

The Effect of Neuroticism on Psychological Distress Mediated by Burnout in Medical Students

Yulia Purnamasari^{1*}, Fatimah Azzahra², Latipun³

ABSTRACT

The purpose of this study was to determine the effect of neuroticism personality factors on psychological distress in medical students mediated by burnout syndrome. The sample for this study was 117 active medical students at several universities in Malang, aged 17-25 years. The sampling technique uses quota sampling. This study uses a quantitative method, the analysis test uses statistical techniques using SPSS 23. The results showed that the influence of neuroticism personality factors on psychological distress has a positive and significant effect and burnout syndrome mediates the influence of neuroticism on psychological distress partially.

Keywords: *Neuroticism, Psychological distress, Burnout*

With all the academic difficulties and obligations that students make, they can easily feel psychological problems, one of them is *psychological distress*. *Psychological distress* is very common in the general population, approximately 5-48%. *Psychological distress* is often experienced as part of normal life, a consequence of misfortune, such as suffering due to the transition of normal life, challenges and disadvantages, in education and work, family life, relationships, aging and so on, and is associated with social deprivation, exclusion or persecution (Joseph & Abraham, 2018). *Psychological distress* is a human health problem and increasingly affects young people. Although mental health problems affect all societies, students are discovered to have a high prevalence of psychological disorders rather than the general population. This is because students deal with various stressors such as academic demands, workloads, and pressure to succeed, teacher and parent pressure, financial burdens and worries about the future. These stressors can lead to the development of psychological problems in students and have a negative impact on their academic performance. The most common mental health problems found in students are depression, anxiety and stress. Worldwide studies show this high level of psychological problems in students, more than 50% of students report symptoms of depression shortly after the start of their studies. In addition, many studies show a higher prevalence of mental disorders, namely 53% in the United States, 30% in Canada, 53% in Australia and 41.9% in Malaysia. Research in North

¹(Department of Psychology, Post graduate program University of Muhammadiyah Malang, Indonesia)

²(Department of Psychology, Post graduate program University of Muhammadiyah Malang, Indonesia)

³(Department of Psychology, Faculty Member and Lecturer University of Muhammadiyah Malang, Indonesia)

*Responding Author

Received: January 25, 2019; Revision Received: February 26, 2019; Accepted: March 8, 2019

The Effect of Neuroticism on Psychological Distress Mediated by Burnout in Medical Students

America and Europe all show the fact that college students report higher levels of mental pressure compared to the general population (Kumar, 2016).

From three faculties, namely engineering, medical, and social sciences, medical students have a higher level of psychological distress (Kumar, 2016). Medical students have higher *psychological distress* from the beginning of the lecture process. Although several of distress are normal parts of medical training and can be a motivator for individuals, not all students find constructive stress. For many students, distress evokes feelings of fear, incompetence, uselessness, anger, and guilt (Dyrbye, Thomas, & Shanafelt, 2005). *Psychological distress* is defined as "unpleasant emotional experience from a psychological, social, or spiritual (Aarstad, Beisland, Osthus, & Aarstad, 2011). Symptoms that occur if someone experiences *psychological distress* are depression and anxiety (Stueve & Link, 2018).

Students who have *psychological distress* report difficulties with academics, using illicit substances, suicide, and involvement in violence (Jaisooriya et al., 2017). *psychological distress* can interfere with the academic performance of medical students, academic achievement, decreasing mood and increasing anxiety during the exam (Dendle et al., 2018). There are several factors that influence psychological distress, those are (1) intrapersonal factors of personality traits, based on a research, *neuroticism* personality has a connection with negative emotions (depression and anxiety), (2) situational factors consisting of physiological (physical) factors, cognitive and social factors (Halgin & Whitbourne, 2010).

One of approach personality is a dispositional approach, assuming that personality consists of internal characteristics that are relatively stable as behavioral references. Personality traits are considered as several block structures that make up the personality. Recently, there are five dimensions of personality that are often called the top five that focus on traits and not on personality types. Traits are sustainable qualities; an individual has a different nature. A person can have a higher or lower level in some traits. Thus, in this approach, every personality can be described as how strong variations of certain traits. (Dahriyanto & Tresnawati, 2016) There were several types of personality that were indeed vulnerable towards stressors occurred around them, in a research that examines the role of Big Five Personality against *psychological distress* significantly obtained outcome to type of *neuroticism* personality that significantly influenced against *psychological distress*, while the other four personalities (*extraversion, openness, agreeableness* and *conscientiousness*) acquired a negative correlation for the outcome towards *psychological distress* (Shaheen, Jahan, & Shaheen, 2014). *Neuroticism* individuals easily suffer stress, have unrealistic ideas, have maladaptive coping respond, feel under pressure, anxious and insecure (Paul T. Costa, Jr., 2015). *Neuroticism* personality highly related to an increased risk of depression and *psychological distress* (Navrady et al., 2017). In the research of (Batty, McIntosh, Russ, Deary, & Gale, 2016) founded out that there was no correlation of *neuroticism* personality related to distress and suicide, *neuroticism* was not able to predict the extent of correlation of depression and suicide.

Neuroticism personality was susceptible and vulnerable against psychological pressures but there are other factors becoming a *psychological distress* which can influence the extent of *psychological distress* to someone which has *neuroticism* personality, one of them are a situational factor. Medical students frequently felt a *burnout* syndrome or fatigue. The extent of *burnout* against medical students globally revolve around 28% up to 45%, female students were reported much more affected by *burnout* (Niranjan, Udey, & Razdan, 2017). Burnout

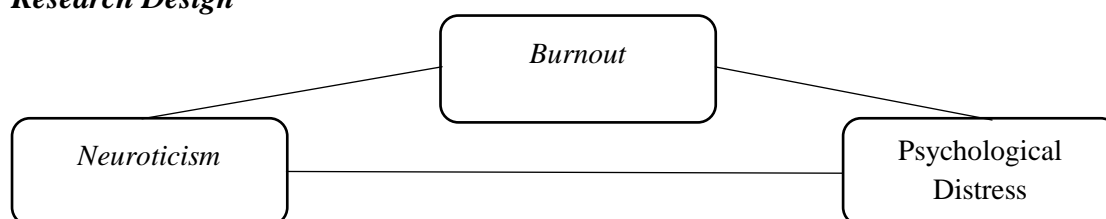
The Effect of Neuroticism on Psychological Distress Mediated by Burnout in Medical Students

occurs to individuals. This involves a feeling, motive, behavior and hopefulness. This is a negative feeling against individuals which caused fatigue (both physical and emotional), feeling of lack of energy, tendency to see individuals in ways that are not interested (depersonalization) and lack of insight of personal achievement. Even individuals were able to encounter cynically towards other people (Mathews, 2017). Medical students have the extent of *burnout* which was high around 28% up to 45% (Niranjan et al., 2017). According to the outcome of Big Five research personality correlate positively with *burnout* gained *neuroticism* and conscientiousness personality for the outcome which correlated positive with *burnout* (Hamze Gholami Dargah., 2010). *Burnout* also has a significant relation with *psychological distress*, the higher level of *burnout* and severe stress are able to lead to do suicide and feel depression (Lebares et al., 2017). Maslach and others reveal *burnout* as a syndrome which consisted into emotional fatigue, depersonalization and professional achievement which have adverse effects both individual or it's organization. (Zopiatis, 2010).

Framework for Thinking and Hypotheses

1. There is a correlation between *Neuroticism* and *Psychological Distress* against medical students
2. There is a correlation between *neuroticism* and *Burnout* against medical students
3. There is a correlation between *Burn Out* and *Psychological Distress* against medical students
4. There is a correlation between *Neuroticism* and *Psychological Distress* that mediated by *Burnout* against medical students.

Research Design



METHODOLOGY

Sample

This research chose research subject by using a quota sample, by using this method, researchers decided how many samples can be respondents in the research that we committed. The researchers decided respondents from this research around 117 medical students that active at universities in Malang city.

Instruments

Three scales used in this research are:

1. **Big Five Personality (BFI)** developed by Jhon and Srivastava consisted into 44 items. Item or state on BFI used in this research related to *neuroticism* only. Amount of *neuroticism* items on BFI were 8 items. *Neuroticism* divided into several aspects, those are *anxiety*, *angry hostility*, *Depression*, *Self-consciousness*, *Impulsiveness*, and *vulnerability* (Jhon, O. P., & Srivastava, 1999). The scale has been gone through reliability test and gained Cronbach Alpha around 0,852 for the outcome which meant reliable.
2. **Maslach Burnout Inventory - SS (MBI-SS)** is a scale used to measure the burnout level on the student. This scale consists of 16 items divided into three aspects, those are fatigue, cynicism, and professional *efficacy*. The example is "I

The Effect of Neuroticism on Psychological Distress Mediated by Burnout in Medical Students

feel emotionally drained from my study" (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002). The scale has been tested for reliability and obtained Cronbach Alpha results of 0.885 which means reliable.

3. **The Kessler Psychological Distress Scale (K10)** is a scale included 10 items that can measure distress level of someone's psychological. This item based on the anxious level and the depression indicator for the past four weeks. The example is "how often did you feel hopeless?" and "how often you feel nervous?". Subjects report the frequency of each experience on this five-point scale from "always" to "never" (Sunderland, Mahoney, and Andrews, 2013). The scale has been tested for reliability and obtained Cronbach Alpha results of 0.922 which mean very reliable.

Procedure

This research consisted of three procedures; those are preparation, retrieval data, and data analysis. First, the researchers find the materials and the existing problems. Then, the researchers prepare the scale and spread it out to 117 medical students from universities in the city of Malang. After obtaining the data, this data will be analyzed using SPSS 23 *for windows*. The process begins with calculating, and then will be explained and taken conclusions based on the processed results.

RESULTS

The research was conducted to observe the role of *burnout* as mediatization between *neuroticism* and *psychological distress* on the medical student. Subjects of this research were medical students who were studying at university in Malang. The subject description could be seen on the table.

Table 1, Sample

Categories	Universities			Genders		Ages		Semesters	
	UB	UIN	UNISMA	L	P	17-20	21-25	2-6	8-12
Frequency	56	38	23	38	79	52	65	89	28
percentage	48%	32%	20%	32%	68%	44%	56%	76%	24%

The total subjects in this research were 117 active medical students who were studying at several universities located in the city of Malang, those universities were Brawijaya University (UB) consisted of 56 students (48%), State Islamic University (UIN) consisted of 38 students (32%) and Islamic University of Malang (UNISMA) consisted 23 students (20%). Based on the gender, male active students were 38 people (32%) and female active students were 79 students (68%). In terms of age, the subject was divided into two, namely age 17-20 consisted of 52 students (44%) and age 21-25 consisted of 65 students (56%). For levels of semester, it was divided into two from semesters, 2-6 consisted of 89 students (76%) and semester 8-12 as consisted of 28 students (24%).

In the first hypothesis of this research is to find the relation between variables X and Y (coefficient c) that have been analyzed and get the results known c coefficient value of 0.502 ($\beta_c = 0.483$), with $t_c = 5.920$ and significance $p < 0.05$. Thus, *neuroticism* significantly has a positive effect on *psychological distress* (or $c \neq 0$), thus the first hypothesis is fulfilled. It can be seen on table 2.

In the second hypothesis of this research is to find the relation between variables X and M (coefficient a) that has been analyzed and get the results known c coefficient value of 0.286

The Effect of Neuroticism on Psychological Distress Mediated by Burnout in Medical Students

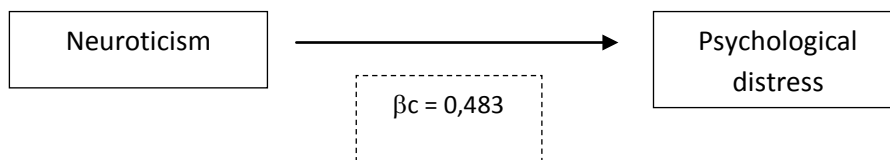
($\beta_c = 0.276$), with $t_c = 3.080$ and significance $p < 0.05$. Thus, *neuroticism* significantly has a positive effect on *burnout* (or $c \neq 0$), thus the first hypothesis is fulfilled. Can be seen on table 2.

Table 2

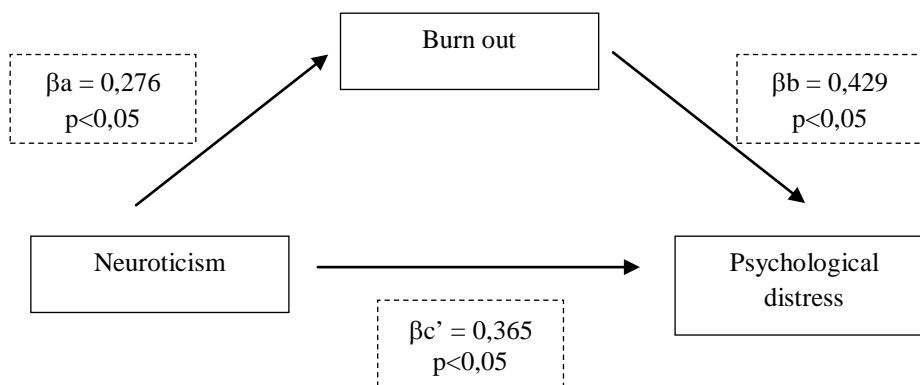
Hypothesis	B	Beta	t	P
X. > Y (koefisien c)	0,502	0,483	5,920	0,000
X > M (koefisien a)	0,286	0,276	3,080	0,000
M > Y (koefisien b)	0,431	0,429	5,704	0,000
X, M > Y (koefisien C ¹)	0,379	0,365	4,848	0,000

In the third hypothesis of this research is to find the relation between variables X and M to Y (coefficient b C1) that has been analysed and get the results known that the coefficient value of b is 0.431 ($\beta_b = 0.429$), and the coefficient value of c is 0.379 ($\beta_c = 0.365$). The value of $t_b = 5.704$ and significance $p < 0.05$ while the value of $t_c = 4.848$ and significance $p < 0.05$. Thus each *burnout* and **neuroticism** significantly have a positive effect on *psychological distress* (or b and $c \neq 0$). Can be seen on table 2. Because hypothesis 1, 2, and 3 are significant and hypothesis 4 is also significant, it is said that *burnout* mediates the influence of *neuroticism* on *psychological distress* **partially**. Note: if the effect of *burnout* on *psychological distress* is not significant then it is stated that *burnout* mediates the influence of *neuroticism* on *psychological distress* is **complete mediation**. Simply, the results of the three regression analyses above can be described in the diagram as follows.

Regression Analysis Without Mediation



Regression Analysis with Mediation



Based on the picture above it also can be known that the total effect of *Neuroticism* to *psychological distress* (line C) amounting to 0,483; direct effect *Neuroticism* to *psychological distress* (Line C) amounting to 0,365 and indirect effect of *Neuroticism* to *psychological distress* (Line A x B) amounting to $0,276 \times 0,429 = 0,118$. Total effect is addition of direct effect plus indirect effect ($c = c + ab = 0,365 + 0,118 = 0,483$)

The Significance of Indirect Effect

The existence of a mediator role can also be seen from significance indirect effect. To see the magnitude of the indirect influence and test its significance, it can be done with a Sobel test. The Calculation of obel test can be done via online on <http://quantpsy.org/sobel/sobel.htm> by entering the previous value of T. For the output from calculation result for this research, can be seen below:

Input:		Test statistic:	p-value:	
t_a	3.080	Sobel test:	2.71014041	0.00672547
t_b	5.704	Aroian test:	2.67845809	0.0073962
		Goodman test:	2.74297427	0.00608855
<input type="button" value="Reset all"/>		<input type="button" value="Calculate"/>		

Based on the picture above, it can be seen that the results of the single test calculation obtained a test statistic value of 2,710 and $P < 0,05$. Those of all, it can be concluded that burnout mediates the effect of neuroticism on psychological distress.

DISCUSSION

According to the results of the research that has been done, there is a significant relation between neuroticism to psychological distress in medical students, this result can be seen from the value of p that is equal to 0,000 which is smaller than 0.05, which means that hypothesis 1 is accepted. Neuroticism personality factors can be one of the factors causing psychological distress in medical students, this result is in accordance with the research conducted by Navrady, 2017 which showed that neuroticism results are strongly associated with an increased risk of depression and higher psychological stress (Navrady et al., 2017). the higher a neuroticism of person, the easier it will increase distress in that person. Neuroticism personality, an individual who has a high level of being nervous, temperamental, emotionally sentimental and emotionally vulnerable (Dahriyanto & Tresnawati, 2016).

The results of hypothesis testing in this study provide that there is a significant relationship between neuroticism and burnout in medical students (the first hypothesis) which shows that neuroticism personality is significantly associated with burnout syndrome in medical students who get a P value of 0,000, which means that hypothesis 2 is accepted. The role of neuroticism personality factors has a very large influence on the causes of burnout syndrome as in Azeem study, 2013 which found neuroticism results were found to be positively and significantly related to the dimensions of burnout (Azeem, 2013). The other research revealed by Hamze, 2010 revealed that extroversion, friendliness and openness of experience had a negative relationship with job burnout. The other side, there is a positive relationship between conscience and neuroticism with job burnout (Hamze Gholami Dargah., 2010). The research conducted by Zopiatis, 2010 found a result that showed some positive relationship between emotional fatigue and neuroticism (Zopiatis, 2010). In other words, the higher the neuroticism of a person, the easier he will be to feel tired (burnout) emotionally and physically.

From the results of the third hypothesis test get the results that there is a significant relationship between burnout to psychological distress that, get a P value of 0,000, which means that hypothesis 3 is accepted. A study conducted by Lebares, 2017 found high levels of fatigue, severe stress, and dangerous symptoms experienced during general surgical training on surgeons, trainees with high fatigue and stress have a high risk of depression and get suicide (Lebares et al., 2017). Research conducted by Zou, 2016 showed that 85.5% of

The Effect of Neuroticism on Psychological Distress Mediated by Burnout in Medical Students

nurse's experience psychological distress. Resilience is negatively related to psychological distress and burnout while burnout is positively related to psychological distress (Zou, Shen, Tian, Liu & Li, 2016) from several studies and the results of hypothesis testing that have been done get results that burnout syndrome which is increasingly high can cause psychological distress that gets worse and can even cause depression and get suicide.

From the result of the final hypothesis test, the fourth hypothesis found the result of the significant relation between neuroticism (x) and burnout (m) to psychological distress (y) which has P value of 0,000. From the result of research and hypothesis test can be said that burnout mediate neuroticism to psychological distress indirectly (partial). Partial correlation is where the influence of one variable is "taken" from the second variable, which correlates with the third variable. Partial correlation is a value obtained when we have the third variable which is constant from two variables (Jose, 2013). the results of the Sobel test calculation were obtained with a statistical test value of 2.710 and $p < 0.05$. Thus it can be concluded that burnout mediates the effect of neuroticism on psychological distress.

In the results of this study we know that many factors cause psychological distress, among others, are neuroticism and burnout. the role of the influence of neuroticism and burnout personality traits has an influence on increasing psychological distress in medical students. The influence occurs indirectly or is said to be partial mediation.

CONCLUSION

The conclusion of this study is that there is a significant relation between neuroticism to psychological distress, there is a significant relation between neuroticism to burnout in medical students, there is a significant relation between burnout to psychological distress. There is a relation / indirect influence (partial) from variables mediation (burnout) on the relationship of variables X (neuroticism) and Y (psychological distress).

REFERENCES

- Aarstad, A. K. H., Beisland, E., Osthus, A. A., & Aarstad, H. J. (2011). Distress, quality of life, neuroticism and psychological coping are related in head and neck cancer patients during follow-up. *Acta Oncologica*, 50(3), 390–398. Retrieved from <https://doi.org/10.3109/0284186X.2010.504227>
- Batty, G. D., Mcintosh, A. M., Russ, T. C., Deary, I. J., & Gale, C. R. (2016). Psychological distress, neuroticism, and cause-specific mortality: early prospective evidence from UK Biobank, 1136–1139. <https://doi.org/10.1136/jech-2016-207267>
- Dahriyanto, L. F., & Tresnawati, F. R. (2016). Personality Traits Prediction of Fear of Missing Out In College Students. *The International Journal of Indian Psychology ISSN*, 3(4), 2348–5396. Retrieved from <http://www.ijip.in>
- Dendle, C., Baulch, J., Pellicano, R., Hay, M., Lichtwark, I., Ayoub, S., ... Horne, K. (2018). Medical student psychological distress and academic performance. *Medical Teacher*, 0(0), 1–7. <https://doi.org/10.1080/0142159X.2018.1427222>
- Dyrbye, L. N., Thomas, M. R., & Shanafelt, T. D. (2005). Medical student distress: Causes, consequences, and proposed solutions. *Mayo Clinic Proceedings*, 80(12), 1613–1622. <https://doi.org/10.4065/80.12.1613>
- Halgin, R. P., & Whitbourne, S. K. (2010). *Abnormal Psychology*. (Beth Mejia, Ed.) (Sixth Edit, Vol. 3). New York: Mc Graw Hill Higher Education. <https://doi.org/10.1037/031838>
- Hamze Gholami Dargah., Z. P. E. (2010). The Relationship Between The Big Five Personality Factors and Job Burnout, 2(11), 1842–1850.

The Effect of Neuroticism on Psychological Distress Mediated by Burnout in Medical Students

- Jaisoorya, T., Rani, A., Menon, P. G., CR, J., Revamma, M., Jose, V., ... Sivasankaran Nair, B. (2017). Psychological distress among college students in Kerala, India—Prevalence and correlates. *Asian Journal of Psychiatry*, 28(2017), 28–31. Retrieved from <https://doi.org/10.1016/j.ajp.2017.03.026>
- John, O. P., & Srivastava, S. (1999). Big Five Inventory (BFI). *Handbook of Personality: Theory and Research*, 2, 102–138. <https://doi.org/10.1525/fq.1998.51.4.04a00260>
- Joseph, R. K., & Abraham, M. C. (2018). Psychological Distress among School-Going Adolescents. *The International Journal of Indian Psychology*, 6(1), 155–163. Retrieved from <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. Retrieved from <https://doi.org/10.15406/jpcpy.2016.05.00283>
- Lebares, C. C., Guvva, E. V., Ascher, N. L., Sullivan, P. S. O., Harris, H. W., & Epel, E. S. (2017). Burnout and Stress Among US Surgery Residents : Psychological Distress and Resilience. *Journal of the American College of Surgeons*, 226(1), 80–90. <https://doi.org/10.1016/j.jamcollsurg.2017.10.010>
- Mathews, J. (2017). Occupational Stress and Job Burnout among Primary and Secondary School Teachers in Cuttack , Orissa , 2013, 5(1). <https://doi.org/10.25215/0501.056>
- Navrady, L. B., Ritchie, S. J., Chan, S. W. Y., Kerr, D. M., Adams, M. J., Hawkins, E. H., ... McIntosh, A. M. (2017). Intelligence and neuroticism in relation to depression and psychological distress : Evidence from two large population cohorts. *European Psychiatry*, 43, 58–65. <https://doi.org/10.1016/j.eurpsy.2016.12.012>
- Niranjan, V., Udey, B., & Razdan, R. G. (2017). Evaluation of burnout in medical interns: an institutional study. *International Journal of Research in Medical Sciences*, 5(5), 2173. <https://doi.org/10.18203/2320-6012.ijrms20171864>
- Paul T. Costa, Jr., and R. R. M. (2015). The Five-Factor Model Of Personality and Its Relevance To Personality Disorders. *Journal Of Personality Disorder*, (January 2012). <https://doi.org/10.1037/10423-001>
- 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>
- Shaheen, F., Jahan, M., & Shaheen, S. (2014). Role of Personality Factors in Experiencing Psychological Distress among Adolescents. *International Journal of Education and Psychological Research*, 3(1).
- Stueve, A., & Link, B. (2018). Social Causes of Psychological Distress, 496–497.
- 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>
- Zopiatis, A. (2010). Investigating the Association of Burnout and Personality Traits of Hotel Managers.
- Zou, G., Shen, X., Tian, X., Liu, C., & Li, G. (2016). Correlates of psychological distress , burnout , and resilience among Chinese female nurses, 389–395.

Acknowledgements

The authors profoundly appreciate all the people who have successfully contributed in ensuring this paper is in place. Their contributions are acknowledged however their names cannot be able to be mentioned.

Conflict of Interest

The authors carefully declare this paper to bear not conflict of interests

How to cite this article: Purnamasari. Y, Azzahra. F, & Latipun. (2019).The Effect of Neuroticism on Psychological Distress Mediated by Burnout in Medical Students. *International Journal of Indian Psychology*, 7(1), 665-673. DIP:18.01.073/20190701, DOI:10.25215/0701.073