The Analysis of Epidemic-related Stressors among Chinese Students Studying in The UK

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Abstract. In the era of the Coronavirus outbreak, the pre-existing social order and people's lifestyles have been shaken to the core. A number of negative effects have been shown that students' stress levels are correlated with such negative effects. Some previous studies have shown that economic, academic and other factors can influence students' stress to some extent. This study seeks to investigate the stress index of international students during the epidemic and finds out the reasons behind it through a survey of international students staying in the UK. The results show that the general levels of stress of international students is medium level. Females perceive higher levels of stress than males. Factors related to employment, economic factors and factors related to the ability to learn independently were the most relevant to their stress. The findings of this study reveal the epidemic-related stressors of international students, which can be used to help international students and schools to understand these influences and to propose targeted and appropriate solutions to achieve the sustainable development goal of providing quality education while ensuring the well-being of all students.

Keywords: COVID-19, international students, wellbeing, stress

1. Introduction

The outbreak of the Coronavirus pandemic has made a significant difference to the world. Various governments had to enact new policies such as wearing masks, closing public places and quarantines in order to combat the epidemic. However, this poses a threat to people's mental health. The absence of social relationships and restricted physical activity could predict high indices of depression, anxiety, insomnia and other symptoms [1]. The American Psychological Association believes that the psychological problems brought on by the new crown epidemic can be severe and persistent [2]. Studies have also shown that beyond the general personal pressures that individuals face in terms of death of a family member, finances and loneliness [3-6], university students also face pressures related to their studies [7]. Meanwhile, a high proportion of individuals experience symptoms of stress, depression associated with the epidemic. It is particularly evident among persons with university degrees and above [8].

Furthermore, in accordance with the requirements of Goal 3 Good Health and Well-being and Goal 4 Quality Education of the 17 Sustainable Development Goals 2030 [9], students can benefit from a high quality education while ensuring their mental and physical well-being. Collectively, these

reasons makes it particularly important to understand the indicators and causes of stress among university students during this Coronavirus pandemic.

This study has two main research questions, with the first focusing on the extent to which Chinese students in the UK perceive stress at this stage of the epidemic, and the second aspect looking at the factors that may be associated with these stresses. Based on the research topic and questions, a questionnaire survey is used to do the quantitative analysis in this study. The sample was 103 participants which drawn from Chinese students studying at the university.The data obtained from the quantitative study will be analyzed by means of simple statistical methods. Therefore, this paper analyses the level of stress experienced by Chinese students studying in the UK during the COVID-19 epidemic by means of a quantitative study, so as to offer some references for the study of students' psychology.

2. Methodology

2.1. Survey Design

A quantitative method was adopted in this research. According to Wellington and Szczerbinski [10], quantitative research is applicable to interpret certain phenomena and general laws, such as the relationship between objects. Quantitative research allows researchers to predict the scores of one or more factors from the scores of other factors through statistical techniques [11]. According to the research aim and questions mentioned above, quantitative research method seem to be appropriate for this project. Questionnaires are considered one of the principal means of collecting primary data for quantitative research, as the data collected through questionnaires are standardized, consistent and coherent [12]. Furthermore, in consideration of the limited resources of this study and the participants' privacy issues, the questionnaire seems to have advantages over other data collection methods [12].

Based on this, a structured questionnaire was designed and used to collect data. Most of the questions in the questionnaire used scaled questions from the Semantic Difference Scale to capture participants' attitudes and psychological meaning of an event [12]. For example, how relevant do you think economic factors are to your stress production on a scale of 1 to 5, with 5 being strongly relevant. Additionally, open-ended questions were used to a minor extent in the survey. Previous researchs has shown that respondents are more diverse in their responses to open-ended questions, whereas when they answer closed-ended questions they are more likely to fix themselves within the framework of the topic [12,13]. Although the questionnaire used in this study already gives partial reasons for students to experience stress based on some previous studies, considering that some new sources of stress may arise in the context of the COVID-19, the last question in this questionnaire uses an open-ended question in the form of a complementary sentence in order to consider more comprehensively the sources of stress for students during the epidemic.

2.2. Data Collection and Participant

This questionnaire was administered via the internet. Internet surveys are nowadays widely used due to their speed, low cost and positive self-administration effects [14]. Simultaneously, the use of the Internet as a medium has been found to have no effect on the validity of the questionnaire. Several examples can be found in the meta-analysis by De Leeuw [15]. It is to be considered that there may be problems with the coverage of subgroups (such as the elderly) with questionnaires distributed via the internet [16]. However, there are data indicating that over 81% of students on campus have access to broadband services [16]. Therefore, the coverage factor seems to have an insignificant effect on the questionnaire in this study. Considering the validity of the questionnaire, a pretest phase was conducted before the questionnaire was formally administered. According to [17], pretesting is necessary for a questionnaire to ascertain that the data collected by the survey is valid and consistent

with expectations. Wellington and Szczerbinski [10] supplemented that by analyzing the pretests, it could be determined that the questions were reasonably framed and sequenced, that all respondents understood the meaning of the questions, and that questions could be eliminated and added to.

The participants were all students from China studying in the UK who volunteered to participate and fill in the questionnaire by clicking on a recruitment about this study in several Chinese student group chats. The total sample was 103, comprising 38 males (36.89%) and 65 females (63.11%). 4 (3.88%) from Medical Biology related, 4 (3.88%) from Psychology, 19 (18.44%) from STEM, 4 (3.88%) from Architecture related, 28 (27.18%) from Humanities, Social Sciences and Education, 3 (2.91%) from Law, 27 (26.21%) from Business Management, 9 (8.73%) from Media and Arts Languages 2 (1.94%), Combined and General Studies 3 (2.91%). In addition, 78 of the study participants were current undergraduates, of whom 10 (9.71%) were in their first year, 36 (34.95%) in their second year and 32 (31.07%) in their third year. Besides that, there were 20 postgraduate students (19.41%) and 5 PhDs (4.85%). 54 (52.43%) participants indicated that they were experiencing offline teaching, 15 (14.56%) participants were participating in online classes and the remaining 34 (33.01%) students were in a combined online and offline mode.

3. Results

3.1. Gender

By separately calculating and comparing the means of overall stress perceptions for males and females Table 1 was produced. No standard deviation has been introduced here due to the different sample sizes for males and females. Table 1 reveals that the overall perception of stress in the sample is at the medium to high level of the options 1 to 5 on the Semantic Difference Scale. A clear gap (difference of 0.56) can be seen between males and females. Male participants were subjected to less stress than females.

Table 1: Comparison of gender and stress perception.

Item	Mean	N
Whole	3.33	103
Male	2.97	38
Female	3.53	65

This finding is consistent with several recent studies under the epidemic. This is further supported by a number of recent investigations conducted in the background of the epidemic. Limcaoco and his team [18] surveyed over a thousand respondents from 41 countries by means of an online survey in order to verify the current state of anxiety, worry and stress perceptions in the recent epidemic situation. The findings suggest that female participants demonstrated higher levels of stress and apprehension in the context of the epidemic. Similarly, a survey from China at the beginning of the outbreak found similar gender differences [19].

3.2. Grades

The questionnaire divided the university students into four options for their grade level, with the other option including current students with Masters and PhD degrees. Table 2 shows the values of students' responses to perceptions of stress in general for the different grades. A clear increasing trend is found between UG1 and UG3. The difference between the perceived stress of juniors and freshmen is highly significant (0.96). In the last open-ended question, a number of participants explained that "[t]here is a need to decide whether to continue with postgraduate studies" or "there is a need to consider employment while ensuring that I can complete my dissertation".

Table 2: Comparison of grades and stress perception.

Grades	Mean	N
UG1	2.7	10
UG2	3.31	36
UG3	3.66	32
Other	3.2	25

The relationship between student age and stress appears to be controversial at present, This findings seem to differ from those of Singh and Upadhyay [20], who observed that first-year students were more stressed about their studies than juniors. Instead, the answers we obtained are similar to some other studies, Singh and Upadhyay's [20] study suggesting that first-year students are more academically stressed than juniors. Conversely, Elias et al. [7] found that juniors experienced more academic stress and freshmen the least. Also, some studies have found that final year students are the most stressed, which may be since this is when academics need to consider post-graduation employment and internships [21, 22].

3.3. Teaching and Assessment Methods

Through the pre-testing phase it was found that a large number of participants indicated that different teaching and assessment methods caused them to feel different levels of stress. Therefore, these two factors were listed as two separate questions when the questionnaire was formally administered. The survey did establish that both were associated with the generation of stress in international students. The findings in Figure 1 show that the offline examination method was the most stressful for students relatively, which may support Panton's [23] argument. The stress caused by examinations may cause depression and self-harming behaviour in students [23]. Interestingly, online exams and combined online and offline exams were considered to be the least stressful. The interpretation given by participants was that 'online exams are unable to have the same strict regulatory system as offline, many students may have committed academic misconduct, and fairness may be an issue.
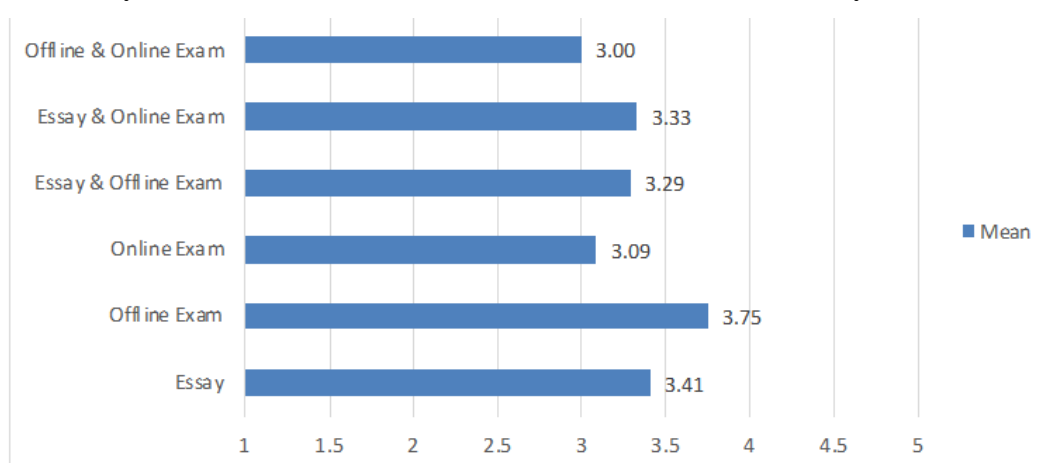

Figure 1: Comparison of assessment methods and stress perception.

In terms of teaching methods, according to the data in Table 3, people who experienced offline teaching were less stressed. The other two methods associated with online instruction produced higher levels of stress. Some participants indicated in the pretest that online learning was difficult for them because they were unable to use the online teaching resources effectively and stay focused. Therefore, relevant questions were inserted in the formal questionnaire. For

international students, the stress related to "the use of online educational platforms (e.g. zoom)" was low (mean=2.89). The correlations for "access to and use of online educational resources" and "online teaching requirements for independent learning skills" were mean=3.07 and mean=3.53 respectively associated with students creating stress. For the latter, some participants felt that concentration during online classes was limited because "there are a lot of distractions at home". Also "internet connection is an issue" they stated, "internet lag during online classes can make me feel anxious".

Table 3: Comparison of teaching methods and stress perception.

Teaching methods	Mean	N
Face to face	3.17	54
Online	3.4	15
Face to face & Online	3.56	34

3.4. Employment

Figure 2 represents the scores given by international students for the perception of stress brought about by particular stressors.
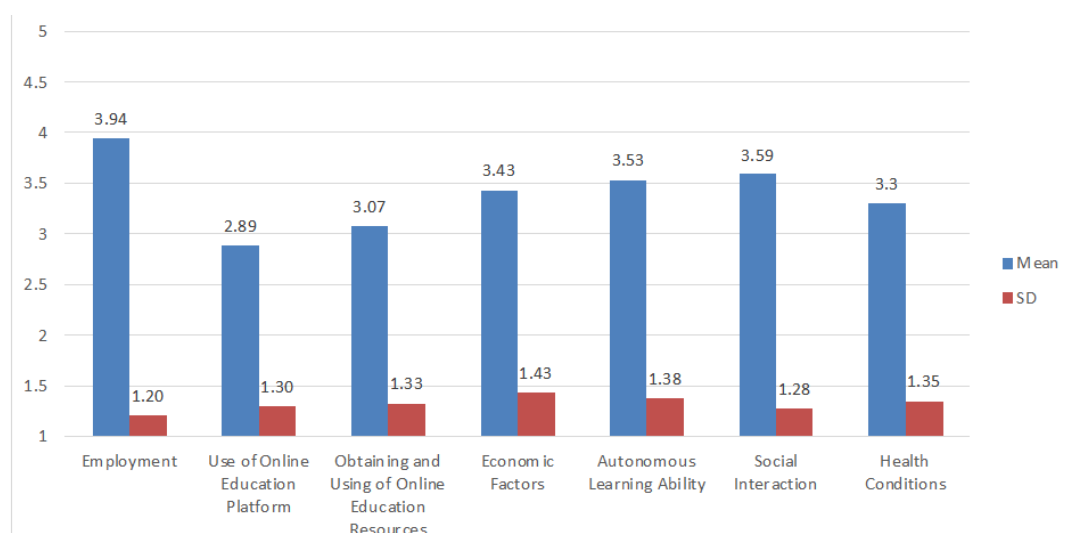

Figure 2: International students' perception of possible stressors.

The employment issue, which was mentioned earlier, is more clearly observed in Figure 2. With a score close to 4, it is possible to express that all participants felt a high level of stress about it (SD=1.20). In the answers to the open-ended questions, participants mentioned that the outbreak had made employment more difficult for graduates and thus made them feel additional pressure. This seems to be in line with the data reported by the International Labour Organization [24]. A large number of companies laid off employees and reduced their wages or asked them to take unpaid leave because they could not afford to pay them [25]. Such a situation is a blow and loss for the employees. The employment scenario is also not promising. The employment rate has been observed to plummet the most ever in a month [26]. According to the World Labour Organization, the advantage of young people in the job market is already diminishing, and when combined with the current epidemic situation, the result may be an increase in unemployment among young people [23, 27].

3.5. Economics

Economic factors were the fourth largest source of stress for international students in this study (M=3.43, SD=1.43). This finding is congruent with most current research. The global economic depression that followed the outbreak reduced household income [28, 29]. While the main source of funding for international students is the family [30]. Simultaneously, financial assistance and resources for international students are extremely limited [31]. This knock-on effect may lead to increased psychological stress for students.

Furthermore, some additional information regarding economy-related stress was provided by in the last question. Students were stressed about the higher cost of living due to price increases following the outbreak. This was reasonable because the majority of fund needs to be spent on tuition fees, meaning that the small amount of money left over needs to be divided between accommodation and daily expenses [30]. Working part-time off-campus may seem to be an effective solution, but it does not apply to every international student. For example, part-time work is not legally permitted for international students in the USA [30]. Consequently, the social activities and language skills of international students may be indirectly affected. International students tend to reduce unnecessary social activities due to financial difficulties [32] and live with other international students from the same country in the similar situation, which limits the development of their foreign language skills [32]. In turn, this language barrier and low frequency of social interaction can be stressful for international students [33, 34].

3.6. Autonomous Learning Ability

Autonomy has been broadly defined as the ability to direct learners' learning. More detailed, learners' own willingness (e.g. motivation) and ability (e.g. skills) together constitute the autonomy of their learning [35]. Other scholar has also defined autonomous learning as learners taking responsibility for their own learning [36]. Current definitions of autonomous learning in pedagogy are diverse, but there appears to be limited research on its separate relationship with stress.

A number of participants reported a lack of self-directed learning in both the pretest and the open-ended questions of the formal questionnaire, and this lack was attributed to their increased psychological stress (M=3.53; SD=1.38). This is reflected in their feeling that they are unable to take the initiative to plan and achieve their learning goals when receiving online lessons, feeling easily distracted and even outright stating that they do not want to study. However, they also felt that their academic grades were important to them and this compelled them to study. Thus psychological stress arises from the combination of such two mentalities. The above cause-effect relationship is only the explanation of the participants, in order to establish whether the ability to learn autonomously is something that some future research could be carried out under this topic.

3.7. Social Interaction

Social interaction was the stressor that had the greatest impact on students after employment among the stressors considered in this study. With the exception of 22 (21.36%) participants who felt that the epidemic had no impact on their social activities, the remaining 81 (78.64%) agreed that the epidemic had made them engage in social activities less frequently and that it had caused them stress (M=3.59; SD=1.28).

Embargo policies were introduced in most countries to curb the spread of Covid-19. Greyling et. al. [37] studied the well-being of residents in three countries under blockade policies and reported a strong negative correlation between embargo policies and citizens' well-being, with the stricter the embargo policy, the lower the well-being of the individuals. Similarly, the statistical results of Misirlis et. al. [34] support this view. The closed environment is a source of stress, isolation and trepidation

for people, especially for students and international students. Therefore, the social support available to students in such difficult situations is highly limited. And once students feel isolated, or they do, stress and anxiety can arise [38]. When students are unable to relieve themselves in time, a number of psychological problems may arise [34].

3.8. Health Conditions and Other Stressors

Contrary to predictions, health did not appear to be a major source of stress for international students during the epidemic (M=3.3; SD=1.35). However, some participants reported that although the stress of the COVID-19 outbreak had subsided due to the vaccination, the recent outbreak of the new virus monkeypox made them feel panicked and stressed.

This was supplemented by several repeatedly mentioned events from the open-ended questions that made participants feel stressed. After summarizing and categorizing them, the researcher identified parental expectations, intimate relationships, competition among peers and racist attacks related to the epidemic as stressors reported by the participants that could be studied in depth in future studies.

4. Conclusion

Since 2019, the global pandemic of Covid-19 has had a huge impact on people's lives. The economic and employment situation has turned bleak, and a number of consequences resulting from policy changes have had an impact on students' psyches. This study attempts to analyse the stressors of Chinese students studying in the UK in the context of the epidemic through a quantitative study. The study found that the source that most stressed the participants was employment, followed by a reduction in social interaction. The ability to be autonomous learners and financial factors followed closely behind. The use of and acquisition of online educational resources and platforms, and health considerations were three weaker stressors in this study.

As large parts of the UK have been unsealed, international students' perceptions of certain outbreak-related stressors may not be as pronounced as during Lockdown. Some stressors may have been neglected as a result. Future research could characterize Chinese students in the UK on this topic in a way that increases the sample size. Moreover, some of the factors related to self-directed learning and other factors in relation to stress could be studied more.

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