

The side-effect of Burnout against Psychological Distress Mediated in Resilience in Medical Students

Fatimah Azzahra^{1*}, Yulia Purnamasari², Latipun³

ABSTRACT

This study was conducted to determine whether there is a mediator role between burnout and psychological distress in medical students. The selection of subjects was carried out using a quota sample and measured by Maslach Burnout Inventory - SS (MBI-SS), The Kessler Psychological Distress Scale (K10), and Connor-Davidson Resilience Scale (CD-RISC) 10. The data obtained were normal and analyzed using the correlation in SPSS 23 for windows to check the relationship between variables which was followed by mediation analysis using PROCESS macros for SPSS. From the results of the analysis it is known that the relationship issued is partial mediation. Even though there is no resilience as a mediator, burnout and psychological distress variables have a positive and significant relationship in medical students.

Keywords: *Burnout, Psychological Distress, Resilience.*

Nowadays, university students have quite burdens in the college life. Those burdens lead them to experience stress. If it is not well handled, it could guide them to negative things. This is commonly referred to psychological distress. It has been reported that the level of psychological distress in countries such as America, Hong Kong, and China increases in the university population or the students (Pidgeon, Rowe, Stapleton, Magyar, & Lo, 2014). In addition, it is mentioned that three faculties; engineering, medicine and social sciences; have higher level of psychological distress compared to other faculties (Kumar, 2016).

This psychological distress has many effects, especially in mental health, individual's function and productivity in doing their job, and some cases lead them to death (Cardozo et al., 2012; Forman-Hoffman et al., 2014). Many cases of early death are reported as a result of psychological distress, regardless of physical health and sociodemography (Forman-Hoffman et al., 2014). On medical students, the most obvious effect of psychological distress are they

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have poor academic, cynicism, unwilling to treat chronic diseases, and reduction of empathy that later can affect the quality of doctors treat in the future (Yamada, Klugar, Ivanova & Oborna, 2014).

Psychological distress is actually a general term used to describe feelings or emotions that are unpleasant and have an impact on the level of function. It means that psychological distress is a psychological discomfort that disrupts daily life. Besides, it also creates negative view of the surrounding, others, and themselves. This psychological distress has nothing to do with gender and is a subjective experience in which it is not possible that two peoples experience it in the same way (Abdullah & Mushtaq, 2015; Joseph & Abraham, 2018).

Not only psychological distress, the medical students are also vulnerable to burnout. At least 50% of medical students is compatible to the burnout criteria in several points during their study period (Chunming, Harrison, MacIntyre, Travaglia, & Balasooriya, 2017). Burnout is a psychological term used to explain negative responses to stress related to work. It is different from psychological distress. Although Burnout has similar characteristics to depression, burnout and depression are different in forms (Iacovides, Fountoulakis, Kaprinis, & Kaprinis, 2003). Burnout occurs due to when people giving too much time, energy and effort to their work in a long period of time without having so much time to recover both emotionally and physically. Burnout is described as a condition consisting of emotional fatigue, disappointment and withdrawal which initially is realized among voluntary health workers (Okwaraji & Aguwa, 2014). Burnout for students can cause to higher absence, lower motivation to do the right job, higher dropout rates and also have a negative effect on student achievement (Cazan & Năstasă, 2015).

Continuous burnout can also develop into psychological distress (Sanchez-Moreno, de La FuenteRoldan, Gallardo-Peralta, & Lopez de Roda, 2014). However, apparently not all individuals who experience burnout happen to experience psychological distress too (Shenoi, Kalyanaraman, Pillai, Raghava, & Day, 2018). It is caused by one of the three burnout aspects is not related to psychological distress (Zou et al., 2016). As it is discussed earlier, psychological distress has a quite dangerous impact thus this needs to be prevented.

Researcher wants to know what variable that is connecting burnout and psychological distress. Many previous researchers have tried to examine how individuals who are capable to dealing their pressures in life. From various variables, resilience is perceived as the most suitable variable because it consists of two aspects, namely hardiness and persistence (Campbell-Sills & Stein, 2007). There are several previous studies that only discuss the relationship between resilience and psychological distress and also with burnout. Resilience involves the interaction between individuals, personality characteristics, past experiences, family and community resources (Anghel, 2015).

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Students with high level of resilience have lower psychological distress compared to students with low levels of resilience (Pidgeon & Pickett, 2017; Pidgeon et al., 2014). The understanding related to psychological distress is closely related to resilience in psychological health structures (Graber, Pichon, & Carabine, 2015). In addition, it is also proven that there is a significant negative relationship between burnout and resilience symptoms. Therefore, it shows us how influencing the role of resilience to burnout (Guo et al., 2018). It means that the higher the level of one's burnout, the lower the level of resilience. In conclusion, resilience is negatively related to psychological distress and burnout, while burnout has a positive relationship with psychological distress (Zou et al., 2016). Therefore, the researcher wants to know if it is possible that resilience can mediate burnout with psychological distress in medical students.

METHODOLOGY

Hypothesis

1. There is a significant correlation between burnout and psychological distress in the medical students.
2. There is a significant correlation between burnout and resilience in the medical students.
3. There is a significant correlation between resilience and psychological distress in the medical students.
4. There is a mediation role between burnout and psychological distress in the medical students.

Research Design

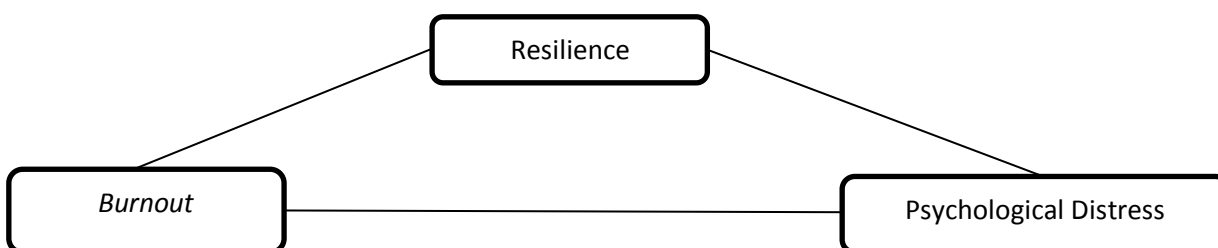


Figure1. Correctional design based on the hypothesis above. The mediation design is explained after the correlation.

Sample

The research subject was chosen by using quota sampling, which the researcher decided the number of sample used as the respondents in the study. The researcher concluded that 183 of medical students who were taking a course in several Universities at Malang as the respondents of this research.

Instruments

There were three scales used in this study, which were:

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1. MBI-SS

Maslach Burnout Inventory – SS (MBI-SS) is a scale that is used to measure the burnout levels of the students. This scale consists of 15 items divided into three aspects, which are fatigue, cynicism, and professional efficacy. For example, "*I feel emotionally drained from my study*" (Schaufeli, Martínez, Pinto, Salanova, & Bakker, 2002). Cronbach's alpha of this scale was 0.874.

2. K10

The Kessler Psychological Distress Scale (K10) is a scale consists of 10 items that can be used to measure someone's psychological distress. This K10 item is based on the anxiety level and the depression symptoms experienced by an individual in the recent 4 weeks. For example, "*how often did you feel hopeless?*" and "*how often you feel nervous?*" The subject reported the frequency of these each experience of five scales and started from "always" to "never" (Sunderland, Mahoney, & Andrews, 2013). Cronbach's alpha of this scale was 0.921.

3. CD-RISC 10

Connor-Davidson Resilience Scale (CD-RISC) is a scale that is developed by Connor and Davidson to measure someone's resilience levels (Connor & Davidson, 2003). This scale consists of 25 items which were then modified by Campbell into 10 items which considered as the representative from all of the items. The name then became CD-RISC 10. These 10 items are divided into two aspects, which are hardiness and persistence. For example "*I believe I can achieve my goals, even if there are obstacles*" (Campbell-Sills & Stein, 2007). Cronbach's alpha of this scale was 0.758.

Procedure

This research consisted of three procedures, which were preparation, data retrieval, and data analysis. First, the researcher investigated and searched for the materials and the problems. Then, the researcher prepared some scales to be distributed to 183 medical students from several universities in Malang. After getting the data, the researcher preceded the data by using SPSS 23 for windows. This process was started by examining the data normality, then calculating the descriptive statistics followed by calculating the correlation. After getting the significant correlation from those three variables, the mediation analysis was done by using PROCESS macro (Hayes, 2012). PROCESS macro for SPSS is a combination from regression method and bootstrap. The result from the data processing was interpreted to check whether there is a mediating role or not.

RESULTS & DISCUSSION

This research is aimed to explore the resilience's role as the mediation between burnout and psychology distress in medical students. The subject of this research was medical students who were taking a course in several Universities at Malang. The description of the subject can be seen in table 1 below.

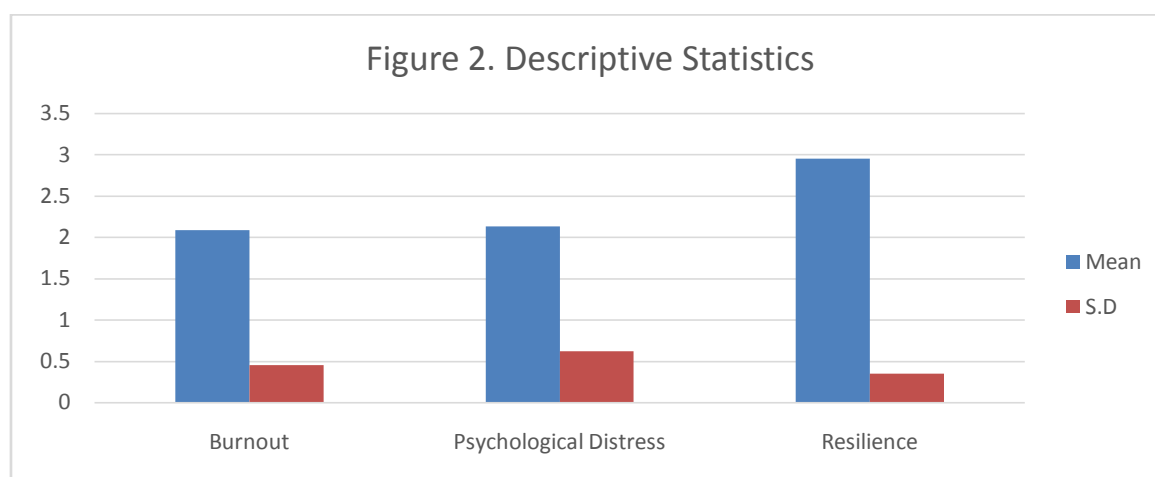
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Table 1. Description of Subject Data

Categories	University				Gender		Age		Semester	
	UMM	UB	UIN	UNISMA	M	F	17-20	21-25	2-6	8-12
frequency	97	44	22	20	49	134	113	70	143	40
percentage	53%	44%	12%	11%	27%	73%	62%	38%	78%	22%

Table 1. Description of Subject Data

Total of the subject in this research was 183 medical students who were taking a course in several Universities at Malang, which were UMM (53%), UB (44%), UIN (12%) and UNISMA (11%). The medical students as the subject of this research consisted of 49 males (27%) and 134 females (73). Based on the age, the subject was divided into two, which were 17-20 years old = 113 students (62%) and 21-25 years old = 70 students (38%). If we saw based on the semester, it was found that there were two categories, which were 143 students (78%) from 2nd – 6th semester and 40 students (22%) from 8th – 12th semester.



Based on this figure, it could be seen how the results from the mean and Standard Deviation from each variable. The first variable was burnout (X) the mean was 2.13 and S.D was 0.45. Meanwhile the psychological distress (Y) had 2.13 as the mean and 0.62 as S.D. The last was resilience (M) which had 2.95 as the mean and 0.35 S.D.

The first hypothesis was formulated to find out the correlation between burnout, psychological distress, and resilience.

Table 2. Correlation Matrix

Variable	Burnout	Psychological Distress	Resilience
Burnout	1	.606**	-.258**
Psychological Distress	.606**	1	-.349**

N= 183

**Correlation is significant at the 0.01 level (2 tailed)

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From table 2, it can be concluded that all variables have significant correlation. There were a positive and significant correlation between burnout and psychological distress ($r = .606$, $p < 0.05$), whereas the significant negative correlation was found on burnout and resilience ($r = -.258$, $p < 0.05$) as well as the correlation between psychological distress and resilience.

The result above verified that in hypothesis (1) there were significant correlations between burnout and psychological distress toward medical students, (2) there were significant correlation between burnout and resilience toward medical students, (3) there were significant correlation between resilience and psychological distress toward medical student, and it had been proven and accepted. It was accordance with some previous studies. Hence, the correlation between psychological distress and burnout had already been proven that they had positive correlation in which individuals who has high level of psychological distress also has high level of burnout (Higuchi et al., 2016). By the same token, resilience and burnout had already proven that they had significant negative correlation in which if the burnout level was high, the resilience level of individuals was low and vice versa (Cooke, Doust, & Steele, 2013). Previous study had also been stated that medical students with high resilience level had lower psychological distress rather than students with low resilience level (Bacchi & Licinio, 2016)..

After conducting correlation analysis, mediation analysis was held by using PROCESS macro for SPSS. Resilience was expected as the mediator between burnout with psychological distress.

Figure 3. Regression-based path coefficient from mediation analysis resilience within correlation between burnout and psychological distress

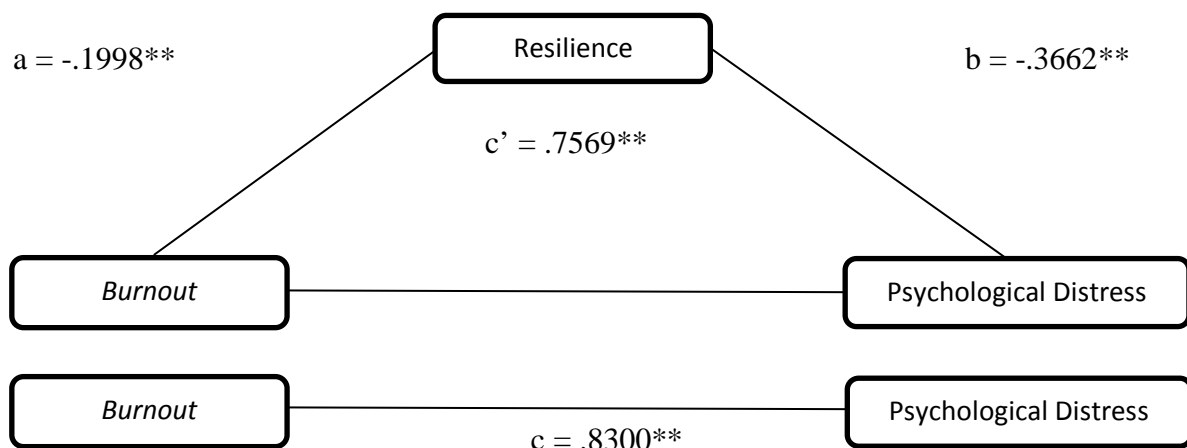


Figure 3 showed that the significant correlation between burnout and psychological distress are based on regression-based approach. The total effect from burnout on psychological distress showed significant result ($c = .8300$, $SE = .0810$, $t = 10.2430$, $p < 0.05$). Direct effect from burnout on psychological distress after through resilience had also shown significant result ($c' = .7596$, $SE = .0814$, $t = 9.2955$, $p < 0.05$). Indirect effect of burnout toward resilience

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($a = -.1998$, $SE = .0555$, $t = -3.5976$, $p < 0.05$) and reliance toward psychological distress ($b = -.3662$, $SE = .1052$, $t = -3.4791$, $p < 0.05$) had also shown a significant result. Significant direct effect from burnout toward psychological distress showed that resilience had a role as partial mediation between the correlation of burnout and psychological distress of medical students. Indirect correlation between burnout with psychological distress through resilience was obtained after conducting data analysis by using PROCESS macro for SPSS. The result from the analysis can be shown in following table 3 and 4.

Table 3. Parameter estimates of 1000 bootstrap samples with bias corrected and accelerated bootstrap confidence intervals (BCa CI) at 95% confidence level.

Effect	Product of coefficient		Bootstrapping 95% BCa CI	
	Parameter Estimate	SE	Lower CI	Upper CI
B→R→PD	.0732	0.341	.0164	.1530
N=183				

Table 4. Normal Theory Test

Effect	SE	Z	P
.0732	.0298	2.4525	.0142
N = 183			

From table 3 and 4 of partial mediation on the correlation between burnout and psychological distresses through resilience toward medical student can be said as significant due to complete precondition. Hence, the calculation of analysis result of indirect correlation from bootstrapping 95 were different from zero and BCa CI were not included as zero ($PE = .0732$, 95% Bca CI [.0164, .1530]). Moreover, it was found the coefficient with the amount of 0.732 ($\beta = .0732$, $Z = 2.4525 > 1.96$, $p < 0.05$). Those result proved that fourth hypothesis which stated that there were a mediation role from resilience between burnout and psychological distress toward medical students was accepted. This means that partial mediation showed that resilience could bridge the indirect correlation between burnout and psychological distress toward medical students. Nevertheless, even without the existence of resilience as mediation variable, burnout still had significant positive direct correlation toward psychological distress toward medical students. It was because of another factor which give more effect between the correlation of burnout and psychological distress such as sociodemography characteristic as follows; woman, age, marital status, certain racial group, and low economic social status as predisposition factor for psychological distress (Mthembu, Mabaso, Khan, & Simbayi, 2017). It was in accordance with the result of the study which proposed that woman is more likely experience psychological distress rather than man and psychological distress will decrease with age because in adolescence, individual will experience emotional difficulties at this age (Joseph & Abraham, 2018).

CONCLUSION

Data from analysis result from this study proved that resilience could become mediation variable between burnout and psychological distress toward medical students. However, the correlation happened was partial mediation. It was shown that even without the existence of resilience as mediator, burnout variable and psychological distress still has positive and significant correlation towards medical students.

REFERENCES

- Abdullah, R., & Mushtaq, S. (2015). An Exploration of Life Satisfaction , Psychological Distress and Psychological Well-being among College Students. *The International Journal of Indian Psychology*, 3(1).
- Anghel, R. E. (2015). ScienceDirect Psychological and Educational Resilience in High vs. Low-Risk Romanian Adolescents. *Procedia - Social and Behavioral Sciences*, 203, 153–157. <https://doi.org/10.1016/j.sbspro.2015.08.274>
- Bacchi, S., & Licinio, J. (2016). Resilience and Psychological Distress in Psychology and Medical Students. *Academic Psychiatry*, 41(2), 185–188. <https://doi.org/10.1007/s40596-016-0488-0>
- Campbell-Sills, L., & Stein, M. B. (2007). Psychometric Analysis and Refinement of the Connor–Davidson Resilience Scale (CD-RISC): Validation of a 10-Item Measure of Resilience Laura. *Journal of Traumatic Stress*, 20(6), 1019–1028. <https://doi.org/10.1002/jts>.
- Cardozo, B. L., Crawford, C. G., Eriksson, C., Zhu, J., Sabin, M., Ager, A., ... Simon, W. (2012). Psychological Distress, Depression, Anxiety, and Burnout among International Humanitarian Aid Workers: A Longitudinal Study. *PLoS ONE*, 7(9). <https://doi.org/10.1371/journal.pone.0044948>
- Cazan, A.-M., & Năstasă, L. E. (2015). Emotional Intelligence, Satisfaction with Life and Burnout among University Students. *Procedia - Social and Behavioral Sciences*, 180(November 2014), 1574–1578. <https://doi.org/10.1016/j.sbspro.2015.02.309>
- Chunming, W. M., Harrison, R., MacIntyre, R., Travaglia, J., & Balasooriya, C. (2017). Burnout in medical students: A systematic review of experiences in Chinese medical schools. *BMC Medical Education*, 17(1), 1–11. <https://doi.org/10.1186/s12909-017-1064-3>
- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new Resilience scale: The Connor-Davidson Resilience scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82. <https://doi.org/10.1002/da.10113>
- Cooke, G. P. E., Doust, J. A., & Steele, M. C. (2013). A survey of resilience, burnout, and tolerance of uncertainty in Australian general practice registrars. *BMC Medical Education*, 13(January), 2. <https://doi.org/10.1186/1472-6920-13-2>
- Forman-Hoffman, V. L., Muhuri, P. K., Novak, S. P., Pemberton, M. R., Ault, K. L., & Mannix, D. (2014). The CBHSQ Data Review: Psychological Distress and Mortality among Adults in the U.S. General Population. *Center for Behavioral Health Statistics and Qualit.*

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- Graber, R., Pichon, F., & Carabine, E. (2015). State of knowledge and future research agendas. Retrieved from www.odi.org
- Guo, Y. F., Luo, Y. H., Lam, L., Cross, W., Plummer, V., & Zhang, J. P. (2018). Burnout and its association with resilience in nurses: A cross-sectional study. *Journal of Clinical Nursing*, 27(1–2), 441–449. <https://doi.org/10.1111/jocn.13952>
- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling. *White Paper*, 1–39. <https://doi.org/978-1-60918-230-4>
- Higuchi, Y., Inagaki, M., Koyama, T., Kitamura, Y., Sendo, T., Fujimori, M., ... Yamada, N. (2016). A cross-sectional study of psychological distress, burnout, and the associated risk factors in hospital pharmacists in Japan. *BMC Public Health*, 16(1), 1–8. <https://doi.org/10.1186/s12889-016-3208-5>
- Iacovides, A., Fountoulakis, K. N., Kaprinis, S., & Kaprinis, G. (2003). The relationship between job stress, burnout and clinical depression. *Journal of Affective Disorders*, 75(3), 209–221. [https://doi.org/10.1016/S0165-0327\(02\)00101-5](https://doi.org/10.1016/S0165-0327(02)00101-5)
- Joseph, R. K., & Abraham, M. C. (2018). Psychological Distress among School-Going Adolescents. *The International Journal of Indian Psychology*, 6(1), 155–163. <https://doi.org/10.25215/0601.038>
- Kumar, H. (2016). Psychological Distress and Life Satisfaction among University Students. *Journal of Psychology & Clinical Psychiatry*, 5(3), 1–8. <https://doi.org/10.15406/jpcpy.2016.05.00283>
- Mthembu, J. C., Mabaso, M. L. H., Khan, G., & Simbayi, L. C. (2017). Prevalence of psychological distress and its association with socio-demographic and HIV-risk factors in South Africa: Findings of the 2012 HIV prevalence, incidence and behaviour survey. *SSM - Population Health*, 3(December 2016), 658–662. <https://doi.org/10.1016/j.ssmph.2017.07.009>
- Okwaraji, F., & Aguwa, E. (2014). Burnout and psychological distress among nurses in a Nigerian tertiary health institution. *African Health Sciences*, 14(1), 237–245. <https://doi.org/10.4314/ahs.v14i1.37>
- Pidgeon, A. M., & Pickett, L. (2017). Examining the differences between university students' levels of resilience on mindfulness, psychological distress and coping strategies. *European Scienti*, 13(12), 103–113. <https://doi.org/10.1177/0306624X15602514>
- Pidgeon, A. M., Rowe, N. F., Stapleton, P., Magyar, H. B., & Lo, B. C. Y. (2014). Examining Characteristics of Resilience among University Students: An International Study. *Open Journal of Social Sciences*, 2, 14–22. <https://doi.org/10.4236/jss.2014.211003>
- Sanchez-Moreno, E., de La Fuente Roldan, I.-N., Gallardo-Peralta, L. P., & Lopez de Roda, A. B. (2014). Burnout, Informal Social Support and Psychological Distress among Social Workers. *British Journal of Social Work*, (June), 1–19. <https://doi.org/10.1093/bjsw/bcu084>
- Schaufeli, Martínez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and Engagement in University Students. *Journal of Cross-Cultural Psychology*, 33(5), 464–481. <https://doi.org/10.1177/0022022102033005003>

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- Shenoi, A. N., Kalyanaraman, M., Pillai, A., Raghava, P. S., & Day, S. (2018). Burnout and Psychological Distress among Pediatric Critical Care Physicians in the United States. *CriticalCare Medicine*, 46(1), 116–122. <https://doi.org/10.1097/CCM.0000000000002751>
- Sunderland, M., Mahoney, A., & Andrews, G. (2013). Erratum: Investigating the factor structure of the Kessler psychological distress scale in community and clinical samples of the Australian population (*Journal of Psychopathology* (2012) 34 (253-259) DOI:10.1007/s10862-012-9276-7). *Journal of Psychopathology and Behavioral Assessment*, 35(4), 603–604. <https://doi.org/10.1007/s10862-013-9390-1>
- Yamada, Y., Klugar, M., Ivanova, K., & Oborna, I. (2014). Psychological distress and academic self-perception among international medical students: the role of peer social support. *BMC Medical Education*. <https://doi.org/10.1186/s12909-014-0256-3>
- Zou, G., Shen, X., Tian, X., Liu, C., Li, G., Kong, L., & Li, P. (2016). Correlates of psychological distress, burnout, and resilience among Chinese female nurses. *Industrial Health*, 54(5), 389–395. <https://doi.org/10.2486/indhealth.2015-0103>

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Conflict of Interest

There is no conflict of interest.

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