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THE REASONS FOR DISTRESS OF FIRST-SEMESTER STUDENTS DURING COVID-19 PANDEMIC AND MITIGATION MEASURES

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ABSTRACT: Due to governmental restrictions in Germany regarding the Covid-19 pandemic, presential lectures were either just permitted under strict conditions or not at all. This led to a switch to an online format, which in turn had effects on the students and their perception of stress. This paper investigates the root causes of stress among first-semester students at a mid-sized university in southern Germany. In a quantitative-qualitative approach, 112 first-semester students (69,6 % female) participated in an anonymized survey that contained closed and open questions regarding the reasons for their perceived stress. In the end, the participants had the chance to give additional input on how they think the university can help to reduce stress levels. The most frequently reported reasons for stress were examination (69%), self-managed learning/ online format (57%), and social interaction (53%). The students expressed their wish for more information regarding the general operating procedure and the scope of coursework and exams. Furthermore, many felt overwhelmed with the manifold online tools of the university and were not able to manage their time efficiently. Easy-to-implement measures for the university to support the students are introductory courses to the platforms, a dedicated timetable for the study programs, and time management seminars. These and other measures are presented within this paper.

Keywords: *Stress; First Semester; Covid-19 Pandemic; Mitigation Measures*

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1. INTRODUCTION

Two years ago, in early 2020, the first infections of a new virus called SARS-CoV-2 – colloquial Covid-19 or Corona – were reported in Germany (Robert Koch-Institut, 2020). At this point, no one could barely imagine how this would turn into a global pandemic with curfews, travel restrictions, and commercial shutdowns. An economic crisis arose with many companies facing insolvency and high rates of unemployment (Statistisches Bundesamt, 2022). The health system was close to its limits and social distancing was statutory. Strict restrictions were prescribed by law; limitations of persons within a room, a distance of two meters, and wearing a mask became normal measures. These restrictions – of course – also affected the academic world. Due to the governmental ambition to avoid further spreading of the virus, gatherings of bigger groups were prohibited. This included presential lectures at universities. During the first waves up until October 2021, which were three full German semesters, almost all lectures had to be taken online (Hochschulrektorenkonferenz, 2022). So, for one and a half years – or half of the regular studying time for a Bachelor's degree, the students did not get to meet each other in person. Considering all the circumstances, several articles have shown that this time was stressful for everyone (e.g. Brooks et al. 2020; Mheidly et al., 2020; Pierce et al., 2020).

With the winter term of 2021, restrictions slowly have been relaxed, and presential courses were partially permitted again. A hybrid teaching model got the "new normal", but nevertheless, psychological after-effects of the previous lock-downs were and still are noticeable (Schlack et al., 2020).

The purpose of this paper is to deep dive into the winter term 2021 first-semester students' stress perception by analyzing the major root causes of their distress, and evaluating measures how to reduce the stress level. The target of this endeavor is to name explicit activities that a university can implement to facilitate the young peoples' start in university life and hence redirect their attention back to academic content. The findings of this paper are part of a longitudinal study about the development of stress and self-efficacy during one semester.

After a short theoretical introduction to stress, the methodology of the parental study will be described, followed by an explanation of the context to this paper. Next, the results are presented and practical implications are derived. A final discussion acknowledging the limitations of this study will close this paper.

2. STRESS

Hans Selye, a pioneer in the field of stress, once defined stress as the "nonspecific response of the body to any demand, whether it is caused by, or results in, pleasant or

unpleasant conditions" (1985, p. 8). This definition puts stress in a neutral light. Contrary to the commonly perceived negative association with this word, stress in small amounts can be beneficial (Kouda & Iki, 2010; Minois, 2000). But as the circumstances of Covid-19 have increased the general stress level in society, the focus of the stress impact is on the negative effects within this paper (Haikalis et al.,2022; Riedel-Heller & Richter, 2021).

Stress symptoms may occur in miscellaneous forms that range from physical manifestations like headache or stomach ache to psychological disorders like anger or anxiety. Some people express the feeling of stress - consciously or unconsciously – in their behavior by starting to drink alcohol or eating unusual amounts of fast food or candy (Behere et al. 2011; Cohen et al, 2007).

In the academic setup, various studies have shown that stress has a negative impact on students' performance. High levels of stress are strongly linked to lower grades and a higher risk of health issues (e.g., Akgun & Ciarrochi, 2003; Zajacova et al., 2005). Especially, the first semester is considered to be particularly stressful for students, as many are moving away from home, family, and friends and have to adjust to college life and the academic requirements (Pitt et al., 2017; Zajacova et al., 2015). Based on these findings, the target group of this paper is first-semester undergraduate students. Goodman (1993) divided student stressors into the categories academic, financial, time or health-related, and self-imposed. As one objective of this paper is to name measures of how a university can support to reduce the stress, the focus will be on academic and self-imposed stress.

3. METHODOLOGY

As stated before, the content of this paper is part of an unpublished study about the development of self-efficacy and stress among first-semester students at the University of Applied Sciences in Ansbach, in the winter semester of 2021. This study aimed to investigate if and how the perceived stress level and self-efficacy are correlating over time. The present paper has its focus on stress, more specifically on the reasons for the perceived stress among the students.

All undergraduate students have been contacted in the first two weeks of their first semester at welcoming events, introduction lectures, and via messenger groups. After a short presentation about the background of the study, they were asked to participate in a three-part survey. The participation was voluntary and the students did not receive any credits or benefits for their participation. In the last run, an incentive in form of two shopping vouchers was announced to keep the participation rate on track. To take part in

the survey, the students had to sign in by scanning a QR code or copying the link to the university's choice for surveys platform "Limesurvey".

The first part had to be filled at the beginning of the semester, the second one in the mid, and the third one after the final exams at the end of the semester. All three parts of the survey consisted of the same three scales to measure 1) the perceived stress level (Cohen et al., 1983), 2) the general self-efficacy (Chen et al., 2001) and 3) the academic self-efficacy (Chemers et al., 2001) besides the general demographic data retrieval. Students, who signed up for the first survey were reminded to participate in the other two runs, but participation rates dropped as expected. Of the 329 originally signed students, 198 completed the first survey, 148 filled as well the second, and 112 (69,6% female) the third one.

Whereas the parental study is purely quantitative, the present research is of a mixed nature. In the last part of the survey at the end of the semester, an additional question block was added, to capture the students' impressions and feelings in a retrospective. In the first part of this block, they were asked if specific factors – such as the search for housing or exams - were stressing them or not. The second part added a qualitative perspective by giving the students the chance to elaborate on their individual stressors and what support they would have liked from the university. This qualitative part was optional and in total, 48 of the 112 third-run participants shared their impressions.

4. RESULTS

Similar to other studies, the most relevant stressor for students was the examination and the related achievement pressure (e.g. Everly et al., 1994; El-Ghoroury et al., 2012). 77 out of the 112 respondents said that the exams stressed them. Figure 1 shows the perceived intensities of the seven stressors that were explicitly asked in the survey.

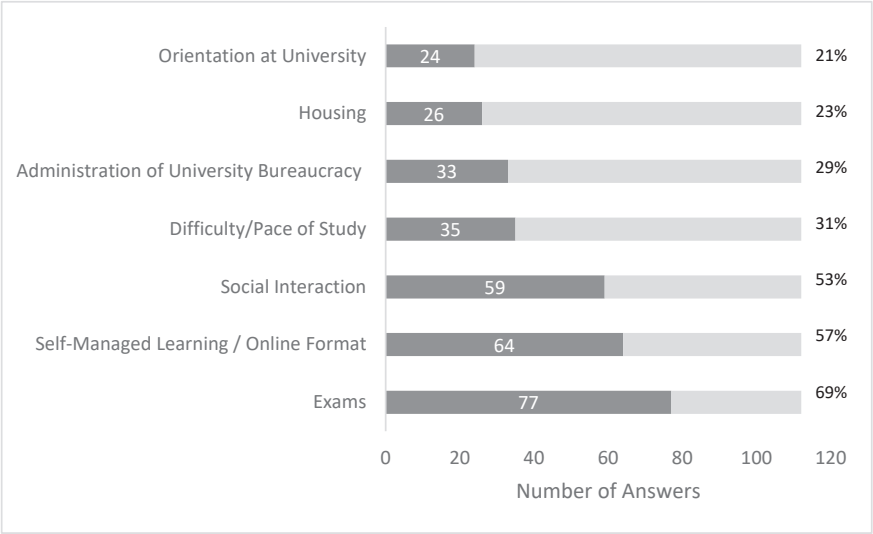

Figure 1. Perceived Intensities of Stressors

That the Covid-19 pandemic has a high impact on the students can be seen in the second and third rank of the stressors. 57% of the students reported that self-managed learning and the online format increased their stress levels. Besides the transition in the learning environment from school to university, the students also had to get used to the online format of lectures. Staying focused in a face-to-screen set up all day long is reported to be exhausting and hence it is a logical consequence that students frequently get distracted. Kemp and Grieve (2014, p.1) found in their study that - even though performance is similar between presential and online formats - students expressed "a strong preference for class discussions to be conducted face-to-face, reporting that they felt more engaged, and received more immediate feedback, than in online discussion". This finding supports the fact that the students in this study feel stressed about online learning.

The third major reason for distress in first-semester students is social interaction. 53% had difficulty in finding new friends and getting in contact with their peers. Due to the online lectures, the social interaction between the students was reduced drastically. As the survey was conveyed among first-semester students, many of them had not had contact before with other students in their new hometown.

Around one-third of the respondents reported being stressed by the pace of the study, as they had difficulties following the complex contents. Approximately the same

amount named the administration of the university bureaucracy as a reason for their arousal. At the beginning of the first semester, students get overwhelmed by various tools, activities they have to do, and deadlines. What has been organized by the teacher at school, is now their own responsibility. The two least stressful factors were housing (23%) and orientation at the university (21%), but nevertheless still stressed one-fifth of the students. Additionally, in the free text field, the following stressors have been mentioned: finances/work besides university, moving away from friends and hobbies, and mental health issues.

As the qualitative part was in free text format as well, the results are bundled and rephrased according to their content. The students were asked what would have reduced their stress levels and what the university could do to support them. The answers are categorized in content and scope, information flow, time management, adoption of the online format, network, and housing.

Out of the 48 respondents, sixteen requested a more detailed provision of information on the scope of the coursework and the content of the exams. In case of uncertainties, the answering of questions via emails was considered time-consuming and cumbersome. More practical exercises, lecture notes, an overview of the study program, and study groups were mentioned as possible efforts to alleviate.

Information flow is the second most mentioned category with fifteen answers. Much important information gets lost in the flood of content in the first weeks of a study. Therefore, the students had difficulties in handling the different tools and fulfilling the requested tasks in time. The university's online platforms like Moodle, ILIAS, and Primuss are not self-explaining, and keeping an overview of the different purposes was considered tricky. As peer exchange was difficult with Covid-19, a more precise explanation was requested. Additionally, more reminders for general information like registration deadlines were desired.

The same amount of mentions (fifteen) has the third category network. Due to the pandemic circumstances, many students had difficulties making new friends and felt lonely. More freshman events, or course-internal events, would have helped them to meet new fellow students. Especially higher semester peers are of interest in order to exchange experiences and course requirements. Another answer included leisure activities or extracurricular engagements as a possible way to connect.

Eleven students rated time management as an important field for improvement. This self-imposed issue was very present due to the absence in the classroom. Students had to keep track of their online lectures and a structured daily routine. Distractions at home negatively impacted their concentration. Besides, the intervals between the exams were reported to be too short. One individual introduced the idea of an intermediate

examination within the semester to collect credits for the final exam, but this wish might not represent the general consensus.

The adaption of the online format was named as a mitigation measure by nine students. Regularly, the lectures were held over a Zoom meeting and the content was not provided online afterward. Even when a student joined the original lecture, many questions remained open, because of the burden to reach out to the professor during an online class. The respondents requested recorded lectures to re-watch. If that is not possible, it would yet help to have the slide decks available. Also, the digitalization of the examination was mentioned. In case a student is corona positive - but feels well - an online exam would eliminate the issue to postpone the assessment to the next semester and re-study the course content. The majority of students named presential lectures as the best way to reduce the perceived stress, but the development of the pandemic is out of the university's control, unfortunately.

The last category is housing with four mentions. This issue is well known in the city of Ansbach. Every term, students have a hard time finding accommodation, as the housing market of the around 40.000 inhabitants city is continuously insufficient. The university already does its best by running a housing platform on its webpage with private offers.

5. PRACTICAL IMPLICATIONS

Based on these results, mitigation measures are recommended in this chapter. As the examination phase is and always will be a stressor to the majority of students independent of the visited institution and as there is no possibility to change the circumstance of the pandemic, the focus of the practical implications will be on the qualitative results of the study and structured accordingly and by their cost-benefit ratio.

Regarding the content and scope of course work and examination and the information flow, there are some easy-to-implement measures the university can take advantage of. As the students are overwhelmed by unstructured information in the beginning, the first proposal would be an overview of the operational model of the study program and the most important information summarized in a short form. This short summary should contain all important must-dos (e.g. choosing subjects, assignment of exams, re-registration next semester) and their deadlines, which tool to use for what activity, where to retrieve further information, and the overall structure of the study program. Additionally, every course should provide a one-pager about its focus, the main learning targets, the form of examinations, and deadlines if there are some. Some courses already share the slides with this content, but students sometimes need this information ahead of the first lectures, for the choice of compulsory elective subjects for instance.

The second proposal is the establishment of mandatory introductory courses for the various online tools. Just like for the library services in Ansbach, students should visit a course at the beginning of their studies where they get explained the handling and purpose of the university's IT structure. This measure would reduce confusion and as a consequence the workload of course secretaries and student support centers.

Another promising idea in this context is having additional reminders for important deadlines. If the period for exam registration is over and a student missed it, they have to wait until the following term to participate in the examination. The university already sends two email reminders, but some students do not check their university mail accounts regularly. Another form of reminder might be a possible solution. An app with all important data and push notifications would probably rather reach the students as they have their mobiles with them anytime. This app could also be used for overviews of events, tools and other university related information. Depending on the back-end requirements for the app, the IT subjects of the university might even be able to develop it themselves.

To address the social interaction issue, the university could implement a mentoring or buddy program. Every freshman should have an assigned higher-semester student as their mentor/buddy who they can contact if they have questions or doubts. It is important to pair them up beforehand because else introverted students would not reach out to participate. If the freshman does not need support, it is up to them to step out of the program anytime. Depending on the willingness of the higher semester students to take part in this program, an incentive might be necessary to consider to motivate them.

As time management was the biggest self-imposed stressor, the university could offer seminars on how to efficiently organize tasks and structure days. Such a time management course is an investment for the university that is not awarded directly, but indirectly as the students learn how to better focus on their tasks, hence are less stressed and hence are more likely to perform better (see also Häfner et al., 2014).

In a nutshell, the following mitigation measures are recommended to be implemented by the university administration.

1. Overview one-pager with most important information for study program and courses
2. Mandatory introductory courses for online tools
3. Additional reminders of important deadlines via app
4. Mentoring/Buddy Program with higher semester students
5. Offering time management seminars

The following further mitigation measures might be of interest but need to be discussed in detail because they are harder to implement or not compatible with all

subjects. The first additional proposal is the implementation of question rounds every few weeks after a lecture, where students are given the time to ask questions without interrupting the flow of the professor. This might reduce the incoming flood of emails for the professors and give students the chance to easily address uncertainties.

Secondly, the intensity of the examination period might be reduced by either stretching the period or -if applicable – offering pre-tests during the semester to reduce learning content in the final exam. As the timing of the terms is not steered individually by the university but nationwide, the first option is rather unrealistic to implement. But, if subjects permit the second model of intermediate assessments, the workload at the end of the semester and with it the stress and pressure on the students would decrease. This model is time-intensive and requires a re-arrangement of the schedule and is therefore not easy to implement but under circumstances worth the effort.

Thirdly, the atmosphere and social feedback of face-to-face interaction are very different from the face-to-screen setup. Not all professors are well prepared for this format. Staff training focusing on online teaching and presentation skills might help everyone to adjust to the "new normal". This measure is a win-win situation for both teacher and student, but is costly and does staff require to participate.

Other recommended measures are not the university administration's responsibility but might be adopted by the student council. Some of the students asked for more freshman events like the orientation days at the beginning of the semester. Due to governmental restrictions, parties were prohibited for a long time, which is why there were fewer events in the term of this investigation. As Covid-19 is fading out, the student council will probably return to its usual activities. Additionally, it might be interesting to think about online or hybrid events for upcoming lockdowns to provide at least an option to get in contact with peers. Next to the open-to-all-students events, study course internal festivities or meetings could be arranged, since fellow students are not met physically in the classroom anymore at times of online lectures.

This circumstance also complicates the organization of learning groups. Possibly, the student council could set up the framework and provide the platform for students to form learning groups. Just like the housing exchange of the university, the student council could advertise learning groups on their page and interested students could inserate offers.

Another proposal that came up in the survey concerning networking is to get an overview of the leisure time activities in Ansbach. The student council's webpage gives a broad insight into the extracurricular working groups of the university. However, if a student also wants to engage in clubs, associations, or other leisure time activities outside the university, information gets rare. It is obviously not the concern of anyone else what

a person does in their spare time, but for some of the students, it might ease the start in a new town, if they have a rough overview of the offerings.

6. RESEARCH LIMITATIONS AND DISCUSSION

Besides the commonly known restraints and drawbacks of self-reported surveys, this study has a few other limitations. As this study is based on just one university, it may not be representative of generality but it can be seen as a pilot project. The mitigation measures are based on the individual perceptions of the survey participants and the measures might need to be adopted. Furthermore, the gender split of participants was not equal which might have impacted the results of the qualitative part. Due to this inequality and consequently low numbers of male respondents, no in-depth gender-based analysis was conducted that could have further differentiated the results.

Covid-19 is fading out again, so the impact of stress might be different now as presential meetings are permitted again. The results are still of interest, because 1) due to globalization, more pandemics will come up and lead to similar circumstances and lockdowns and 2) online and hybrid formats have been well established during the last two years. With this "new normal", more events will take place online even if face-to-face lectures are allowed. It is also interesting because 3) not all of the stressors were caused by Corona and hence are relevant at all times.

There have been mentioned a lot of measures the University of Applied Sciences in Ansbach could do to support, but in the end, it is still the students' responsibility to cope with their life, and sometimes it is best to be thrown in the cold water. The real world after school and university is hard and they have to be able to cope with their problems themselves. Nevertheless, the complete switch from presential to online format has been a tough transition for the institute as well, so it is recommendable for the university to take advantage of the low-hanging fruits and consider the easy-to-implement measures, as this is a win-win situation for the university, the staff, and of course the students. Less stress and confusion on the student side usually also means less workload for support staff and a better reputation for the university both performance-wise and recommendation-wise.

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Conflict of interests

No potential conflict of interest was reported by the authors.

AUTHOR CONTRIBUTIONS

The conceptualization of this paper was discussed between all of the authors because this research is part of Mrs. Oberst's Ph.D. program and Mrs. Hedderich, Mrs. de-Molina-Miguel, and Mr. Catalá Pérez are her supervisors. The investigation and writing were conducted by Mrs. Oberst. The other authors supervised, reviewed, and validated the research.

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