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An overview study on the educational psychological assessment by measuring students' stress levels

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ABSTRACT

This article reviews the literature on the field of bibliographic analysis of the literature on educational assessment, psychological stress during the examination period, psychometric tools, and measurement scales for students' stress. It examined the link between students' social and psychological health, stress levels, and preferred social support systems. The research subjects were Abai Kazakh National Pedagogical University first-year students (n=299) who completed the Perceived Stress Scale and a Likert rating-type scale via a Google form. The scale's validity and reliability were confirmed through 'high' Aiken's V and Cronbach's Alpha coefficients. Structural equation modeling (SEM) analysis showed a satisfactory fit for the model. The average relationship (r=0.39) was found between stress levels and preferred social support, while a positive correlation (r=0.29) existed between preferred social support and socio-psychological health. However, the Stress Level variable only correlated with Socio-psychological Health through Preferred Social Support. The subjects preferred the University Staff and Academic advisors as social support providers over their parents. Overall, the findings indicate that higher levels of support were associated with reduced stress and improved socio-psychological health among Abai Kazakh National Pedagogical University students—conversely, lower support levels correlated with increased stress and negative impacts on well-being.

Keywords: assessment, examinations, students, stress, social support, education

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INTRODUCTION

Education is one of the human movements toward personal development in life. This is reflected in its quality, methodological literacy, and moral validity. The quality of education is associated with a lively, saturated with universal values, methodologically sound, and competent dialogue between a teacher and students (Golubchikova et al., 2021; Ilmaliyev et al., 2022). The issues of ensuring equal access to quality education today are relevant not only for the Republic of Kazakhstan but also for many countries. The quality of the educational environment is ensured by meaningful components related to the interaction of participants in the educational process, the organization of the educational process, and the 1reateion of conditions for the professional development of teachers. The material equipment of the educational settings cannot be the only condition for ensuring quality education (Ivanova et al., 2020). Assessment plays a key role in successful learning and teaching. However, due to different personalities, the evaluation process affects students' and teachers' work. Even though there are various tools for the assessment of the education quality of learners such as the School-Age Care Environment Rating Scale (SACERS), Programme for International Student Assessment (PISA), Progress in International

Reading Literature Study (PIRLS), Trends in Mathematics and Science Study (TIMSS), International Civic and Citizenship Study (ICCS), International Computer and Information Literacy Study (ICILS), International English Language Testing System (IELTS), Test Of English as a Foreign Language (TOEFL), United National Test (UNT), KazTest, Scholastic Aptitude Test (SAT), Graduate Management Admission Test (GMAT), Graduate Record Examinations (GRE), etc., educators should pay attention to learners' perception of new information and how they pass exams, how they apply new skills, etc., because there arises a question if the assessment is fair or unfair; whether there are other factors to measure cognitive abilities of learners.

Grades, tests, traditional exams, and assessments profoundly impact students' health as they learn new skills and apply new knowledge. Such knowledge measurements have a stressful effect on students, which may affect both the learning process and memory formation in different ways. Learning exam questions by heart causes stress to create bad memories, making the overall learning process less effective (McLean et al., 2019; Bueno, 2021). One of the major crucial issues in education is the role of measuring the knowledge of learners. Evaluating somebody's intellectual abilities when giving feedback or peer assessment is sophisticated for students and teachers. Evaluation plays a crucial role in the learning process and the monitoring of the teaching system, whether there is progress in students' acquiring knowledge and development (McLean et al., 2019; Begimbetova et al., 2023). This action can influence the learning process "from the inside," a cognitive activity from the neural mechanisms that connect reactions to stress and learning processes (Bueno, 2021).

Stress is one of the ubiquitous issues of the educational process, affecting teachers and students, particularly during the national or official examinations. Some study findings associated stress levels and related social as predictors of socio-psychological health (Kristine et al., 2013; McLean et al., 2022). From the same perspective, Lizunova et al. (2020) distinguished the difference between psychological and social health. On the one hand, the former establishes the balance between the internal and external influences of somebody's life: positive worldview formation and how a person copes with negative emotional states. On the other hand, social health refers to a person's relationship with society, which is an excellent foundation for a person's ability to form goals, motives, desires for self-fulfillment, and the establishment of different forms to help others.

Studying a person's socio-psychological health has also attracted interest from researchers. Psychometricians used psychometric measurement tools to establish the relationship between the synergy, that is, the relationship and mutual influence between psychological health and social health. In contrast, educational researchers used other scaling methods or the item response theory (IRT) framework (Manapat et al., 2021). Since psychological measuring tools are costly and complex to administer to larger sample sizes (Fabbri et al., 2021), tools like self-report scales are often used as their validity and reliability indices have been tested and proven (Morgan et al., 2014). These scales have an underlying property: the fact that the subjects of studies' attributes could be positioned on a continuum (Fung & James, 2001) makes a comparison possible.

Ibrayeva et al. (2021) clarified the notions of latent variables and predictors of positive mental health. The latter's predictors include emotional well-being, which refers to life satisfaction and positive feelings, and social well-being, which accounts for social connection and adequate social functioning. As far as psychological well-being is concerned, it refers to thriving in life and personal functioning. At Abai Kazakh National Pedagogical University, to help new students, especially those in the first year, an in-depth investigation is needed to uncover the kinds of stressors encountered by those students and the various social support systems they have recourse to during their early days on campus. Consequently, there is an urgent and pressing need to develop measures for those students' stress levels and related preferred social support (Kassymova et al., 2018). This study assists Abai Kazakh National Pedagogical University's managerial section in making informed decisions to help those new undergraduates.

Scaling raw data into normally distributed high measurement scores and developing instruments that measure socio-psychological health and related latent variables are not common in the existing Kazakhstani psychometric and educational measurement literature. If academia

still uses the raw data from Likert rating scales, there is a high probability of measurement errors associated with their conclusions (Setiawati et al., 2013). This research examines how students' social and psychological health is linked to stress levels and social support systems. Through scaling data, proving instrument validity and reliability, and the goodness of fit of the hypothetical model, the researchers believe that they accurately assess the research subjects' support mechanisms: this becomes their contribution to a better understanding of natural helping processes for stressed people.

Educational psychological assessment measures students' abilities and skills to discover which talents they must develop further. Such qualities as the ability to independently acquire new knowledge, learn it, transfer it to new situations, generate new ideas, find non-traditional ways to solve problematic problems, and solve new problems usually remain outside the scope of various texts. The same can be attributed to the control and measuring materials of the unified state exam (Noev, 2007).

The possibility of using such assessment scales as SACERS, PISA, PIRLS, TIMSS, ICCS, ICILS, IELTS, TOEFL, UNT, KazTest, SAT, GMAT, GRE, etc. allows evaluating the conditions for ensuring equal access to quality education. The main components of these scales correspond to all types of conditions for the implementation of educational programs and can be used as a tool for assessing the academic environment and education quality, language proficiency, and personal development when conducting entrance exams and school audits (Ivanova & Vinogradova, 2017; Mayakova et al., 2018). The authors of this study reviewed five databases such as Education Database, ERC, ERIC, Scopus Web of Science, and Google Scholar, for bibliographic analysis of the literature about the assessment of the educational environment rating scale (SACERS); potential papers were the first identified by searching with characteristic search phrases and searching for cited references in these papers (both forward and backward). Based on Figure 1, this bibliographic analysis of literature covers the period from 2017 to 2023 and involved 21 authors researching the assessment of the educational environment rating scale using 40-related keywords. The research analyzed nine articles from various sources, including books and journals, selected based on their discussion of assessment of educational environment rating scale fields or aspects in the academic field. The visualization of the information above can be seen in Figure 1.

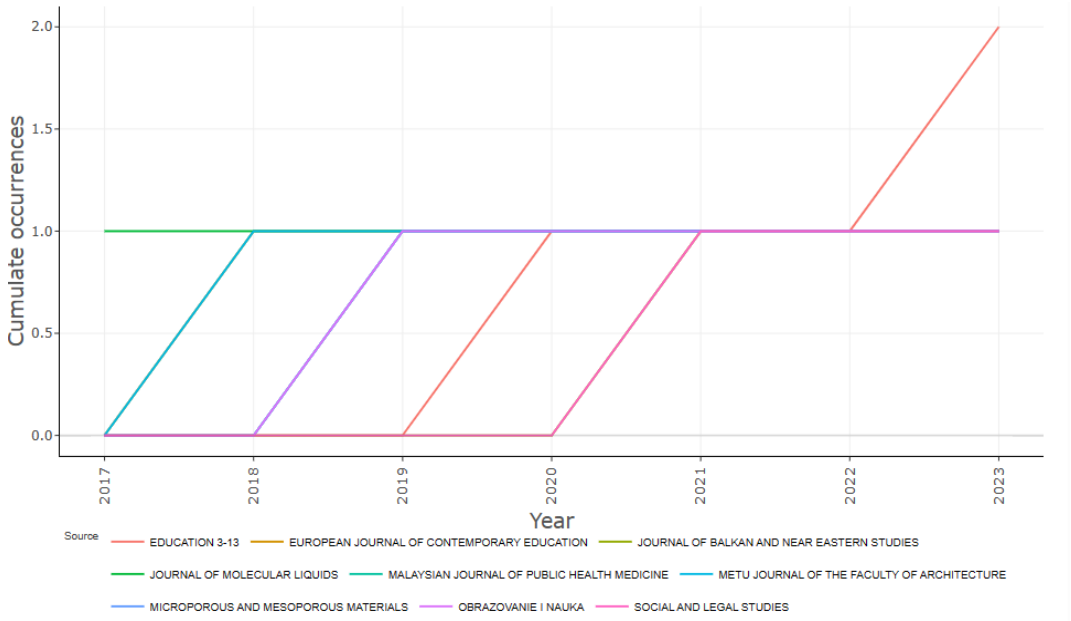

Figure 1. The Most Relevant Publication about the Assessment (SACERS)

A bibliographic analysis of the literature on the assessment of the educational environment indicated the importance of research on educational assessment. Education and personal

development are two independent processes. Learning is a purely external process, a set of standard facts; development is an internal process through internal motivation. At 18, a person does not reach the top of intellectual development (Noev, 2007). Personal development depends on personality peculiarities based on various internal and external factors such as motivation, financial support, nutrition, environment, etc. Teaching and learning are significant factors influencing a person's learning achievement and success. That is why it is crucial to deliver lessons without stress. In addition to the effect of stress on learning and memory, the most relevant for this brief review is the impact of stressful situations. It may occur during exams or national tests on learning and memory. Figure 2 shows that stress during the learning process boosts memory, but prolonged stress does not support new learning and may even prevent the successful encoding of new knowledge and skills (de Quervain et al., 2000; Bueno, 2021).

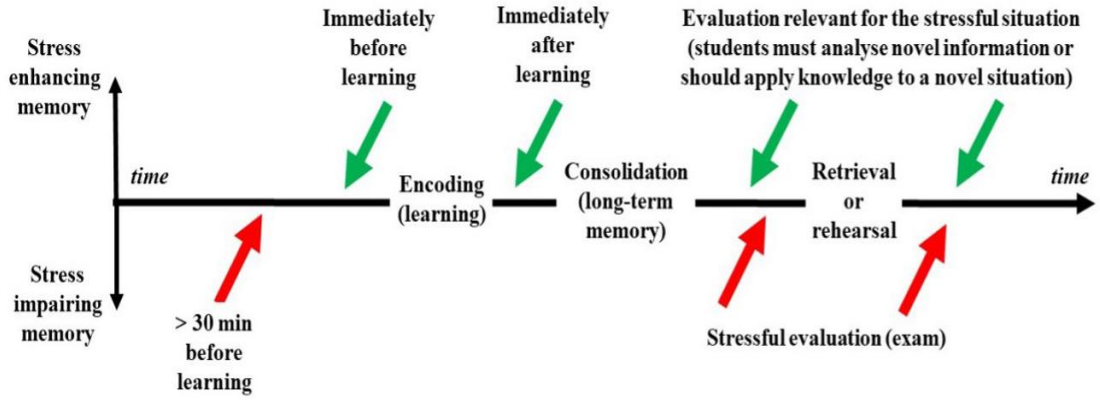

Figure 2. Effects of Stress on Memory (Bueno, 2021)

Stressful events are widespread in the educational process, especially when assessing students' cognitive abilities. Many exams, grades, and deadlines create a lot of pressure to work during the mid-term period. However, this stress can have a decisive impact on the learning and memory processes (Joels et al., 2006; Schwabe et al., 2012; Vogel & Schwabe, 2016). Many factors impact stress levels in human beings. The systemic type is the body's response to an infectious disease, injury, light, high or low temperature, too much digital information, ecological change, industrial emissions into the atmosphere, natural disasters, examinations or tests in education, new jobs, tight deadlines, conflicts, etc. (Arpentieva, 2018; Kassymova, 2018; Rohde et al., 2023). Mental type manifests itself in the emotional and mental spheres, followed by the biological level. Currently, it is believed that psychological dialogues, along with other stress management techniques such as yoga or meditation, are a way of solution to avoid stressful conditions (Kassymova, 2018; Kassymova et al., 2023; Abutalip et al., 2023). So, creating a social support system in educational settings is beneficial for both students and teachers to work effectively.

Psychological stress can be caused by information or emotional overload. Given that we live in the age of information technology, information in all its forms and types abounds in all spheres of human life (Sheriyev et al., 2023; Rohde et al., 2023). And it is tough to protect yourself from psychological stress (Arpentieva, 2018; Rohde et al., 2023). Very often, under stress, a person comes up with various outcomes. Fantasies can go so far that all the efforts made seem meaningless. A person decides that everything is terrible with him, life has failed, and so on. You begin to live in emotions that have nothing to do with reality – there are no external influences, but the feelings you experience change your psychological and physiological state. Managing emotions is crucial. It is the responsibility of educators to teach students how to cope with big data and how to avoid stressful situations while they are studying at universities. The higher education system should focus on delivering knowledge, research, and development to tackle the issues (Kenzhaliyev et al., 2020, 2021). While studying, students not only recall learning materials

but also apply new information to previous knowledge. Integrating further information into existing memories is a critical process in education (Vogel & Schwabe, 2016). Learning achievement is the result of a friendly learning environment without stress.

Students typically experience stress due to new environments, moving from their parent's home to the dormitory, and stressful events in and out of the classroom (Vanaelst et al., 2012); in addition, human interaction with the computer technologies (Sheriyev et al., 2016; Pratama et al., 2021) or artificial intelligence system is creating stress if man cannot understand how to manage it. Emotional and psychological stress decreases the perception of new information in existing memories. When students get stressed, they cannot retrieve and update further information in their memory, which may hinder the successful transfer of knowledge and reduce cognitive flexibility in problem-solving tasks (Vogel & Schwabe, 2016). Many studies are confirming the harmful effects of stress. Within 30 minutes to 4 hours, stress can affect various mechanisms of the human brain, such as consolidation, short-term memory, long-term memory, and recall (Sandi & Pinelo-Nava, 2007). So, research in this area should consider stress issues in the educational process and apply the necessary controls to cope with it and create a friendly learning atmosphere in the classroom.

As one of the psychometric tools, scales have been widely used in collecting people's perceptions or conditions in self-reporting formats. A scale refers to a tool, a device or a mechanism used to differentiate individuals' characteristics points on the continuum. The existing literature shows three types of orientations when it comes to scaling. These are subject-oriented, stimulus-oriented, and response-oriented types. The subject-oriented type includes talent and performance tests (Setiawati et al., 2013). Scales are also classified into two categories: rating scales and ranking scales. Researchers can measure people's perceptions of you or their attitudes through scales. In educational researchers or psychometricians, there is also a standard classification of data according to their measurement scales. So, data can be nominal, ordinal, interval, and ratio data (Sugiyono, 2015; Allen & Yen, 1979; Cohen & Swerdlik, 2009). Minor data are sets grouped in any class but without order; ordinal data, however, are arranged in a particular order. However, the distance between the rows in the continuum is not the same. Interval and ratio data satisfy the property of the exact distance between rows, but still, there is a nuance between the two. Interval data have an equal distance between rows on the continuum, but there is no absolute zero; the zero is arbitrary. But ratio data, in addition to the interval data properties, have a complete zero 0.

Meanwhile, most self-report adapted scales standard in social research collect interval and ratio data. The most common scales include dichotomous, category, Likert, semantic differential, numerical, fixed, or constant scales (Themistocleous et al., 2019). In positive psychology, the Likert has been legendarily used to measure students' stress levels and preferred social support systems (Maymon & Hall, 2021). Most of the Perceived Stress Scale (PSS) or social support systems measures are either formatted on a version of the Likert scale: the original or modified. In the same perspective of measuring stress levels and related social support, we must elaborate on these notions.

As far as psychological stress is concerned, it happens when the demands from environmental, physical, and/or psychological factors surpass the perceived ability to cope with a specific situation. This explanation suggests that stress is a constantly changing process involving several factors (Smyth et al., 2023). Recently, there has been a lot of interest in reducing stress for students as well (Khoroshev et al., 2020). Studies on stress experienced by first-year students have also utilized single-item measures to assess their stressors and coping abilities, encompassing multiple dimensions (Lean et al., 2022). The measurement precision is obtained in scaling studies by standardizing the raw data. One of the standard scaling methods is a summated rating. Summated rating scaling consists of converting raw scores into z-scores using a normal distribution. This scaling process measures the distance between scores on the same scale, resulting in interval-level data (Dunn-Rankin et al., 2004; Setiawati et al., 2013). Data scaling allows researchers to perform higher measurement levels, increasing precision and providing better information than lower levels (Salkind, 2013). Analyzing and drawing conclusions based

on raw data collected through self-report scales leads to imprecision. Such data lack equal distances between units and can hinder accurate analysis: they are not interval data.

Social support is positively associated with students' learning outcomes. For first-year students, social support is necessary for dealing with stressors related to life changes and university education (McLean et al., 2022). It is evident that first-year students mostly feel stressed because of new responsibilities for studying at university. When they reach the age of 18, the families' attention decreases while looking in another city compared to when youths are under the control of their parents (Kassymova et al., 2018). Even though enough studies highlight the role of social support in promoting mental health (Tough et al., 2017; McLean et al., 2022) and the protective effect of social support (Zhang et al., 2018). It is believed that social support is beneficial for those students who are far away from home.

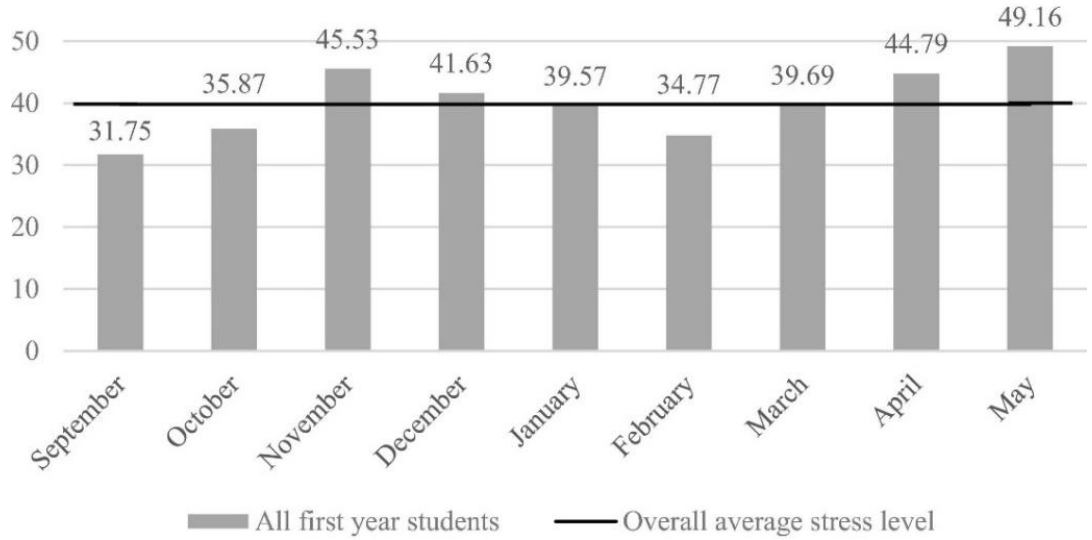

Figure 3. First-year Students' Monthly Stress Level (van Winden et al., 2021)

Figure 3 illustrates how the stress level of first-year students from Codarts Rotterdam, University of the Arts, Netherlands, increased monthly, ranging from 31.75 to 49.16. (van Winden et al., 2021). Other studies have shown that stress takes place in learners when environmental demands exceed a person's ability to cope with the needs of specific events, tasks, or experiences (Lazarus & Folkman, 1984; van Winden et al., 2021). That means while first-year students are fresh and should accumulate new knowledge and skills, they will get stressed because of personal development.

The recent COVID-19 pandemic was predicted to leave negative consequences on academic students' failure in their future careers because of lockdowns and educational changes (Coakley et al., 2021; Ubolnuar et al., 2022). Rathakrishnan et al. (2021) studied international first-year students. They found that public university freshmen suffer from high stress due to poor sociocultural adjustment and moderate homesickness, with an overall average perceived stress score of 36.8/50. First-year students experience the highest levels of stress compared to sophomores. Another study found that first-year students who are homesick and away from home pay less attention to their studies and always have poor learning outcomes (Kegel, 2009). It is vital not to ignore student stress issues, which should not be taken lightly by any educational institution (Rathakrishnan et al., 2022). When teaching students, it is essential to consider the prevention and correction of stress in the context of correcting the development of education subjects in such contexts as educational or professional-personal interactions (Kassymova et al., 2019). To our knowledge, this study is the first to review the combination of educational psychological assessment which predicts stress factors in first-year students at a national university in Kazakhstan. That is why this study randomly employed first-year students from Abai Kazakh National Pedagogical University to find out which stress factors affect them and to tackle student issues that make them stressed. This research seeks to answer the following research

questions: 1) How does the Sociopsychological health measurement model work? 2) How strong is the relation between stress level and preferred social support? 3) What is the preferred social support for the 1st year Abai Kazakh National Pedagogical University student? 4) How does socio-psychological health correlate with stress level and preferred social support?

METHOD

This study utilized a quantitative approach with descriptive statistics for data analysis. There were 69 male and 230 female respondents. The questionnaire was distributed to the first-year students during lectures or through various online platforms such as WhatsApp Groups, email, or online classes in Kazakh and English. Perceived Stress Scale and a Likert rating-type scale via a Google form in the Spring of 2023 were used for collecting data. The scale consisted of 20 items, allowing participants to rate their stress levels and preferred social support system on a four-point scale ranging from 1 (Strongly disagree) to 4 (Strongly agree). These items were designed to assess the factors influencing students' stress levels and preferences for social support.

This research is a quantitative study focusing on quantitative data. The latent variable was students' socio-psychological health progressed on loading factors such as stress level and social support. So, since this variable cannot be measured directly, one must go through other latent variables or indicators (Ghozali & Fuad, 2014). We cannot run multiple regressions, as we have latent variables **(**Gana & Broc, 2019) in a hypothetical model. The best way to go around this is by using Structural Equating Modeling (SEM). The study participants were Abai Kazakh National Pedagogical University first-year students (n=299) who filled out a Perceived Stress Scale, a Likert rating-type scale, in a Google form that the researchers set. That Self-Report Scale consisted of four response categories (1 = Strongly disagree to 4 = strongly agree). That psychometric scale consists of 20 items measuring the students' stress predictors and preferred social support system.

The data analysis was quantitative, especially descriptive statistics. Data were analyzed in the R Program, following the Structural Equating Modeling (SEM) theory whereby the full model included these variables: 1) Socio-psychological Health (SPH): Desire to Achieve Goals (DAG), Goal Achievement Strategies (GAS), and Lack of Confidence in the Future (LCF); 2) Stress Levels (SL): Poor Quality of Sleep (PQS), Poor Academic Performance (PAP), Broken Relationship (BR), Debts (DB), Poor Housing Conditions (PHC), Noisy Environment (NE), Living Far from Parents (LFP), and Parents Bad Conditions (PBC); 3) Preferred Social Support (PSS): Friends (F), Parents (P), University Office Staff (UOS), and Class Advisor (CA).

FINDING AND DISCUSSION

Finding

The first and foremost step was to inquire about the Perceived Stress Scale, that is, the Likert rating-type scale's validity and reliability. The following are indices of its items' validity and reliability:

The Aiken V Index

The instrument used to measure Abai Kazakh National Pedagogical University first-year students' predictors of stress and preferred social support system was validated through experts' judgment. The experts' feedback on the developed items became data used to compute Aiken's V Index using the formula at (1).

$$V = \frac{\sum s}{n(c-1)} \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Experts were also allowed to provide qualitative inputs on each item being assessed. The R Program output for Aiken Index values is shown in Table 1.

The Index Mean *V=1.555556 High validity*. This proves that the items used to measure Abai Kazakh National Pedagogical University's first students' stress level self-report were valid.

Table 1. Aiken index values

Item	Aiken V	Interpretation
Expert.1	Expert.1 2.1111111	High validity
Expert.2	Expert.2 0.7777778	Average/Mediocre validity
Expert.3	Expert.3 1.7777778	High validity

Reliability

The other index worth mentioning is the reliability index value. Such a value was computed in R studio and the output returned was in Table 2. The Cronbach Alpha reliability value considered is 0.83, that is, the "std. Alpha". The latter stands for the standardized coefficient alpha. It is similar to raw alpha but it is adjusted for the number of items and their intercorrelations. The standardized alpha is the one used to compare the reliability of such a Stress Level Self-Report Scale.

Table 2. Reliability analysis

Raw Alpha	Std. Alpha
0.84	0.83

Call: alpha (x = data)

This also proved that the developed Likert rating-type scale satisfies the consistency criterion: it is expected, if used in similar conditions, to yield almost identical results. The logistic conditional reliability curve, as illustrated in Figure 4, provides valuable insights into data reliability when scaled into the logistic measurement level.

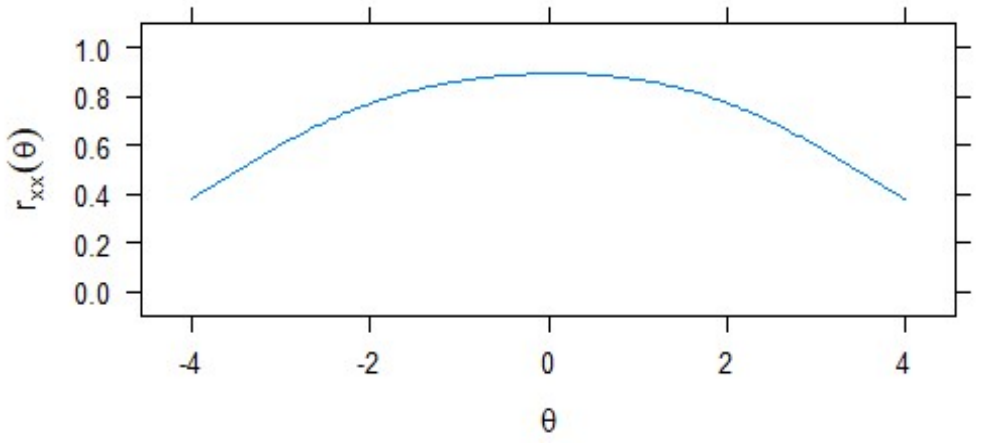

Figure 4. Conditional Reliability

This curve allows a detailed examination of the relationship between stress levels and the corresponding reliability index values. By analyzing this curve, one can understand how well the Stress Level Self-Report Scale performs in different conditions and stress levels. The Classic and modern calibration methods used to assess the reliability index values clearly indicate that the Stress Level Self-Report Scale is a reliable instrument (Marco-Franco et al., 2022). The term "Classic calibration" typically refers to traditional calibration methods, while "modern calibration" may involve contemporary statistical techniques and methodologies.

Scalling raw data

The second move was to scale the raw data to minimize our hypothetical model's standard error of measure. The scaling consists of transforming the raw data from the Perceived Stress Scale, also termed the Likert rating-type scale, into z-score data. Table 3 below shows an example

of raw data collected through the modified Likert adapted from the Perceive Stress Scale instrument.

Table 3 shows raw data whose distribution is unknown; equally, the distance between entry values is not the same. So, if we use these scores, we might not be able to make the correct conclusion. That is why the raw data above should be converted or transformed to z scores that use a normal distribution and which use the same units for their distance from each other.

Table 3. Example of raw data in Likert scale rating

ID	LCF	GAS	PHC	P	NE
1	4	4	2	2	2
2	4	4	1	3	1
3	3	4	4	4	2
4	4	4	2	3	3
5	4	4	1	3	1
6	3	3	3	4	2
7	3	4	3	3	2
8	3	4	3	4	2
9	3	3	4	4	1

Table 4 shows the z scores obtained using the summated rating method to the raw data.

Table 4. Example of calculation of summated scaling rating on items

ID	LCF	GAS	PHC	P	NE
1	0.6731079	0.5842037	-0.4026396	-0.7275997	-0.2681914
2	-0.4835545	0.5842037	-13.287.107	0.2182799	-12.705.566
3	0.6731079	0.5842037	14.495.025	11.641.595	-0.2681914
4	0.6731079	0.5842037	-0.4026396	0.2182799	0.7341739
5	-0.4835545	-0.7492078	-13.287.107	0.2182799	-12.705.566
6	-0.4835545	0.5842037	0.5234315	11.641.595	-0.2681914
7	-0.4835545	0.5842037	0.5234315	0.2182799	-0.2681914
8	-0.4835545	-0.7492078	0.5234315	11.641.595	-0.2681914
9	0.6731079	-0.7492078	14.495.025	11.641.595	-12.705.566

Using the summated rating scaling method, the researchers obtained the z score for each item. These results also showed that the raw data values differ with the scaling process from those obtained after transformation. For instance, the value for item 1 was 4 in the raw data set for the Lack of Confidence in the Future (LCF), but after transformation into z score, the same item's z value became 0.6731079. The other raw scores also became different after the conversion into z scores.

The full SEM model for the socio-psychological health

```
Model_sph <- 'SL =~ PQS+PAP+BR+DB+PHC+NE+LFP+PBC
      PSS =~ F+P+UOS+CA
      SPH =~ LCF + GAS + DAG
      SPH ~ a*SL + b*PSS
      PSS ~ c*SL
      # Total and non-direct effect
     ETL_cb  := c*b
     ETot_bca:= a + c*b
```

The good fitness of the model

The use of an SEM model requires the computation of its fit statistics index values. Table 3 illustrates values showing the level at which the model was fit.

For this Socio-psychological SEM model Good Fit statistics, the Comparative Fit Index (CFI) value was 0.87, indicating a relatively good fit. Similarly, the Tucker-Lewis Index (TLI) yielded a value of 0.85, also indicating an acceptable fit. The Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) both had values of 0.07, suggesting a close fit of the model to the data.

Table 5. SEM model fit index values

No	Fit index	Standardized
1	CFI	0.87
2	TLI	0.85
3	RMSEA	0.07
4	SRMR	0.07
5	AIC	11758.95
6	BIC	11881.07

These fit indices collectively suggest that the model adequately captures the relationships present in the data. Furthermore, the AIC and BIC values obtained were 11758.95 and 11881.07, respectively. Lower values of AIC and BIC indicate better model fit, and in this case, the obtained values suggest a reasonable fit of the model.

The measurement model semPlots

At this level, the reader can see the relationship between the various variables involved in the hypothetical model that was found fit. Figure 5 displays the real strength of their association.

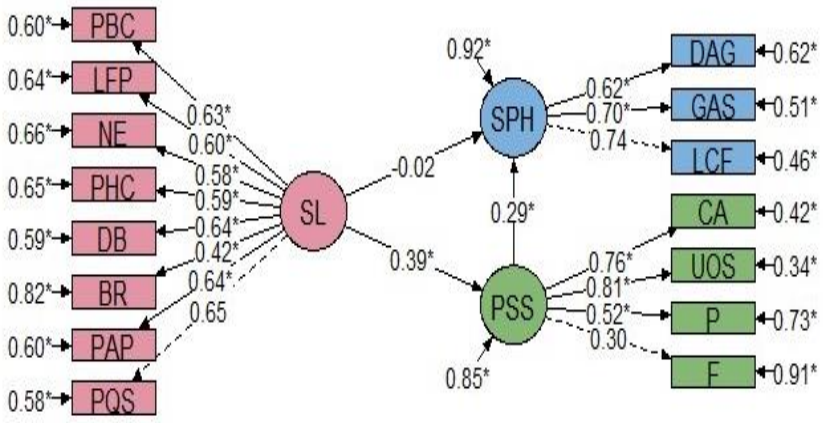

Figure 5. Display the Real Strength

Table 6. Variabel in the SEM model

Variable in the SEM Model		
Stress Level	**PSS - Preferred Social Support**	**SPH - Socio-psychological Health**
PBC: Parents' Bad Conditions	CA: Class Advisor	DAG: Desire to Achieve Goals
LFP: Living Far from Parents	UOS: University Office Staff	GAS: Goal Achievement Strategies
NE: Noisy Environment	P: Parents	LCF: Lack of Confidence in the Future
PHC: Poor Housing Conditions	F: Friends	
DB: Debts		
BR: Broken Relationship		
PAP: Poor Academic Performance		
PQS: Poor Quality of Sleep		

The loading coefficient of 0.39 indicates that SL (Stress Level) has a positive correlation with Preferred Social Support (PSS). However, for the collected data, Stress Levels only correlate with Socio-psychological Health (SPH) through Preferred Social as the latter has a positive correlation (0.29) with Socio-psychological Health (SPH), as the SEM plot indicates.

In terms of manifest variables, the top stress sources for the 1st-year students at Abai Kazakh National Pedagogical University (the year 2023) are 1) PQS (poor quality of sleep) with a loading coefficient of 0.65; 2) PAP (Poor Academic Performance) with a loading coefficient of 0.64; 3) DB (Debts) with a loading coefficient of 0.64; 4) PBC (Parents' Bad Conditions) with a loading coefficient of 0.63.

Discussion

The discussion anchors on key measurement tool indices and the fitness of the SEM model. All then is going to be channeled to answering the research questions. In terms of the measurement instrument used, the key indices illustrative indicators are the V index and reliability values. As the Aiken Index Mean *V=1.555556,* this is a great indication of the instrument's High validity. The standardized V index value corresponds to Istiyono's (2020) and Retnawati's (2016) guidelines on the matter. This proves that the items used to measure Abai Kazakh National Pedagogical University's first students' stress level self-report were valid.

As far as the instrument's measurement consistency or reliability, the standardized "std. alpha" Cronbach's Alpha is 0.83. This value falls into the "Highly Reliable" category established in Istiyono (2020). So, the Perceived Stress Scale, that is, the Likert rating-type scale, used is reliable. The findings from the logistic conditional reliability curve, coupled with the positive outcomes from both calibration methods and internal consistency assessments, have substantial implications for both research and practical applications (Marco-Franco et al., 2022). What is more, the raw data were scaled (transformed) into standardized data to minimize the standard error of measurement. The transformation of raw data into standardized z-scores through the summated rating method is a critical step in ensuring measurement consistency. This process, following guidelines from Huang et al. (2020), results in normally distributed data with equal distances between values on the measurement continuum. This transformation minimizes the standard error of measurement, contributing to more accurate and conclusive findings. This process is believed to reduce the errors of measurement and the conclusions made are conclusive, which corroborates by view of Setiawati et al. (2013).

With a valid and reliable instrument together with standardized data, the researcher can move to the next level of the discussion; they can prove the model's goodness of fit. To demonstrate how the model is, we compare the fit statistics obtained and the theoretical cut-off scores for the CFI, TL, RMSEA, and SRMR index values. According to Hair, Anderso, Tatha, and Black (2012), the TLI and CFI > 0.8 on the one hand, and the SRMR and RMSEA index values comprised between 0.05-0.08 indicate the goodness-of-fit of an SEM model. In the study at hand, these fit statistics values were found, and they fall in the theoretical "Good Fit" margins indicated 1) Comparative Fit Index (CFI): 0.87; 2) Tucker-Lewis Index (TLI): 0.85; 3) Root Mean Square Error of Approximation (RMSEA): 0.07; and 4) Standardized Root Mean Square Residual (SRMR): 0.07.

This answers research question No. 1 worded as "How fit is the Socio-psychological Health measurement model?" The fit indices collectively suggest that the model adequately captures the relationships present in the data. The indices prove the SEM model's goodness of fit. The SEM plot wraps many pieces of information that can help answer the research questions. For instance, there is evidence that SL (Stress Level) has a positive correlation with Preferred Social Support (PSS) as indicated by the loading factor of 0.39. These findings answer research question No. 2 "How strong is the relation between Stress Level and Preferred Social Support?" As it is proven, the relationship between SL and PSS is average, that is, r=0.39. However, in this model, the Stress Levels only correlated with Socio-psychological Health (SPH) through Preferred Social Support. This also responds to research question No. 4: "How does Socio-psychological Health correlate with Stress Level and Preferred Social Support?" There is a positive correlation (r=0.29) between

Preferred Social Support (PSS) and Socio-psychological Health (SPH). That is why researchers considered adding the marker of "Total and non-direct effect" in the SEM model used.

Next, the same Sem plot in Figure 1 displays a piece of information that answers research question No. 3 "What is the preferred Social Support for the 1st year students at Abai Kazakh National Pedagogical University?" When stressed, the 1st year students at Abai Kazakh National Pedagogical University preferred to tell what stressed them either to 1) UOS: University Office Staff: with a loading factor of 0.81 (most preferred); 2) CA: Class Advisor: with a loading factor of 0.76; and 3) P: Parents: with a loading factor of 0.52.

According to the SEM plot, the researchers managed to determine the top stress sources for the 1st-year students at Abai Kazakh National Pedagogical University (the year 2023). Arranged according to the magnitude of their loading factor coefficients, the stressors for those students included 1) PQS (poor quality of sleep) with a loading coefficient of 0.65; 2) PAP (Poor Academic Performance) with a loading coefficient of 0.64; 3) DB (Debts) with a loading coefficient of 0.64; 4) PBC (Parents' Bad Conditions) with a loading coefficient of 0.63.

Existing studies have emphasized that academic stress is associated with sleep disturbances. Coupled with conflicts in interpersonal relationships, and poor quality of sleep. Deng et al. (2023) can indicate stress, and this can significantly affect the students' overall well-being. Preparing exams and managing substantial course material within constrained timeframes (Khan, Altaf, & Kausar, 2013) can then lead to unsatisfactory academic outcomes (Aihie & Ohanaka, 2019).

As this research examined how students' social and psychological health is linked to stress levels and social support systems, the researchers believe that accurate assessment of support mechanisms contributes to a better understanding of natural helping processes (Barrera., Sandler & Ramsay 1981). The relationship between variables in this model indicates that the more support Abai Kazakh National Pedagogical University students (the year 2023) would get, the less stressed they became, and this sustained their socio-psychological health. Conversely, the less support they obtained, the more stressed they got, and this had negative repercussions on their overall well-being. The research findings suggest that educational assessments, stress levels, and social support are intricately related. Enhancing the assessment process and cultivating a supportive environment are crucial measures that can refine evaluation procedures and positively impact the psychological well-being of students. This, in turn, contributes to a more comprehensive and effective educational experience. The interplay between assessments, stress, and support highlights the significance of adopting strategies that not only optimize academic evaluations but also prioritize the mental and emotional welfare of students.

CONCLUSION

Overall, an educational psychological assessment is a stressful task and a set of teaching methods and learning processes that affect both students and teachers. Therefore, it is recommended to improve the learning process, examinations, measurement, and evaluation tools. Moreover, exams as well as exam preparation belong to quite common stressful situations. The stress in the classroom reduces new information perception in the memory of learners and recalling the existing one, which may later be reflected in the final examination and assessment results. Stress influences on learning abilities and remembering process of students. It is not avoidable, so educators should create a good atmosphere during teaching without stress and pressure. Based on our study results, it can be said that the Perceived Stress Scale used to measure Abai Kazakh National Pedagogical University first-year students' stress level was a valid tool. Such a tool also was found to be reliable given its Cronbach's Alpha standardized coefficient. What is more, there was enough evidence for the SEM model's goodness of fit. As it was proven, the relationship between SL and PSS is average as r=0.39.

In addition, there was recorded a positive correlation (r=0.29) between Preferred Social Support (PSS) and Socio-psychological, but no direct link was established between Stress levels and the research subjects' socio-psychological health. In terms of the Preferred Social Support, Parents ousted the Office Staff and Class Advisor. One's parent's support was preferred over

going to the Office Staff and Class Advisor for support. Besides, the two support indicators are also a preference for some of the 1st year students/respondents. After a deep analysis of the relationship between variables in the SEM model used, it can be stated that the more support Abai Kazakh National Pedagogical University students (the year 2023) would get, the less stressed they became, which sustained their socio-psychological health. On the contrary, the less support the students obtained, the more stressed they became, and this led to negative repercussions on their overall well-being.

As coping with stress is associated with social support and will take time to develop students through education from the start of their academic journey, it is recommended for the mentoring staff to ensure that students are accessing social support. As a recommendation, further studies should be carried out to establish the reason for preferring the University Staff and Academic advisors over parents when it comes to preferred social support systems. Logically, when stressed students are expected to contact their parents rather than a non-family member. However, the findings in this research showed the opposite logic. Only further social support-specific studies can unravel this predicament.

In terms of research limitations, the current study did not explore the socioeconomic status, gender factors, or living situations of the students randomly sampled. It was limited to eight stressful factors such as new friends, finance, dormitory, exams and deadlines, parent support, quality of sleep during the first semester, and relationships at only one Kazakhstani university. Along with these stress factors, there are other personal events to be studied in future research. For instance, feeling under lots of pressure from authoritative teachers, experiencing discrimination, hate, bullying, or abuse, illness, undesired pregnancy, suddenly becoming a single parent, family member lost (bereavement), everyday tasks such as household chores or traveling between house and university, etc. Our study is also limited to a cross-sectional online survey to collect information from the respondents and did not have any control groups to identify the differences between experimental and control groups. Further studies should be focused on students' learning outcome observations after correction workshops with students.

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