

Effects of Supervisor Support on Depression Symptoms in Research Students: Time Management as Moderator

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The major aim of the study was to explore the impact of supervisor support on depressive symptoms in research students of BS, MSc, MPhil and PhD. Moreover, the study investigated the moderating role of time management for the relationship of supervisor support with depressive symptoms. The sample of research students ($N = 154$), age range of 21 to 39 years ($M = 23.47$, $SD = 3.57$), was recruited from various departments of the University of Sargodha. Postgraduate Research Experience Scale (Australian Council for Education Research, 1999), Self Management sub-scale of Self-Management Scale (Xue & Sun, 2011) and Depression Anxiety and Stress Scale (Lovibond & Lovibond, 1995) were individually administered. Hierarchical regression analysis revealed that supervisor support was strong predictor of depressive symptoms in research students. Time management skill acted as moderator such that the negative relationship between supervisory support and depressive symptoms was found only when the level of the time management skills was low. The study has important implications for educational psychologists and students.

Keywords: Supervisor support, time management skills, depression

Doing research is an integral, important and stressful task for students of higher education. In universities, almost no degree can be completed successfully without exposure to research. However, as research demands time and cognitive efforts, it often results in stress for the students. Therefore, it is commonly observed that the students doing research often develop psychological symptoms including symptoms of depression (Kazmi & Muazzam, 2017). Therefore, the present study aimed to investigate how research experiences specifically satisfaction with supervisor support cause depressive symptoms. Moreover, it is interested in exploring the moderating role of time management skills was also explored.

Depression is one of the most commonly experienced mental health problems in the world. It has been observed that university students often exhibit depressive symptoms. For instance, Sarokhani et

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al., (2013) conducted a meta-analysis and reported that the prevalence of depression was 33% in Iranian university students. Similarly, it was 27.5% for Malaysian students, 47.01 % of Thai students and 23.80% of Chinese students (Islam, Low, Tong, Yuen, & Abdullah, 2018). Several factors have been outlined as associated factors of depressive symptoms in university students, for example, the year at university, socioeconomic status of the student, sleep disturbances, post-traumatic stress (Islam et al., 2018), family history of depression, face acne, physical defects, the use of alcohol, smoking, and preoccupation regarding future occupation (Arslan, Ayranci, Unsal, & Arslantas, 2009). In Pakistan, many researchers have turned their attention towards exploring the causes of depression. Bukhari and Khanam (2015), for instance outlined the differences in gender and socioeconomic status as important determinants of depression in students. Satisfaction with degree course work and teaching method of the teachers were also observed as correlates of depression in university students (Ghayas, Shamim, Anjum, & Hussain, 2014). However, a little attention has been paid towards the role of research experiences in depression.

The students undertaking research have to face many stressors and strains which are quite different from those experienced by medical or other students at university (Ahmed, Umrani, Pahi, & Shah, 2017). A study, conducted on Canadian graduate students, identified key factors which determine the causes of depressive symptoms among graduate research students (Peluso, Carleton, & Asmundson, 2011). They described that key contributory factors to depressive symptoms were satisfied with advisory relationship and the number of hours worked in a week. Similarly, Kazmi and Muazzam (2017) surveyed a sample of university students and outlined several factors which resulted in poor adjustment in Pakistani university students. Such factors put the students, particularly research students at stake of developing mental health issues specifically depression.

The negative consequences that students face can be mitigated when social support is available for them. The most effective source of support in this regard is the supervisor of the research students. If the supervisor is supportive the students are able to find the solution of many problems which are directly or indirectly related to their research and other stressors Ali, Watson, and Dhingra (2016) reported that effective supervisor should help the students to manage their time effectively. Similarly, Ahmed, Umrani, Pahi, and Shah (2017) concluded that supervisory support did have an impact on psychological capital of PhD

students. This increased psychological capital may in turn affect the symptoms of depression in the students. Weigl et al., (2016) for instance, observed that supervisory support was a strong factor mitigating the effects of burnout on depression. Similarly, Hamming (2017) observed that among all types of social support, supervisory support was the only and the strongest contributor to health and work related outcomes. Therefore, it can be assumed that satisfaction with supervisory support would play a role in lessening depressive symptoms in research students.

The students of higher education have to perform many roles at the same time. Each of the role requires much time and energy to be completed. For instance, the students have to manage their financial burden and thus have to get employment somewhere; similarly, they have to fulfill many of their family responsibilities and thus may experience role conflict and role overload. Akpotor (2018) concluded that married female students had to face role conflict which resulted in poor academic performance and that this would not be taken as an excuse rather effective management and adjustment was required in order to cope with this role conflict.

Time management skills can work as an important tool for adjusting to such a role conflict and thus, reducing stress symptoms associated with it. Researchers have offered time management skills as an important factor in solving out several problems of the students. Pehlivan (2013) found that proper time management skills are associated with high GPAs of the students. Al-Khatib (2014) observed that the students who were high at time management skills perceived less stress and had greater levels of academic achievement. Eid, Safan, and Diab (2015) found that time management skills and high self-esteem both are associated with high grade point average among nursing faculty. Miqdadi, Almomamni, Masharqa, and Elmousel (2014) examined a sample of students in Dubai and found that proper time management skills are strongly related to academic achievement of the students.

Alinehzad, Beheshtifar, and Gorbani (2013) observed that time management skills significantly related to mental health. It can also be assumed that poor time management skills can produce disastrous effects on the individuals. Therefore, it can be assumed that time management skills can act as a moderator for the relationship previously discussed. More specifically, the researcher assumes that the students who have lesser time management skills would rely on supervisory support and thus will reduce the depressive symptoms; whereas, the relationship

would be weaker for the students who have high time management skills. It is, therefore, hypothesized that:

H1: Time management will moderate the relationship between supervisor support and depressive symptoms such that the relationship between supervisor support and depressive symptoms in students would be more meaningful when time management is low.

Method

Sample

The sample of the present study consisted of research students of the University of Sargodha ($N = 154$) age ranging from 21 to 39 years ($M = 23.47$, $SD = 3.57$). The sample was drawn from four departments of the University of Sargodha including Psychology ($n = 85$), Sociology ($n = 36$), Food Science ($n = 11$) and Education ($n = 22$). The sample was further categorized on the basis of gender, girls ($n = 114$) and boys ($n = 40$). The students of BS, MSc, MPhil, and PhD who were doing research for a thesis ($n = 95$) or as a class research project ($n = 49$) were included in the sample.

Assessment Measures

Supervision sub-scale of Postgraduate Research Experiences Scale. Postgraduate Research Experiences Scale is a questionnaire developed by the Australian Council for Education Research (1999) in order to measure research related experiences of the post-graduate students. The scale consists of six sub-scales measuring students' responses regarding infrastructure, intellectual climate, goals and expectations of the students, of supervision and thesis examination. The current study used Supervision Scale (consisting of 6 items) which is a reliable measure of satisfaction with the research supervisor with an alpha of 0.91. All items are to be responded on a 5-point rating scale ranging from strongly disagree to strongly agree where high scores are indicative of a high level of satisfaction in both the areas.

Performance Management sub-scale of Self-Management Scale. For the measurement of time management skills, performance management sub-scale of Self Management Scale (Xue & Sun, 2011) was used which is a reliable measure of time management skills among students with an alpha of 0.90. The sub-scale consists of 10 items to be responded on a 5-point rating scale ranging from totally disagree to

totally agree. Higher scores, on the scale indicate high levels of time management skills.

Depression sub-scale of Depression, Anxiety and Stress Scale (DASS). In order to measure depression symptoms among students, the Depression sub-scale of DASS-21 developed by Lovibond and Lovibond (1995) was used. The scale consists of 7 items to be responded on a 4-point rating scale ranging from 0 (Never) to 3 (Everyday). The scale is the most widely used and reliable measures of depression with high alpha ranging from .91 to .97 (Golster et al., 2008).

Procedure

The sample of the current study was approached through purposive sampling from various departments of the University of Sargodha. The students, who were doing research either for thesis purpose or as a class project, were identified by their teachers and then were contacted in the classrooms and the laboratories at the university. After having informed consent signed, the demographic data sheet and the questionnaires were handed over to them. Detailed verbal as well as written instructions regarding responding to the questionnaires were provided to them. As soon as they completed their questionnaires, the portfolios were collected from them. The response rate was good, as many of the respondents (83.2%) gave their complete responses on the portfolio. Finally, the responses were analyzed through using various statistical techniques.

Results

In order to examine the hypotheses, the data were analyzed using SPSS. First of all the researchers ensured the psychometric properties of the scales used in the study. The alpha coefficient ranged from satisfactory to good for all the scales i.e., .85, .81 and .78 for Satisfaction with Supervisor, Performance Management sub-scale of Self-Management Scale and Depression sub-scale of DASS respectively. The correlation analysis concluded that supervisory support is positively associated with time management skills ($r = .29, p < .01$) and is negatively associated with depressive symptoms ($r = .19, p < .05$). Further, time management skills are negatively associated with depressive symptoms (i.e., $r = -.26, p < .01$). The results of moderation analysis are summarized below:

Table 1

Moderated Hierarchical Regression Analysis for Moderating Role of Time Management between the relationship of Supervisor Support and Depressive Symptoms (N = 154)

Model Predictor		Depression Symptoms	
		β	ΔR^2
1	Supervisor Support	-.24*	.058
2	Supervisor Support	-.18*	.057
	Time Management	-.25**	
3	Supervisor Support \times Time Management	1.27*	.122
	Total R^2		.139

* $p < .05$, ** $p < .01$

Table 1 portrays the moderating influence of time management on the relationship between supervisor support and depression symptoms. It suggests that model 1 is statistically significant $F(1, 153) = 9.31, p < .01$ and contributes for a 5.8 % variance. It is evident from the Table 1 that supervisor support is a significant negative predictor of depression symptoms ($\beta = -.24, t = -3.05, p < .01$) and has been found contributing for 5.2% variance in depression symptoms ($R^2 = .052$). In model 2, supervisor support and time management both variables are entered and the model is found to be significant, with $\{\Delta R^2 = .057, \Delta F(2, 152) = 9.68, p < .01\}$. Beta values exhibit that supervisor support ($\beta = -.18, t = -2.24, p < .05$) and time management ($\beta = -.25, t = -3.11, p < .01$) are significant negative predictors of depressive symptoms. When both variables are entered in the predictor list, 11.5% variance is caused in the criterion variable ($R^2 = .115$); which suggest that time management contributes for some 6% additional variable in the depressive symptoms ($\Delta R^2 = .057$)

The model 3 presents an interaction of supervisor support and time management predicting depression symptoms. The overall model is found significant with $\{\Delta R^2 = .020, \Delta F(3, 151) = 4.25, p < .05\}$ and product of supervisor support and time management significantly predicts the dependent variable with ($\beta = 1.27, t = 2.06, p < .05$). The results show

that the model 3 contributes for 13.9% variation in the dependent variable ($R^2 = .102$) with an additional variance of 2.4% ($\Delta R^2 = .024$).

Figure 1

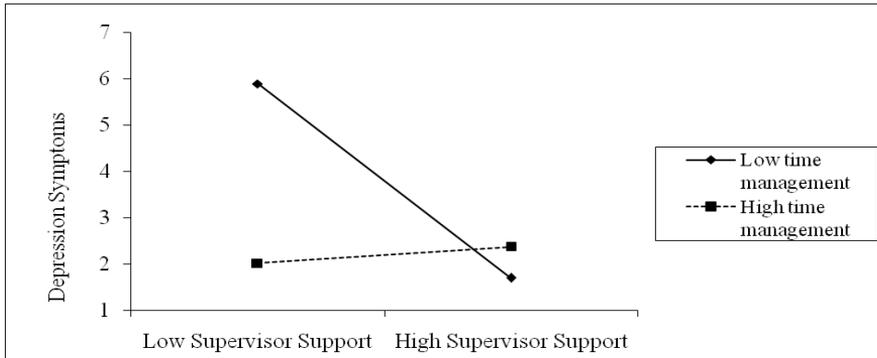


Figure 1. Moderating role of time management in the relationship between supervisor support and depression symptoms.

The Figure 1 depicts the moderating role of time management for the relationship of supervisor support and depression symptoms. The figure suggests that relationship between supervisor support and depression symptoms is most significant when time management is low. So, it implies that when you have supervisor support it helps to avoid depressive symptoms even when you have poor time management skills

Discussion

The current study examined the role of supervisor support in predicting depressive symptoms among research students. Moreover, the study was focused on exploring the moderating role of time management skills for the relationship between these two research students from the University of Sargodha. The results revealed that supervisor support significantly accounted for change in depressive symptoms in a negative direction, suggesting that when the students perceive high levels of supervisor support, the risk of developing depression symptoms was reduced. The students who find more support in academic settings generally experience less stress and thus, are less likely to develop symptoms of depression. These findings are supported by Wang, Cai, Qian, and Peng (2014) who determined that perceived social support results in moderating the effects of stress on depression. The research students are always in need of guidance and support from their supervisors. If the research supervisor is supportive, the burden and stress of the research work are plausibly reduced. The supportive supervisor

generally supports the student, understands his or her problems and role conflicts and thus, the burden on the student is reduced, which inhibits students to develop symptoms of stress and depression. Previous researches have also explored the effects of social support from mentors (or advisors) on various outcomes. Pfister (2004) found that among athlete graduate students, those who were being mentored by their professors in mentoring program reported more social support and the result of mentoring either by peer or a professor found to be negatively related to perceived stress.

The hypothesis of the study was that time management skills would act as moderator in the relationship between supervisor support and depressive symptoms. The results are found to be supportive for the present data. It has been observed that time management skills have a buffering effect for the relationship between supervisory support and depression. Negative relationship is strong when the level of time management is low. In other words, when the time management skills of the students are good, the students do not have to rely on the support of the supervisor; rather the relationship of supervisory support and depressive symptoms become very weak. Contrarily, when the students' time management skills are poor, the supervisory support is the factor which reduces the depressive symptoms in research students. Previous literature also supports this mitigating effect of time management skills. For instance, Koncevičienė (2016) found that time management skills acts as moderator of the relationship of academic procrastination and self-efficacy in academic domains. Similarly, Nonis, Fenner, and Sager (2011) concluded time management as moderator of the relationship of locus of control and performance. The results are in line with those of previous researchers which had suggested that time management skills should be taught in order to reduce the effects of symptoms of stress on research students (Gelberg & Gelberg, 2005).

Conclusions

Overall, the study has found that supervisor support is a significant negative predictor of depressive symptoms of research students. Moreover, poor time management skills acted as moderator between the supervisor support and depressive symptoms.

Limitations and Suggestions

For the present study, several factors, e.g., employment and marital status of the students, and the stage of research was not controlled

which might affect the relationships among variables. Moreover, for the current study, all research students (whether they were doing research as a thesis purpose or as a classroom assignment) were included in the study. A clearer picture of the relationships among study variables can be gained if the students who are doing research for thesis only are considered. Finally, the stress causing agents are different for the students doing research at graduate and post-graduate level; therefore, the level should also be controlled in further studies.

Practical Implications

The study highlights the issue of mental health problems in students who are doing research particularly the depressive symptoms. Moreover, it talks about the significance of students' time management skills and the role of the supervisor in this regard. The supervisors of the research can help students with managing symptoms of depression. However, the students can themselves, by improving their time management skills, cope with negative factors during research and studies. On a theoretical level, it is important for the researchers who can study time management skills as a moderating factor in the relationship of different stress causing agents and depressive symptoms in students particularly research students.

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