PREDICTIVE VALIDITY OF INTRINSIC EFFECTS OF STRESS ON SENIOR SECONDARY SCHOOL STUDENTS ACADEMIC ACHIEVEMENT IN BIOLOGY IN RIVERS STATE, NIGERIA

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ABSTRACT

This study examines the predictive validity of intrinsic effects of stress on senior secondary school students' academic achievement in Biology in Rivers State, Nigeria. The study adopted the correlational research design. A sample of 936 respondents comprising 288 and 648 Biology teachers and students respectively were selected from 72 public senior secondary schools across six (6) randomly selected Local Government Areas in Rivers State. A 20-item self-structured instrument titled "Predictive Validity of Intrinsic Effects of Stress Questionnaire" (PVIESQ) and 50-item "Biology Achievement Test" (BAT) with reliability coefficients of 0.852 and 0.837 respectively necessitated their use for collecting data analyzed using regression analysis. The study revealed p-values of .000*, .011*, and .041* which indicated that the predictors of stress like depression, emotional insecurity and mental health disorder respectively significantly contributed to determine senior secondary school students' achievement in Biology in Rivers State. The study recommended that the Ministry of Education should ensure that school administrators and supervisors regularly monitor teachers' compliance to professionalism in teaching, guiding and giving students age-compliant tasks that would enhance their school interest rather that burdening them with tasks that could depress, traumatize and affect their academic achievement in Biology.

Keywords: Intrinsic Effects, Stress, Biology Achievement, Senior Secondary Schools, Rivers State.

Introduction

Stress could occur as a result of overwhelming feelings and extra workloads that are usually perceived to incite and place physical, social, economic and emotional demands and burdens that tends to outweigh an individual's ability to cope with issues that more often lead to negative rather than positive outcome (Crawford, 2012). Generally, not all stress is bad; as a certain amount of stress can help an individual to perform at his/her best. However, stress need to be combated in view of the likelihood to trigger hyperactive functioning of the nervous system with its attendant traumatic responses that could affect a student academic achievement in secondary schools (Zhao & Selman, 2014). Implicitly, a stressed student is prone or susceptible to anxiety, depression, passive, withdrawal and delinquent behaviours that could affect students' academic achievement in school subjects including Biology (Amaechi-Onyerimma, 2021).

The simplicities, ambiguities and workloads in the schooling processes and roles could culminate to stressors that are known or recognized to stir issues likely to affect students learning outcomes (Addae et al., 2018). In the light of the possible trauma, anxiety, exhaustion and depressive mood encountered by a student experiencing stress could make him/her become less interested and motivated to learn when their teachers do not have

enough energy and passion for inspirational teaching (Pakarinen et al., 2020). Moreover, dissatisfaction, overactivity, frustration and anguish are among the multiplicity of the factors and stressors that heighten students' level of stress, ill health, poor performance and eventually negative educational outcome as well as poor societal development (Kyriacou & Chien, 2014; McGowan et al., 2016).

The ensuing negative social, health, economic and academic effects or consequences arising from stressful situations underscore the need to tackle stressors. In essence, the inability to timely tackle the stress-inducing and traumatic feelings, loads, events among other issues that accentuates anxiety, depression and other emotional pains leading to an individual developing a spirit of apathy, nostalgia and reluctance to partake in schooling processes and activities (Peltzer et al., 2019). Conversely, the longer that anxiety and stress is left untreated and unresolved, the more likely a student is to develop further, new symptoms like aggression, mental disorder and other health issues that could depress and emotionally exhaust him/her thereby, negatively impacting on that student academic achievement in secondary schools (Klusmann et al., 2016).

Stress can be caused by certain lifestyle and indulgences that could predispose a student enlisting and ascribing to self-medication with drugs such as alcohol, tobacco, cocaine etc. which may aggravate a mental and health conditions that could further weaken student's intellect and capacity to effectively study and attain high academic achievement (Skaalvik & Skaalvik, 2020). In specificity, stress could be caused by both internal and external factors. In this regard, Tung and Chahal (2005) reiterated that the external causes of stress include: major life changes, work or school, relationship difficulties, financial problems, being too busy, children and family. On the other hand, the internal or intrinsic stimulants catalytic agent catalyst causes of stress include chronic worry, pessimism, negative self-talk, unrealistic expectations/perfectionism, rigid thinking, lack of flexibility, and all-or-nothing attitude (Amaechi-Onyerimma, 2021).

Furthermore, certain level of workloads and tasks could constrain and stir up interpersonal conflicts as well as emotional challenges that will then become the major factors that contribute to student's stress and problems in the classroom in secondary schools (Moore, 2021). To this end, stress can dampen and make a student to become unpassionate, uninspiring, uninterested and unmotivated to learn and guided by their teachers in secondary school (Pakarinen et al., 2020). Conversely, the fallout of the anxiety, frustration and agony and that occur from stressful situations and stressors could stigmatize and heighten mental disorder or imbalance that could affect students' academic achievement especially in Biology among other subjects in senior secondary schools (Amaechi-Onyerimma, 2020). Additionally, these effects from stressors underscores Douglass and Islam (2007) earlier assertion for secondary school counselors and other professionals to urgently deplore their expertise towards providing assistance on issues related to anxiety, stress, depression and emotional incognizance. This would obviously help to forestall the arousal of complexities that are known to decline a student's intellectual capability and academic achievement.

Statement of the Problem

The indulgence and experience of series of academic, social, domestic and religious

workloads, activities and engagements at a stretch when they become excessive and mentally tasking would result to stress. Specifically, stress and stressful situations have the tendency to overwhelm, bewilder and then outweigh the coping and carrying capacity of a young student to calmly handle varying tasks in senior secondary schools. In addition, a student experiencing stress is prone or susceptible to anxiety, exhaustion, withdrawal, depression, inactivity, delinquent behaviours, distressing moods and self-agitations that could affect his/her composure, articulation and academic achievement in a senior secondary school subject (like Biology).

Overtime, there have been public outcry including media campaign targeted at unearthing the reasons behind the continuous occurrence of the preventable decline in students' academic achievement that has now become a social malaise or malady that exposes young students to avoidable social and academic misfortune or disaster. The susceptibility of a stressed student to increasingly experience nervousness, dejection, misery and disorderliness is a problem. Also, the likelihood for stress to coerce a student to become agitated, uninterested, inactive, uncertain, among other effects that slows participation in learning is even more problematic. Thus, stress aggravates mental and health conditions leading to emotional incognizance that further weakens the intellectual capacity and composure required for a student to excel academically. It is against this backdrop, that this study examined predictive validity of intrinsic effects of stress on senior secondary school student's academic achievement in Biology in Rivers State, Nigeria**.**

Objectives of the Study

The study was set out to achieve the following objectives, which are to:

1. Determine the relative contribution of the predictors of stress (anxiety, depression, emotional insecurity and mental health disorder) to senior secondary school students' achievement in Biology in Rivers State.
2. Ascertain the joint contribution of the predictors of stress (anxiety, depression, emotional insecurity and mental health disorder) to senior secondary school students' achievement in Biology in Rivers State.

Research Questions

The following research questions guided this study:

1. What is the relative contribution of the predictors of stress (anxiety, depression, emotional insecurity and mental health disorder) to senior secondary school students' achievement in Biology in Rivers State?
2. What is the joint contribution of the predictors of stress (anxiety, depression, emotional insecurity and mental health disorder) to senior secondary school students' achievement in Biology in Rivers State?

Significance of the Study

The findings of this study would be beneficial to the students, teachers, curriculum planners, researchers and government. Students and teachers would immensely benefit from their increased awareness on the tasks, workloads and indulgences that could overwhelm and outweigh an individual student capacity or ability to cope the level of stress as outcomes or

results from their positive or negative engagements and activities. Also, knowledge of the actions and factors that predisposes one to stress would enhance their skillfully devising strategies to effectively curtail or manage likely inevitable social, financial, family, cultural, academic and emotional stressors with a view at attaining high academic achievement as the goal of participating in secondary school education.

The findings if utilized by curriculum planners would enable them develop appropriate methods and approaches in teaching and handling the ensuing stressors and problems experienced by both students and teachers. This will enable the curriculum planners inculcate in themselves the desired knowledge, attitudes and skills necessary in dealing with stress and its associated academic effects.

Researchers and government would leverage on the finding of this study to adopt measures and strategies to effectively cope with stressors that could impede teachers and students' successes in their career pacts.

Scope of the Study

The study examined the predictive validity of intrinsic effects of stress on senior secondary school student's academic achievement in Biology in Rivers State. The rightly anticipated constraints relating to time factor, topography, finance, transport and security culminated to the researcher opting for a select sample of senior secondary schools rather than traversing all the 278 public senior secondary schools in Rivers State for the purpose of collecting data for this study. Furthermore, the independent variable is stress (dimensioned by anxiety, depression, emotional insecurity and mental health disorder) as predictors, while the dependent variable is students' achievement in Biology.

Methodology

Research Design: The study adopted the correlational design. The correlational design aims at establishing the relationship between two or more variables with a view at expressing the degree of relationship as correlation coefficient (Nwankwo, 2016).

Population: The target population for the study was all the 6956 teachers and 158875 students in all the two hundred and seventy-eight (278) public senior secondary schools in Rivers State (Rivers State Senior Secondary Schools Board, 2021). The choice of teachers and students were considered appropriate because at this level, it is expected that the teachers and students as major players in the school and home should have acquired sufficient knowledge on stress.

Sample and Sampling Techniques: A sample size of 936 respondents comprising 288 Biology teachers and 648 Biology students in public senior secondary class III (SSCIII) from three arms in Rivers State participated in the study. The multistage sampling was in four-phases. Firstly, 26 percent of the 23 Local Government Areas (LGAs) and 278 public senior secondary schools were selected. This gave approximately 72 public senior secondary schools and six (6) Local Government Areas (LGAs). In the second phase, random sampling technique using balloting was used to simultaneously pick six (6) numbers from a pot containing twenty-three (23) numbers. This led to pick of numbers representing Local Government Areas (LGAs) like: Port

Harcourt, Obio/Akpor, Ikwerre, Emohua, Tai and Ogba/Egbema/Ndoni Local Government Areas, where the public senior secondary schools were selected in the ratio of 12:12:12:12:12:12 respectively.

Thirdly, random sampling technique was used in the selection of 288 Biology teachers (representing 4 Biology teachers from each school) from the 72 selected public senior secondary schools in Rivers State. In the fourth and final phase, quota sampling technique was used to allocate nine (9) Biology students across the three (3) arms of Senior Secondary Class III from the 72 selected public senior secondary schools. This led to the random selection of 9 students from each of the 72 selected public senior secondary schools; totaling 648 students that were selected in this study. This constituted a sample of 288 Biology teachers and 648 Biology students that were selected from the 72 selected public senior secondary schools in the study area.

Instruments for Data Collection: The instruments for data collection include the "Predictive Validity of Intrinsic Effects of Stress Questionnaire" (PVIESQ) administered to both teachers and students, and "Biology Achievement Test" (BAT) administered to only students. In particular, the PVIESQ instrument was a self-structured 20-item questionnaire or instrument patterned after a four-point Likert rating scale of "Very High Extent" (VHE, 4 Points), "High Extent" (HE, 3 Points), "Low Extent" (LE, 2 Points), and "Very Low Extent" (VLE, 1 Point). Furthermore, the PVIESQ instrument comprises two sections; Section A elicited the demographic variables of the respondents (teachers and students) while Section B elicited 20 items containing 5-items each for the predictors of stress like anxiety, depression, emotional insecurity and mental health disorder.

On the other hand, the Biology Achievement Test (BAT), which was adapted from Akunwa and Obidiwe (2013) consisted of 50-item multiple choice objective tests achievement test (options A-D) on senior secondary school 3 Biology (with 2 marks for each question, totaling to 100%). The questions or items in revised 6th Edition of the "Modern Biology for Senior Secondary Schools" that conform to senior secondary school 3 (SSS III) scheme of work formed the selected items in the Biology Achievement Test (BAT) instrument that was administered to the participants or respondents. Below was the table of specification on the sections or branches in Biology.

Validity of the Instrument: The face and content validity of the PVIESQ and BAT instruments were determined by two (2) educational experts (comprising 1 Biologist and 1 Measurement Evaluator) in Ignatius Ajuru University of Education. The validates crossmatched each item in the BAT instrument in the syllabus, while the items in the PVIESQ instrument were crossmatched with the research questions that were stated in this study. Afterwards; the comments, corrections and modifications of these validates were effected during the final construction of the instruments.

Reliability of Instrument: The Cronbach Alpha method was used to establish the reliability or internal consistency of the non-cognitive instrument (i.e. PVIESQ). The Cronbach Alpha method computes that internal consistency of the items of the instrument (Nwankwo, 2016). In the light of this, fifty (50) respondents (comprising 15 Biology teachers and 35 Biology

students) were selected from five (5) public senior secondary schools in Ahoada East Local Government Area (which was not included among the sampled schools) in this study. Then, the 50 copies of the PVIESQ instrument that was distributed to the teachers and students were retrieved, coded and analyzed using the Cronbach Alpha (r_a) method to obtain the reliability coefficients of 0.852 that necessitated the use of the PVIESQ instrument for the study. Furthermore, the reliability of the BAT instrument was established using test-retest method. The copies of BAT were administered at two intervals to 50 senior secondary school 3 (SSS II) students in Ahoada West Local Government Area and after their responses, the instrument was retrieved, and re-administered to the same SSS III students after a period of fourteen (14) days from the day of the first administration and retrieved on completion. After marking and scoring the first and second sets of administration, the total scores was computed and correlated using Pearson Product Moment Correlation (PPMC) to obtain a reliability coefficient of 0.837 for the BAT instrument.

Method of Data Collection: The face-to-face direct delivery technique was used for the administration of the PVIESQ and BAT instruments. In view of this, the researcher visited the 72 selected public senior secondary schools in order to get the approval of the principals for the commencement of the administrative process. Similarly, the serially numbered 936 copies of the PVIESQ and BAT instruments were administered to the selected 288 Biology teachers and 648 Biology students in the 72 selected public senior secondary schools in Rivers State. Out of the 936 copies of the PVIESQ and BAT instruments that were administered to 288 Biology teachers and 648 Biology students, only 893 copies (representing approximately 95% return rate) were validly retrieved and used for the subsequent data analysis in this study.

Method of Data Analysis: The responses that were gathered from the PVIESQ and BAT instruments were sorted, tabulated, coded and analyzed using regression analysis. Similarly, tables also served as a basis for deductions from the results of the research questions used in the study. The 0.05 level of significance was the basis for the acceptance or rejection of the research questions that were stated in this study.

Results

Research Question 1: What is the relative contribution of the effects of stress (anxiety, depression, emotional insecurity and mental health disorder) to senior secondary school students' achievement in Biology in Rivers State?

Table 1: Regression Coefficients of the Predictor Variables (effects of stress) on Students' Achievement in Biology in Rivers State

Model	Unstandardized Coefficients		Standardized Coefficients	Rank	T	Sig
	B	Standard Error	Beta			
Constant	19.936	0.418			47.734	.000
Anxiety	-0.016	0.036	-0.015	4th	-0.457	.648
Depression	0.195	0.031	0.218	1st	6.200	.000*
Emotional insecurity	-0.061	0.024	-0.088	2nd	-2.560	.011*
Mental health disorder	0.145	0.071	0.071	3rd	2.052	.041*

*Significant at P < 0.05 level

Table 1 shows the relative contribution of each of the independent variables to the prediction of students' achievement in Biology in Rivers State. The table reveals which of the four predictor variables that contributed mostly to determine students' achievement in Biology. The table showed that out of the four independent variables (stress), only three predictor variables contributed significantly to the prediction of students' achievement in Biology at 0.05 alpha level. Depression was found to contribute mostly to determine students' achievement in Biology (β = -0.015; t (839) = 6.200; p < .05). Emotional insecurity was found to be the second most contributory variable to determine students' achievement in Biology (β = -0.088; t (839) = -2.560; p< .05), while Mental health disorder was found to be the third most contributory variable to determine students' achievement in Biology (β = 0.070; t (839) = 2.052; p< .05). Result of the findings in Table 1 also indicates that anxiety (β = -0.015; t (839) = -0.457; p> .05) did not contribute to the prediction of students' achievement in Biology in Rivers State.

Research Question 2: What is the joint contribution of effects of stress (anxiety, depression, emotional insecurity and mental health disorder) to senior secondary school students' achievement in Biology in Rivers State?

Table 2: Model Summary of the Predictor Variables on Students' Achievement in Biology

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
	.283	.080	.076	5.744

Table 3: Regression ANOVA of the Predictor Variables on Students' Academic Achievement in Biology

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2407.798	4	601.950	18.245	.000*
Residual	27680.633	889	32.992		
Total	30088.431	893			

*=Significant at P < 0.05

Result in Table 2 shows that the combination of all the four (4) predictor variables (anxiety, depression, emotional insecurity and mental health disorder) yielded a positive multiple correlation (R = 0.283). This correlation coefficient (that is multiple correlation), indicates that the relationship between all the predictors and students' achievement in Biology was moderate. As a result, the predictors are quite relevant in predicting the achievement of senior secondary school students in Biology. However, the combination of the four predictor variables accounted for approximately 7.6% (R^2 Adjusted = 0.076) of the variance observed in the Biology achievement scores of the students. The remaining 92.4% could be due to factors and residuals in the model that are not considered in this study on the predictors of stress on senior secondary school students' achievement in Biology in Rivers State. Furthermore, Table 3 shows that, the combination of the four predictor variables (anxiety, depression, emotional insecurity and mental health disorder) jointly predict the senior secondary school students' achievement in Biology in Rivers State significantly {$F_{(4,839)}$ = 18.245; P < 0.05}.

Discussion of Findings

The result in Table 1 reveals that in the relative contribution of the four predictor variables of stress (via anxiety, depression, emotional insecurity and mental health disorder) to senior secondary students' achievement in Biology, only three predictor variables via depression (β = -0.015; t (839) = 6.200; p < .05), emotional insecurity (β = -0.088; t (839) = -2.560; p< .05) and mental health disorder (β = 0.070; t (839) = 2.052; p< .05) significantly contributed to determine senior secondary school students' achievement in Biology in Rivers State. While anxiety (β = -0.015; t (839) = -0.457; p> .05) did not contribute to determine senior secondary school students' achievement in Biology in Rivers State. This finding is consistent with the views of Cowden (2009) who emphasized that the elements of stress such as: anxiety, depression, emotional insecurity and mental disorder lead to students' experiences of excessive and uncontrollable worry about future and past events that affects their successful performance in academic endevours.

The researcher aligns with the finding of this study as the experience of the slightest iota or excessive level of stress could overwhelm and outweigh as well as destabilize a student to the extent that it impedes their self-cognizance and ability to excel academically. This finding is consistent with the position of Zhao and Selman (2014) that rising stress level has effect on the physical and psychological health as well as student's normal response to the pressure from a subject like Biology in senior secondary schools that becomes a harbinger to the anticipated or intended academic achievement contemplated by parents and teachers. Furthermore, this finding aligns with the position of McGowan et al. (2016) that stress and stressful situations culminate to multiplicity of stressors and factors that overwhelm and frustrate students stirring dissatisfaction and anguish among other multiplicity of the factors and stressors that heighten students' poor performance and negative educational outcome and poor development.

The result in Tables 2 and 3 shows that the combination of all the four (4) predictor variables of stress (via anxiety, depression, emotional insecurity and mental health disorder) yielded a positive and moderate relationship that jointly predicted or contributed to control senior secondary school students' achievement in Biology in Rivers State ($F_{(4,839)} = 18.245$; $P < 0.05$). This finding is in agreement with earlier findings by Latha (2014) that severity of academic anxiety destabilizes the inability to exercise leading to students' development of poor study skills, inability to efficiently concentrate and cope with studies in senior secondary schools. Accordingly, the study by Pakarinen et al. (2020) found that stress is tantamount to chronic levels of depression leading to disillusionment, trauma, anxiety, exhaustion, high rate of school dropout and withdrawal rates, inability to exhibit the required flexibility necessary to continuing and achieving in their studies and poor academic achievement. Additionally, the researcher stressed that the stigma associated with anxiety, depression, and other emotional issues, accelerates mental disorder or imbalance, which according to Douglass and Islam (2007), could be cured by urgently seeking assistance from the secondary school counselors and other professionals because reluctance leaves the victim untreated, thereby further weakening the intellect and capacity for students to attain high academic achievement. This standpoint aligns with the position of Peltzer et al. (2019) that the inability to timely tackle

the stress-inducing and traumatic feelings, workloads and activities could accentuate anxiety, depression and emotional pains leading to a student developing a spirit of lethargy, nostalgia and unwillingness to participate in academic activities in senior secondary schools.

Conclusion

The study concluded that the predictor variables of stress (via anxiety, depression, emotional insecurity and mental health disorder) relatively contributed to affect senior secondary school students' achievement in Biology in Rivers State however, anxiety (as a predictor of stress) did not contribute to senior secondary school students' achievement in Biology in Rivers State. In addition, students experience of the slightest iota or excessive level of stress could depress, overwhelm and outweigh their carrying capacity thereby, leading to their nervousness, emotional lack of self-confidence and psychological disorders. Thus, these effects of stress if not tackled would continue to destabilize a student to the extent that it impedes their self-cognizance and ability to excel academically especially in senior secondary schools.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Teachers and parents should ensure that students engage in programmes and activities that will help reduce the stress and emotional insecurity which are tantamount to affect their academic achievement in Biology in senior secondary schools.
2. The Ministry of Education should ensure that school administrators and supervisors regularly monitor teacher's compliance to professionalism in teaching, guiding and giving students age-compliant tasks that would enhance their school interest rather that burdening them with tasks that could depress, traumatize and affect their academic achievement in Biology.

References

Addae, H. M., Praveen, P. K., & Velinor, N. (2018). Role stressors and organizational commitment: Public sector employment in St Lucia. *International Journal of Manpower*, *29*(6), 567-582.

Akunwa, L. I., & Obidiwe, J. B. C. (2013). *Modern biology for senior secondary schools by Ramalingam, S. T.* (Revised 6th Edition). Based on the new curriculum for senior secondary schools. Africana First Publishers PLC.

Amaechi-Onyerimma, C. N. (2021). *Sexual harassment, domestic violence and absenteeism as determinants of students' achievement in senior secondary Biology in Rivers State*. Unpublished dissertation of University of Ibadan.

Cowden, P. (2009). *Communication and conflict: Anxiety and learning*. [online] http://www.aabri.com/manuscripts/10517.pdf [Accessed September 14, 2012].

Crawford, J. (2012). *What is stress?....and what can you do about it*?. http//www.what-is-stress.com.

Douglass, L., & Islam, M. (2007). *Emotional wellbeing of first year university students*: Critical for determining future academic success', [online] http://www.fyhe.com.au/past_papers/papers09/content/pdf/8A.pdf [Accessed September 14, 2012].

Klusmann, U., Richter, D., & Ludtke, O. (2016). Teachers' emotional exhaustion is negatively related to students' achievement: Evidence from a large-scale assessment study. *Journal of Educational Psychology*, *108*(8), 1193-1203.

Kyriacou, C., & Chien, P. (2014). Teacher stress in Taiwanese primary school. *Journal of Education Enquiry, 5*(2), 86-104.

Latha, M. (2014). Study of self-concept and academic anxiety among secondary school students of Mandya City. *International Multidisciplinary e-Journal, 1*(9), 59-64.

McGowan, J., Gardner D., & Fletcher R (2016), Positive and negative affective outcomes of occupational stress in Massey University, Auckland New Zealand. *Journal of Psychology, 35*(2), 245-254.

Moore, W. (2021). *Teachers and stress: Pressures of life at the chalkface*. Channel4 news.

Nwankwo, O. C. (2016). *A practical guide to research writing for students in education and social sciences* (6th Edition). M & J Grand Orbit and Communication Ltd.

Pakarinen, E., Kiuru, N., Lerkkanen, M., Poikkeus, A., Siekkinen, M., & Nurmi, J. (2020). Classroom organization and teacher stress predict learning motivation in kindergarten children. *European Journal of Psychology of Education*, *25*(3), 281-300.

Peltzer, K., Shisana, O., Zuma, K., Van Wyk, B., & Zungu-Dirwayi, N. (2019). Job stress, job satisfaction and stress related illnesses among South African educators. *Stress and Health*, *25*(3), 247-257.

Rivers State Senior Secondary Schools Board (RSSSSB, 2021). *School statistics of academic staff and students in public senior secondary schools in Rivers State*. RSSSSB Publication.

Skaalvik, E. M., & Skaalvik, S. (2020). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology*, *99*, 611-625.

Tung, S., & Chahal, N. (2005). Relationship between Stress and Adjustment Adolescents females; A causal study, *Journal of Personality study and Group Behaviour*, *25*, 19-31.

Zhao, X., & Selman, R. L. (2014). *Combating the effects of academic stress in Chinese schools*. http://china-outlook.net/essays/1201-2/#sthash.5nzICa9k.dpuf