

University of Groningen

Well-being Survey 2020

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Well-being Survey

2020

Aspects of University of Groningen PhD students' well-being

April 2021

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Preface

This is the second well-being survey conducted by the University of Groningen (UG). The first survey was conducted in 2018 and showed that our PhD students are no exception when it comes to their mental health when compared to reports of students from other countries in the international literature (among others, Levecque et al., 2017; Van der Weijden et al., 2017). Consequently, the UG has drawn up a plan to provide more support for mental health issues and improve prevention. The implementation of the plan is now almost complete: a PhD support team has been established to provide help (<https://www.rug.nl/education/phd-support>), and two psychologists have been appointed to PhD students. The recruitment of PhD counsellors for the Faculty of Medical Sciences and the Faculty of Science and Engineering was successful, while the process is still ongoing for the other faculties, which host about one third of the PhD students. The PhD support team and the occupational health & safety team, in close collaboration with each other, provide help to PhD students with difficulties. Preventative courses for PhD students on recognizing stress early on and dealing with it have been set up. With the onset of the first COVID-19 lockdown, these measures were extended and more help was offered through the Youcanbookme initiative.

It is not yet possible to conclude whether all these initiatives have been successful, as this survey was carried out in the spring of 2020. PhD students, like all UG students and staff, had a hard time adjusting to the changed working conditions as a result of the COVID-19 pandemic. The responses from 473 PhD students with employee status and 246 PhD scholarship students show that both categories experienced the situation in very similar ways. Wherever possible, action has been taken to alleviate the problems raised. About two thirds of the respondents said that they are able to concentrate better in the office, and about half indicated that the internet connection quality is better in the office. The decision by the Board of the University to compensate internet costs has hopefully helped to mitigate this difference. Another issue was the quality of personal computers: 58.1% of the PhD scholarship students posited that they had a better PC/laptop at the office, and 45.5% of the PhD students with employee status shared this opinion. We are confident that, through the new regulation for laptops (either through the UG Tablet/Laptop scheme or on loan by the graduate schools), all PhD students have by now up-to-date hardware at home. More than 75% of all PhD students claimed that they had a more ergonomic workplace at the office. The immediately introduced efforts to facilitate taking material (chairs, big screens, etc.) home from the office and the financial help by the University has hopefully made a difference there.

Two thirds of the PhD students stated that the pandemic affected their PhD programme, but slightly more than one quarter stated that their project is on track and that they will be able to finish in time. Moreover, another one quarter think that they will make up for the delay and also finish in time, while about one third think that they will not finish in time. In addition to the funds for the extension of contracts of employed PhD students made available by the Ministry of Education, Culture and Science and by NWO, the Board of the University has made extra budget available for extensions for PhD scholarship students, so that all PhD students will receive identical support concerning extensions. Although not all PhD projects can be extended due to

a shortage of funds, all graduate schools perform regular inventories of PhD projects close to the end date and grant extensions where strictly necessary. It is encouraging to see that, despite the difficult circumstances in general, PhD students are satisfied with the supervision that they receive (awarded a 3.85/5 by PhD students with employee status and a 3.83/5 by PhD scholarship students) and with the PhD programme.

I would like to thank all of the PhD students who took the time to answer the long list of questions in the survey and, of course, many thanks go to Ellen Jansen, Marjon Fokkens-Bruinsma, and Friederike Axmann for doing a great job in designing the survey, analysing the results, drawing important conclusions, and writing this very interesting report.

Prof. Petra Rudolf, Dean of Graduate Studies

Management summary

In June 2020, the Well-being Survey was sent to all PhD students at the UG as part of the 'Succesvol Promoveren' research project. The main aim of this well-being study was to gain more insight into the prevalence of mental health-related problems among PhD students. In addition, we focused on the effects of COVID-19 and related measures. A total of 910 PhD students completed the survey. The main results are summarized in this section. For more detailed information, we refer to the full report and the appendix.

Progress and satisfaction

Most PhD students indicated that they had fallen behind schedule. On average, PhD students were confident that they would finish their PhD, but their confidence in being able to finish within the time of their contract (i.e. submit the thesis to the Examination Committee before the end of the contract) was lower. However, few PhD students considered quitting their PhD. On average, PhD students were satisfied with their PhD trajectory overall and with their supervision, although they rated the workload and the complexity of their project as high. The PhD students were reasonably confident that they would be able to find a suitable and interesting job after completing their PhD. These findings are comparable to those that were reported in the 2018 survey.

COVID-19 and current situation

The PhD students felt well informed about the outbreak, the rules, and the regulations, and rated the UG's protective measures as sufficient. The main sources of information were the Dutch and international news, followed by university news. Over 60% of the PhD students were working from home at the time of completing the survey. Around 60-75% reported a higher level of concentration, greater motivation, fewer distractions, getting more work done, and having more ergonomic facilities at the office. Coffee and tea facilities were however better at home. Furthermore, 63% of all the respondents expected the crisis to affect their PhD trajectory the PhD students scored above the scale average for being unable to finish in time, but also in terms of having limited access to laboratories, libraries, and print facilities, and limited contact with fellow PhD students.

Mental health

Mental health was measured using the WHO scale, which ranges from 0-100. The PhD students scored slightly above the midpoint of this scale. The PhD students also rated their average mental health during the PhD, on a scale of 1 to 10. Their average current mental health was 6.3 (i.e. only slightly lower than their reported health in 2018), but they rated their mental health much higher during their Bachelor's and Master's programmes: a 7.7 (comparable to 2018). The PhD students worried about how the pandemic affected their mental health. In this vein, worries about other peoples' health, the world/the situation in general, and the lack of face-to-face social contact were mentioned. In general, PhD students worried about elements of their career such as not achieving good results and not being able to finish on time, as well as their own capabilities and problems with their work-life balance. They were substantially more positive about mental health outside academia, which is comparable to the 2018 survey: almost half of all the PhD students expected their mental health to improve if they were to pursue a career outside academia. Also similar to the 2018 survey is that the PhD students worry about what kind of career they want, about whether they are

good enough, and about the high level of competition. However, the COVID-19 pandemic has not caused more worries about their future careers.

Mental health support at the University

PhD students would like to be able to talk to someone at the University if they were to experience mental health problems. Other than in the 2018 survey, the PhD students in the 2020 survey tended to know who to turn to in such an instance. Similar to 2018, PhD students were more likely to talk to their daily supervisor than to their primary supervisor if they experienced mental health problems. Both supervisors scored high on the PhD students' expectation regarding supportive behaviour.

One quarter of the respondents had attended at least one workshop at the University related to mental health. However, the usefulness of these workshops was rated quite low, which was comparable to the 2018 survey. In contrast to the 2018 data, only 10% of the PhD students expressed interest in a support group, compared to about half of the PhD students in 2018. Over 50% of the PhD students reported that they did not know about the university psychologist, and just 37% would consider talking to a psychologist.

PhD students with mental health problems

Almost half of the PhD students reported that they had experienced mental health problems in previous years of their PhD or are currently experiencing problems. This was comparable to the 2018 survey. In 2020, however, only 24% of these PhD students had discussed their problems with their supervisors (almost 50% in 2018), and 27% with colleagues or both (compared to more than 50% of the PhD students in 2018).

Burnout and work engagement

Burnout is often measured by levels of exhaustion, cynicism, and professional efficacy (where low efficacy is an indicator of burnout). The mean scores for exhaustion and cynicism were slightly below the scale average. This means that most of the PhD students experience a higher level of exhaustion and/or cynicism. Professional efficacy was above the scale average. Work engagement can be measured by vigour and dedication. The PhD students' mean score on vigour was average, and the score on dedication clearly above average. These findings were comparable to the 2018 survey data.

Work-life balance

Many PhD students struggle to maintain a healthy balance between work and their personal life. Over 60% of the PhD students indicated that their work-life balance has worsened due to the COVID-19 pandemic.

Sociodemographic and lifestyle characteristics

Of the respondents, 30% reported being involved in a structural activity in addition to their PhD. For example, they had another job, were a member of a board of an organization, or did voluntary work. More than 80% slept for 6 to 8 hours every night, and 80% took part in sports activities for at least one hour a week. Furthermore, 72% of the PhD students reported drinking 1 or 2 glasses of alcohol on an average day, although 50% of the students indicated that this had not changed due to the COVID-19 pandemic. More than two thirds of the PhD students reported having experienced a

significant life event in the last 12 months, such as severe problems in a personal relationship or the severe illness of the PhD student themselves or someone close to them. The majority of those who experienced such a life event indicated that this affected their work: 57% had discussed this with their supervisor and the vast majority felt at least somewhat supported by them. In contrast to the 2018 survey, more than 94% of the respondents currently work in the evenings for an average of one to two hours per evening. PhD students who had official vacation days were asked how many they had used. Only 7% had used all of their vacation days, and almost 21% had used less than half of their vacation days. Two thirds of the PhD students in the sample have incoming work emails on their phone outside official work hours, and most of these PhD students indicated that they usually or always immediately read them. More than half of the PhD students indicated that this affected their ability to relax.

Relationship between mental health aspects, progress, and satisfaction

Both the score on the general mental health test and PhD students' current mental health test had medium correlations with satisfaction with the PhD overall, satisfaction with performance within the PhD, and satisfaction with supervision. The aspects of burnout – exhaustion, cynicism, and professional efficacy – and of work engagement – vigour and dedication – had medium to large correlations with satisfaction with the PhD overall, satisfaction with performance within the PhD, and satisfaction with supervision. Mental health had medium to large correlations with all aspects of burnout and work engagement.

Differences

We examined differences based on gender, nationality, graduate school, type of contract, and phase of the PhD project. Only a few gender-based differences were found. More differences were found based on nationality, graduate school, and type of contract. However, these differences did not indicate a clear trend. The phase-based differences did indicate a trend in favour of the junior PhD students.

Concluding remarks

Overall, the results of the 2020 survey show many similarities with the 2018 survey, and PhD students still rate their current well-being as being worse than during their Bachelor's and Master's studies. The PhD students indicated that the COVID-19 pandemic had a small negative effect on their current mental health, and that they expected the pandemic to affect their PhD trajectory, for example in terms of having fewer supervisory meetings or less contact with other PhD students. Many PhD students expected that their mental health would improve once they started working outside academia after completing their PhD. In contrast to the 2018 survey, PhD students tend to do more work in the evenings and weekends. On top of that, the PhD students indicated that they find it hard to maintain a healthy work-life balance. Comparable to the 2018 survey, these mental health problems are not just negative in and of themselves, but are also negatively related to progress and satisfaction. In 2018, the results pointed to a few risk groups; in 2020, there were many differences in findings related to nationality, graduate school, and type of contract. These differences did not indicate a certain risk group. One exception were the phase-based differences, which tended to favour the junior PhD students.

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1. Introduction

The ‘Succesvol Promoveren’ research project started in early 2017. The aims of this project were to investigate factors that are related to PhD students’ timely and successful completion of their PhD thesis at the UG. By gaining insight into these factors, PhD education can be improved. One part of this project focused specifically on PhD students’ well-being. This is a topic that has become more pressing in recent years, with different studies showing that many PhD students suffer from mental health problems. As a result, the Well-being Survey was developed and then distributed among PhD students for the first time in 2018. In June 2020, the Well-being Survey was conducted again, to gain more insight in PhD students’ well-being during the COVID-19 pandemic. The main goals of this study were therefore:

1. to gain insight into the prevalence of mental health problems and other work-related problems;
2. to investigate whether and how these problems are related to a number of background factors: gender, nationality, graduate school, type of contract (e.g. employed, scholarship, external), and phase of the project (i.e. first two years or last two years);
3. to find out how and to what extent mental health is related to a PhD student’s progress and satisfaction;
4. to gain insight into PhD students’ use and appreciation of the support that is currently offered by the University;
5. to gain insight in the influence of the COVID-19 pandemic on the mental well-being of PhD students and their PhD project.

The survey addressed the following topics:

1. Progress and satisfaction
2. The effects of COVID-19 and the current work situation
3. Mental health
4. Support at the University
5. Burnout and work engagement
6. Work-life balance
7. Feelings about performance and accomplishments
8. Sociodemographic and lifestyle questions
9. Background characteristics

The Well-being Survey was sent to all PhD students via an email from the Groningen graduate schools, in which the goal of the survey was explained. It was emphasized that the survey was meant for all PhD students, and words such as ‘problems’ were avoided to decrease the response bias towards PhD students who did not feel well mentally. Two reminders were sent out. After six weeks, the survey was closed. Participation in the survey was voluntary, anonymity was guaranteed, and respondents were free to withdraw from the survey at any time.

In September 2020, a first report with descriptive tables was written, in which we specifically focused on the COVID-19 related questions. In the present report, we present the most important results for all themes. The results regarding topics 1 to 8 are presented in tables that focus on the total sample of PhD students. Differences

between groups are presented in tables in the appendix. Topic 9 – Background characteristics – is discussed in the ‘Sample description’ section that follows below.

To ensure PhD students’ anonymity, the results are only presented at the group level, and the results of small groups ($n < 30$) are not presented at all.

2. Sample description

The total sample consisted of 1,374 PhD students (which equals a response percentage of 36%), of which 910 completed at least two thirds of the survey and their data could be used for research and improvement purposes. The background questions for the sample description were in the final part of the survey and were therefore not completed by all 910 respondents. As Table 1 shows, almost 57% of the respondents were female. This is comparable to the number of female respondents in the 2018 survey (60% female respondents).

Table 1. Gender. Number and percentage of respondents' gender.

	Number	Percentage
Female	516	57.0
Male	376	41.5
Other / prefer not to say	14	1.5
Total	906	100

Table 2 shows the distribution of respondents' origin over the continents. About 45% of the respondents were Dutch, 22% were non-Dutch European, 18% Asian, 6% South American, and the rest African, Oceanian, North-American, Russian, or preferred not to answer. Compared to the data from 2018, the number of Dutch PhD students decreased by 9%, while an increase was seen in the number of Asian (by 3%) and non-Dutch European (by 2%) students.

Table 2. Nationality. Number and percentage of respondents' nationality.

	Number	Percentage
African	24	2.6
Asian	165	18.2
Oceanian	2	0.2
Dutch	410	45.2
Non-Dutch European	195	21.5
North American	23	2.5
South American	53	5.8
Russian	8	0.9
Prefer not to say	28	3.1
Total	910	100

Note: groups marked green contain more than 30 respondents and are used to investigate possible differences based on nationality.

The distribution of the educational background of the respondents' parents is shown in Table 3. As can be seen, 35% of all respondents did not have a parent who completed higher education, 27% had at least one parent who completed higher education, and 36% had parents who both completed higher education. The rest followed a different path or preferred not to say.

Table 3. Parental educational background. Number and percentage of respondents with parents who completed higher education.

	Number	Percentage
Neither parent	317	35.0
Both parents	330	36.4
One parent	240	26.5
Other	3	0.3
Don't know / prefer not to say	16	1.7
Total	910	100

Table 4 shows the number and percentage of respondents by graduate school. Most of the PhD students were part of the Graduate School of Science and Engineering (40%), followed by the Graduate School of Medical Sciences (28%), and the Graduate School of Behavioural and Social Sciences (10%). The remaining 22% were part of Campus Fryslân, the Graduate School of Economics and Business, the Graduate School for the Humanities, the Graduate School of Law, the Graduate School of Philosophy, the Graduate School of Spatial Sciences, the Graduate School of Theology and Religious Studies, or preferred not to say. Compared to the 2018 data, the number of PhD students at the Graduate School of Science and Engineering increased by 11%, while the number decreased by 10% at the Graduate School of Medical Sciences. The rest remained similar.

Table 4. Graduate School. Number and percentage of respondents in each graduate school.

	Number	Percentage
BSS	89	9.8
Campus Fryslân	14	1.5
EB	44	4.9
Hum	52	5.7
Law	19	2.1
MS	257	28.3
Philosophy	9	1.0
SE	359	39.6
SS	28	3.1
TRS	11	1.2
Don't know / prefer not to say	25	2.7
Total	907	100

Note: groups marked green contain more than 30 respondents and are used to investigate possible differences based on the graduate school.

Table 5 represents the type of contract of the PhD student. Almost half of the respondents (49%) were employees at the UG, while 27% received a scholarship, 8% were externally employed, and 4% had ended their contract/scholarship and were completing their PhD in their own time. The remaining PhD students were bursary¹

¹ Bursary PhD students are international PhD students with a scholarship (usually from their home country) who are not eligible to participate in the PhD scholarship programme in Groningen because they started before 1 September 2016. From that time on, both PhD students with a full scholarship and those with a scholarship from their home country (which is supplemented by the UG) are included in the PhD scholarship programme and are labelled 'PhD scholarship students'.

students, medical doctor (MD)/PhD students at the UMCG, or PhD students who had already finished their thesis or fall into the ‘other’ category (see Table 5.1). While the number of employed students remained similar to in 2018, the number of external PhD students doubled, and the number of scholarship students increased by 8%, while the number of bursary students dropped by 6%.

Table 5. Type of contract. Number and percentage of respondents per type of contract.

	Number	Percentage
Employed	445	48.8
External: employed by a research centre (NWO/ASTRON/SRON)	30	3.3
External: employed by a university of applied science	47	5.2
Bursary	12	1.3
Scholarship	251	27.6
MD / PhD at UMCG	32	3.5
End of contract / scholarship and finishing PhD in own time	35	3.9
Completed PhD	8	0.9
Other (see Table 5.1 for details)	25	2.8
Prefer not to say	19	2.1
Total	908	100

Note: groups marked green contain more than 30 respondents and are used to investigate possible differences based on the respondents’ contract.

Table 5.1. Other types of contract.

	Number	Percentage of ‘other’	Percentage of total
Combination of different contracts, scholarship or ‘sandwich position’	7	28.0	0.8
Self-funded	16	64.0	1.8
Contract at RUG (not a PhD contract)	2	8.0	0.2
Total	25	100	2.8

The distribution of the respondents’ allotted time for their PhD projects is shown in Table 6. The table shows that 72% of all PhD students planned 4 years for their project, 9% expected more than 4 years, 11% planned 3 years, and 5% planned less than 3 years. Table 7 shows that 83% of the PhD students work full-time on their project, while 8% work fewer than 36 hours per week, and 9% have a different system. These distributions are similar to the 2018 data.

Table 6. Allotted time. Number and percentage of allotted time period for the PhD project.

	Number	Percentage
< 3 years	44	4.8
3 years	103	11.3
3–4 years	12	1.3
4 years	653	71.8
> 4 years	85	9.4
Other ¹	4	0.4
Don't know / no contract	8	0.9
Total	909	100

¹New contract, open-end contract

Table 7. Number and percentage of respondents working full-time or part-time.

	Number	Percentage
Full-time	625	82.6
Part-time (<36 hours)	57	7.6
Other ¹ / don't know	71	9.4
Total	753	100

¹Change of hours, scholarship, external, no salary

We also asked PhD students without a formal contract or arrangement to indicate how many hours they spent working on their thesis (Table 8). 25% of the respondents spent 11–20 hours per week on their thesis, 30% spent 21–30 hours per week, and another 25% spent 31–40 hours per week. The remaining 20% spent 10 hours or less, or 41 hours or more, on their thesis.

Table 8. Amount of work. Number and percentage of respondents per hours worked on the thesis.

	Number	Percentage
<11 hours	9	14.1
11–20 hours	16	25.0
21–30 hours	19	29.7
31–40 hours	16	25.0
41–50 hours	2	3.1
>50 hours	2	3.1
Total	64	100

Table 9 shows that the respondents were almost equally distributed over the first year (24%), second year (24%), and third year (25%). The remaining 27% were either in their fourth year (18%), fifth year (6%), or more (3%).

Table 9. Year of PhD. Number and percentage of respondents per current year of PhD.

	Number	Percentage
First year	211	23.5
Second year	218	24.2
Third year	225	25.0
Fourth year	159	17.7
Fifth year	56	6.2
Sixth year or more	30	3.3
Total	899	100

As already presented in Table 5, 34 PhD students (4% of the total sample) were finishing their thesis in their own time because their contract had ended. We asked this group whether they had a job in addition to completing their PhD (see Table 10). Of this group, 41% did not have another job, 31% had a full-time job, and 21% had a part-time job. These results are similar to the 2018 data.

Table 10. Additional job. Number and percentage of students with no PhD contract and an additional job.

	Number	Percentage
No	12	41.4
Yes (>35 hours)	9	31.0
Yes (24–35 hours)	4	13.8
Yes (<24 hours)	2	6.9
Other ¹	2	6.9
Total	29	100

¹Currently receiving unemployment benefits, usually yes but not right now

3. Progress and satisfaction

Satisfaction with performance, project characteristics, and confidence

The PhD students were asked some general questions about their self-perceived progress in their PhD project, their confidence in being able to finish on time, and their satisfaction (see Table 11). PhD students' own satisfaction with their performance is lower than their supervisors' satisfaction, while the students rated the workload and complexity quite high. Furthermore, the PhD students are generally confident that they will finish their thesis, even if their confidence in being able to submit their thesis to the assessment committee before the end of their contract is substantially lower. Their confidence in finding an interesting and suitable job after their PhD is above the scale average. The results reflect the impression of the data from 2018.

Table 11. Satisfaction. Mean and standard deviation (SD) showing the respondents' satisfaction with performance, project characteristics, and confidence.

	Mean (SD)
Overall, I am satisfied with how I am performing in my PhD	3.36 (1.02)
Overall, my primary supervisor (promoter) is satisfied with how I am performing	3.9 (.71)
Overall, my daily supervisor is satisfied with how I am performing	3.91 (.73)
The workload in my PhD is high	3.81 (.87)
The complexity of my PhD is high	4.0 (.85)
I am confident that I will finish my PhD	4.16 (.83)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract	2.8 (1.23)
I am confident that I will find a suitable and interesting job after I have finished my PhD	3.57 (1.09)

Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

Progress, considering quitting, and satisfaction with the trajectory and supervision

When asked whether they thought they were on schedule or not, one quarter of the respondents reported to be on time, one quarter to have fallen behind but able to finish on time, and one quarter to be behind schedule and not able to finish on time. The remaining quarter already had an extension, was completing their thesis in their own time, had completed their thesis, did not have a schedule, or was dealing with uncertainty for various reasons (Table 12).

Table 12. Progress of the PhD students with their thesis. Number and percentage of respondents per statement.

	Number	Percentage
Yes, I think I will be able to finish my PhD in time	225	24.8
No, I have fallen behind but I still think I can finish in time	233	25.6
No, I have fallen behind and I don't think I will be able to finish in time	244	26.8
I was unable to finish in time and am currently on an extension	34	3.7
I was unable to finish in time and am currently finishing my thesis in my own time	26	2.9
I have already defended my thesis or sent the manuscript to the assessment committee	9	1.0
I don't have a schedule	24	2.6
I don't know / other ¹	114	12.5

¹Uncertainty due to COVID-19, health issues, pregnancy

Furthermore, few PhD students have considered quitting their thesis, and satisfaction with the PhD track and its supervision are above the scale average (Table 13). These results mirror the 2018 data.

Table 13. Considerations of quitting, and satisfaction with the track and the supervision.

	Mean (SD)
Have you ever considered quitting your PhD project? ¹	4.05 (1.16)
How satisfied are you with your PhD trajectory so far? ²	3.47 (.88)
How satisfied are you with the supervision you receive? ²	3.83 (1.00)

Note. Answers were given on a scale from 1 to 5. ¹ (1 = yes, very often, 5 = no, never), ² (1 = very dissatisfied, 5 = very satisfied).

4. The effects of COVID-19 and the current work situation

Information regarding the situation

Respondents were asked about the information they received about the COVID-19 outbreak. All in all, they felt well informed about the outbreak and the rules and regulations, and rated the UGs protective measures as sufficient (see Table 14). Most PhD students seemed to use more than one source to obtain information about the COVID-19 crisis. The main sources used were Dutch and international news sources and the university news. About one third of all respondents consulted their fellow PhD students and/or their supervisors.

Table 14. Satisfaction with information and regulations regarding the COVID-19 outbreak.

	Mean (SD)
I feel well informed about the recent COVID-19 outbreak	4.03 (.84)
The UG has informed me sufficiently about the COVID-19 rules and regulations	3.95 (.84)
I am satisfied about the way that the UG has implemented protective measures concerning the COVID-19 outbreak	3.88 (.9)

Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

Table 15. Source of information about the COVID-19 crisis.

	Number	Percentage
Dutch news (newspaper / programmes)	626	68.8
International news (newspaper / programmes)	579	63.6
University news	527	57.9
Fellow PhD students	268	29.5
Supervisors	295	32.4
Other ¹	165	18.1

¹ *Mainly family, friends, UMCG news and social media, but also other colleagues, government website, and scientific publications.*

Effects of the COVID-19 crisis on work facilities and the PhD trajectory

Over 60% of all the PhD students reported that they were working from home. Only 29% were able to work from home and the office, and only 4% worked fully from the office. Around 60–75% reported better concentration, more motivation, less distraction, and better ergonomic facilities at the office, and 51% reported having a better internet connection at the office. However, 64% reported having better coffee and tea facilities at home, while 41% reported no difference between the two. Interestingly, while 35% reported being able to write and read better at home and 43% at the office, only 17% said that they could get more work done at home, while 62% got more work done at the office (Table 16). Furthermore, 63% of all respondents expected the crisis to affect their PhD track, while 29% were not sure, and only 8% expected that the pandemic would not affect their trajectory (Table 17).

Table 16. Comparison of the working environment and facilities at the respondents' home vs. office.

	Percentage 'home'	Percentage 'office'	Percentage 'both'
I am currently working at...	66.7	3.8	29.6
I can concentrate better at...	21.1	60.7	18.3
I have fewer distractions at...	24.6	60.4	15.0
I am more motivated to work at...	9.7	67.1	23.2
I have a better internet connection at...	8.1	51.0	40.9
I have a better PC / laptop at...	15.4	48.5	36.1
I have an ergonomically better workplace at...	8.0	76.5	15.5
I have better coffee and tea facilities at...	65.2	19.3	15.5
I can write better at...	36.3	43.2	20.4
I can read literature better at...	36.0	44.9	19.1
In general, I get more work done at...	17.4	62.8	19.8

Table 17. Answer to the question: 'Do you feel that the COVID-19 crisis is affecting your PhD trajectory?'

	Number	Percentage
Yes	576	63.3
Possibly	166	18.2
No	70	7.7
I don't know	98	10.8

Table 18. The influence of the COVID-19 outbreak on the PhD trajectory.

	Mean (SD)
I have no or limited access to laboratories	3.56 (1.06)
I have no access to the library	3.38 (1.08)
I have no or limited print facilities	3.73 (1.23)
I have no or limited computer facilities	2.64 (1.21)
I have no or limited contact with supervisors	2.39 (1.18)
I have no or limited contact with fellow PhD students	3.31 (1.17)
It slows down my PhD trajectory due to worse working conditions	3.57 (1.13)
It slows down my PhD trajectory due to less supervision meetings.	2.63 (1.11)
It will accelerate my PhD trajectory, because I have more time to write the manuscript	2.18 (1.02)
It will accelerate my PhD trajectory, because of fewer meetings I have to attend	2.31 (1.10)
It will accelerate my PhD trajectory, because I don't attend conferences	2.15 (1.00)
My workload has significantly increased since the COVID-19 outbreak	2.95 (1.19)
I am concerned that I will not be able to successfully complete my PhD in time due to the COVID-19 outbreak	3.55 (1.56)

Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

The respondents were asked whether they agreed or disagreed with several statements about the influence of the COVID-19 outbreak on their PhD trajectory. Most PhD students reported having limited access to laboratories, libraries, and printing

facilities, and limited contact with their fellow PhD students. Access to computer facilities or contact with their supervisors seemed to be less limited. The poorer working conditions slowed down their PhD trajectory more than fewer supervisory meetings did. The PhD students did not expect the pandemic to accelerate their PhD trajectory, even though they expected to have more time to write. Moreover, even though the workload did not increase significantly, the PhD students were concerned that they would not be able to complete their PhD on time (Table 18).

Work-life balance, supervision, and work atmosphere

Respondents were asked to state whether the COVID-19 crisis had led to changes in their work-life balance regarding non-work activities. They reported problems balancing work and non-work activities in addition to their work interfering with their non-work life. Furthermore, the respondents disagreed with the statement that their work and non-work life are balanced (Table 19). In general, the mean scores regarding work-life balance being disrupted due to increased demands from their work was higher than in the 2018 survey. In addition, almost 60% of the PhD students reported that the pandemic worsened their work-life balance, while only 24% said that the COVID-19 pandemic did not have any influence on their work-life balance (Table 20).

Table 19. The respondents' work-life balance.

	Mean (SD)
I have difficulties balancing my work and non-work activities	3.72 (1.06)
The demands of my work interfere with my life away from work	3.43 (1.07)
The amount of time my work takes up makes it difficult to fulfil other interests	3.18 (1.11)
Things that I want to do at home do not get done because of work demands	2.94 (1.04)
My work produces strain that makes it difficult to fulfil other responsibilities and duties	3.11 (1.05)
Due to my work, I have to make changes to my plans for activities outside of work	3.23 (1.09)
Overall, I believe that my work and non-work life are balanced	2.77 (1.07)

Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

Table 20. Answers to the question: 'Has your work-life balance changed due to the COVID-19 pandemic?'

	Number	Percentage
No	227	24.9
Yes, since the pandemic my work-life balance has improved	145	15.9
Yes, since the pandemic my work-life balance has worsened	538	59.1

Within the context of work-life balance and supervision, the PhD students were, in an open question, asked about the positive influence of the pandemic on their work-life balance. The main improvement, mentioned by more than two thirds, was an increase in flexibility and time for additional activities. About one fifth also reported a decrease in work and travel (see Table 20a). Furthermore, the PhD students indicated the negative influence of the pandemic on their work-life balance. Over two thirds of the answers addressed the lack of separation between work and personal life. Moreover, 18% of the students mentioned working less efficiently, and 15% reported an increase in work (see Table 20b).

Table 20a. Reasons why work-life balance has improved due to the pandemic.

	Number	Percentage
More flexibility and time for other activities	65	37.8
Less work because of fewer unnecessary meetings and fewer additional tasks due to less interaction with the supervisor	37	21.5
Less travel or commuting (to work or conferences)	33	19.2
More time at home and / or with family	25	14.5
No laboratory work	5	2.9
A change in the barrier between work and personal life (either because they now interfere with each other or because it was necessary to set clear boundaries)	3	1.7
Less busy work spaces	3	1.7
More contact with supervisor	1	0.6
Total	172	100

Table 20b. Reasons why work-life balance has worsened due to the pandemic.

	Number	Percentage
No separation between work and personal life	224	35.9
Less efficient work due to distractions	113	18.1
More work and therefore less time for other activities	92	14.7
No adequate work space and a lack of structure	69	11.1
Lack of social contacts and the possibility to go outside	57	9.1
Difficulties in the research project such as access to the laboratory or communication with the supervisor	40	6.4
Worries and anxiety due to the current situation	16	2.6
Technical difficulties which lead to a delay and complicate the work process (e.g. internet connection)	10	1.6
Personal difficulties	3	0.5
Total	624	100

Most PhD students met their daily supervisor between once a week and several times a month, while online meetings with their primary supervisor happened between several times and once a month. Moreover, the PhD students seemed to be quite satisfied with their online meetings (Table 21). Over 50% of all respondents reported that the frequency of their meetings did not change due to the pandemic, while 32% reported fewer meetings than before (Table 22).

Table 21. Frequency and satisfaction with online supervision.

	Mean (SD)
Frequency of meetings with daily supervisor ¹	2.76 (1.14)
Frequency of meetings with primary supervisor ¹	3.33 (1.22)
Satisfaction online meetings ²	3.85 (.95)

¹ Answers were given on a scale from 1 to 5 (1 = several times a week; 2 = about once a week; 3 = several times a month; 4 = about once a month; 5 = less than once a month).

² Answers were given on a scale from 1 (very dissatisfied) to 5 (very satisfied).

Table 22. Answer to the question: ‘Did the frequency of meetings with supervisors change due to the COVID-19 pandemic?’

	Number	Percentage
No	477	52.5
Yes, I have had more meetings	140	15.4
Yes, I have had fewer meetings	291	32.0

PhD students were asked about their dissatisfaction regarding online meetings in an open question, and most answers focused on problems with the supervisor (communication, lack of time or focus) and communication, and an impersonal feeling (see Table 22b).

Table 22b. Reasons for dissatisfaction about the online meetings with supervisor/supervisors.

	Number	Percentage
Lack of communication, time and / or focus of supervisor	32	36.0
Communication problems during online interaction / it is impersonal	31	34.8
Technical difficulties (e.g. internet connection)	9	10.1
No valuable outcome from online meetings	8	9.0
No comfortable atmosphere during online meetings	3	3.4
No or few meetings	3	3.4
Everything is fine / prefer not to say	2	2.3
Online meetings decrease the motivation to work	1	1.1
Total	89	100

Lastly, the PhD students reported a good work atmosphere regarding formal relationships (e.g. collaboration), informal relationships (e.g. interpersonal relationships between colleagues), and a sense of belonging in their department (Table 23).

Table 23. Means and SD regarding the atmosphere within the department.

	Mean (SD)
Formal relationships	3.36 (.68)
Informal relationships	3.27 (.86)
Sense of belonging	3.77 (.68)

Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

5. Mental health

General mental health

In an attempt to gain more insight into PhD students' mental health as well as the extent to which the COVID-19 pandemic and pursuing a PhD were seen as a cause of mental health problems, several questions were asked. Firstly, a general WHO score was calculated based on the PhD students' current mood from the last two weeks, with a higher score being better (0–100). Secondly, respondents were asked to rate their current mental health (i.e. during their PhD), their pre-COVID mental health, and their mental health during their Bachelor's and Master's studies, on a scale of 1 to 10. Overall, the respondents reached a mean of 64 points on the WHO scale. Furthermore, they reported a mean of 6.3 for their current mental health, a higher score of 7.2 pre-COVID, and an even higher score of 7.7 for the time during their Bachelor's or Master's degree. Compared to the survey from 2018, the self-reported mental health during the PhD was lower. Their mental health was higher before the COVID-19 pandemic started. The PhD students reported a similar score in their Bachelor's/Master's. Moreover, respondents reported that the COVID-19 pandemic had a small negative effect on their mental health, while doing a PhD in general could sometimes have a negative effect and sometimes a positive affect (Table 24).

Table 24. Mental health.

	Mean (SD)
WHO score	64.43 (15.63)
Mental health, current	6.3 (1.79)
Mental health, pre-COVID-19 pandemic	7.19 (1.6)
Mental health during Bachelor's / Master's	7.7 (1.5)
In your experience, is the COVID-19 pandemic affecting your mental health?	3.19 (1.21)
In your experience, is doing a PhD affecting your mental health?	3.85 (1.30)

The impact of the COVID-19 pandemic and pursuing a PhD on mental health

We asked the PhD students which aspects of the pandemic or following a PhD played a role in negatively affecting their mental health. Multiple answers were possible. Table 25 shows that worries about other people's health, worries about the world/the situation in general, and the lack of face-to-face social contact were the most frequently named aspects of the pandemic that negatively affected mental health, and were mentioned by more than 50% of the respondents. Achieving bad results, not being able to finish on time, insecurities about personal capabilities, and problems with work-life balance were the most mentioned aspects by more than 40% of the PhD students regarding the effects of following a PhD (Table 26). The main issues affecting a PhD student's mental health as a result of the PhD trajectory are still the same as in 2018.

Table 25. Aspects of the pandemic that negatively affected mental health

	Number	Percentage
Worries about my own health	267	29.3
Worries about other people's health (e.g friends, family)	483	53.1
Worries about the world / the situation in general	469	51.5
The lack of face-to-face social contact	544	59.8
Not being able to travel	425	46.7
Not being able to do sports	316	34.7
Worries about how the pandemic affects my work	401	44.1
Worries about how the pandemic affects my future career	294	32.3
Other ¹	85	9.3

¹ Other issues negatively affecting the respondents' mental health were problems caused by working from home, loneliness and being separated from loved ones, financial problems, lack of work-life balance, worries about the economy / politics, insecurity about current situation, or a lack of support from employers.

Table 26. Aspects of doing a PhD that negatively affect mental health?

	Number	Percentage
High workload	362	39.8
Problems with work-life balance	420	46.2
Insecurities about future career	338	37.1
Insecurities about own capabilities	472	51.9
Not being able to finish in time or doubts about being able to finish in time	375	41.2
Not achieving good results or doubts about achieving good results	389	42.7
Issues due to practical setbacks in the project	278	30.5
Publication pressure	293	32.2
Problems with supervisors	133	14.6
Problems with colleagues	47	5.2
High level of competition in academia	222	24.4
Other ¹	70	7.7

¹ Other issues negatively affecting the respondents' mental health were trouble with and a lack of supervision, balancing PhD with other jobs/personal life, financial problems, lack of social contacts, external pressure, or doubts about their PhD.

Mental health and career

We asked PhD students whether they currently aspire to a career in academia or outside academia. The results (Table 27) show that 40% of the PhD students aspire to a career in academia (definitely or probably in academia), while 32% probably or definitely want to work outside academia, and 24% of all PhD students do not know yet. These results reflect the impression given by the 2018 data.

PhD students were also asked about their expectations regarding their mental health if they remained in academia or transferred to a job outside academia. Table 28 shows that PhD students are substantially more positive about their mental health if they work outside academia: almost half of all PhD students expected their mental health to improve if they pursued a career outside academia. Additionally, career worries seem to be quite common: 40% of the PhD students worry about it sometimes, 28% often, and 8% all the time (Table 29). Over one third of all PhD students worry about not knowing what kind of career they want, being unsure whether they are good enough

for the kind of job they want, or the high competition to obtain the job they want (Table 30). The PhD students were also asked whether or not the COVID-19 pandemic affected how often they worried about their career. The results in Table 31 show that 59% reported no change while 39% reported worrying more often about their career than before.

Table 27. Answers to the question: ‘Do you currently aspire to a career inside academia or outside academia?’

	Number	Percentage
Definitely inside	125	13.8
Probably inside	238	26.2
Don’t know yet	220	24.2
Probably outside	192	21.1
Definitely outside	97	10.7
Other ¹	37	4.1

¹ Other represented a combination of both, a Medical Doctor (MD), or a wish to teach but not carry out research.

Table 28. PhD students’ expectations regarding post-PhD mental health inside and outside academia, in percentages.

	If I stay in academia	If I leave academia
I expect my mental health to get worse	23.6	4.0
I expect no change in my mental health	35.8	25.9
I expect my mental health to improve	21.5	47.1
I don’t know	19.1	22.9

Table 29. Answers to the question: ‘Do you currently worry about your career?’

	Number	Percentage
Never	54	5.9
Rarely	170	18.7
Sometimes	360	39.6
Often	250	27.5
All of the time	75	8.3

Table 30. Types of career worries.

	Number	Percentage
Not knowing what kind of career I want	332	36.5
Being unsure whether I am good enough for the kind of job I want	400	44.0
Having to move to another place for a new job	223	24.5
Feeling unprepared for the job I want	254	27.9
The high competition to obtain the job I want	408	44.8
Having to start a new job while my PhD thesis is not yet finished	228	25.1
The work-life balance in my future job	256	28.1
Being insecure about my skills in writing application letters and/or job interviews	168	18.5
Other ¹	57	6.3

¹ Other represents not being able to get a job in the preferred city, language/ immigration problems, being overqualified, or availability of jobs.

Table 31. Answers to the question: ‘Has the COVID-19 pandemic affected how often you worry about your career?’

	Number	Percentage
No	534	58.7
Due to the pandemic, I worry more often about my career	352	38.7
Due to the pandemic, I worry less often about my career	23	2.5

6. Support at the University

The respondents were asked about the support that they receive from the University with their mental health problems. First, they were asked whether they knew who to contact if they experienced mental health issues. While respondents in 2018 mostly did not know who to talk to, the 2020 respondents reported the opposite. Additionally, respondents agreed that they would like to talk to someone at the University and that their supervisor was supportive. However, the respondents said that they would rather talk to and expected support from their daily supervisor rather than their primary supervisor (Table 32).

Table 32. Statements about talking about mental health problems.

	Mean (SD)
If I were to experience mental health problems, I would know who I could talk to at the University	3.17 (1.20)
If I were to experience mental health problems, I would like to talk about it with someone at the University	3.23 (1.08)
If I were to experience mental health problems, I would talk about this with my primary supervisor	3.12 (1.2)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems	3.89 (1.02)
If I were to experience mental health problems, I would talk about this with my daily supervisor	3.5 (1.16)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems	4.04 (.97)

Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

Workshops, support groups, and a PhD psychologist

Further questions regarding support provided at the University were asked. While one quarter of all respondents reported having attended a mental health-related workshop at the University, these were only rated as being hardly to somewhat helpful. The bi-weekly PhD support group was only attended by 2.2% of the respondents, but was rated as being somewhat to very helpful (Table 33). However, almost 10% of all respondents expressed interest in the support group. Over 50% of the PhD students reported that they did not know about the university psychologist, and only 37% reported that they would talk to her if they had a mental health issue (Table 34). Interestingly, in 2018, 74% reported that they thought that the University should have a psychologist, and 52% stated that they would visit one.

Table 33. Workshop and support group attendance, and ratings of helpfulness in percentages.

	Yes	No	Don't remember / prefer not to say	Helpfulness of course or support group (1-5) ¹
Have you ever attended workshops at the University about topics related to mental health?	26.3	62.9	10.9	2.85
Have you ever attended the bi-weekly PhD support group organized by Student Support and Career Services?	2.2	94.9	2.9	3.35

¹Note: answers were given on a scale of 1 (not at all) to 5 (extremely).

Table 34. Interest in mental health workshops, support group, and psychologists in percentages.

	Yes	Possibly	No
Workshops about mental health ¹	25.5	46.8	25.2
Support group ²	9.8	41.9	45.2
Did you know about the university psychologist specialized in PhD student problems?	47	-	53
Have you ever visited this psychologist?	5.2	-	94.8
Would you visit the psychologist if you were to experience problems? ³	36.9	50.2	9.7

¹ Respondents noted that they would have liked to join but did not have the time, they would have liked to join but only if it was free, or they would also be interested in workshops on soft skills and project management.

² Respondents noted that they might not have the time or financial opportunities to join, even if they were interested.

³ Respondents noted that they tried to get in touch but the waiting list was too long, that they were unsure if they could attend with issues unrelated to the PhD, or they were already seeing someone outside the University.

7. Questions to PhD students who have experienced or are experiencing mental health problems

We asked the PhD students whether or not they were experiencing or had experienced any kind of mental health problems during their PhD. While 47% stated that they have never experienced any problems, 29% mentioned that they had experienced problems in the past, and 18% reported currently having problems (Table 35). This mirrors the impression from 2018.

Table 35. Number of PhD students who are experiencing or have experienced mental health problems during their PhD.

	Number	Percentage
No, I have never experienced mental health problems that affected my work	429	47.1
Yes, I have experienced mental health problems that affected my work	267	29.3
Yes, I am currently experiencing mental health problems that affect my work	159	17.5
Prefer not to say	55	6.0

Talking about mental health problems

The PhD students who experienced mental health problems in the past or who are experiencing them currently ($n = 429$) were asked who they talked to about their problems at the University. While 9% said that they had not talked to anyone, 24% reported having talked to their supervisor, and 27% to their colleagues. Respondents also reported that it was somewhat helpful to quite helpful to talk to their supervisor or colleagues about their problems (on a scale from 1 (not helpful at all) to 5 (extremely helpful): mean = 3.32, SD = .873). Furthermore, the number of PhD students with problems who did not talk to anyone dropped from 20% in the 2018 survey to 9% this year. Additionally, more PhD students reported having talked to their supervisors (44%) or their colleagues (57%) compared with in 2018.

Table 36. Number of PhD students who have talked about their mental health problems with someone at the University.

	Number	Percentage
I have never talked to anyone at the University about my problems	81	8.9
I have talked to my supervisor	218	24.0
I have talked to a colleague / colleagues	245	26.9
I have talked to the confidential advisor	32	3.5
I have talked to my PhD coordinator or mentor	37	4.1
I have talked to someone from Student Support or Career Services	22	2.4
I have talked to someone from AMD (Health, Safety and Environment Service), e.g. an occupational health worker	47	5.2
I have talked to the psychologist for PhD students	16	1.8
Other ¹	65	7.1

¹ Other: company doctor / student psychologist, family & friends, other people at the University, or external help.

In the context of mental health problems, PhD students who experienced mental health problems or who are currently experiencing these problems were asked to give their advice. About one fifth of the students stated that it is important to address the cause of the mental health problems instead of the symptoms. The main problems mentioned by PhD students are burnout and high expectations, as well as the normalization of overtime. These issues have a negative effect on PhD students' mental health. Additionally, 18% of the students suggested training for supervisors to improve their methods of supervision and how to react when students experience mental health problems. The idea to advertise support opportunities, for example via email, was mentioned by 15% of the students, and 11% suggested an increase in social contact between old and new PhD students, with an opportunity to talk about problems (see Table 36).

Table 36. As someone who is experiencing / has experienced a tough time during their PhD, do you have some advice for the University on how to help PhD students who suffer from mental health problems? If so, please write it down here.

	Number	%
Treat the cause of mental health problems instead of the symptoms, investigate why students suffer to improve university structures, and stop normalizing overtime	15	17.1
Provide useful material and information for all supervisors about supervision and mental health problems (contact list of mental health support possibilities, information events about the amount of time they have to spend on their PhD students and that it is their responsibility)	16	18.2
Communicate openly and advertise the university psychologist as well as other opportunities, e.g. by regular emails to all staff members and PhD students	16	18.2
Increase social contact between junior and senior PhD students to teach structures, talk about problems, and decrease stigmatization of mental health problems	10	11.4
Provide mandatory appointments for all PhD students for mental health checks and meetings to discuss possible problems without the supervisor	11	12.5
Communicate to the PhD student the type and amount of work expected from them, how this work should be performed, and how to deal with extensions and the recovery process (after mental health problems)	7	8.0
Train all staff members (especially confidential advisors and graduate school directors) to recognize warning signs and provide help, and increase the time available to them to listen to students	3	3.4
Train PhD students to recognize their mental health problems (e.g. by providing a questionnaire) and how to generally deal with the life of a PhD student	2	2.3
Provide workshops and courses for specific problems and improve current workshops	2	2.3
Provide offices for PhD students	3	3.4
Improve the university structures to avoid students losing their supervision (in case of sick leave, etc.)	2	2.3

Inform international PhD students about the Dutch health care system and how to cover costs for psychological treatment	1	1.1
Total	88	100

Professional help

Of all the PhD students, 17% reported that they had experienced mental health problems in the past but did not receive professional help outside of the University, while about 8% had seen a psychologist or a therapist (Table 37). 10% of all PhD students stated that they were currently experiencing mental health problems but were not receiving professional help outside of the University, while 6% were seeing a psychologist or therapist (Table 38). Compared to 2018, fewer PhD students reported that they were not receiving help from outside the University (55%).

Table 37. Number of PhD students who have talked about their mental health problems with someone outside of the University in the past.

	Number	Percentage
I did not receive professional help from outside of the university	152	16.7
Yes, from my general practitioner (GP)	35	3.8
Yes, from a psychologist or therapist	76	8.4
Yes, from someone else ¹	27	3.0

¹ Family & friends, coach, psychiatrist.

Table 38. Number of PhD students who are talking about their current mental health problems with someone outside the University.

	Number	Percentage
I am not receiving professional help from outside of the university	87	9.6
Yes, from my general practitioner (GP)	12	1.3
Yes, from a psychologist or therapist	56	6.2
Yes, from someone else ¹	11	1.2

¹ Family & friends, coach, psychiatrist.

8. Burnout and work engagement

The Maslach Burnout Inventory-General Survey and the Utrecht Work Engagement Scale (UWES-9S) (Schaufeli et al., 2002) were used to measure the PhD students' levels of burnout and engagement. Some items were slightly rephrased to match the PhD students' situation. All factors related to burnout (exhaustion, cynicism, and professional efficacy (the reverse of burnout)) had sufficient reliability. Engagement consisted of three factors: vigour, dedication, and absorption. However, the absorption scale, which concerned aspects such as getting carried away while working, or feeling happy when working intensely, did not have sufficient reliability ($\alpha < .60$) and was therefore not included in the analyses. All items were measured on a 7-point Likert scale. While the means for exhaustion and cynicism were slightly below the scale average (3.74 and 3.72), vigour was exactly the average (4), and dedication and professional efficacy were above average (4.59 and 4.98) (Table 39). In comparison to the 2018 data, the PhD students reported higher scores in exhaustion and cynicism but lower scores in professional efficacy, vigour, and dedication.

Table 39. Mean and standard deviation of the different factors of burnout and engagement.

	Mean	SD
Exhaustion (n=908)	3.74	1.06
Dedication (n=908)	4.59	0.97
Vigour (n=907)	4.00	0.99
Cynicism (n=907)	3.72	1.37
Professional efficacy (n=907)	4.98	0.75

Note: burnout and engagement were measured on a 7-point Likert scale.

9. Sociodemographic and lifestyle questions

Because this section included a substantial number of questions, differences based on gender, nationality, graduate school, type of contract, and phase of the project are not discussed in the text but presented in tables in the appendix (the corresponding table numbers in the appendix can be found in a note below the main tables).

Structural supplementary professional and semi-professional activities

PhD students were asked whether or not they engaged in additional activities. Almost 70% of all PhD students stated that they did not. However, PhD students who did engage in additional activities were most likely to have another job or be on the board of an organization or actively involved in an organization (Table 40). This mirrors the impression from 2018. Furthermore, a roughly equal number of PhD students spent less, more, or an equal amount of time on their activity as a result of the COVID-19 pandemic (Table 41).

Table 40. Number and percentage of PhD students who engage in structural activities in addition to their PhD.

	Number	Percentage
No additional activities	636	69.9
I have another job	112	12.3
I am on the board of an organization or actively involved in an organization	67	7.4
I am actively involved in a political party	7	0.8
I do voluntary work	48	5.3
I am an informal caregiver for a relative or other person	17	1.9
I am a professional / semi-professional athlete or musician	23	2.5
Other ¹	40	4.4

¹Additional activities are mainly being a parent, education, hobbies, additional jobs at the University, or running a business.

Note: see tables A170–A179

Table 41. Answers to the question: ‘Has the time that you spend on this activity changed due to the COVID-19 pandemic?’

	Number	Percentage
No	75	28.7
Less time	90	34.5
More time	82	31.4
Other ¹	14	5.4

¹The available time for additional activities changes over time and depends on the type of activity.

Note: see tables A170–A179

Marital status

Most PhD students reported that they were in a long term relationship (>6 months), while a smaller but still considerable percentage of PhD students reporting being single or married (Table 42). This mirrors the impression from the 2018 data.

Table 42. Number and percentage of PhD students by marital status.

	Number	Percentage
Single	278	30.6
In a relationship of <6 months	35	3.9
In a relationship of >6 months	392	43.2
Married	167	18.4
Prefer not to say	14	1.5
Other ¹	22	2.4

¹Cohabiting, divorced, engaged, registered partnership, widowed

Note: see tables A180–A184

Children

Similar to the report from 2018, the majority of the PhD students reported that they do not have children (Table 43). However, PhD students who have children mainly reported that these affected their productivity during the lockdown (Table 44).

Table 43. Number and percentage of PhD students who have children.

	Number	Percentage
Yes	111	12.3
No	784	86.8
Prefer not to say	8	0.9

Note: see tables A185–A194

Table 44. Effect of children at home during pandemic on productivity, in number and percentage.

	Number	Percentage
My children did affect my productivity	74	67.3
My children did not affect my productivity	19	17.3
My children still went to daycare during the pandemic	4	3.6
Not applicable (e.g. children live elsewhere)	13	11.8

Note: see tables A185–A194

PhD students who indicated that they have children were asked to explain how and how much the children interrupted their work life. About 40% of the students stated that their productivity had decreased by at least 50%. Moreover, one fifth of the students mentioned that working next to their children decreased their concentration. Overall, 12% reported working at unusual times of the day, and 11% that it was hard to balance additional tasks, which negatively affected their work (see Table 44a).

Table 44a. Please describe briefly how and how much your productivity was affected by having your children at home.

	Number	Percentage
Productivity decreased a lot (by 50% or more)	31	40.8
Working at home with children decreased concentration	17	22.4
Due to the additional task (childcare) it is necessary to work at different times of the day to compensate	9	11.8
Additional tasks affected work and it was harder to balance tasks	8	10.5
Productivity decreased but by less than 50%	5	6.6
Children slowed down the work process	3	4.0
Children drained energy	2	2.6
It varied day to day	1	1.3
Total	76	100

Sleep

Half of the PhD students reported they slept between seven and eight hours every night, while one third slept between six and seven hours each night (Table 45). This is similar to the 2018 data. Moreover, 43% reported no change in their sleep schedule since the COVID-19 pandemic started, but one third reported sleeping more (Table 46).

Table 45. Number and percentage of PhD students per number of hours of sleep on weekdays.

	Number	Percentage
Less than 6 hours	59	6.5
6 to 7 hours	301	33.1
7 to 8 hours	454	49.9
More than 8 hours	89	9.8
Don't know / prefer not to say	7	0.7

Note: see tables A195–A204

Table 46. Influence of COVID-19 pandemic on sleep in number and percentage.

	Number	Percentage
No change	388	42.8
I sleep less	212	23.4
I sleep more	306	33.8

Note: see tables A195–A204

Sport

While 15% of the PhD students mentioned they did not take part in sport at all, around 20% stated they worked out two, three, or four hours per week (Table 47). Compared to the 2018 data, the number of people not working out decreased, while the number of people who worked out for four hours per week on average increased. Additionally, half of all the PhD students reported that they spent less time on sport due to the COVID-19 pandemic (Table 48).

Table 47. PhD students' frequency of sports activities in number and percentage.

	Number	Percentage
No sport	136	15.0
On average 1 hour per week	162	17.8
On average 2 hours per week	200	22.0
On average 3 hours per week	193	21.2
On average 4 or more hours per week	208	22.9
Prefer not to say	10	1.1

Note: see tables A205–A214

Table 48. Influence of COVID-19 pandemic on sport in number and percentage.

	Number	Percentage
No change	226	25.0
I spend less time on sport	448	49.6
I spend more time on sport	230	25.4

Note: see tables A205–A214

Alcohol consumption

To measure alcohol use, we adapted the Alcohol Use Disorders Identification Test (Audit-C) for problematic alcohol use (Bush et al., 1998). Based on this instrument, we asked the PhD students: how often they drink alcohol (Table 49); if they do, how much alcohol they then drink (Table 50); and how often they drink more than six glasses of alcohol in one day (Table 51). We also asked the students whether they drink more or less alcohol compared to before the COVID-19 pandemic (Table 52).

Table 49. PhD students' frequency of alcohol consumption in number and percentage.

	Number	Percentage
Never	135	14.8
Once a month or less	201	22.1
Two to four times a month	305	33.5
Two to three times a week	203	22.3
Four or more times a week	60	6.6
Prefer not to say	6	0.7

Note: see tables A215–A234

Table 50. Number of glasses PhD students drink on an average day when they drink alcohol, in number and percentage.

	Number	Percentage
1 or 2 glasses	557	71.9
3 or 4 glasses	171	22.1
5 or 6 glasses	30	3.9
7, 8, or 9 glasses	8	1.0
10 glasses or more	1	0.1
Prefer not to say	8	1.0

Note: see tables A215–A234

Table 51. How often PhD students drink more than six glasses in one day, in number and percentage.

	Number	Percentage
Never	349	45.1
Less than once a month	274	35.4
Once a month	94	12.1
Once a week	32	4.1
Two or three times a week	9	1.2
Daily, or almost daily	0	0
Prefer not to say / I don't know	16	2.0

Note: see tables A215–A234

Table 52. Influence of COVID-19 pandemic on alcohol consumption, in number and percentage.

	Number	Percentage
No change	407	52.8
I drink less alcohol	225	29.2
I drink more alcohol	139	18.0

Note: see tables A215–A234

Significant life events

Around 38% of the PhD students reported that they had not experienced any significant life events. Among those who had experienced one or more significant life events, the most common ones were severe problems in personal relationships and severe illness of themselves or someone close (both around 20%). A death of someone close and financial problems were reported by fewer PhD students but still more than 10% (Table 54). This mirrors the impression from 2018, except that fewer PhD students were in the process of buying a house in 2020.

Table 54. Number and percentage of PhD students who have experienced significant life events.

	Number	Percentage
Death of someone close	156	17.1
Severe problems in a personal relationship	190	20.9
Financial problems	127	14.0
Severe illness of yourself or someone close	182	20.0
Being in the process of buying a house	77	8.5
Getting married	25	2.7
Expecting a child	37	4.1
None of these events	346	38.0
Prefer not to say	13	1.4
Other ¹	68	7.5

¹Injuries, burnout, losing a job, moving

Note: see tables A235–A259

Of the PhD students who reported one or more significant life events, the majority indicated that this affected their work somewhat or quite a lot (Table 55). Moreover, 57% of these PhD students talked about it with their supervisor (Table 56), and the majority of the PhD students who talked with their supervisor perceived this as helpful (Table 57). The primary reasons why PhD students did not talk to their supervisor were

that it did not affect their work enough or that they felt uncomfortable doing so (Table 58).

Table 55. Extent to which the life event affected work, in number and percentage.

	Number	Percentage
Not at all	47	8.8
Hardly	90	16.9
Somewhat	207	38.9
Quite a lot	137	25.8
Extremely	51	9.6

Note: see tables A235–A259

Table 56. Number and percentage of PhD students who had talked about their life event with their supervisor.

	Number	Percentage
No	171	43.3
Yes	224	56.7

Note: see tables A235–A259

Table 57. Perceived support by supervisor in dealing with life event, in number and percentage.

	Number	Percentage
None	3	1.3
A little	18	8.0
Some	75	33.5
Quite a lot	95	42.4
A lot	33	14.7

Note: see tables A235–A259

Table 58. Reasons why PhD students chose not to talk to their supervisor about significant life events, in number and percentage.

	Number	Percentage
It doesn't affect my work enough that they need to know	88	9.7
I already receive support elsewhere	38	4.2
It is none of their business	54	5.9
I would feel uncomfortable talking about this with them	86	9.5
I think they would not understand	37	4.1
I think it would be bad for my career to discuss this	36	4.0
Prefer not to say	5	0.5
Other ¹	13	1.4

¹Limited contact with supervisor, no personal relationship with supervisor, will do so in the future

Note: see tables A235–A259

Mental disorder diagnosis

Of all PhD students, 83% reported not having been officially diagnosed with a mental disorder, while 14% have been (Table 59). The number of PhD students with a diagnosis slightly increased compared to 2018. The most common diagnoses were mood disorders or anxiety disorders (Table 60).

Table 59. Number and percentage of PhD students who have ever been officially diagnosed with a mental disorder.

	Number	Percentage
No	755	83.1
Yes	123	13.5
Prefer not to say	31	3.4

Note: see tables A260–A289

Table 60. Mental disorders PhD students have been officially diagnosed with, in number and percentage of total sample.

	Number	Percentage
Depression or other mood disorder	75	8.2
Attention disorder, e.g. ADD or ADHD	16	1.8
Autism spectrum disorder	9	1.0
Anxiety disorder	55	6.0
Personality disorder	13	1.4
Eating disorder	7	0.8
Prefer not to say	1	0.1
Other ¹	11	1.2

¹Burnout, dyslexia, PTSD, OCD, substance abuse

Note: see tables A260–A289

About one third of the PhD students with a diagnosis reported that it would not or hardly affect their work, while one third stated that it would affect their work quite a lot or extremely (Table 61). Moreover, 54% of these PhD students talked to their supervisor about their diagnosis (Table 62), and the majority found their supervisor to be supportive (Table 63). The PhD students who did not talk to their supervisor indicated that they would feel uncomfortable doing so, that they already received help elsewhere, or that it did not affect their work that much (Table 64).

Table 61. Number and percentage of the extent to which the disorder affects PhD students' work.

	Number	Percentage
Not at all	17	13.8
Hardly	25	20.3
Somewhat	43	35.0
Quite a lot	28	22.8
Extremely	10	8.1

Note: see tables A260–A289

Table 62. Number and percentage of PhD students who talked to their supervisor about their disorder.

	Number	Percentage
No	37	45.7
Yes	44	54.3

Note: see tables A260–A289

Table 63. Perceived support by supervisor regarding dealing with a disorder at work, in number and percentage.

	Number	Percentage
None	2	4.5
A little	3	6.8
Some	14	31.8
Quite a lot	15	34.1
A lot	10	22.7

Note: see tables A260–A289

Table 64. Reasons why PhD students chose not to talk to their supervisor about a diagnosis, in number and percentage.

	Number	Percentage
It doesn't affect my work enough that they need to know	16	1.8
I already receive support elsewhere	16	1.8
It is none of their business	7	0.8
I would feel uncomfortable talking about this with them	21	2.3
I think they would not understand	15	1.6
I think it would be bad for my career to discuss this	14	1.5
Prefer not to say	1	0.1
Other	0	-

Note: see tables A260–A289

Work schedule

The PhD students were asked how often they worked in the evenings on weekdays in an average week. About 41% reported doing so on one or two evenings, and 28% reported doing so on three or four evenings (Table 65). Compared to the data from 2018, the amount of PhD students who did not work during evenings dropped from 34% to 18%, and the number of PhD students working three evenings or more increased from 19% to 28%. About half of the PhD students mentioned that they usually work one or two hours in the evening, while one third work two to three hours (Table 66). One third of the PhD students who work in the evening never or rarely compensate for their work, while another one third usually or always compensates (Table 67). Additionally, about one quarter of all PhD students does not work at the weekend, while one third works one to three hours on an average weekend, and the rest works three or more hours per weekend (Table 68). The number of PhD students who work at weekends and the hours that they work increased compared to the data from 2018.

Table 65. Number and percentage of weekday evenings worked by PhD students in an average week.

	Number	Percentage
None	164	18.0
One or two evenings	369	40.6
Three or four evenings	253	27.8
All five weekday evenings	123	13.5

Note: see tables A290–A309

Table 66. Duration of time usually worked on an average weekday evening, in number and percentage.

	Number	Percentage
Less than one hour	45	6.0
One to two hours	357	48.0
Two to three hours	250	33.6
More than three hours	92	12.4

Note: see tables A290–A309

Table 67. Number and percentage of PhD students who compensate for the time worked.

	Number	Percentage
Never	86	11.6
Rarely	151	20.3
Sometimes	251	33.8
Usually	211	28.4
Always	44	4.8

Note: see tables A290–A309

Table 68. Number and percentage of hours worked by PhD students at the weekend, on average during the last two months.

	Number	Percentage
None	233	25.7
One to three hours	295	32.5
Three to six hours	230	25.3
Six to nine hours	98	10.8
More than nine hours	52	5.7

Note: see tables A290–A309

Vacation

Of the PhD students, 60% indicated that they have official vacation days (Table 69). However, only 27% used all or most of these vacation days, while 21% used fewer than half of their vacation days last year (Table 70). The primary reasons why more vacation days were not used were that the PhD students had too much to do or it never seemed like a good time to take time off (Table 71). This impression is similar to the one from 2018.

Table 69. Number and percentage of PhD students with official vacation days.

	Number	Percentage
Yes	543	60.0
No	323	35.7
I don't know	39	4.3

Note: see tables A310–A339

Table 70. Use of vacation days in number and percentage.

	Number	Percentage
All of them	40	7.4
Almost all of them	109	20.1
More than half of them	94	17.3
About half of them	77	14.2
Less than half of them	116	21.4
I don't remember / prefer not to say	43	8.0
Was not yet working at the University in 2019	64	11.8

Note: see tables A310–A339

Table 71. Reasons for not using more vacation days, in number and percentage.

	Number	Percentage
I had too much to do	168	18.5
I felt working would be a better use of my time than holidays	83	9.1
There never seemed to be a good time to take time off	147	16.2
I didn't feel the need to take days off	81	8.9
My supervisor wanted me to keep working	10	1.1
Other ¹	27	3.0

¹Started later during the year, had time off for another reason, pressure from colleagues to keep working, saved vacation days for 2020

Note: see tables A310–A339

About one quarter of all PhD students have not used any vacation days so far in 2020, while another quarter have used five to ten days (Table 72). The majority of the PhD students plan to use most of their vacation days during the summer, regardless of the COVID-19 situation, or plan to use them as soon as possible when the COVID-19 situation has improved (Table 73). However, 65% had not yet discussed their plans with their supervisor (Table 74).

Table 72. Number and percentage of PhD students regarding their use of vacation days so far in 2020.

	Number	Percentage
None	141	26.0
One or two days	81	14.9
Three to five days	112	20.6
Five to ten days	125	23.0
More than ten days	52	9.6
I don't remember / prefer not to say	32	5.9

Note: see tables A310–A339

Table 73. Number and percentage of PhD students regarding their plan to use their vacation days in 2020.

	Number	Percentage
I plan to use them as soon as possible when the COVID-19 situation has improved (e.g. when travel is possible again)	126	23.3
I plan to use them at the end of the year (e.g. take a long Christmas break)	58	10.7
I plan to continue working this year and not use my vacation days at all or hardly use them	53	9.8

I plan to use all or most of my vacation days this summer, regardless of the COVID-19 situation	158	29.2
I don't know yet / prefer not to say	101	18.7
Other ¹	45	8.3

¹Use them at end of PhD, divide over the year, contract already ended
Note: see tables A310–A339

Table 74. Number and percentage of PhD students regarding the question whether or not the PhD students had yet discussed their vacation plans with their supervisor.

	Number	Percentage
No	349	64.5
Yes, briefly	140	25.9
Yes	52	9.6

Note: see tables A310–A339

Emails

Around 64% of the PhD students reported that they received work emails on their phone (Table 75), and 70% of them reported that they usually or always read their work emails immediately, even outside work hours (Table 76). Additionally, 40% stated that they usually or always took immediate action as a response to work emails that they received on their phone outside work hours (Table 77). However, the majority reported that this did not greatly affect their ability to relax (Table 78). This mirrors the impression of the 2018 data.

Table 75. Number and percentage of PhD students who receive work emails on their phone.

	Number	Percentage
No	326	35.9
Yes	583	64.1

Note: see tables A340–A359

Table 76. Answer to question: ‘How often do you immediately read work emails on your phone outside work hours?’

	Number	Percentage
Never	8	1.4
Rarely	42	7.2
Sometimes	122	21.0
Usually	237	40.7
Always	173	29.7

Note: see tables A340–A359

Table 77. How often PhD students immediately take action as response to a work email they receive on their phone outside of work hours, in number and percentage.

	Number	Percentage
Never	3	0.6
Rarely	102	19.2
Sometimes	211	39.7
Usually	177	33.3
Always	39	7.3

Note: see tables A340–A359

Table 78. Answer to question: 'To what extent does checking your work emails outside work hours affect your ability to relax?'

	Number	Percentage
Not at all	49	9.2
Hardly	160	30.1
Somewhat	220	41.4
Quite a lot	85	16.0
Extremely	18	3.4

Note: see tables A340–A359

10. Differences

Gender-based differences

Progress and satisfaction

Male respondents seemed to be more confident about being on schedule and finishing on time, even if they were slightly behind compared to female respondents (see Table A18).

COVID-19 and current work situation

Female PhD students more often reported having no or limited print facilities (see Table A40).

Work-life balance and supervision

Male PhD students more often reported that their work takes up a lot of time and produces strain. This made it difficult to fulfil other interests, responsibilities, and obligations. It also caused them to make changes in their plans of activities outside work (see Table A53).

Mental health

Female PhD students reported a lower pre-COVID-19 score than male PhD students did. Otherwise, there were no significant differences in general mental health (see Table A78)

Support at the University

Compared to female PhD students, male PhD students were more likely to talk about mental health problems with someone at the University (see Table A121).

Burnout and work engagement

No significant differences were found.

Nationality-based differences

There were many significant differences based on nationality, some of which are described below.

Progress and satisfaction

- Asian and Dutch PhD students were more satisfied with their own performance compared to non-Dutch European PhD students. Additionally, Dutch PhD students were more satisfied with their own performance compared to South American students (see Table A14).
- Dutch PhD students expected their primary and daily supervisor to be more satisfied with their performance than the other nationalities.
- Asian PhD students rated the workload and complexity of their PhD project lower than the other nationalities. South American PhD students scored highest on the workload and complexity of their PhD project.

- Asian PhD students were more confident in being able to submit their thesis before the end of their contract than Dutch and non-Dutch European PhD students.
- Dutch PhD students were more confident about finding a suitable job after their PhD than non-Dutch Europeans.
- Significant differences could be found for Asian PhD students, who considered quitting their PhD less often than Dutch and other European PhD students (see Table A21).
- Asian and non-Dutch European PhD students reported being less satisfied with their PhD so far than Dutch PhD students (see Table A21).

COVID-19 and current work situation

- Dutch PhD students were less satisfied with the information provided by the UG about rules and regulations and the protective measures than Asian PhD students (see Table A30).
- Dutch PhD students reported less often that they had limited computer facilities than Asian and non-Dutch European PhD students (see Table A43).
- Asian PhD students were more confident in accelerating their PhD track since they have more time to write their manuscript than Dutch PhD students,. However, they were also more concerned about being unable to finish in time compared to Dutch PhD students (see Table A43).

Work-life balance, supervision, and work atmosphere

- South American PhD students reported more difficulties balancing their work and non-work activities, more demands that interfered with their lives away from work, and more difficulty fulfilling other interests than Asian and Dutch PhD students. South American PhD students also indicated that they had to make more changes in their plans for activities outside work (see Table A58).
- Dutch PhD students reported meeting their primary supervisor less frequently than the other PhD students (see Table A60).
- Asian PhD students reported having fewer formal and informal relationships with their colleagues than Dutch PhD students as well as a lower sense of belonging. Furthermore, Dutch PhD students reported a higher sense of belonging than non-Dutch European PhD students (see Table A62).

Mental health

- Non-Dutch European PhD students reported having better general mental health than Asian and Dutch PhD students. However, non-Dutch European PhD students reported an overall worse level of current and pre-COVID-19 pandemic mental health status than Asian and Dutch PhD students, while Dutch PhD students reported a better current mental health status than South American PhD students (see Table A79).

Support at the University

- Dutch PhD students reported less often that they would like to talk to someone at the University in the case of mental health problems compared to Asian or South American PhD students (see Table A122).

Burnout and work engagement

- Non-Dutch European PhD students reported being more exhausted compared to Dutch PhD students. Dutch PhD students reported feeling more dedicated compared to non-Dutch European PhD students. However, non-Dutch European PhD students reported the lowest scores regarding vigour, followed by Dutch, and then South American PhD students. The Asian PhD students scored highest on vigour (see Table A157).

Graduate school-based differences

Progress and satisfaction

Several significant differences could be found between PhD students from the different graduate schools (see Table A15):

- PhD students from the Graduate School (GS) of Behavioural and Social Sciences reported being more satisfied with their own performance compared to PhD students from the GS of Economics and Business or of Science and Engineering.
- The PhD students from the GS of Humanities reported that their primary supervisor was more satisfied with their performance compared to PhD students from other graduate schools.
- PhD students from the GS of Science and Engineering reported that their daily supervisor was less satisfied with their performance than PhD students from the GS of Behavioural and Social Sciences and the GS of Medical Sciences.
- The PhD students from the GS of Humanities reported a higher complexity in their PhD than those from the GS of Medical Sciences.
- The PhD students from the GS of Humanities were less confident of their ability to find a suitable job after finishing their PhD than the students from the GS of Medical Sciences.
- PhD students from the GS of Science and Engineering were less satisfied with their PhD track than PhD students from the GS of Behavioural and Social Science and the GS of Medical Sciences (see Table A23).

COVID-19 and current work situation

PhD students from the GS of Behavioural and Social Sciences do not think that their PhD track will slow down due to worse working conditions compared to Economics and Business PhD students and PhD students from the GS of Science and Engineering. Medical Science PhD students expect less slowdown than Economics and Business PhD students and PhD students from the GS of Science and Engineering (see Table A46).

More PhD students from the GS of Science and Engineering expect that they will slow down due to fewer supervisory meetings than PhD students from the GS of Behavioural and Social Sciences (see Table A46).

More PhD students from the GS of Behavioural and Social Sciences expect that having time to write the manuscript will accelerate their PhD trajectory compared to Economics and Business PhD students and PhD students from the GS of Science and Engineering. Furthermore, more of them also expect that attending fewer meetings might accelerate their PhD track compared to PhD students from the GS of Science and Engineering. Moreover, more of them expect that attending fewer conferences might

accelerate their PhD track compared to Economics and Business PhD students (see Table A46).

Lastly, PhD students from the GS of Science and Engineering were more concerned about being unable to complete their PhD in time due to COVID-19 compared to PhD students from the GS of Behavioural and Social Sciences (see Table A46).

Work-life balance, supervision, and work atmosphere

Fewer Medical Sciences PhD students reported that the amount of time that their work takes up made it difficult to fulfil other interests, as well as needing to make changes to their plans for activities outside work due to their work, compared to PhD students from the GS of Science and Engineering. Also, overall, they more often believed that their work and non-work life are in balance (see Table A63).

Humanities PhD students reported having less frequent meetings with their daily supervisor than PhD students from the GS of Behavioural and Social Sciences, the GS of Medical Sciences, and the GS of Science and Engineering (see Table A65).

Economics and Business PhD students reported a lower quality of formal relations within their department than PhD students from the GS of Behavioural and Social Sciences, the GS of Medical Sciences, and the GS of Science and Engineering (see Table A67).

Mental health

Economics and Business PhD students reported a significantly lower current mental health score than PhD students from the GS of Behavioural and Social Sciences and the GS of Medical Sciences (see Table A80).

Support at the University

More PhD students from the GS of Science and Engineering reported that they would like to talk to someone at the University about problems with their mental health than PhD students from the GS of Behavioural and Social Sciences and the GS of Medical Sciences (see Table A123).

Burnout and work engagement

PhD students from the GS of Science and Engineering reported feeling exhausted more often than PhD students from the GS of Behavioural and Social Sciences and the GS of Medical Sciences. Moreover, Economics and Business PhD students reported higher scores on the cynicism scale and lower scores in professional efficacy compared to PhD students from the GS of Behavioural and Social Sciences, the GS of Humanities, and the GS of Medical Sciences (see Table A158).

Type of contract-based differences

Progress and satisfaction

More MD PhD students reported that their primary and daily supervisors were satisfied with their performance than other PhD students (see Table A16). Employed

PhD students were more confident in their ability to find a suitable job after finishing their thesis than PhD students with a scholarship.

External applied sciences PhD students were overall more satisfied with their PhD trajectory than PhD scholarship students and PhD students who are currently finishing their thesis in their own time (see Table A25).

COVID-19 and current work situation

External PhD students were less concerned about library access or computer facilities than employed or PhD scholarship students. Furthermore, employed PhD students were less concerned about a delay due to the COVID-19 outbreak than PhD scholarship students (see Table A49).

Work-life balance, supervision, and work atmosphere

External applied sciences PhD students reported having less frequent meetings with their daily and primary supervisors than the other PhD students (see Table A70).

Employed PhD students reported better formal relations with their colleagues than PhD scholarship students, and better informal relations and a higher sense of belonging than external applied sciences PhD students (see Table A72).

Mental health

MD PhD students showed a significantly lower mental health score than the other PhD students. However, they reported a higher current mental health score than PhD scholarship students (see Table A81).

Support at the University

Fewer PhD students from external research centres reported that they knew who to talk to if they experienced mental health problems than employed and PhD scholarship students (see Table A124).

Burnout and work engagement

External applied sciences PhD students reported a significantly lower exhaustion score and a lower cynicism score than scholarship students and students completing their thesis in their own time (see Table A159).

Phase-based differences

Progress and satisfaction

As can be seen in Table A17 in the appendix, more junior PhD students reported that their daily and primary supervisors were satisfied with their work than senior PhD students. Furthermore, they were more confident about finishing their thesis before the end of their contract and finding a suitable and interesting job afterwards. Senior PhD students also reported a higher workload.

Fewer junior PhD students considered quitting their PhD project and they were overall more satisfied with their PhD trajectory and supervision than senior PhD students (see Table A27).

COVID-19 and current work situation

While senior PhD students reported feeling slightly more informed about the COVID-19 outbreak, junior PhD students were more satisfied with the information provided by the UG about rules and regulations (see Table A36).

More senior PhD students reported having limited contact with their supervisors. They also more often expected the track to slow down due to fewer supervisory meetings. Finally, they were also more concerned about not finishing in time due to the outbreak (see Table A52).

Work-life balance, supervision, and work atmosphere

Junior PhD students reported a better work-life balance than senior PhD students (see Table A68), as well as greater satisfaction with online meetings (see Table A70). Furthermore, junior PhD students reported better formal relationships within their department and a higher sense of belonging (see Table A72).

Mental health

Junior PhD students reported a better current and pre-COVID-19 mental health score. Furthermore, junior PhD students reported that their PhD had a more positive effect on their mental health than senior PhD students (see Table A82).

While the majority of junior PhD students reported that the pandemic did not affect their career worries (69%), only 50% of all senior PhD students did so. However, no other notable differences could be observed (see tables A116–A120).

Support at the University

Overall, junior PhD students reported that they were more likely to talk to their primary and daily supervisors in the case of mental problems than senior PhD students. Furthermore, they trusted that their primary and daily supervisors would act supportively should they experience mental health problems (see Table A125).

Burnout and work engagement

Junior PhD students scored higher on dedication and vigour, while senior PhD students had significantly higher scores regarding cynicism (see Table A169).

Appendix

Sample characteristics

In this appendix, differences are presented in the sample characteristics between the following groups:

- Gender: female vs. male.
- Nationality: Asian, Dutch, non-Dutch European, South American (other nationalities consisted of fewer than 30 respondents).
- Graduate school: Behavioural and Social Sciences (BSS), Economics and Business (EB), Humanities (Hum), Medical Sciences (MS), Science and Engineering (SE) (other graduate schools consisted of fewer than 30 respondents).
- Type of contract: employed, external research centre (including NWO/ASTRON/SRON), external applied sciences or others (AS), PhD scholarship (those with a scholarship who started after September 2016), MD / PhD students at the UMCG, own time (PhD students whose contract has already ended and are trying to finish their thesis in their own time).
- Year of PhD: junior (first two years of PhD) vs. senior (older years).

When reading about these differences between gender, nationalities, graduate schools, types of contract, and phase of the project (junior vs. senior), it is important to keep in mind that these factors do not stand alone and that differences can often be explained by multiple factors or by effects overlapping and interacting. The most important 'issues' that can confound the results are listed here.

Nationality

- Among the Dutch PhD students, a relatively greater percentage of respondents are female, while respondents are relatively equally distributed among the other nationalities (see Table A1).
- While 40% of the total sample belongs to the Graduate School of Science and Engineering, 62% of all Asian respondents work in this graduate school. Dutch respondents are more likely to be part of the Graduate School of Behavioural and Social Sciences or Medical Sciences (Table A2).
- Dutch and non-Dutch European PhD students are more likely to have an employment contract, while Asian and South American PhD students are more likely to have a scholarship (Table A3).

Graduate school

- While the total sample contains 42% males, only 28% of the respondents within the Graduate School of Behavioural and Social Sciences, 25% of the respondents within the Graduate School of Humanities, and 29% of the respondents within the Graduate School of Medical Sciences were male (Table A5). However, 52% of the respondents from the Graduate School of Economics and Business were male, and 55% of the respondents from the Graduate School of Science and Engineering (Table A5).

- The Graduate School of Behavioural and Social Sciences and the Graduate School of Humanities samples had fewer Asian PhD students and more Dutch PhD students, while the Graduate School of Economics and Business sample did not include any South Americans and the Graduate School of Sciences and Engineering sample contained more Asian and fewer Dutch PhD students (Table A6).
- The Graduate School of Humanities sample included more external PhD students and fewer employed PhD students. Almost all MD students in the sample belonged to the Graduate School of Medical Sciences (Table A7).
- The Graduate School of Behavioural and Social Sciences sample contained fewer junior and more senior PhD students, while the opposite was true for the Graduate School of Economics and Business (Table A8).

Type of contract

- More males than females have an external contract within a research centre, while more females than males have an MD or an external contract within applied sciences or others (Table A9).
- Employed PhD students are more likely to be Dutch and less likely to be Asian, which is the same situation as external PhD students from the applied sciences or other background. Furthermore, PhD scholarship students are more often Asian than Dutch. Lastly, almost all MD students are Dutch (Table A10).
- PhD students with a contract with an external research centre are more prevalent in the Graduate School of Humanities or the Graduate School of Science and Engineering samples than within the Graduate School of Medical Sciences sample, while PhD students with an external contract with applied sciences or others are mainly prevalent in the Graduate School of Behavioural and Social Sciences or the Graduate School of Medical Sciences sample. Almost all MD PhD students belong to the Graduate School of Medical Sciences sample (Table A11).

Table A1. Percentage of male and female survey respondents, per nationality.

Nationality	Male	Female
Asian	49.1	49.7
Dutch	37.6	61.5
Non-Dutch European	41.5	57.4
South American	49.1	49.1
Total sample	41.5	57.0

Table A2. Percentage of respondents in graduate schools, per nationality.

Nationality	BSS	EB	Hum	MS	SE
Asian	3.6	5.5	1.2	20.0	61.8
Dutch	14.1	4.9	6.6	39.0	24.6
Non-Dutch European	10.3	6.2	8.2	13.3	49.2
South American	3.8	0	1.9	37.7	47.2
Total sample	9.8	4.9	5.7	28.3	39.6

Table A3. Percentage of respondents' type of contract, per nationality.

Nationality	Employed	External RC	External AS	Scholarship	MD	Own time
Asian	28.5	2.4	0.6	51.5	0.6	2.4
Dutch	57.6	4.1	7.3	12.9	5.4	3.4
Non-Dutch European	58.5	1.5	2.6	27.2	0.5	2.6
South American	41.5	1.9	0	39.6	1.9	3.8
Total sample	48.9	3.3	6.3	27.2	3.5	3.7

Table A4. Percentage of junior and senior PhD students, per nationality.

Nationality	Junior	Senior
Asian	43.6	54.5
Dutch	50.2	49.3
Non-Dutch European	48.2	51.3
South-American	52.8	43.4
Total sample	47.1	51.6

Table A5. Percentage of male and female PhD students, per graduate school.

Graduate school	Male	Female
BSS	28.1	69.7
EB	52.3	47.7
Hum	25.5	70.6
MS	28.9	70.7
SE	55.4	43.7
Total sample	41.5	57.0

Table A6. Respondents' nationalities in percentage, per graduate school.

Graduate school	Asian	Dutch	European	South-American
BSS	6.7	65.2	22.5	2.2
EB	20.5	45.5	27.3	0
Hum	3.8	51.9	30.8	1.9
MS	12.8	62.3	10.1	7.8
SE	28.4	28.1	26.7	7.0
Total sample	18.2	45.2	21.5	5.8

Table A7. Respondents' type of contract in percentage, per graduate school.

Graduate school	Employed	External RC	External AS	Scholarship	MD	Spare time
BSS	57.3	2.2	9.0	21.3	1.1	2.2
EB	54.5	2.3	2.3	31.8	0	2.3
Hum	34.6	11.5	9.6	26.9	0	3.8
MS	51.2	0.8	5.9	19.1	9.8	2.3
SE	51.5	5.0	1.4	29	0.3	3.6
Total sample	48.9	3.3	6.3	27.2	3.5	3.7

Table A8. Percentage of junior and senior respondents, per graduate school.

Graduate school	Junior	Senior
BSS	36.0	64.0
EB	65.9	34.1
Hum	47.1	52.9

MS	49.2	50.8
SE	45.5	54.5
Total sample	47.1	51.6

Table A9. Percentage of male and female respondents, per type of contract.

Type of contract	Male	Female
Employed	41.3	57.3
External RC	58.6	37.9
Extern AS	32.4	67.6
Scholarship	43.4	55.7
MD	22.2	74.1
Spare time	48.3	51.7
Total sample	41.5	57.0

Table A10. Division of respondents over nationalities in percentage, per type of contract.

Type of contract	Asian	Dutch	Non-Dutch European	South-American
Employed	10.6	53.3	25.7	5.0
External RC	13.3	56.7	10.0	3.3
Extern AS	2.7	81.1	13.5	0
Scholarship	34.7	21.6	21.6	8.6
MD	3.7	81.5	3.7	3.7
Spare time	13.8	48.3	17.2	6.9
Total sample	18.2	45.2	21.5	5.8

Table A11. Division of respondents over graduate schools in percentage, per type of contract.

Type of contract	BSS	EB	Hum	MS	SE
Employed	11.5	5.4	4.1	29.6	41.9
External RC	6.7	3.3	20.0	6.7	60.0
Extern AS	21.6	2.7	13.5	40.5	13.5
Scholarship	7.8	5.7	5.7	20.0	42.4
MD	3.7	0	0	92.6	3.7
Spare time	6.9	3.4	6.9	20.7	44.8
Total sample	9.8	4.9	5.7	28.3	39.6

Table A12. Percentage of junior and senior respondents, per type of contract.

Type of contract	Junior	Senior
Employed	58.5	41.5
External RC	40.0	60.0
Extern AS	37.8	62.2
Scholarship	39.2	60.8
MD	70.4	29.6
Spare time	3.4	96.6
Total sample	47.1	51.6

Progress and satisfaction

Satisfaction with performance, project characteristics and confidence

Table A13. Mean (standard deviation) of satisfaction with performance, project characteristics, and confidence, per gender.

	Male	Female
Overall, I am satisfied with how I am performing in my PhD.	3.35 (1.04)	3.38 (1.00)
Overall, my primary supervisor (promotor) is satisfied with how I am performing.	3.88 (.73)	3.91 (.70)
Overall, my daily supervisor is satisfied with how I am performing.	3.87 (.75)	3.94 (.71)
The workload in my PhD is high.	3.8 (.87)	3.82 (.87)
The complexity of my PhD is high.	4.03 (.83)	3.97 (.87)
I am confident that I will, eventually, finish my PhD.	4.23 (.82)	4.14 (.82)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.***	3.0 (1.27)	2.65 (1.27)
I am confident that I will find a suitable and interesting job after I have finished my PhD.	3.61 (1.10)	3.56 (1.07)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree). Significant differences are highlighted, bold type face indicates the highest score. * $p < .05$; ** $p < .01$; *** $p < .001$

Table A14. Mean (standard deviation) of satisfaction with performance, project characteristics and confidence, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Overall, I am satisfied with how I am performing in my PhD.***	3.39 (.95)	3.56 (.99)	3.09 (1.02)	3.06 (1.02)
Overall, my primary supervisor (promotor) is satisfied with how I am performing.***	3.81 (.73)	4.05 (.59)	3.78 (.74)	3.68 (.97)
Overall, my daily supervisor is satisfied with how I am performing.***	3.75 (.79)	4.06 (.59)	3.88 (.68)	3.67 (1.07)
The workload in my PhD is high.***	3.47 (.89)	3.82 (.85)	3.96 (.85)	4.0 (.90)
The complexity of my PhD is high.***	3.73 (.91)	3.99 (.84)	4.17 (.77)	4.19 (.79)
I am confident that I will, eventually, finish my PhD.	4.08 (.82)	4.22 (.83)	4.16 (.80)	4.04 (.9)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.***	3.2 (1.22)	2.73 (1.24)	2.65 (1.34)	2.67 (1.21)
I am confident that I will find a suitable and interesting job after I have finished my PhD.**	3.56 (.95)	3.73 (1.05)	3.32 (1.15)	3.42 (1.16)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree). * $p < .05$; ** $p < .01$; *** $p < .001$

Table A15. Mean (standard deviation) of satisfaction with performance, project characteristics and confidence, per graduate school.

	BSS	EB	Hum	MS	SE
Overall, I am satisfied with how I am performing in my PhD.***	3.65 (.89)	3.14 (.93)	3.6 (.88)	3.47 (1.00)	3.21 (1.05)
Overall, my primary supervisor (promotor) is satisfied with how I am performing.**	4.03 (.58)	3.76 (.78)	4.14 (.73)	3.94 (.70)	3.78 (.74)
Overall, my daily supervisor is satisfied with how I am performing.**	4.05 (.57)	3.85 (.82)	4.09 (.71)	3.96 (.72)	3.77 (.77)
The workload in my PhD is high.	3.88 (.80)	3.72 (.77)	3.9 (.83)	3.84 (.91)	3.79 (.86)
The complexity of my PhD is high.*	3.98 (.87)	3.95 (.74)	4.31 (.67)	3.87 (.90)	4.03 (.84)
I am confident that I will, eventually, finish my PhD.	4.23 (.80)	4.14 (.90)	4.38 (.67)	4.19 (.85)	4.11 (.85)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.	2.79 (1.17)	2.46 (1.29)	3.15 (1.30)	2.68 (1.29)	2.81 (1.28)
I am confident that I will find a suitable and interesting job after I have finished my PhD.*	3.48 (1.07)	3.61 (.86)	3.24 (1.03)	3.78 (1.10)	3.54 (1.04)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A16. Mean (standard deviation) of satisfaction with performance, project characteristics and confidence, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Overall, I am satisfied with how I am performing in my PhD.	3.41 (1.02)	3.29 (.94)	3.51 (1.04)	3.34 (1.00)	3.44 (1.05)	2.9 (.98)
Overall, my primary supervisor (promotor) is satisfied with how I am performing.**	3.99 (.66)	3.78 (.80)	3.97 (.56)	3.77 (.75)	4.04 (.62)	3.6 (.87)
Overall, my daily supervisor is satisfied with how I am performing.**	4.01 (.69)	3.79 (.72)	3.94 (.56)	3.79 (.74)	4.04 (.62)	3.48 (.93)
The workload in my PhD is high.	3.82 (.85)	3.7 (.79)	3.76 (.92)	3.8 (.93)	3.78 (1.01)	3.83 (.66)

The complexity of my PhD is high.	4.01 (.85)	4.1 (.71)	4.11 (.89)	4 (.86)	3.74 (.90)	3.96 (.81)
I am confident that I will, eventually, finish my PhD.	4.17 (.85)	4.21 (.56)	4.46 (.74)	4.14 (.79)	3.89 (.97)	4.3 (.91)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.***	2.78 (1.25)	3.18 (1.31)	3.29 (1.18)	2.83 (1.22)	3.04 (1.43)	1.35 (.78)
I am confident that I will find a suitable and interesting job after I have finished my PhD.***	3.69 (1.02)	3.33 (.96)	3.81 (1.08)	3.27 (1.14)	4.27 (.78)	3.22 (1.20)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree). * $p < .05$; ** $p < .01$; *** $p < .001$

Table A17. Mean (standard deviation) of satisfaction with performance, project characteristics and confidence, per phase of PhD project.

	Junior	Senior
Overall, I am satisfied with how I am performing in my PhD.	3.44 (1.08)	3.28 (1.03)
Overall, my primary supervisor (promotor) is satisfied with how I am performing.**	3.98 (.67)	3.82 (.73)
Overall, my daily supervisor is satisfied with how I am performing.**	4.01 (.70)	3.82 (.75)
The workload in my PhD is high.**	3.61 (.86)	3.98 (.84)
The complexity of my PhD is high.	3.94 (.83)	4.05 (.88)
I am confident that I will, eventually, finish my PhD.	4.18 (.80)	4.14 (.87)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.**	3.09 (1.18)	2.53 (1.29)
I am confident that I will find a suitable and interesting job after I have finished my PhD.**	3.73 (1.03)	3.4 (1.11)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree). * $p < .05$; ** $p < .01$; *** $p < .001$

Progress, considering quitting, and satisfaction with the trajectory and the supervision

Table A18. Progress of the PhD students with their thesis. Percentage of respondents per statement, per gender.

	Male	Female
Yes, I think I will be able to finish my PhD in time.	29.1	21.9
No, I have fallen behind but I still think I can finish in time.	28.5	24.0
No, I have fallen behind and I don't think I will be able to finish in time.	21.3	30.4
I was unable to finish in time and am currently on an extension.	4.0	3.7
I was unable to finish in time and am currently finishing my thesis in my spare time.	3.2	2.7
I have already defended my thesis or sent the manuscript to the assessment committee.	1.9	0.4

I don't have a schedule.	2.1	3.1
I don't know / other.	9.9	13.7

Table A19. Mean (standard deviation) of consideration of quitting, and satisfaction with the trajectory and the supervision, per gender.

	Male	Female
Have you ever considered quitting your PhD project? ¹	4.13 (1.15)	4.02 (1.16)
How satisfied are you with your PhD trajectory so far? ²	3.47 (.88)	3.49 (.87)
How satisfied are you with the supervision you receive? ²	3.86 (.96)	3.82 (1.00)

Note. Answers were given on a scale from 1 to 5. ¹(1 = Yes, very often, 5 = No, never), ²(1 = very dissatisfied, 5 = very satisfied).

Table A20. Progress of the PhD students with their thesis. Percentage of respondents per statement, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Yes, I think I will be able to finish my PhD in time.	31.5	25.7	21.0	22.6
No, I have fallen behind but I still think I can finish in time.	24.2	24.7	27.7	30.2
No, I have fallen behind and I don't think I will be able to finish in time.	24.2	27.4	28.2	28.3
I was unable to finish in time and am currently on an extension.	6.1	3.2	1.0	1.9
I was unable to finish in time and am currently finishing my thesis in my spare time.	1.8	2.7	3.1	5.7
I have already defended my thesis or sent the manuscript to the assessment committee.	0	0.7	1.5	1.9
I don't have a schedule.	2.4	2.2	5.1	1.9
I don't know / other.	9.7	13.4	12.3	7.5

Table A21. Mean (standard deviation) of consideration of quitting, and satisfaction with the trajectory and the supervision, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Have you ever considered quitting your PhD project? ^{1**}	4.3 (.99)	4.0 (1.18)	3.92 (1.22)	4.28 (.97)
How satisfied are you with your PhD trajectory so far? ^{2***}	3.36 (.82)	3.65 (.82)	3.31 (.92)	3.42 (.91)
How satisfied are you with the supervision you receive? ²	3.79 (1.01)	3.89 (.94)	3.78 (1.05)	3.77 (1.10)

Note. Answers were given on a scale from 1 to 5. ¹(1 = Yes, very often, 5 = No, never), ²(1 = very dissatisfied, 5 = very satisfied). * $p < .05$; ** $p < .01$; *** $p < .001$

Table A22. Progress of the PhD students with their thesis. Percentage of respondents per statement, per graduate school.

	BSS	EB	Hum	MS	SE
Yes, I think I will be able to finish my PhD in time.	28.1	20.5	17.3	23.3	26
No, I have fallen behind but I still think I can finish in time.	25.8	22.7	23.1	28	24.6

No, I have fallen behind and I don't think I will be able to finish in time.	23.6	27.3	25	28.4	29.1
I was unable to finish in time and am currently on an extension.	1.1	4.5	0	4.7	3.1
I was unable to finish in time and am currently finishing my thesis in my spare time.	3.4	4.5	3.8	1.9	3.4
I have already defended my thesis or sent the manuscript to the assessment committee.	3.4	0	1.9	1.2	0
I don't have a schedule.	4.5	2.3	0	4.3	2.0
I don't know / other.	10.1	18.1	28.8	8.2	12.1

Table A23. Mean (standard deviation) of consideration of quitting, and satisfaction with the trajectory and the supervision, per graduate school.

	BSS	EB	Hum	MS	SE
Have you ever considered quitting your PhD project? ¹	4.17 (1.12)	3.95 (1.14)	4.31 (1.00)	4.09 (1.17)	3.94 (1.19)
How satisfied are you with your PhD trajectory so far? ^{2***}	3.78 (0.85)	3.34 (.83)	3.65 (.76)	3.56 (.88)	3.33 (.88)
How satisfied are you with the supervision you receive? ^{2*}	4.02 (.89)	3.8 (1.05)	4.06 (.92)	3.86 (.95)	3.72 (1.04)

Note. Answers were given on a scale from 1 to 5. ¹(1 = Yes, very often, 5 = No, never), ²(1 = very dissatisfied, 5 = very satisfied). * $p < .05$; ** $p < .01$; *** $p < .001$

Table A24. Progress of the PhD students with their thesis. Percentages of respondents per statement, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Yes, I think I will be able to finish my PhD in time.	25.8	40.0	18.9	25.6	29.6	3.4
No, I have fallen behind but I still think I can finish in time.	27.6	20.0	35.1	24.0	33.3	6.9
No, I have fallen behind and I don't think I will be able to finish in time.	27.6	26.7	18.9	33.3	33.3	3.4
I was unable to finish in time and am currently on an extension.	2.0	3.3	5.4	2.0	0	17.2
I was unable to finish in time and am currently finishing my thesis in my spare time.	0.2	0	0	0	0	65.5
I have already defended my thesis or sent the manuscript to the assessment committee.	0.2	0	8.1	0.4	0	0
I don't have a schedule.	3.4	0	2.7	1.6	3.7	0

I don't know / other.	13.1	10	10.8	13.0	0	3.4
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Table A25. Mean (standard deviation) of consideration of quitting, and satisfaction with the trajectory and the supervision, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Have you ever considered quitting your PhD project? ¹	4.1 (1.14)	3.93 (1.08)	4.24 (.93)	4.08 (1.16)	4.15 (1.29)	3.93 (1.16)
How satisfied are you with your PhD trajectory so far? ^{2***}	3.57 (.84)	3.4 (.93)	3.78 (.82)	3.36 (.88)	3.59 (1.05)	3.03 (.91)
How satisfied are you with the supervision you receive? ²	3.86 (1.00)	3.6 (1.28)	3.97 (.93)	3.83 (.93)	4.15 (.72)	3.62 (1.08)

Note. Answers were given on a scale from 1 to 5. ¹(1 = Yes, very often, 5 = No, never), ²(1 = very dissatisfied, 5 = very satisfied).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A26. Progress of the PhD students with their thesis. Percentage of respondents per statement, per phase of project.

	Junior	Senior
Yes, I think I will be able to finish my PhD in time.	30.5	19.4
No, I have fallen behind but I still think I can finish in time.	30.1	22.2
No, I have fallen behind and I don't think I will be able to finish in time.	19.6	33.5
I was unable to finish in time and am currently on an extension.	0	7.0
I was unable to finish in time and am currently finishing my thesis in my spare time.	0	5.5
I have already defended my thesis or sent the manuscript to the assessment committee.	0	1.3
I don't have a schedule.	3.7	1.7
I don't know / other.	16.1	9.4

Table A27. Mean (standard deviation) of consideration of quitting, and satisfaction with the trajectory and the supervision, per phase of project.

	Junior	Senior
Have you ever considered quitting your PhD project? ^{1***}	4.25 (1.05)	3.88 (1.23)
How satisfied are you with your PhD trajectory so far? ^{2**}	3.6 (0.82)	3.36 (.91)
How satisfied are you with the supervision you receive? ^{2***}	4.03 (.89)	3.65 (1.05)

Note. Answers were given on a scale from 1 to 5. ¹(1 = Yes, very often, 5 = No, never), ²(1 = very dissatisfied, 5 = very satisfied).

* $p < .05$; ** $p < .01$; *** $p < .001$

The effects of COVID-19 and (current) work situation
Information regarding the situation

Table A28. Mean (standard deviation) of satisfaction with information and regulations regarding the COVID-19 outbreak, per gender.

	Male	Female
I feel well informed about the recent COVID-19 outbreak.	4.08 (.86)	4.00 (.82)
The UG has informed me sufficiently about the COVID-19 rules and regulations.	4.02 (.86)	3.92 (.83)
I am satisfied about the the way th UG has implemented protective measures concerning the COVID-19 outbreak.	3.93 (.94)	3.87 (.86)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

Table A29. Source of information about the COVID-19 crisis in percentage, per gender.

	Male	Female
Dutch news (newspaper / programmes)	63.6	72.9
International news (newspaper / programmes)	73.4	55.6
University news	58	57.8
Fellow PhD students	31.9	27.3
Supervisors	33.0	32.4
Others ¹	19.7	17.2

¹ Mainly family, friends, UMCG news & social media, but also other colleagues, government websites & scientific publications.

Table A30. Mean (standard deviation) of satisfaction with information and regulations regarding the COVID-19 outbreak, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
I feel well informed about the recent COVID-19 outbreak.	4.01 (.98)	4.06 (7.21)	4.04 (.85)	4.11 (.8)
The UG has informed me sufficiently about the COVID-19 rules and regulations.*	4.13 (.96)	3.91 (.79)	3.93 (.83)	3.98 (.91)
I am satisfied about the the way th UG has implemented protective measures concerning the COVID-19 outbreak.*	4.04 (.94)	3.81 (.82)	3.85 (.99)	4.02 (.93)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A31. Source of information about the COVID-19 crisis in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Dutch news (newspaper / programmes)	39.4	97.8	48.7	45.3
International news (newspaper / programmes)	79.4	40.0	85.1	88.7
University news	67.9	53.9	55.4	66.0
Fellow PhD students	38.8	20.0	34.4	39.6
Supervisors	35.2	29.3	35.4	41.5
Others ¹	20.6	15.6	19.5	20.8

¹ Mainly family, friends, UMCG news & social media, but also other colleagues, government websites & scientific publications.

Table A32. Mean (standard deviation) of satisfaction with information and regulations regarding the COVID-19 outbreak, per graduate school.

	BSS	EB	Hum	MS	SE
I feel well informed about the recent COVID-19 outbreak.	4 (.96)	4.14 (.73)	4.06 (.80)	4.09 (.74)	3.99 (.89)
The UG has informed me sufficiently about the COVID-19 rules and regulations.	3.93 (.92)	4.02 (.85)	4.06 (.73)	3.89 (.78)	4.02 (.88)
I am satisfied about the the way th UG has implemented protective measures concerning the COVID-19 outbreak.	3.85 (1.01)	3.86 (.93)	4.04 (.71)	3.96 (.80)	3.87 (.94)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A33. Source of information about the COVID-19 crisis in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Dutch news (newspaper / programmes)	82.0	65.9	75.0	79.0	57.7
International news (newspaper / programmes)	51.7	84.1	76.9	50.2	72.1
University news	59.6	65.9	61.5	56.8	57.1
Fellow PhD students	29.2	25.0	25.0	28.0	34
Supervisors	23.6	20.5	23.1	37.7	38.2
Others ¹	23.6	9.1	11.5	21.0	17.0

¹ Mainly family, friends, UMCG news & social media, but also other colleagues, government websites & scientific publications.

Table A34. Mean (standard deviation) of satisfaction with information and regulations regarding the COVID-19 outbreak, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare Time
I feel well informed about the recent COVID-19 outbreak.	4.06 (.78)	3.97 (.81)	4.35 (.68)	3.95 (.91)	4.07 (.62)	4.07 (.88)
The UG has informed me sufficiently about the COVID-19 rules and regulations.	3.97 (.81)	4.03 (.67)	4.14 (.71)	3.87 (.91)	3.81 (.83)	4.18 (.72)
I am satisfied about the the way th UG has	3.88 (.87)	3.97 (.81)	4.11 (.81)	3.76 (1.02)	3.85 (.75)	4.04 (.69)

implemented protective measures concerning the COVID-19 outbreak.						
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Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

Table A35. Source of information about the COVID-19 crisis in percentage, per type of contract.

	Employe d	Externa l RC	Externa l AS	Scholarshi p	MD	Spare Time
Dutch news (newspaper / programmes)	74.9	73.3	89.2	55.7	77.8	69.0
International news (newspaper / programmes)	63.0	70.0	45.9	73.2	44.4	51.7
University news	54.4	46.7	75.7	61.0	48.1	69.0
Fellow PhD students	30.2	33.3	2.7	36.6	22.2	20.7
Supervisors	35.7	26.7	16.2	29.7	51.9	24.1
Others ¹	17.4	10.0	18.9	19.1	14.8	17.2

¹ Mainly family, friends, UMCG news & social media, but also other colleagues, government websites & scientific publications.

Table A36. Mean (standard deviation) of satisfaction with information and regulations regarding the COVID-19 outbreak, per phase of project.

	Junior	Senior
I feel well informed about the recent COVID-19 outbreak.*	4.01 (.80)	4.04 (.85)
The UG has informed me sufficiently about the COVID-19 rules and regulations.**	3.99 (.79)	3.92 (.89)
I am satisfied about the the way th UG has implemented protective measures concerning the COVID-19 outbreak.	3.9 (.89)	3.85 (.90)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A37. Source of information about the COVID-19 crisis in percentage, per phase of project.

	Junior	Senior
Dutch news (newspaper / programmes)	69.2	68.5
International news (newspaper / programmes)	62.0	65.5
University news	59.9	55.5
Fellow PhD students	31.7	27.7
Supervisors	36.4	28.5
Others ¹	16.3	19.6

¹ Mainly family, friends, UMCG news & social media, but also other colleagues, government websites & scientific publications.

Effects of COVID-19 crisis on work facilities and PhD trajectory

Table A38. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per gender.

	Male Home	Male Office	Male Both	Female Home	Female Office	Female Both
I am currently working at...	65.3	4.6	30.2	67.3	3.1	29.5
I can concentrate better at...	15.5	64.7	19.8	25	57.3	17.7
I have fewer distraction at...	19.0	66.5	14.5	28.8	55.6	15.6
I am more motivated to work at...	7.8	71.0	21.2	11.0	64.3	24.7

I have better internet connection at...	11.3	53.1	35.7	5.6	48.4	45.9
I have a better PC / laptop at...	21.6	40.8	37.5	11.2	53.6	35.3
I have an ergonomically better workplace at...	10.6	71.8	17.6	6.3	79.4	14.3
I have better coffee and tea facilities at...	58.3	28.7	13.0	70.1	12.6	17.3
I can write better at...	29.5	48.1	22.4	40.5	38.8	19.0
I can read literature better at...	29.1	49.7	21.1	40.8	41.0	18.2
In general, I get more work done at...	13.9	67.4	18.8	19.7	59.6	20.7

Table A39. Answer to the question ‘Do you feel that the COVID-19 crisis affects your PhD trajectory?’ in percentage, per gender.

	Male	Female
Yes	59.8	65.7
Maybe	20.2	17.4
No	8.8	6.8
I don't know	11.2	10.1

Table A40. Mean (standard deviation) of statements regarding the influence of the COVID-19 outbreak on the PhD trajectory, per gender.

	Male	Female
I have no or limited access to laboratories.	3.58 (1.10)	3.56 (1.04)
I have no access to the library.	3.33 (1.08)	3.42 (1.08)
I have no or limited print facilities. *	3.62 (1.25)	3.82 (1.21)
I have no or limited computer facilities.	2.58 (1.19)	2.66 (1.23)
I have no or limited contact with supervisors.	2.42 (1.19)	2.36 (1.17)
I have no or limited contact with fellow PhD students.	3.38 (1.18)	3.27 (1.17)
It slows down my PhD trajectory due to worse working conditions.	3.63 (1.11)	3.52 (1.14)
It slows down my PhD trajectory due to less supervision meetings.	2.66 (1.2)	2.6 (1.1)
It will accelerate my PhD trajectory, because I have more time to write the manuscript.	2.13 (1.00)	2.22 (1.03)
It will accelerate my PhD trajectory, because of fewer meetings I have to attend.	2.24 (1.10)	2.36 (1.1)
It will accelerate my PhD trajectory, because I don't attend conferences.	2.11 (1.04)	2.18 (.98)
My workload has significantly increased since the COVID-19 outbreak.	2.99 (1.2)	2.94 (1.18)
I am concerned that I will not be able to successfully complete my PhD in time due to the COVID-19 outbreak.	3.42 (1.51)	3.62 (1.58)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A41a. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per nationality.

		I am currently working at...	I can concentrate better at...	I have fewer distraction at...	I am more motivated to work at...
Asian	Home	56.8	12.1	22.1	9.2
	Office	7.4	71.5	69.3	74.8
	Both	35.8	16.4	8.6	16.0

Dutch	Home	73.9	26.7	27	10.1
	Office	1.2	54.9	55.4	64.5
	Both	24.9	18.4	17.6	25.4
Non-Dutch European	Home	64.4	20.1	22.6	8.9
	Office	4.1	57.2	60.5	63.7
	Both	31.4	22.7	16.9	27.4
South-American	Home	56.9	13.2	22.6	7.5
	Office	2.0	71.7	62.3	71.7
	Both	41.2	15.1	15.1	20.8

Table A41b. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per nationality.

		I have better internet connection at...	I have a better PC / laptop at...	I have an ergonomically better workplace at...	I have better coffee and tea facilities at...
Asian	Home	2.4	14.3	8.0	43.8
	Office	57.9	60.9	79	38.3
	Both	39.6	24.8	13	17.9
Dutch	Home	9.8	16.7	6.9	73.3
	Office	43	40.9	77.9	12.0
	Both	47.2	42.4	15.2	14.7
Non-Dutch European	Home	11.3	18.0	10.9	70.3
	Office	53.6	50.3	68.2	16.1
	Both	35.1	31.7	20.8	13.5
South-American	Home	7.5	9.8	9.4	58.5
	Office	52.8	49.0	81.1	15.1
	Both	39.6	41.2	9.4	26.4

Table A41c. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per nationality.

		I can write better at...	I can read literature better at...	In general, I get more work done at...
Asian	Home	19.1	17.1	9.3
	Office	59.3	62.2	73.5
	Both	21.6	20.7	17.3
Dutch	Home	41.8	43.5	21.1
	Office	37.9	37.6	57.7
	Both	20.3	18.9	21.1
Non-Dutch European	Home	39.1	41.5	18.4
	Office	36.5	37.4	58.9
	Both	24.5	21.0	22.6
South-American	Home	44.2	28.3	13.5
	Office	40.4	58.5	75.0
	Both	15.4	13.2	11.5

Table A42. Answer to the question 'Do you feel that the COVID-19 crisis affects your PhD trajectory?' in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Yes	58.2	66.1	57.9	60.4
Maybe	17.6	17.3	22.6	18.9

No	9.1	8.0	7.7	9.4
I don't know	15.2	8.5	11.8	11.3

Table A43. Mean (standard deviation) of statements regarding the influence of the COVID-19 outbreak on the PhD trajectory, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
I have no or limited access to laboratories.	3.46 (1.10)	3.58 (1.07)	3.56 (1.00)	3.75 (1.13)
I have no access to the library.	3.42 (1.06)	3.32 (1.10)	3.43 (1.06)	3.43 (1.17)
I have no or limited print facilities.	3.74 (1.19)	3.72 (1.23)	3.64 (1.28)	3.79 (1.23)
I have no or limited computer facilities. ***	2.85 (1.16)	2.42 (1.19)	2.76 (1.24)	2.71 (1.28)
I have no or limited contact with supervisors.	2.34 (1.17)	2.36 (1.12)	2.38 (1.22)	2.3 (1.27)
I have no or limited contact with fellow PhD students.*	3.15 (1.22)	3.41 (1.12)	3.14 (1.21)	3.32 (1.32)
It slows down my PhD trajectory due to worse working conditions.	3.7 (1.08)	3.44 (1.18)	3.64 (1.09)	3.51 (1.15)
It slows down my PhD trajectory due to less supervision meetings.	2.73 (1.05)	2.5 (1.06)	2.67 (1.21)	2.58 (1.12)
It will accelerate my PhD trajectory, because I have more time to write the manuscript.*	2.4 (.99)	2.12 (1.03)	2.14 (1.03)	2.23 (1.07)
It will accelerate my PhD trajectory, because of fewer meetings I have to attend.	2.46 (1.06)	2.29 (1.10)	2.29 (1.18)	2.25 (1.11)
It will accelerate my PhD trajectory, because I don't attend conferences.*	2.25 (.97)	2.22 (1.02)	2.03 (1.02)	1.92 (1.02)
My workload has significantly increased since the COVID-19 outbreak.	2.87 (1.04)	2.88 (1.19)	3.09 (1.27)	2.91 (1.24)
I am concerned that I will not be able to successfully complete my PhD in time due to the COVID-19 outbreak.*	3.73 (1.47)	3.35 (1.57)	3.63 (1.56)	3.58 (1.60)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A44a. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per graduate school.

		I am currently working at...	I can concentrate better at...	I have fewer distraction at...	I am more motivated to work at...
BSS	Home	88.8	29.2	30.3	11.4
	Office	0	46.1	53.9	56.8
	Both	11.2	24.7	15.7	31.8
EB	Home	86.4	15.9	13.6	4.5
	Office	0	72.7	70.5	84.1
	Both	13.6	11.4	15.9	11.4
Hum	Home	90.2	19.2	17.6	5.9
	Office	0	55.8	64.7	60.8

	Both	9.8	25.0	17.6	33.3
MS	Home	61.6	24.3	28.5	9.9
	Office	3.5	57.3	55.9	64.4
	Both	34.9	18.4	15.6	25.7
SE	Home	53.8	17.0	23.5	8.5
	Office	5.4	67.3	63.6	71.2
	Both	40.8	15.6	12.9	20.3

Table A44b. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per graduate school.

		I have better internet connection at...	I have a better PC / laptop at...	I have an ergonomically better workplace at...	I have better coffee and tea facilities at...
BSS	Home	7.9	13.6	4.5	63.6
	Office	49.4	53.4	82.0	15.9
	Both	42.7	33.0	13.5	20.5
EB	Home	2.3	13.6	4.5	56.1
	Office	50.0	50.0	88.6	31.7
	Both	47.7	36.4	6.8	12.2
Hum	Home	13.7	16.3	7.8	70.6
	Office	49.0	46.9	70.6	3.9
	Both	37.3	36.7	21.6	25.5
MS	Home	7.4	19.2	7.5	72.2
	Office	47.3	45.2	76.1	13.5
	Both	45.3	35.6	16.5	14.3
SE	Home	8.4	15.4	9.6	60.8
	Office	53.4	48.3	74.3	24.7
	Both	38.2	36.3	16.1	14.5

Table A44c. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per graduate school.

		I can write better at...	I can read literature better at...	In general, I get more work done at...
BSS	Home	37.1	44.9	24.7
	Office	27.0	29.2	48.3
	Both	36.0	25.8	27.0
EB	Home	25.0	22.7	13.6
	Office	63.6	56.8	75.0
	Both	11.4	20.5	11.4
Hum	Home	30.8	40.4	17.3
	Office	40.4	42.3	53.8
	Both	28.8	17.3	28.8
MS	Home	44.8	43.3	19.8
	Office	38.0	39.0	62.1
	Both	17.2	17.7	18.2
SE	Home	32.3	30.7	12.9
	Office	49.3	50.3	68.6
	Both	18.4	19.0	18.6

Table A45. Answer to the question ‘Do you feel that the COVID-19 crisis affects your PhD trajectory?’ in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Yes	57.3	68.2	69.2	65	60.7
Maybe	24.7	18.2	11.5	16.3	19.2
No	6.7	6.8	9.6	10.9	6.7
I don't know	11.2	6.8	9.6	7.8	13.4

Table A46. Mean (standard deviation) of statements regarding the influence of the COVID-19 outbreak on the PhD trajectory, per graduate school.

	BSS	EB	Hum	MS	SE
I have no or limited access to laboratories. *	3.63 (1.05)	3.41 (1.17)	4.02 (.87)	3.61 (1.07)	3.55 (1.07)
I have no access to the library.	3.36 (1.24)	3.48 (1.29)	3.65 (1.14)	3.27 (1.04)	3.42 (1.01)
I have no or limited print facilities. ***	4 (1.19)	4.27 (.97)	4.17 (1.02)	3.6 (1.25)	3.55 (1.26)
I have no or limited computer facilities.	2.61 (1.17)	2.75 (1.35)	2.73 (1.30)	2.56 (1.23)	2.62 (1.18)
I have no or limited contact with supervisors.	2.35 (1.08)	2.3 (1.23)	2.19 (1.19)	2.4 (1.18)	2.43 (1.20)
I have no or limited contact with fellow PhD students.	3.28 (1.08)	3.43 (1.09)	3.17 (1.22)	3.33 (1.19)	3.26 (1.21)
It slows down my PhD trajectory due to worse working conditions.***	3.17 (1.17)	3.91 (1.03)	3.45 (1.10)	3.4 (1.23)	3.76 (1.01)
It slows down my PhD trajectory due to less supervision meetings.	2.36 (1.6)	2.52 (1.09)	2.61 (1.10)	2.59 (1.11)	2.73 (1.14)
It will accelerate my PhD trajectory, because I have more time to write the manuscript.**	2.49 (1.16)	1.84 (.78)	2.18 (1.18)	2.18 (1.02)	2.16 (.96)
It will accelerate my PhD trajectory, because of fewer meetings I have to attend.*	2.6 (1.14)	2.05 (1.06)	2.18 (1.18)	2.39 (1.10)	2.22 (1.07)
It will accelerate my PhD trajectory, because I don't attend conferences.*	2.39 (1.02)	1.82 (.92)	2.14 (1.08)	2.18 (1.00)	2.13 (.99)
My workload has significantly increased since the COVID-19 outbreak.	3.01 (1.13)	3.09 (1.48)	3.14 (1.10)	2.95 (1.24)	2.97 (1.16)
I am concerned that I will not be able to successfully complete my PhD in time due to the COVID-19 outbreak.*	3.17 (1.62)	3.66 (1.55)	3.69 (1.55)	3.38 (1.60)	3.69 (1.48)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A47a. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per type of contract.

		I am currently working at...	I can concentrate better at...	I have fewer distraction at...	I am more motivated to work at...
Employed	Home	62.0	20.4	23.1	9.8
	Office	4.1	61.1	61.7	67.4
	Both	33.9	18.6	15.2	22.8
External RC	Home	79.3	24.1	16.7	70.0
	Office	0	58.6	63.3	0
	Both	20.7	17.2	20.0	30.0
External AS	Home	91.9	43.2	43.2	17.1
	Office	0	29.7	27.0	37.1
	Both	8.1	27	29.7	45.7
Scholarship	Home	67.8	17.1	23.7	9.4
	Office	3.7	66.3	65.7	70.2
	Both	28.5	16.7	10.6	20.4
MD	Home	66.7	22.2	14.8	3.7
	Office	0	74.1	77.8	85.2
	Both	33.3	3.7	7.4	11.1
Spare time	Home	78.6	28.6	31.0	17.9
	Office	3.6	46.4	48.3	53.6
	Both	17.9	25.0	20.7	28.6

Table A47b. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per type of contract.

		I have better internet connection at...	I have a better PC / laptop at...	I have an ergonomically better workplace at...	I have better coffee and tea facilities at...
Employed	Home	9.7	18.5	9.6	70.0
	Office	51.4	46.0	74.7	15.9
	Both	38.9	35.6	15.7	14.1
External RC	Home	16.7	17.2	3.6	46.7
	Office	46.7	55.2	78.6	30.0
	Both	36.7	27.6	17.9	23.3
External AS	Home	8.1	25.0	13.5	73
	Office	35.1	22.2	67.6	8.1
	Both	56.8	52.8	18.9	18.9
Scholarship	Home	4.9	8.7	5.7	55.6
	Office	53.7	59.3	79.9	27.4
	Both	41.5	32.0	14.3	17.0
MD	Home	7.4	23.1	3.7	73.1
	Office	44.4	38.5	88.9	23.1
	Both	48.1	38.5	7.4	3.8
Spare time	Home	0	21.4	6.9	65.5
	Office	69.0	42.9	79.3	20.7
	Both	31.0	35.7	13.8	13.8

Table A47c. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per type of contract.

		I can write better at...	I can read literature better at...	In general, I get more work done at...
Employed	Home	38.2	36.7	16.1
	Office	41.2	41.9	63.0
	Both	20.6	21.5	20.9
External RC	Home	36.7	40.0	13.3
	Office	46.7	50.0	63.3
	Both	16.7	10.0	23.3
External AS	Home	60.0	66.7	37.8
	Office	17.1	11.1	32.4
	Both	22.9	22.2	29.7
Scholarship	Home	27.3	28.0	14.0
	Office	50.2	54.1	68.6
	Both	22.4	17.9	17.4
MD	Home	29.6	37.0	11.1
	Office	59.3	55.6	77.8
	Both	11.1	7.4	11.1
Spare time	Home	46.4	39.3	25.0.
	Office	42.9	50.0	53.6
	Both	10.7	10.7	21.4

Table A48. Answer to the question ‘Do you feel that the COVID-19 crisis affects your PhD trajectory?’ in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Yes	61.9	60.0	62.2	65.0	74.1	75.9
Maybe	19.2	13.3	21.6	18.7	14.8	6.9
No	7.2	3.3	8.1	7.3	3.7	10.3
I don't know	11.7	23.3	8.1	8.9	7.4	6.9

Table A49. Mean (standard deviation) of statements regarding the influence of the COVID-19 outbreak on the PhD trajectory, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
I have no or limited access to laboratories.	3.58 (1.07)	3.67 (1.2)	3.27 (.77)	3.56 (1.05)	3.62 (1.20)	3.22 (1.09)
I have no access to the library. *	3.41 (1.05)	3.33 (1.32)	2.76 (1.07)	3.42 (1.07)	3.44 (1.09)	3.38 (1.12)
I have no or limited print facilities.	3.64 (1.25)	3.93 (1.23)	3.95 (1.13)	3.83 (1.22)	3.63 (1.15)	3.66 (1.45)
I have no or limited computer facilities. **	2.6 (1.19)	2.34 (1.20)	1.95 (.85)	2.76 (1.22)	2.89 (1.28)	2.62 (1.35)
I have no or limited contact with supervisors.	2.38 (1.19)	2.47 (1.20)	2.32 (1.00)	2.39 (1.25)	2.37 (1.15)	2.69 (1.14)
I have no or limited contact with fellow PhD students.	3.28 (1.17)	3.33 (1.06)	3.19 (1.15)	3.31 (1.22)	3.33 (1.21)	3.62 (.94)

It slows down my PhD trajectory due to worse working conditions.	3.59 (1.1)	3.27 (1.11)	3.19 (1.20)	3.69 (1.11)	3.63 (1.28)	3.31 (1.42)
It slows down my PhD trajectory due to less supervision meetings.	2.57 (1.12)	2.73 (1.20)	2.59 (.96)	2.63 (1.11)	2.52 (1.09)	2.89 (1.23)
It will accelerate my PhD trajectory, because I have more time to write the manuscript.	2.19 (1.0)	2.2 (.85)	2.35 (.98)	2.04 (.97)	1.96 (1.02)	2.41 (1.35)
It will accelerate my PhD trajectory, because of fewer meetings I have to attend.	2.36 (1.12)	2.13 (1.07)	2.3 (.91)	2.18 (1.07)	2.11 (.89)	2.52 (1.38)
It will accelerate my PhD trajectory, because I don't attend conferences.	2.16 (1.03)	2.23 (1.07)	2.41 (.93)	2.01 (.96)	2.26 (.94)	2.34 (1.08)
My workload has significantly increased since the COVID-19 outbreak.	2.9 (1.19)	3.03 (.85)	3.3 (1.15)	2.89 (1.18)	3 (1.21)	2.89 (1.20)
I am concerned that I will not be able to successfully complete my PhD in time due to the COVID-19 outbreak.**	3.42 (1.52)	3.37 (1.50)	3.32 (1.67)	3.87 (1.56)	3.48 (1.63)	3.76 (1.62)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A50. Comparison of the working environment and facilities at the respondents home vs. office in percentage, per phase of project.

	Junior Home	Junior Office	Junior Both	Senior Home	Senior Office	Senior Both
I am currently working at...	65.4	3.1	31.5	68.1	4.3	27.6
I can concentrate better at...	16.6	65.6	17.8	25.3	55.9	18.8
I have fewer distraction at...	18.0	66.7	15.2	30.9	53.9	15.2
I am more motivated to work at...	6.8	70.4	22.8	12.4	64.2	23.4
I have better internet connection at...	9.6	48.6	41.8	6.6	53.1	40.3
I have a better PC / laptop at...	16.8	45.6	37.6	14.5	50.7	34.9
I have an ergonomically better workplace at...	8.7	75.9	15.4	6.9	77.5	15.6
I have better coffee and tea facilities at...	62.7	19.7	17.5	67.5	19.1	13.4
I can write better at...	35.0	44.0	21.0	37.5	42.2	20.3
I can read literature better at...	35.6	45.7	18.7	36.7	43.8	19.5
In general, I get more work done at...	14.7	66.9	18.4	19.6	59.0	21.4

Table A51. Answer to the question ‘Do you feel that the COVID-19 crisis affects your PhD trajectory?’ in percentage, per phase of project.

	Junior	Senior
Yes	57.1	68.7
Maybe	21.7	15.5
No	6.8	8.1
I don't know	14.5	7.7

Table A52. Mean (standard deviation) of statements regarding the influence of the COVID-19 outbreak on the PhD trajectory, per phase of project.

	Junior	Senior
I have no or limited access to laboratories.	3.61 (1.01)	3.5 (1.11)
I have no access to the library. **	3.49 (1.05)	3.28 (1.11)
I have no or limited print facilities.	3.69 (1.22)	3.76 (1.24)
I have no or limited computer facilities.	2.65 (1.19)	2.61 (1.23)
I have no or limited contact with supervisors. **	2.25 (1.13)	2.52 (1.22)
I have no or limited contact with fellow PhD students.	3.29 (1.17)	3.33 (1.18)
It slows down my PhD trajectory due to worse working conditions.	3.55 (1.08)	3.6 (1.17)
It slows down my PhD trajectory due to less supervision meetings.**	2.48 (1.04)	2.76 (1.15)
It will accelerate my PhD trajectory, because I have more time to write the manuscript.	2.14 (.93)	2.21 (1.08)
It will accelerate my PhD trajectory, because of fewer meetings I have to attend.	2.29 (1.06)	2.32 (1.13)
It will accelerate my PhD trajectory, because I don't attend conferences.	2.11 (.95)	2.19 (1.05)
My workload has significantly increased since the COVID-19 outbreak.	2.88 (1.14)	3.02 (1.23)
I am concerned that I will not be able to successfully complete my PhD in time due to the COVID-19 outbreak.**	3.42 (1.45)	3.67 (1.62)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Work-life balance and supervision

Table A53. Mean (standard deviation) of statements regarding the respondents work-life balance, per gender.

	Male	Female
I have difficulties balancing my work and non-work activities.	3.78 (1.01)	3.67 (1.10)
The demands of my work interfere with my life away from work.	3.45 (1.03)	3.39 (1.10)
The amount of time my work takes up makes it difficult to fulfil other interests.*	3.28 (1.08)	3.1 (1.13)
Things I want to do at home do not get done because of work demands.	3 (1.04)	2.89 (1.02)
My work produces strain that makes it difficult to fulfil other responsibilities and duties.*	3.2 (1.05)	3.04 (1.05)
Due to my work, I have to make changes to my plans for activities outside of work.*	3.34 (1.07)	3.16 (1.10)
Overall, I believe that my work and non-work life are balanced.	2.7 (1.03)	2.83 (1.09)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A54. Answer to the question if the respondents' work-life balance changed due to the COVID-19 pandemic in percentage, per gender.

	Male	Female
No.	27.1	23.4
Yes, since the pandemic my work-life balance has improved.	12.0	19.4
Yes, since the pandemic my work-life balance has worsened.	60.9	57.2

Table A55. Mean (standard deviation) of frequency and satisfaction with online supervision by gender.

	Male	Female
Frequency meeting daily supervisor ¹	2.75 (1.16)	2.76 (1.12)
Frequency meeting primary supervisor ¹	3.23 (1.22)	3.38 (1.22)
Satisfaction online meetings ²	3.84 (.93)	3.86 (.96)

¹ Answers were given on a scale from 1 to 5 (1 = several times a week; 2 = about once a week; 3 = several times a month; 4 = about once a month; 5 = less than once a month).

² Answers were given on a scale from 1 (very dissatisfied) to 5 (very satisfied).

Table A56. Answer to the question if the frequency of meetings with supervisors changed due to the COVID-19 pandemic in percentage, per gender.

	Male	Female
No.	50.8	53.7
Yes, I have had more meetings.	15.2	16.1
Yes, I have had fewer meetings.	34.0	30.2

Table A57. Mean (standard deviation) of the atmosphere within the department, per gender.

	Male	Female
Formal relationships	3.36 (.69)	3.37 (.67)
Informal relationships	3.2 (.87)	3.32 (.85)
Sense of belonging	3.8 (.66)	3.77 (.68)

Table A58. Mean (standard deviation) of statements regarding the respondents work-life balance, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
I have difficulties balancing my work and non-work activities.**	3.58 (1.01)	3.62 (1.11)	3.87 (1.04)	4.08 (1.00)
The demands of my work interfere with my life away from work.*	3.3 (1.00)	3.33 (1.07)	3.54 (1.08)	3.6 (1.16)
The amount of time my work takes up makes it difficult to fulfil other interests.**	3.1 (1.02)	3.02 (1.09)	3.3 (1.18)	3.42 (1.22)
Things I want to do at home do not get done because of work demands.	2.92 (.98)	2.81 (.98)	3 (1.11)	3.08 (1.17)
My work produces strain that makes it difficult to fulfil other responsibilities and duties.	3.05 (1.02)	2.99 (1.04)	3.21 (1.09)	3.25 (1.16)
Due to my work, I have to make changes to my plans for activities outside of work.***	3.38 (1.01)	3.03 (1.08)	3.3 (1.14)	3.54 (1.11)
Overall, I believe that my work and non-work life are balanced.***	2.73 (1.05)	2.98 (1.07)	2.69 (1.06)	2.28 (.97)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A59. Answer to the question if the respondents' work-life balance changed due to the COVID-19 pandemic in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No.	24.2	26.8	24.6	20.8
Yes, since the pandemic my work-life balance has improved.	16.4	17.8	17.9	9.4
Yes, since the pandemic my work-life balance has worsened.	59.4	55.4	57.4	69.8

Table A60. Mean (standard deviation) of frequency and satisfaction with online supervision, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Frequency meeting daily supervisor ¹	2.69 (1.21)	2.81 (1.10)	2.75 (1.15)	2.45 (1.06)
Frequency meeting primary supervisor ^{1**}	3.12 (1.20)	3.47 (1.20)	3.28 (1.22)	3.1 (1.24)
Satisfaction online meetings ²	3.75 (.98)	3.91 (.88)	3.84 (.99)	3.81 (.86)

¹ Answers were given on a scale from 1 to 5 (1 = several times a week; 2 = about once a week; 3 = several times a month; 4 = about once a month; 5 = less than once a month).

² Answers were given on a scale from 1 (very dissatisfied) to 5 (very satisfied).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A61. Answer to the question if the frequency of meetings with supervisors changed due to the COVID-19 pandemic in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No.	52.4	52.7	51.8	50.9
Yes, I have had more meetings.	15.9	14.6	15.9	26.4
Yes, I have had fewer meetings.	31.7	32.7	32.3	22.6

Table A62. Mean (standard deviation) of the atmosphere within the department, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Formal relationships**	3.22 (.74)	3.46 (.63)	3.32 (.67)	3.36 (.65)
Informal relationships***	3.08 (.72)	3.40 (.89)	3.23 (.84)	3.29 (1.0)
Sense of belonging***	3.7 (.6)	3.88 (.63)	3.65 (.78)	3.83 (.62)

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A63. Mean (standard deviation) of statements regarding the respondents work-life balance, per graduate school.

	BSS	EB	Hum	MS	SE
I have difficulties balancing my work and non-work activities.	3.61 (1.17)	3.86 (1.09)	3.71 (.92)	3.63 (1.13)	3.8 (1.00)
The demands of my work interfere with my life away from work.	3.38 (1.18)	3.3 (1.03)	3.6 (1.03)	3.43 (1.11)	3.46 (1.10)
The amount of time my work takes up makes it difficult to fulfil other interests.*	3.03 (1.23)	3.16 (1.18)	3.19 (1.03)	3.05 (1.12)	3.31 (1.05)
Things I want to do at home do not get done because of work demands.	2.87 (1.12)	2.84 (.96)	2.83 (.99)	2.9 (1.04)	3.03 (1.02)
My work produces strain that makes it difficult to fulfil other responsibilities and duties.	2.98 (1.15)	3.11 (1.06)	3.15 (1.06)	3.04 (1.09)	3.21 (.99)
Due to my work, I have to makes changes to my plans for activities outside of work.**	3.07 (1.13)	3.23 (.91)	3.02 (.96)	3.09 (1.15)	3.41 (1.06)
Overall, I believe that my work and non-work life are balanced.*	2.83 (1.17)	2.7 (1.00)	2.73 (.93)	2.94 (1.14)	2.64 (1.00)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A64. Answer to the question if the respondents' work-life balance changed due to the COVID-19 pandemic in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
No.	23.6	15.9	25.0	27.2	25.1
Yes, since the pandemic my work-life balance has improved.	16.9	20.5	11.5	20.2	13.6
Yes, since the pandemic my work-life balance has worsened.	59.6	63.6	63.5	52.5	61.3

Table A65. Mean (standard deviation) of frequency and satisfaction with online supervision, per graduate school.

	BSS	EB	Hum	MS	SE
Frequency meeting daily supervisor ^{1**}	2.57 (.84)	2.93 (1.06)	3.22 (1.17)	2.58 (1.09)	2.66 (1.17)
Frequency meeting primary supervisor ^{1*}	3.52 (1.21)	3.49 (1.03)	3.6 (1.13)	3.24 (1.21)	3.13 (1.24)
Satisfaction online meetings ²	3.92 (.98)	3.93 (.86)	4.1 (.95)	3.78 (.93)	3.8 (.97)

¹ Answers were given on a scale from 1 to 5 (1 = several times a week; 2 = about once a week; 3 = several times a month; 4 = about once a month; 5 = less than once a month).

² Answers were given on a scale from 1 (very dissatisfied) to 5 (very satisfied).

*p < .05; **p < .01; ***p < .001

Table A66. Answer to the question if the frequency of meetings with supervisors changed due to the COVID-19 pandemic in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
No.	57.3	34.1	46.2	54.1	53.6
Yes, I have had more meetings.	15.7	20.5	17.3	16.3	14.8
Yes, I have had fewer meetings.	27.0	45.5	36.5	29.6	31.6

Table A67. Mean (standard deviation) of the atmosphere within the department, per graduate school.

	BSS	EB	Hum	MS	SE
Formal relationship**	3.48 (.61)	3.06 (.48)	3.33 (.52)	3.47 (.69)	3.36 (.7)
Informal relationships	3.26 (.85)	2.99 (.91)	3.41 (.91)	3.33 (.86)	3.27 (.85)
Sense of belonging	3.77 (.6)	3.66 (.69)	3.8 (.56)	3.84 (.64)	3.77 (.71)

*p < .05; **p < .01; ***p < .001

Table A68. Mean (standard deviation) of statements regarding the respondents work-life, per type of contract.

	Employee	External RC	External AS	Scholarship	MD	Spare time
I have difficulties balancing my work and non-work activities.	3.75 (1.06)	3.67 (1.18)	3.54 (1.07)	3.72 (.99)	3.48 (1.01)	3.52 (1.30)
The demands of my work interfere with my life away from work.	3.41 (1.09)	3.3 (.88)	3.41 (1.04)	3.44 (1.03)	3.11 (.93)	3.52 (1.24)
The amount of time my work takes up makes it difficult to fulfil other interests.	3.15 (1.10)	3.43 (.97)	3.24 (1.07)	3.14 (1.11)	2.81 (1.00)	3.62 (1.12)
Things I want to do at home do not get done because of work demands.	2.9 (1.04)	2.8 (.96)	3.11 (.91)	2.97 (1.04)	2.67 (.92)	3.1 (1.15)
My work produces strain that makes it difficult to fulfil other responsibilities and duties.	3.06 (1.06)	3.21 (.98)	3.16 (.99)	3.14 (1.02)	2.74 (.984)	3.41 (1.12)

Due to my work, I have to makes changes to my plans for activities outside of work.	3.19 (1.11)	3.1 (1.03)	2.89 (1.02)	3.41 (1.08)	2.89 (.93)	3.24 (1.22)
Overall, I believe that my work and non-work life are balanced.	2.81 (1.08)	2.8 (.96)	2.73 (1.05)	2.71 (1.08)	3 (1.04)	2.5 (1.20)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

Table A69. Answer to the question if the respondents' work-life balance changed due to the COVID-19 pandemic in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No.	25.1	13.3	10.8	24.0	44.4	27.6
Yes, since the pandemic my work-life balance has improved.	15.3	13.3	21.6	15.4	18.5	20.7
Yes, since the pandemic my work-life balance has worsened.	59.6	73.3	67.6	60.6	37.0	51.7

Table A70. Mean (standard deviation) of frequency and satisfaction with online supervision, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Frequency meeting daily supervisor ^{1***}	2.64 (1.08)	2.41 (1.02)	3.24 (1.16)	2.85 (1.18)	2.7 (1.17)	3.28 (1.19)
Frequency meeting primary supervisor ^{1***}	3.25 (1.18)	2.93 (1.17)	4.22 (1.01)	3.27 (1.25)	3.24 (1.33)	3.71 (1.21)
Satisfaction online meetings ²	3.9 (.94)	3.97 (.78)	3.97 (.98)	3.75 (.92)	3.8 (.91)	3.96 (1.10)

¹ Answers were given on a scale from 1 to 5 (1 = several times a week; 2 = about once a week; 3 = several times a month; 4 = about once a month; 5 = less than once a month).

² Answers were given on a scale from 1 (very dissatisfied) to 5 (very satisfied).

*p < .05; **p < .01; ***p < .001

Table A71. Answer to the question if the frequency of meetings with supervisors changed due to the COVID-19 pandemic in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No.	55.5	41.4	59.5	48.6	59.3	41.4
Yes, I have had more meetings.	14.9	13.8	8.1	17.6	14.8	27.6
Yes, I have had fewer meetings.	29.6	44.8	32.4	33.9	25.9	31

Table A72. Mean (standard deviation) of the atmosphere within the department, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Formal relationship***	3.49 (.65)	3.3 (.64)	3.3 (.66)	3.2 (.71)	3.53 (.71)	3.31 (.68)
Informal relationships**	3.36 (.85)	3.09 (1.03)	2.83 (.88)	3.23 (.87)	3.26 (.73)	3.35 (.65)
Sense of belonging*	3.84 (.67)	3.83 (.59)	3.5 (.75)	3.7 (.67)	3.77 (.46)	3.77 (.9)

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A73. Mean (standard deviation) of statements regarding the respondents work-life, per phase of project.

	Junior	Senior
I have difficulties balancing my work and non-work activities.	3.69 (1.05)	3.75 (1.07)
The demands of my work interfere with my life away from work.***	3.25 (1.04)	3.58 (1.07)
The amount of time my work takes up makes it difficult to fulfil other interests.***	3.0 (1.08)	3.35 (1.10)
Things I want to do at home do not get done because of work demands.***	2.81 (.97)	3.05 (1.07)
My work produces strain that makes it difficult to fulfil other responsibilities and duties.***	2.94 (1.02)	3.27 (1.05)
Due to my work, I have to makes changes to my plans for activities outside of work.***	3.09 (1.06)	3.35 (1.10)
Overall, I believe that my work and non-work life are balanced.*	2.85 (1.03)	2.7 (1.109)

Note. Answers were given on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A74. Answer to the question if the respondents' work-life balance changed due to the COVID-19 pandemic in percentage, per phase of project.

	Junior	Senior
No.	24.7	24.9
Yes, since the pandemic my work-life balance has improved.	17.5	14.7
Yes, since the pandemic my work-life balance has worsened.	57.8	60.4

Table A75. Mean (standard deviation) of frequency and satisfaction with online supervision, per phase of project.

	Junior	Junior
Frequency meeting daily supervisor ¹ ***	2.57 (1.09)	2.93 (1.16)
Frequency meeting primary supervisor ¹ **	3.2 (1.19)	3.45 (1.23)
Satisfaction online meetings ² ***	3.99 (.897)	3.72 (.98)

¹ Answers were given on a scale from 1 to 5 (1 = several times a week; 2 = about once a week; 3 = several times a month; 4 = about once a month; 5 = less than once a month).

² Answers were given on a scale from 1 (very dissatisfied) to 5 (very satisfied).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A76. Answer to the question if the frequency of meetings with supervisors changed due to the COVID-19 pandemic in percentage, per phase of project.

	Junior	Senior
No.	57.2	48.8
Yes, I have had more meetings.	15.0	15.8
Yes, I have had fewer meetings.	27.8	35.4

Table A77. Mean (standard deviation) of the atmosphere within the department, per phase of project.

	Junior	Senior
Formal relationships**	3.41 (.63)	3.32 (.72)
Informal relationships	3.18 (.83)	3.36 (.87)
Sense of belonging***	3.86 (.59)	3.69 (.73)

* $p < .05$; ** $p < .01$; *** $p < .001$

Mental Health
General mental health

Table A78. Mean (standard deviation) of mental health scores, per gender.

	Male	Female
WHO score	63.96 (15.48)	64.5 (15.73)
Mental health current	6.37 (1.74)	6.32 (1.78)
Mental health pre-COVID-19 pandemic*	7.36 (1.48)	7.09 (1.7)
Mental health during bachelor / master	7.72 (1.52)	7.73 (1.4)
In your experience, does the COVID-19 pandemic affect your mental health?	3.15 (1.20)	3.22 (1.22)
In your experience, does doing a PhD affect your mental health?	3.93 (1.35)	3.81 (1.24)

Table A79. Mean (standard deviation) of mental health scores, per nationality

	Asian	Dutch	Non-Dutch European	South-American
WHO score***	63.7 (14.7)	61.67 (15.03)	68.6 (15.60)	64.09 (15.42)
Mental health current***	6.39 (1.8)	6.6 (1.54)	5.89 (2.02)	5.94 (1.68)
Mental health pre-COVID-19 pandemic***	7.31 (1.6)	7.32 (1.3)	6.77 (1.86)	7.11 (1.6)
Mental health during bachelor / master	7.87 (1.56)	7.66 (1.31)	7.58 (1.51)	7.66 (1.52)
In your experience, does the COVID-19 pandemic affect your mental health?	3.13 (1.29)	3.23 (1.20)	3.24 (1.22)	3.08 (.96)
In your experience, does doing a PhD affect your mental health? ³	3.85 (1.49)	3.86 (1.28)	3.81 (1.19)	3.98 (.99)

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A80. Mean (standard deviation) of mental health scores, per graduate school.

	BSS	EB	Hum	MS	SE
WHO score	62.97 (15.57)	66.1 (12.15)	64.38 (14.82)	62.6 (15.7)	65.47 (15.81)
Mental health current*	6.53 (1.8)	5.64 (1.93)	6.5 (1.48)	6.52 (1.73)	6.23 (1.77)
Mental health pre-COVID-19 pandemic	7.4 (1.1)	6.93 (1.62)	7.54 (1.15)	7.24 (1.54)	7.1 (1.78)
Mental health during bachelor / master*	7.26 (1.42)	7.73 (1.59)	7.83 (1.28)	7.72 (1.32)	7.8 (1.56)
In your experience, does the COVID-19 pandemic affect your mental health?	3.36 (1.38)	2.86 (1.32)	2.94 (1.16)	3.25 (1.19)	3.21 (1.19)
In your experience, does doing a PhD affect your mental health?	4.0 (1.31)	3.82 (1.33)	3.69 (1.23)	3.79 (1.24)	3.77 (1.36)

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A81. Mean (standard deviation) of mental health scores, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
WHO score	64.83 (15.47)	64.27 (13.57)	62.38 (16.29)	64.93 (15.69)	54.67 (13.9)	64.28 (17.79)

Mental health current*	6.29 (1.79)	6.63 (1.30)	6.81 (1.37)	6.18 (1.89)	7.22 (1.53)	6.2 (1.92)
Mental health pre-COVID-19 pandemic	7.23 (1.6)	7.4 (1.43)	7.35 (1.14)	7.08 (1.72)	7.41 (1.8)	6.90 (1.50)
Mental health during bachelor / master	7.64 (1.46)	7.9 (1.63)	7.78 (.99)	7.73 (1.58)	8.19 (1.04)	7.48 (1.41)
In your experience, does the COVID-19 pandemic affect your mental health?	3.21 (1.16)	3.43 (1.22)	3.59 (1.28)	3.0 (1.12)	3.0 (1.33)	3.21 (1.47)
In your experience, does doing a PhD affect your mental health? ³	3.88 (1.27)	4.13 (1.20)	4.22 (1.75)	3.74 (1.26)	3.70 (1.49)	3.69 (1.34)

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A82. Mean (standard deviation) of mental health scores, per phase of project.

	Junior	Senior
WHO score	62.42 (15.1)	66.1 (15.9)
Mental health current*	6.52 (1.67)	6.13 (1.86)
Mental health pre-COVID-19 pandemic	7.41 (1.48)	6.98 (1.68)
Mental health during bachelor / master*	7.63 (1.52)	7.77 (1.42)
In your experience, does the COVID-19 pandemic affect your mental health?	3.21 (1.15)	3.17 (1.24)
In your experience, does doing a PhD affect your mental health? *	4.1 (1.27)	3.63 (1.29)

* $p < .05$; ** $p < .01$; *** $p < .001$

The impact of the COVID-19 pandemic and pursuing a PhD on one's mental health

Table A83. Answers to the question which aspects of the pandemic negatively affected the respondents mental health in percentage, per gender.

	Male	Female
Worries about my own health	30.3	28.5
Worries about other people's health (e.g friends, family)	49.2	55.8
Worries about the world / the situation in general	48.7	53.7
The lack of face-to-face social contact	57.7	61.4
Not being able to travel	46.8	46.7
Not being able to do sports	37.5	32.8
Worries about how the pandemic affects my work	43.4	44.2
Worries about how the pandemic affects my future career	33.0	30.6
Other ¹	6.6	11.0

¹ Other issues negatively affecting the respondents mental health were problems caused by home office, loneliness and being separated from loved ones, financial problems, lack of work-life balance, worries about economy / politics, insecurity about current situation or a lack of support from employers.

Table A84. Answers to the question which aspects of doing a PhD negatively affected the respondents mental health in percentage, per gender.

	Male	Female
High workload	38.0	40.9
Problems with work / life balance	46.8	45.5

Insecurities about future career	37.5	36.8
Insecurities about own capabilities	44.9	57.4
Not being able to finish in time or doubts about being able to finish in time	37.8	43.8
Not achieving good results or doubts about achieving good results	40.7	45.0
Issues due to practical setbacks in the project	28.7	31.4
Publication pressure	31.4	33.3
Problems with supervisors	11.7	16.9
Problems with colleagues	3.2	6.8
High level of competition in academia	21.3	26.7
Other ¹	6.4	8.5

¹ Other issues negatively affecting the respondents mental health were trouble with and a lack of supervision, balancing PhD with other jobs / personal life, discrepancy between employed and scholarship students, financial problems, lack of social contacts, external pressure or doubts about their PhD.

Table A85. Answers to the question which aspects of the pandemic negatively affected the respondents mental health in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Worries about my own health	53.3	14.1	29.2	45.3
Worries about other people's health (e.g friends, family)	53.9	43.4	57.4	81.1
Worries about the world / the situation in general	52.7	47.8	53.3	67.9
The lack of face-to-face social contact	49.1	64.6	56.9	62.3
Not being able to travel	54.5	38	55.9	47.2
Not being able to do sports	39.4	31.2	35.9	37.7
Worries about how the pandemic affects my work	52.7	39.5	40	45.3
Worries about how the pandemic affects my future career	43.0	21.5	33.3	41.5
Other ¹	5.5	10.0	9.7	9.4

¹ Other issues negatively affecting the respondents mental health were problems caused by home office, loneliness and being separated from loved ones, financial problems, lack of work-life balance, worries about economy / politics, insecurity about current situation or a lack of support from employers.

Table A86. Answers to the question which aspects of doing a PhD negatively affected the respondents mental health in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
High workload	25.5	44.9	39.5	43.4
Problems with work / life balance	37	46.8	47.2	58.5
Insecurities about future career	37	27.6	49.2	47.2
Insecurities about own capabilities	46.1	50.5	59	67.9
Not being able to finish in time or doubts about being able to finish in time	41.2	39.3	45.6	34.0
Not achieving good results or doubts about achieving good results	43.0	33.2	55.9	58.5
Issues due to practical setbacks in the project	24.8	33.7	28.2	30.2
Publication pressure	36.4	24.4	36.4	41.5

Problems with supervisors	13.3	16.6	11.8	11.3
Problems with colleagues	6.1	4.9	6.7	0
High level of competition in academia	20.6	22.0	28.2	35.8
Other ¹	1.8	8.8	10.3	9.4

¹ Other issues negatively affecting the respondents mental health were trouble with and a lack of supervision, balancing PhD with other jobs / personal life, discrepancy between employed and scholarship students, financial problems, lack of social contacts, external pressure or doubts about their PhD.

Table A87. Answers to the question which aspects of the pandemic negatively affected the respondents mental health in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Worries about my own health	27.0	-	-	25.3	32.3
Worries about other people's health (e.g friends, family)	48.3	54.5	57.7	47.9	53.2
Worries about the world / the situation in general	48.3	52.3	63.5	51.0	49.3
The lack of face-to-face social contact	60.7	56.8	69.2	63.8	55.4
Not being able to travel	38.2	45.5	48.1	48.2	46.0
Not being able to do sports	27.0	34.1	32.7	30.0	40.9
Worries about how the pandemic affects my work	33.7	50.0	48.1	43.2	45.4
Worries about how the pandemic affects my future career	23.6	43.2	40.4	25.7	35.9
Other ¹	7.9	6.8	15.4	10.1	7.5

¹ Other issues negatively affecting the respondents mental health were problems caused by home office, loneliness and being separated from loved ones, financial problems, lack of work-life balance, worries about economy / politics, insecurity about current situation or a lack of support from employers.

Table A88. Answers to the question which aspects of doing a PhD negatively affected the respondents mental health in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
High workload	47.2	40.9	40.4	43.2	38.2
Problems with work / life balance	43.8	45.5	51.9	44.4	47.6
Insecurities about future career	34.8	27.3	51.9	29.6	41.2
Insecurities about own capabilities	48.3	52.3	55.8	51.0	53.5
Not being able to finish in time or doubts about being able to finish in time	34.8	50.0	46.2	41.6	39.8
Not achieving good results or doubts about achieving good results	27.0	52.3	30.8	38.1	51.0
Issues due to practical setbacks in the project	34.8	-	-	32.3	30.1
Publication pressure	25.8	-	-	31.9	36.8
Problems with supervisors	19.1	-	-	13.2	13.6
Problems with colleagues	-	-	-	7.0	4.5
High level of competition in academia	23.6	36.4	38.5	22.6	21.4
Other ¹	-	-	-	7.0	6.1

¹ Other issues negatively affecting the respondents mental health were trouble with and a lack of supervision, balancing PhD with other jobs / personal life, discrepancy between employed and scholarship students, financial problems, lack of social contacts, external pressure or doubts about their PhD.

Table A89. Answers to the question which aspects of the pandemic negatively affected the respondents mental health in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Worries about my own health	23.3	23.3	27.0	40.2	11.1	27.6
Worries about other people's health (e.g friends, family)	50.1	56.7	62.2	59.3	40.7	51.7
Worries about the world / the situation in general	52.1	50.0	62.2	52.8	40.7	31.0
The lack of face-to-face social contact	63.2	73.3	56.8	57.7	59.3	37.9
Not being able to travel	47.2	43.3	35.1	52.4	33.3	27.6
Not being able to do sports	36.3	33.3	21.6	36.2	18.5	31.0
Worries about how the pandemic affects my work	42.2	53.3	37.8	49.6	40.7	31.0
Worries about how the pandemic affects my future career	27.5	36.7	18.9	43.1	22.2	37.9
Other ¹	11.5	0	13.5	4.9	3.7	17.2

¹ Other issues negatively affecting the respondents mental health were problems caused by home office, loneliness and being separated from loved ones, financial problems, lack of work-life balance, worries about economy / politics, insecurity about current situation or a lack of support from employers.

Table A90. Answers to the question which aspects of doing a PhD negatively affected the respondents mental health in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
High workload	42.2	33.3	32.4	40.2	33.3	34.5
Problems with work / life balance	45.8	43.3	40.5	49.2	40.7	48.3
Insecurities about future career	34.5	40.0	5.4	50.4	7.4	44.8
Insecurities about own capabilities	51.9	53.3	40.5	52.8	40.7	55.2
Not being able to finish in time or doubts about being able to finish in time	35.7	36.7	27	48.8	44.4	55.2
Not achieving good results or doubts about achieving good results	43.1	43.3	13.5	48.8	22.2	41.4
Issues due to practical setbacks in the project	31.6	26.7	21.6	31.7	25.9	34.5
Publication pressure	28.7	36.7	16.2	40.2	29.6	37.9
Problems with supervisors	14.7	13.3	10.8	13.4	7.4	27.6
Problems with colleagues	6.3	0	2.7	5.7	0	6.9
High level of competition in academia	21.0	30.0	5.4	34.1	14.8	17.2
Other ¹	8.1	0	10.8	7.3	0	10.3

¹ Other issues negatively affecting the respondents mental health were trouble with and a lack of supervision, balancing PhD with other jobs / personal life, discrepancy between employed and

scholarship students, financial problems, lack of social contacts, external pressure or doubts about their PhD.

Table A91. Answers to the question which aspects of the pandemic negatively affected the respondents mental health in percentage, per phase of project.

	Junior	Senior
Worries about my own health	28.9	29.4
Worries about other people's health (e.g friends, family)	54.8	51.5
Worries about the world / the situation in general	56.9	46.6
The lack of face-to-face social contact	64.6	55.5
Not being able to travel	53.4	40.6
Not being able to do sports	37.8	32.3
Worries about how the pandemic affects my work	45.9	42.3
Worries about how the pandemic affects my future career	24.7	38.7
Other ¹	8.6	9.8

¹ *Other issues negatively affecting the respondents mental health were problems caused by home office, loneliness and being separated from loved ones, financial problems, lack of work-life balance, worries about economy / politics, insecurity about current situation or a lack of support from employers.*

Table A92. Answers to the question which aspects of doing a PhD negatively affected the respondents mental health in percentage, per phase of project.

	Junior	Senior
High workload	32.9	45.3
Problems with work / life balance	39.2	51.9
Insecurities about future career	28.9	44.7
Insecurities about own capabilities	51.7	52.3
Not being able to finish in time or doubts about being able to finish in time	32.9	48.3
Not achieving good results or doubts about achieving good results	41.5	43.6
Issues due to practical setbacks in the project	26.3	34.3
Publication pressure	25.2	38.3
Problems with supervisors	9.3	19.1
Problems with colleagues	3.5	6.6
High level of competition in academia	19.6	28.3
Other ¹	5.4	10.0

¹ *Other issues negatively affecting the respondents mental health were trouble with and a lack of supervision, balancing PhD with other jobs / personal life, discrepancy between employed and scholarship students, financial problems, lack of social contacts, external pressure or doubts about their PhD.*

Mental health and career

Table A93. Career aspirations in percentage, per gender.

	Male	Female
Definitely inside	13.3	14.1
Probably inside	30.1	23.6
Don't know yet	23.9	24.2
Probably outside	21.0	21.3
Definitely outside	9.0	11.4
Other ¹	2.7	5.2

¹ *Others mentioned were a combination of both, a Medical doctor (MD), or do education but not research.*

Table A94. PhD students' expectations regarding post-PhD mental health within and outside academia in percentage, per gender.

	If I stay in academia		If I leave academia	
	Male	Female	Male	Female
I expect my mental health to get worse	21.6	24.5	6.3	2.4
I expect no change in my mental health	36.8	35.5	26.6	25.2
I expect my mental health to improve	24.0	20.1	46.7	47.8
I don't know	17.6	19.9	20.4	24.6

Table A95. Amount of career worries in percentage, per gender.

	Male	Female
Never	5.6	6.2
Rarely	18.6	18.6
Sometimes	43.4	37.2
Often	24.2	29.8
All the time	8.2	8.1

Table A96. Types of career worries in percentage, per gender.

	Male	Female
Not knowing what kind of career I want	32.2	40.1
Being unsure if I am good enough for the kind of job I want	40.4	46.5
Having to move to another place for a new job	24.5	24.6
Feeling unprepared for the job I want	27.4	28.3
The high competition to obtain the job I want	44.7	45.3
Having to start a new job already while my PhD thesis isn't finished yet	24.5	25.4
The work-life balance in my future job	28.5	27.9
Being insecure about my skills in writing application letters and / or doing job interviews	16.0	20.3
Other ¹	3.7	7.9

¹ Others mentioned are not being able to get a job in the preferable city, language / immigration problems, being overqualified or availability of jobs.

Table A97. Affect of COVID-19 pandemic on career worries in percentage, per gender.

	Male	Female
No	56.9	60.7
Due to the pandemic, I worry more often about my career	40.7	36.6
Due to the pandemic, I worry less often about my career	2.4	2.7

Table A98. Career aspirations in percentage, per nationality.

	Asian	Dutch	European	South-American
Definitely inside	25.0	8.0	13.3	15.1
Probably inside	28.0	23.2	27.2	32.1
Don't know yet	24.4	27.3	21.5	20.8
Probably outside	12.8	25.9	20.5	20.8
Definitely outside	6.7	9.8	15.9	7.5
Other ¹	3.0	5.9	1.5	3.8

¹ Others mentioned were a combination of both, a Medical doctor (MD), or do education but not research.

Table A99. PhD students' expectations regarding post-PhD mental health within academia in percentage, per nationality

	Asian	Dutch	Non-Dutch European	South-American
I expect my mental health to get worse	15.5	26.9	28.3	18.9
I expect no change in my mental health	31.1	41.8	31.9	30.2
I expect my mental health to improve	37.9	13.2	16.2	30.2
I don't know	15.5	18.2	23.6	20.8

Table A100. PhD students' expectations regarding post-PhD mental health outside academia in percentage, per nationality

	Asian	Dutch	Non-Dutch European	South-American
I expect my mental health to get worse	5.8	2.5	5.7	5.8
I expect no change in my mental health	21.9	32.8	18.0	21.2
I expect my mental health to improve	45.8	44.2	46.9	53.8
I don't know	26.5	20.6	29.4	19.2

Table A101. Amount of career worries in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Never	4.3	9.0	3.1	0
Rarely	19.5	23.4	15.4	9.4
Sometimes	42.1	41.5	34.9	30.2
Often	26.2	23.2	32.8	41.5
All the time	7.9	2.9	13.8	18.9

Table A102. Types of career worries in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Not knowing what kind of career I want	31.5	39.5	36.4	30.2
Being unsure if I am good enough for the kind of job I want	49.1	36.1	47.2	56.6
Having to move to another place for a new job	15.8	25.9	23.6	26.4
Feeling unprepared for the job I want	33.3	19.3	31.8	52.8
The high competition to obtain the job I want	50.3	36.3	49.2	64.2
Having to start a new job already while my PhD thesis isn't finished yet	19.4	24.4	28.2	26.4
The work-life balance in my future job	20.0	26.8	29.7	43.4
Being insecure about my skills in writing application letters and / or doing job interviews	21.2	10.7	24.6	32.1
Other ¹	2.4	6.8	7.7	9.4

¹ Others mentioned are not being able to get a job in the preferable city, language / immigration problems, being overqualified or availability of jobs.

Table A103. Affect of COVID-19 pandemic on career worries in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No	37.8	72.7	57.4	50.9
Due to the pandemic, I worry more often about my career	57.9	25.4	40	45.3
Due to the pandemic, I worry less often about my career	4.3	2.0	2.6	3.8

Table A104. Career aspirations in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Definitely inside	13.5	15.9	19.2	10.9	11.4
Probably inside	30.3	29.5	28.8	25.8	25.6
Don't know yet	20.2	22.7	30.8	27.0	24
Probably outside	20.2	25.0	13.5	21.5	23.4
Definitely outside	7.9	6.8	5.8	9.0	13.9
Other ¹	7.9	0	1.9	5.9	1.7

¹ Others mentioned were a combination of both, a Medical doctor (MD), or do education but not research.

Table A105. PhD students' expectations regarding post-PhD mental health within academia in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
I expect my mental health to get worse	28.4	20.9	17.6	19.0	29.2
I expect no change in my mental health	39.8	41.9	41.2	42.5	30.3
I expect my mental health to improve	17.0	23.3	15.7	19.8	21.2
I don't know	14.8	14	25.5	18.7	19.3

Table A106. PhD students' expectations regarding post-PhD mental health outside academia in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
I expect my mental health to get worse	2.2	2.3	3.9	4.0	4.5
I expect no change in my mental health	39.3	18.6	23.5	26.9	24.4
I expect my mental health to improve	38.2	65.1	39.2	48.2	49.1
I don't know	20.2	14	33.3	20.9	21.9

Table A107. Amount of career worries in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Never	10.1	2.3	5.8	6.6	4.7
Rarely	27.0	25	13.5	19.9	15.3
Sometimes	34.8	36.4	40.4	40.6	40.1
Often	23.6	29.5	32.7	25.0	30.1
All the time	4.5	6.8	7.7	7.8	9.7

Table A108. Types of career worries in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Not knowing what kind of career I want	28.1	38.6	34.6	36.6	40.1
Being unsure if I am good enough for the kind of job I want	34.8	61.4	32.7	41.2	47.9
Having to move to another place for a new job	28.1	18.2	32.7	24.1	22.3
Feeling unprepared for the job I want	16.9	36.4	23.1	24.1	31.8

The high competition to obtain the job I want	40.4	43.2	63.5	41.6	44.3
Having to start a new job already while my PhD thesis isn't finished yet	27.0	25.0	28.8	23.7	24.5
The work-life balance in my future job	18.0	20.5	26.9	33.9	27.0
Being insecure about my skills in writing application letters and / or doing job interviews	18.0	15.9	19.2	14.4	24.2
Other ¹	10.1	2.3	15.4	7.8	3.9

¹ Others mentioned are not being able to get a job in the preferable city, language / immigration problems, being overqualified or availability of jobs.

Table A109. Affect of COVID-19 pandemic on career worries in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
No	69.7	45.5	53.8	67.6	54.0
Due to the pandemic, I worry more often about my career	29.2	52.3	44.2	30.5	42.9
Due to the pandemic, I worry less often about my career	1.1	2.3	1.9	2.0	3.1

Table A110. Career aspirations in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Definitely inside	9.9	0	5.4	21.1	18.5	13.8
Probably inside	25.5	33.3	21.6	28.6	22.2	20.7
Don't know yet	26.2	36.7	37.8	20.4	29.6	24.1
Probably outside	23.5	16.7	21.6	18.4	18.5	31.0
Definitely outside	12.4	13.3	0	9.0	11.1	3.4
Other ¹	2.5	0	13.5	2.4	0	6.9

¹ Others mentioned were a combination of both, a Medical doctor (MD), or do education but not research.

Table A111. PhD students' expectations regarding post-PhD mental health within academia in percentage, per type of contract.

	Empolyed	External RC	External AS	Scholarship	MD	Spare time
I expect my mental health to get worse	26.0	30.0	10.8	22.6	15.4	28.6
I expect no change in my mental health	38.5	43.3	40.5	28.8	42.3	35.7
I expect my mental health to improve	15.9	10.0	16.2	30.9	23.1	28.6
I don't know	19.6	16.7	32.4	17.7	19.2	7.1

Table A112. PhD students' expectations regarding post-PhD mental health outside academia in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
I expect my mental health to get worse	4.8	3.3	0	2.5	7.7	7.4
I expect no change in my mental health	27.2	26.7	34.3	20.8	23.1	18.5

I expect my mental health to improve	46.7	46.7	34.3	51.7	38.5	44.4
I don't know	21.3	23.3	31.4	25.0	30.8	29.6

Table A113. Amount of career worries in percentage, type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Never	5.4	6.7	18.9	2.0	7.4	3.4
Rarely	21.4	16.7	35.1	13.9	14.8	10.3
Sometimes	39.5	43.3	29.7	40.4	51.9	51.7
Often	27.3	30	10.8	32.2	22.2	24.1
All the time	6.3	3.3	5.4	11.4	3.7	10.3

Table A114. Types of career worries in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Not knowing what kind of career I want	39.5	46.7	21.6	34.6	40.7	41.4
Being unsure if I am good enough for the kind of job I want	40.2	46.7	16.2	54.5	33.3	48.3
Having to move to another place for a new job	24.8	26.7	10.8	25.2	18.5	37.9
Feeling unprepared for the job I want	25.3	23.3	10.8	35.4	18.5	37.9
The high competition to obtain the job I want	39.3	46.7	24.3	56.1	59.3	51.7
Having to start a new job already while my PhD thesis isn't finished yet	21.4	33.3	18.9	29.7	29.6	48.3
The work-life balance in my future job	24.6	23.3	16.2	32.9	59.3	31.0
Being insecure about my skills in writing application letters and / or doing job interviews	17.8	20.0	8.1	21.1	3.7	27.6
Other ¹	7.7	3.3	5.4	3.7	0	10.3

¹ Others mentioned are not being able to get a job in the preferable city, language / immigration problems, being overqualified or availability of jobs.

Table A115. Affect of COVID-19 pandemic on career worries in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No	64.6	63.3	75.7	45.3	66.7	58.6
Due to the pandemic, I worry more often about my career	33.0	30.0	18.9	52.7	29.6	41.4
Due to the pandemic, I worry less often about my career	2.5	6.7	5.4	2.0	3.7	0

Table A116. Career aspirations in percentage, per phase of project.

	Junior	Senior
Definitely inside	11.7	15.4

Probably inside	26.3	25.8
Don't know yet	28.0	21.1
Probably outside	22.6	20.3
Definitely outside	7.9	13.0
Other ¹	3.5	4.5

¹ Others mentioned were a combination of both, a Medical doctor (MD), or do education but not research.

Table A117. PhD students' expectations regarding post-PhD mental health within and outside academia in percentage, per phase of project.

	If I stay in academia		If I leave academia	
	Junior	Senior	Junior	Senior
I expect my mental health to get worse	19.2	27.5	5.0	3.3
I expect no change in my mental health	42.2	30.5	28.6	23.7
I expect my mental health to improve	20.4	22.3	42.7	51.0
I don't know	18.2	19.7	23.6	22.0

Table A118. Amount of career worries in percentage, per phase of project.

	Junior	Senior
Never	7.0	4.9
Rarely	26.1	11.9
Sometimes	41.0	38.8
Often	21.2	33.3
All the time	4.7	11.1

Table A119. Types of career worries in percentage, per phase of project.

	Junior	Senior
Not knowing what kind of career I want	35.0	38.7
Being unsure if I am good enough for the kind of job I want	39.9	47.7
Having to move to another place for a new job	19.8	28.5
Feeling unprepared for the job I want	24.7	30.9
The high competition to obtain the job I want	39.9	48.7
Having to start a new job already while my PhD thesis isn't finished yet	18.6	31.1
The work-life balance in my future job	25.9	30.2
Being insecure about my skills in writing application letters and / or doing job interviews	16.8	20.2
Other ¹	4.4	7.7

¹ Others mentioned are not being able to get a job in the preferable city, language / immigration problems, being overqualified or availability of jobs.

Table A120. Affect of COVID-19 pandemic on career worries in percentage, per phase of project.

	Junior	Senior
No	68.8	49.9
Due to the pandemic, I worry more often about my career	28.4	47.8
Due to the pandemic, I worry less often about my career	2.8	2.3

Support at the University

Table A121. Mean (standard deviation) of statements about talking about (hypothetical) mental health problems, per gender.

	Male	Female
If I were to experience mental health problems, I would know whom I could talk to at the University.	3.18 (1.19)	3.17 (1.21)
If I were to experience mental health problems, I would like to talk about it with someone at the University.**	3.35 (1.05)	3.15 (1.10)
If I were to experience mental health problems, I would talk about this with my primary supervisor.	3.23 (1.21)	3.06 (1.23)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems.	3.97 (1.01)	3.84 (1.02)
If I were to experience mental health problems, I would talk about this with my daily supervisor.	3.57 (1.13)	3.47 (1.18)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems.	4.1 (.95)	4.01 (.98)

Note. These questions were answered on a scale of 1 (completely disagree) to 5 (completely agree).

Table A122. Mean (standard deviation) of statements about talking about (hypothetical) mental health problems, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
If I were to experience mental health problems, I would know whom I could talk to at the University.	3.31 (1.08)	3.2 (1.17)	3.08 (1.27)	3.27 (1.34)
If I were to experience mental health problems, I would like to talk about it with someone at the University.***	3.49 (.93)	3.02 (1.05)	3.24 (1.15)	3.67 (1.06)
If I were to experience mental health problems, I would talk about this with my primary supervisor.	3.35 (1.03)	3.09 (1.24)	3.06 (1.31)	3.38 (1.21)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems.	3.99 (.94)	3.82 (1.0)	4.02 (1.06)	3.96 (1.15)
If I were to experience mental health problems, I would talk about this with my daily supervisor.	3.43 (1.16)	3.62 (1.08)	3.44 (1.20)	3.39 (1.41)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems.	3.96 (1.01)	4.02 (.91)	4.22 (.94)	3.8 (1.31)

Note. These questions were answered on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A123. Mean (standard deviation) of statements about talking about (hypothetical) mental health problems, per graduate school.

	BSS	EB	Hum	MS	SE
If I were to experience mental health problems, I would know whom I could talk to at the University.	3.41 (1.18)	3.21 (1.30)	3.04 (1.17)	3.1 (1.22)	3.14 (1.18)
If I were to experience mental health problems, I would like to talk about it with someone at the University.***	3.06 (1.05)	3.25 (1.06)	3.02 (1.01)	3.03 (1.13)	3.44 (1.02)
If I were to experience mental health problems, I would talk about this with my primary supervisor.	3.25 (1.15)	2.78 (1.24)	3.1 (1.27)	3.14 (1.23)	3.17 (1.25)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems.	4.03 (.93)	3.95 (1.02)	3.94 (1.01)	3.9 (.99)	3.86 (1.07)
If I were to experience mental health problems, I would talk about this with my daily supervisor.	3.63 (1.09)	3.2 (1.24)	3.6 (1.09)	3.7 (1.16)	3.42 (1.19)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems.	4.28 (.89)	4.03 (.97)	4.1 (.99)	4.03 (1.0)	3.97 (.99)

Note. These questions were answered on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A124. Mean (standard deviation) of statements about talking about (hypothetical) mental health problems, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
If I were to experience mental health problems, I would know whom I could talk to at the University.*	3.17 (1.19)	2.5 (.96)	3.07 (1.23)	3.24 (1.20)	3.43 (1.20)	3.28 (1.19)
If I were to experience mental health problems, I would like to talk about it with someone at the University.	3.17 (1.11)	3.1 (.98)	2.79 (1.01)	3.38 (1.03)	3.21 (1.10)	3.19 (1.13)
If I were to experience mental health problems, I would talk about this with my primary supervisor.	3.06 (1.28)	2.93 (1.22)	3.06 (1.16)	3.2 (1.20)	3.48 (1.09)	3.04 (1.17)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems.	3.93 (1.03)	3.63 (1.12)	3.73 (1.07)	3.95 (1.01)	3.78 (.93)	3.5 (1.14)
If I were to experience mental health problems, I would talk about this with my daily supervisor.	3.49 (1.20)	3.61 (1.08)	3.74 (1.08)	3.38 (1.16)	4 (.83)	3.36 (1.29)
My daily supervisor would act supportively if	4.07 (.96)	4 (.98)	3.97 (1.08)	4.01 (.99)	4.08 (.86)	3.65 (1.11)

I told him/her I am experiencing mental health problems.						
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Note. These questions were answered on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A125. Mean (standard deviation) of statements about talking about (hypothetical) mental health problems, per phase of project.

	Junior	Senior
If I were to experience mental health problems, I would know whom I could talk to at the University.	3.24 (1.16)	3.11 (1.22)
If I were to experience mental health problems, I would like to talk about it with someone at the University.	3.22 (1.08)	3.24 (1.09)
If I were to experience mental health problems, I would talk about this with my primary supervisor.*	3.22 (1.20)	3.01 (1.25)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems.***	4.05 (.92)	3.75 (1.09)
If I were to experience mental health problems, I would talk about this with my daily supervisor.*	3.61 (1.13)	3.39 (1.19)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems.**	4.18 (.84)	3.9 (1.06)

Note. These questions were answered on a scale of 1 (completely disagree) to 5 (completely agree).

* $p < .05$; ** $p < .01$; *** $p < .001$

Workshops, support groups and a PhD psychologist

Table A126. Workshop and support group attendance, and ratings of helpfulness, per gender.

		Have you ever attended workshops at the University about topics related to mental health?	Have you ever attended the bi-weekly PhD support group, organized by Student Support and Career Service?
Male	Yes	25.3%	1.3%
	No	64.1%	95.5%
	Don't remember / prefer not to say	10.6%	3.2%
	Helpfulness of course or support group (1-5)	2.77	3.6
Female	Yes	26.6%	2.5%
	No	62.4%	95.2%
	Don't remember / prefer not to say	11.1%	2.4%
	Helpfulness of course or support group (1-5)	2.93	3.23

Table A127. Interest in mental health workshops, support group and psychologists, per gender.

		Workshops about mental health ¹	Support group ²	Did you know about the university psychologist specialized in PhD student problems?	Have you ever visited this psychologist?	Would you visit the psychologist if you were to experience problems? ³
Male	Yes	23.8%	8.4%	43.5%	2.5%	39.9%
	Maybe	47.7%	47%	-	-	50.1%
	No	27.4%	43%	56.5%	97.5%	8.1%
Female	Yes	27.1%	10.6%	49.8%	5.8%	34.7%
	Maybe	46.4%	38%	-	-	50.5%
	No	23.3%	47.2%	50.2%	94.2%	10.6%

¹ Respondents noted, that they would like to join but do not have time, they would like to join but only if it is free and that they would also be interested in workshops regarding soft skills and project management. ² Respondents noted, that they might not have the time or financial opportunities to join, even if they are interested. ³ Respondents noted, that they tried to get in touch but the waiting list is too long, they are insecure if they can meet even with PhD unrelated issues or that they are already seeing someone outside of the university.

Table A128. Workshop and support group attendance, and ratings of helpfulness, per nationality.

		Have you ever attended workshops at the University about topics related to mental health?	Have you ever attended the bi-weekly PhD support group, organized by Student Support and Career Service?
Asian	Yes	20.6%	1.2%
	No	64.2%	86.7%
	Don't remember / prefer not to say	15.1%	12.1%
	Helpfulness of course or support group (1-5)	3.09	2.5
Dutch	Yes	26.3%	1.0%
	No	64.4%	98.8%
	Don't remember / prefer not to say	9.3%	0.2%
	Helpfulness of course or support group (1-5)	2.79	4
Non-Dutch European	Yes	28.2%	4.6%
	No	61%	94.9%
	Don't remember / prefer not to say	10.7%	0.5%
	Helpfulness of course or support group (1-5)	3	3.44
South-American	Yes	37.7%	1.9%
	No	56.6%	96.2%
	Don't remember / prefer not to say	5.7%	1.9%

	Helpfulness of course or support group (1-5)	2.95	3
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Table A129. Interest in mental health workshops, support group and psychologists, per nationality.

		Workshops about mental health ¹	Support group ²	Did you know about the university psychologist specialized in PhD student problems?	Have you ever visited this psychologist?	Would you visit the psychologist if you were to experience problems? ³
Asian	Yes	28.9%	19.6%	48.5%	2.5%	42.6%
	Maybe	53.9%	56.3%	-	-	48.1%
	No	16.4%	23.4%	51.5%	97.5%	8.0%
Dutch	Yes	19.2%	4.9%	48.8%	2.0%	29.1%
	Maybe	43.4%	33.0%	-	-	53.9%
	No	34.1%	58.1%	51.2%	98%	12.8%
Non-Dutch European	Yes	31.2%	8.1%	49.2%	10.4%	42.7%
	Maybe	47.8%	41.1%	-	-	47.6%
	No	20.3%	47.6%	50.8%	89.6%	6.5%
South-American	Yes	30.3%	15.4%	35.8%	5.3%	57.7%
	Maybe	48.5%	51.9%	-	-	36.5%
	No	18.2%	32.7%	64.2%	94.7%	3.8%

¹ Respondents noted, that they would like to join but do not have time, they would like to join but only if it is free and that they would also be interested in workshops regarding soft skills and project management. ² Respondents noted, that they might not have the time or financial opportunities to join, even if they are interested. ³ Respondents noted, that they tried to get in touch but the waiting list is too long, they are insecure if they can meet even with PhD unrelated issues or that they are already seeing someone outside of the university.

Table A130. Workshop and support group attendance, and ratings of helpfulness, per graduate school.

		Have you ever attended workshops at the University about topics related to mental health?	Have you ever attended the bi-weekly PhD support group, organized by Student Support and Career Service?
BSS	Yes	28.1%	0%
	No	55.1 %	96.6%
	Don't remember / prefer not to say	16.9%	3.4%
	Helpfulness of course or support group (1-5)	2.6	-
EB	Yes	18.2 %	2.3%
	No	61.4%	95.5%
	Don't remember / prefer not to say	20.5%	2.3%
	Helpfulness of course or support group (1-5)	2.88	3
Hum	Yes	61.5%	3.8%
	No	32.7%	94.2%

	Don't remember / prefer not to say	5.8%	1.9%
	Helpfulness of course or support group (1-5)	2.97	3
MS	Yes	21.0%	0.8%
	No	69.3%	97.3%
	Don't remember / prefer not to say	9.7%	1.9%
	Helpfulness of course or support group (1-5)	2.78	3
SE	Yes	24.0%	2.2%
	No	66.3%	94.4%
	Don't remember / prefer not to say	9.7%	3.3%
	Helpfulness of course or support group (1-5)	2.9	3.25

Table A131. Interest in mental health workshops, support group and psychologists, per graduate school.

		Workshops about mental health ¹	Support group ²	Did you know about the university psychologist specialized in PhD student problems?	Have you ever visited this psychologist?	Would you visit the psychologist if you were to experience problems? ³
BSS	Yes	17.2%	10.1%	38.2%	0%	34.8%
	Maybe	45.3%	37.1%	-	-	53.9%
	No	37.5%	49.4%	61.8%	100%	7.9%
EB	Yes	22.2%	9.3%	38.6%	0%	34.1%
	Maybe	50.0%	41.9%	-	-	47.7%
	No	27.8%	46.5%	61.4%	100%	6.8%
Hum	Yes	10.0%	8.2%	51.9%	11.1%	34.7%
	Maybe	50.0%	34.7%	-	-	44.9%
	No	35.0%	44.9%	48.1%	88.9%	10.2%
MS	Yes	25.7%	8.7%	53.5%	2.2%	28%
	Maybe	46.0%	32.7%	-	-	55.5%
	No	25.2%	55.5%	46.5%	97.8%	14.6%
SE	Yes	28.9%	10.7%	45.8%	3.7%	45.2%
	Maybe	47.8%	50.0%	-	-	46.0%
	No	21.1%	37.6%	54.2%	96.3%	7.1%

¹ Respondents noted, that they would like to join but do not have time, they would like to join but only if it is free and that they would also be interested in workshops regarding soft skills and project management. ² Respondents noted, that they might not have the time or financial opportunities to join, even if they are interested. ³ Respondents noted, that they tried to get in touch but the waiting list is too long, they are insecure if they can meet even with PhD unrelated issues or that they are already seeing someone outside of the university.

Table A132. Workshop and support group attendance, and ratings of helpfulness, per type of contract.

	Have you ever attended workshops at the	Have you ever attended the bi-weekly PhD
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		University about topics related to mental health?	support group, organized by Student Support and Career Service?
Employed	Yes	26.9%	1.4%
	No	64.8%	97.1%
	Don't remember / prefer not to say	8.4%	1.6%
	Helpfulness of course or support group (1-5)	2.85	3.33
External RC	Yes	33.3%	3.3%
	No	56.7%	96.7%
	Don't remember / prefer not to say	10.0%	0%
	Helpfulness of course or support group (1-5)	2.9	4
External AS	Yes	10.8%	0%
	No	81.1%	100%
	Don't remember / prefer not to say	8.1%	0%
	Helpfulness of course or support group (1-5)	3	-
Scholarship	Yes	32.5%	3.3%
	No	53.7%	91.1%
	Don't remember / prefer not to say	13.8%	5.7%
	Helpfulness of course or support group (1-5)	2.85	3.38
MD	Yes	11.1%	0%
	No	81.5%	96.3%
	Don't remember / prefer not to say	7.4%	3.7%
	Helpfulness of course or support group (1-5)	2	-
Spare time	Yes	17.2%	6.9%
	No	58.6%	93.1%
	Don't remember / prefer not to say	24.1%	0%
	Helpfulness of course or support group (1-5)	2.4	3

Table A133. Interest in mental health workshops, support group and psychologists, per type of contract.

		Workshops about mental health ¹	Support group ²	Did you know about the university psychologist specialized in PhD student problems?	Have you ever visited this psychologist?	Would you visit the psychologist if you were to experience problems? ³
Employed	Yes	36.5%	7.8%	46.0%	3.4%	37.4%
	Maybe	46.4%	42.5%	-	-	50.5%
	No	25.5%	47.6%	54.0%	96.6%	8.7%
External RC	Yes	15.0%	0%	26.7%	-	50.0%
	Maybe	40.0%	48.3%	-	-	30.0%
	No	45%	48.3%	73.3%	-	10.0%
External AS	Yes	9.1%	10.8%	43.2%	0%	27.0%
	Maybe	54.5%	29.7%	-	-	56.8%
	No	33.3%	54.1%	56.8%	100%	16.2%
Scholarship	Yes	19.1%	14.2%	52.0%	7.9%	36.2%
	Maybe	51.9%	45.3%	-	-	52.8%
	No	19.1%	38.4%	48.0%	92.1%	9.4%
MD	Yes	33.3%	11.1%	48.1%	0%	37%
	Maybe	29.2%	33.3%	-	-	48.1%
	No	33.3%	51.9%	51.9%	100%	14.8%
Spare time	Yes	29.2%	11.1%	44.8%	-	33.3%
	Maybe	41.7%	40.7%	-	-	48.1%
	No	25.0%	40.7%	55.2%	-	7.4%

¹ Respondents noted, that they would like to join but do not have time, they would like to join but only if it is free and that they would also be interested in workshops regarding soft skills and project management. ² Respondents noted, that they might not have the time or financial opportunities to join, even if they are interested. ³ Respondents noted, that they tried to get in touch but the waiting list is too long, they are insecure if they can meet even with PhD unrelated issues or that they are already seeing someone outside of the university.

Table A134. Workshop and support group attendance, and ratings of helpfulness, per phase of project.

		Have you ever attended workshops at the University about topics related to mental health?	Have you ever attended the bi-weekly PhD support group, organized by Student Support and Career Service?
Junior	Yes	24.5%	1.2%
	No	68.5%	95.8%
	Don't remember / prefer not to say	7.0%	3.0%
	Helpfulness of course or support group (1-5)	3.01	3.4
Senior	Yes	27.9%	3.2%
	No	57.9%	94.3%
	Don't remember / prefer not to say	14.3%	2.5%

	Helpfulness of course or support group (1-5)	2.73	3.33
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Table A135. Interest in mental health workshops, support group and psychologists, per phase of project.

		Workshops about mental health ¹	Support group ²	Did you know about the university psychologist specialized in PhD student problems?	Have you ever visited this psychologist?	Would you visit the psychologist if you were to experience problems? ³
Junior	Yes	29.5%	10.7%	45.3%	4.1%	41.2%
	Maybe	45.3%	47.6%	-	-	46.7%
	No	22.0%	39.0%	54.7%	95.9%	8.8%
Senior	Yes	21.6%	8.9%	48.4%	6.2%	32.9%
	Maybe	48.2%	36.6%	-	-	53.3%
	No	28.4%	51.0%	51.6%	93.8%	10.7%

¹ Respondents noted, that they would like to join but do not have time, they would like to join but only if it is free and that they would also be interested in workshops regarding soft skills and project management. ² Respondents noted, that they might not have the time or financial opportunities to join, even if they are interested. ³ Respondents noted, that they tried to get in touch but the waiting list is too long, they are insecure if they can meet even with PhD unrelated issues or that they are already seeing someone outside of the university.

Questions to PhD students who experienced or are experiencing mental health problems

Table A136. Percentage of PhD students who experienced or are experiencing mental health problems during their PhD, per gender.

	Male	Female
No, I have never experienced mental health problems that affected my work.	54.3	43.0
Yes, I have experienced mental health problems that affected my work.	25.0	32.0
Yes, I am currently experiencing mental health problems that affect my work.	14.9	19.0
Prefer not to say.	5.9	6.0

Table A137. Percentage of PhD students who experienced or are experiencing mental health problems during their PhD, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No, I have never experienced mental health problems that affected my work.	53.3	50.2	41.5	41.5
Yes, I have experienced mental health problems that affected my work.	28.5	25.4	36.9	24.5
Yes, I am currently experiencing mental health problems that affect my work.	12.1	19.8	14.4	28.3
Prefer not to say.	6.1	4.6	7.2	5.7

Table A138. Percentage of PhD students who experienced or are experiencing mental health problems during their PhD, per graduate school.

	BSS	EB	Hum	MS	SE
No, I have never experienced mental health problems that affected my work.	49.4	43.2	44.2	51.0	47.1
Yes, I have experienced mental health problems that affected my work.	30.3	25.0	32.7	27.6	28.7
Yes, I am currently experiencing mental health problems that affect my work.	15.7	25.0	15.4	17.5	16.7
Prefer not to say.	4.5	6.8	7.7	3.9	7.5

Table A139. Percentage of PhD students who experienced or are experiencing mental health problems during their PhD, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No, I have never experienced mental health problems that affected my work.	48.1	53.3	54.1	46.3	63.0	31.0
Yes, I have experienced mental health problems that affected my work.	26.0	36.7	24.3	32.5	22.2	34.5
Yes, I am currently experiencing mental health problems that affect my work.	19.0	6.7	16.2	15.4	11.1	27.6
Prefer not to say.	7.0	3.3	5.4	5.7	3.7	6.9

Table A140. Percentage of PhD students who experienced or are experiencing mental health problems during their PhD, per phase of project.

	Junior	Senior
No, I have never experienced mental health problems that affected my work.	55.0	40.6
Yes, I have experienced mental health problems that affected my work.	23.8	34.0
Yes, I am currently experiencing mental health problems that affect my work.	15.4	19.1
Prefer not to say.	5.8	6.2

Talking about mental health problems

Table A141. Percentage of PhD students who talked about their mental health problems with someone at the university, per gender.

	Male	Female
No	9.0	8.5
Yes, to my supervisor.	17.3	28.3
Yes, to a colleagues / colleagues.	20.2	31.0
Yes, to the confidential advisor.	3.5	3.5
Yes, to my PhD coordinator or mentor.	4.0	4.1
Yes, to someone from the Student Support and Career Services.	1.1	3.3
Yes, to someone from the AMD (Health, Safety and Sustainability), e. g. a. social occupational worker.	4.5	5.2
Yes, to the psychologist for PhD students.	1.1	1.9
Other ¹	5.3	8.3

¹ Others mentioned were the company doctor / student psychologist, family & friends, other people at the university or external help.

Table A142. Percentage of PhD students who talked about their mental health problems with someone at the university, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No	7.3	6.6	12.3	5.7
Yes, to my supervisor.	17.0	27.1	23.1	28.3
Yes, to a colleagues / colleagues.	20.6	27.6	28.7	28.3
Yes, to the confidential advisor.	4.2	3.2	3.1	3.8
Yes, to my PhD coordinator or mentor.	3.6	5.1	4.6	0
Yes, to someone from the Student Support and Career Services.	1.8	2.2	1.5	5.7
Yes, to someone from the AMD (Health, Safety and Sustainability), e. g. a. social occupational worker.	1.2	5.4	6.7	7.5
Yes, to the psychologist for PhD students.	2.4	0.5	3.6	1.9
Other ¹	4.8	8.3	4.6	13.2

¹ Others mentioned were the company doctor / student psychologist, family & friends, other people at the university or external help.

Table A143. Percentage of PhD students who talked about their mental health problems with someone at the university, per graduate school.

	BSS	EB	Hum	MS	SE
No	5.6	6.8	5.8	10.1	9.7
Yes, to my supervisor.	31.5	31.8	30.8	23.3	21.2

Yes, to a colleagues / colleagues.	29.2	20.5	30.8	25.7	25.9
Yes, to the confidential advisor.	3.4	4.5	1.9	3.9	3.6
Yes, to my PhD coordinator or mentor.	9.0	9.1	1.9	1.6	4.2
Yes, to someone from the Student Support and Career Services.	0	2.3	1.9	2.3	3.1
Yes, to someone from the AMD (Health, Safety and Sustainability), e. g. a. social occupational worker.	7.9	18.2	5.8	3.1	4.5
Yes, to the psychologist for PhD students.	0	0	1.9	0.8	2.2
Other ¹	4.5	4.5	5.8	7.0	7.0

¹ Others mentioned were the company doctor / student psychologist, family & friends, other people at the university or external help.

Table A144. Percentage of PhD students who talked about their mental health problems with someone at the university, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No	9.3	10.0	13.5	7.7	11.1	3.4
Yes, to my supervisor.	22.3	26.7	21.6	24.0	18.5	34.5
Yes, to a colleagues / colleagues.	26.4	26.7	16.2	30.5	14.8	31.0
Yes, to the confidential advisor.	2.7	3.3	0	4.5	0	10.3
Yes, to my PhD coordinator or mentor.	3.8	0	2.7	4.5	3.7	0
Yes, to someone from the Student Support and Career Services.	1.8	0	2.7	4.5	0	3.4
Yes, to someone from the AMD (Health, Safety and Sustainability), e. g. a. social occupational worker.	6.3	3.3	0	3.7	0	13.8
Yes, to the psychologist for PhD students.	1.4	0	0	2.4	3.7	3.4
Other ¹	5.4	6.7	8.1	6.5	11.1	10.3

¹ Others mentioned were the company doctor / student psychologist, family & friends, other people at the university or external help.

Table A145. Percentage of PhD students who talked about their mental health problems with someone at the university, per phase of project.

	Junior	Senior
No	9.1	8.9
Yes, to my supervisor.	19.3	27.4
Yes, to a colleagues / colleagues.	20.5	33
Yes, to the confidential advisor.	1.6	5.1
Yes, to my PhD coordinator or mentor.	2.3	5.7
Yes, to someone from the Student Support and Career Services.	2.6	2.3
Yes, to someone from the AMD (Health, Safety and Sustainability), e. g. a. social occupational worker.	3.5	6.8
Yes, to the psychologist for PhD students.	1.2	2.3
Other ¹	5.8	7.9

¹ Others mentioned were the company doctor / student psychologist, family & friends, other people at the university or external help.

Professional help

Table A146. Percentage of PhD students who talked about their mental health problems with someone outside of the university in the past, per gender.

	Male	Female
I did not receive professional help from outside of the university.	17.0	16.7
Yes, from my general practitioner (GP).	2.7	4.5
Yes, from a psychologist or therapist.	5.1	10.1
Yes, from someone else. ¹	1.6	3.9

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A147. Percentage of PhD students who talk about their current mental health problems with someone outside of the university, per gender.

	Male	Female
I am not receiving professional help from outside of the university.	9.6	9.5
Yes, from my general practitioner (GP).	1.1	1.4
Yes, from a psychologist or therapist.	4.0	7.6
Yes, from someone else. ¹	0.8	1.4

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A148. Percentage of PhD students who talked about their mental health problems with someone outside of the university in the past, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
I did not receive professional help from outside of the university.	21.2	12.4	24.1	7.5
Yes, from my general practitioner (GP).	3.0	4.4	4.1	3.8
Yes, from a psychologist or therapist.	3.6	8.3	9.2	13.2
Yes, from someone else. ¹	2.4	2.7	2.1	3.8

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A149. Percentage of PhD students who talk about their current mental health problems with someone outside of the university, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
I am not receiving professional help from outside of the university.	7.9	11.5	8.2	9.4

Yes, from my general practitioner (GP).	1.2	1.7	0.5	1.9
Yes, from a psychologist or therapist.	2.4	5.6	5.1	18.9
Yes, from someone else. ¹	1.2	2	0.5	0

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A150. Percentage of PhD students who talked about their mental health problems with someone outside of the university in the past, per graduate school.

	BSS	EB	Hum	MS	SE
I did not receive professional help from outside of the university.	12.4	15.9	19.2	14.8	17.5
Yes, from my general practitioner (GP).	4.5	2.3	1.9	4.3	4.2
Yes, from a psychologist or therapist.	13.5	6.8	11.5	7.8	7
Yes, from someone else. ¹	3.4	0	1.9	3.5	2.8

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A151. Percentage of PhD students who talk about their current mental health problems with someone outside of the university, per graduate school.

	BSS	EB	Hum	MS	SE
I am not receiving professional help from outside of the university.	10.1	13.6	9.6	7.4	9.7
Yes, from my general practitioner (GP).	0	2.3	0	2.3	1.4
Yes, from a psychologist or therapist.	5.6	6.8	1.9	8.2	5.8
Yes, from someone else. ¹	0	4.5	1.9	1.2	0.6

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A152. Percentage of PhD students who talked about their mental health problems with someone outside of the university in the past, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
I did not receive professional help from outside of the university.	16.3	23.3	10.8	16.7	11.1	13.8
Yes, from my general practitioner (GP).	3.2	6.7	8.1	3.7	0	10.3
Yes, from a psychologist or therapist.	7.7	6.7	8.1	8.9	7.4	13.8
Yes, from someone else. ¹	1.4	6.7	2.7	5.7	3.7	0

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A153. Percentage of PhD students who talk about their current mental health problems with someone outside of the university, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
I am not receiving professional help from outside of the university.	10.6	3.3	2.7	9.3	3.7	6.9
Yes, from my general practitioner (GP).	1.4	0	2.7	0.8	3.7	3.4
Yes, from a psychologist or therapist.	6.5	3.3	5.4	4.9	7.4	17.2
Yes, from someone else. ¹	1.1	0	2.7	1.2	0	0

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A154. Percentage of PhD students who talked about their mental health problems with someone outside of the university in the past, per phase of project.

	Junior	Senior
I did not receive professional help from outside of the university.	14	19.1
Yes, from my general practitioner (GP).	2.1	5.1
Yes, from a psychologist or therapist.	5.8	10.6
Yes, from someone else. ¹	3.3	2.6

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Table A155. Percentage of PhD students who talk about their current mental health problems with someone outside of the university, per phase of project.

	Junior	Senior
I am not receiving professional help from outside of the university.	8.6	10.2
Yes, from my general practitioner (GP).	0.7	1.9
Yes, from a psychologist or therapist.	5.1	7.0
Yes, from someone else. ¹	1.6	0.9

¹Note. Someone else could have been family & friends, a coach or a psychiatrist.

Burnout and work engagement

Table A156. Mean (standard deviation) of the different factors of burnout and engagement, per gender.

	Male	Female
Exhaustion	3.73 (1.01)	3.73 (1.09)
Dedication	4.62 (1.0)	4.59 (.95)
Vigour	4.06 (1.03)	3.98 (.97)
Cynicism	3.72 (1.34)	3.7 (1.39)
Professional efficacy	4.97 (.78)	4.99 (.73)

Note. Burnout and engagement were measured on a 7-point Likert scale.

Table A157. Mean (standard deviation) of the different factors of burnout and engagement, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Exhaustion**	3.73 (.87)	3.6 (1.08)	3.9 (1.05)	3.91 (1.24)
Dedication*	4.6 (.89)	4.66 (.90)	4.4 (1.12)	4.52 (.95)
Vigour ***	4.33 (.83)	3.97 (.94)	3.71 (1.08)	4.1 (1.09)
Cynicism	3.57 (1.31)	3.67 (1.34)	3.92 (1.43)	3.91 (1.47)
Professional efficacy	5.01 (.75)	4.99 (.66)	4.88 (.80)	4.93 (.83)

Note. Burnout and engagement were measured on a 7-point Likert scale.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A158. Mean (standard deviation) of the different factors of burnout and engagement, per graduate school.

	BSS	EB	Hum	MS	SE
Exhaustion**	3.52 (1.15)	3.85 (.87)	3.57 (1.18)	3.62 (1.08)	3.88 (1.01)
Dedication	4.66 (.98)	4.42 (.86)	4.76 (.78)	4.66 (.92)	4.56 (1.02)
Vigour	3.89 (.92)	3.85 (.89)	4.19 (.81)	4.04 (.98)	4.03 (1.04)
Cynicism**	3.53 (1.48)	4.26 (1.20)	3.47 (1.23)	3.62 (1.41)	3.83 (1.34)
Professional efficacy**	5.14 (.66)	4.69 (.62)	5.16 (.57)	5.03 (.77)	4.91 (.77)

Note. Burnout and engagement were measured on a 7-point Likert scale.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A159. Mean (standard deviation) of the different factors of burnout and engagement, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Exhaustion*	3.69 (1.05)	3.57 (.89)	3.27 (1.01)	3.82 (1.05)	3.58 (1.11)	4.15 (1.23)
Dedication	4.66 (.97)	4.58 (.83)	4.87 (.75)	4.46 (.95)	4.73 (.92)	4.3 (1.24)
Vigour	4 (1)	4.24 (.88)	4.23 (.79)	3.93 (.98)	4.27 (1)	3.74 (1.30)
Cynicism*	3.7 (1.38)	3.73 (1.17)	3.22 (1.33)	3.77 (1.33)	3.44 (1.29)	4.33 (1.47)
Professional efficacy	5 (.74)	4.96 (.75)	5.06 (.60)	4.96 (.73)	5.12 (.80)	4.65 (.92)

Note. Burnout and engagement were measured on a 7-point Likert scale.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table A169. Mean (standard deviation) of the different factors of burnout and engagement, per phase of project.

	Junior	Senior
Exhaustion***	3.46 (.98)	3.99 (1.06)
Dedication***	4.76 (.88)	4.44 (1.01)
Vigour****	4.16 (.93)	3.85 (1.02)
Cynicism***	3.35 (1.22)	4.06 (1.41)
Professional efficacy	5.02 (.72)	4.93 (.76)

Note. Burnout and engagement were measured on a 7-point Likert scale.

* $p < .05$; ** $p < .01$; *** $p < .001$

Sociodemographic and life style questions

Structural (semi-)professional activities in addition to the PhD

Table A170. Percentage of PhD students who are engaged in structural activities in addition to their PhD, per gender.

	Male	Female
No additional activities	71.3	69.0
Yes, I have another job	11.4	13.2
Yes, I am in the board of an organization or actively involved in an organization	8.0	6.8
Yes, I am actively involved in a political party	0.5	0.8
Yes, I do volunteer work	4.0	5.8
Yes, I am an informal caregiver for a relative or other person ('mantelzorger')	0.8	2.7
Yes, I am a (semi-) professional athlete or musician	2.9	2.3
Other ¹	4.5	4.5

¹Additional activities are mainly being a parent, education, hobbies, additional jobs at the university or running a Business.

Table A171. Answer to the question whether the time the PhD students spend on this activity has changed due to the COVID-19 pandemic in percentage, per gender.

	Male	Female
No	25.0	31.2
Less time	41.0	29.9
More time	31.0	31.8
Other ¹	3.0	7.0

¹The available time for additional activities is changing over the time and depends on the type of activity.

Table A172. Percentage of PhD students who are engaged in structural activities in addition to their PhD, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No additional activities	77.6	63.4	73.3	79.2
Yes, I have another job	4.8	18.3	7.7	3.8
Yes, I am in the board of an organization or actively involved in an organization	6.1	6.8	8.2	9.4
Yes, I am actively involved in a political party	0	1.2	0.5	0
Yes, I do volunteer work	4.8	5.1	5.6	1.9
Yes, I am an informal caregiver for a relative or other person ('mantelzorger')	2.4	2.9	0.5	0
Yes, I am a (semi-) professional athlete or musician	4.2	2.4	3.1	0
Other ¹	3.0	4.9	4.6	1.9

¹Additional activities are mainly being a parent, education, hobbies, additional jobs at the university or running a Business.

Table A173. Answer to the question whether the time the PhD students spend on this activity has changed due to the COVID-19 pandemic in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American

No	45.5	30.2	20.4	22.2
Less time	39.4	29.5	42.9	33.3
More time	15.2	32.9	34.7	44.4
Other ¹	0	7.4	2.0	0

¹The available time for additional activities is changing over the time and depends on the type of activity.

Table A174. Percentage of PhD students who are engaged in structural activities in addition to their PhD, per graduate school.

	BSS	EB	Hum	MS	SE
No additional activities	59.6	77.3	61.5	68.1	76
Yes, I have another job	24.7	2.3	13.5	18.7	5.0
Yes, I am in the board of an organization or actively involved in an organization	3.4	9.1	15.4	7.0	7.0
Yes, I am actively involved in a political party	2.2	0	0	0.8	0.6
Yes, I do volunteer work	6.7	2.3	5.8	3.1	5.0
Yes, I am an informal caregiver for a relative or other person ('mantelzorger')	3.4	0	0	2.3	1.7
Yes, I am a (semi-) professional athlete or musician	3.4	2.3	1.9	1.2	3.9
Other ¹	3.4	4.5	9.6	3.5	3.9

¹Additional activities are mainly being a parent, education, hobbies, additional jobs at the university or running a Business.

Table A175. Answer to the question whether the time the PhD students spend on this activity has changed due to the COVID-19 pandemic in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
No	30.6	0	21.1	32.5	29.1
Less time	27.8	62.5	36.8	25.0	41.8
More time	38.9	25.0	31.6	38.8	21.5
Other ¹	2.8	12.5	10.5	3.8	7.6

¹The available time for additional activities is changing over the time and depends on the type of activity.

Table A176. Percentage of PhD students who are engaged in structural activities in addition to their PhD, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No additional activities	75.2	63.3	24.3	74.8	59.3	65.5
Yes, I have another job	7.2	-	64.9	3.7	29.6	24.1
Yes, I am in the board of an organization or actively involved in an organization	6.5	6.7	2.7	7.7	7.4	3.4
Yes, I am actively involved in a political party	0.9	6.7	0	0	0	3.4
Yes, I do volunteer work	4.7	3.3	10.8	6.9	3.7	6.9
Yes, I am an informal caregiver for a relative or other person ('mantelzorger')	1.6	0	5.4	1.2	3.7	0
Yes, I am a (semi-) professional athlete or musician	2.7	13.3	2.7	1.6	0	3.4
Other ¹	4.1	0	10.8	5.3	3.7	0

¹Additional activities are mainly being a parent, education, hobbies, additional jobs at the university or running a Business.

Table A177. Answer to the question whether the time the PhD students spend on this activity has changed due to the COVID-19 pandemic in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No	29.0	44.4	28.6	23.2	36.5	22.2
Less time	32.7	33.3	14.3	50.0	18.2	55.6
More time	32.7	22.2	50.0	21.4	45.5	22.2
Other ¹	5.6	0	7.1	5.4	0	0

¹The available time for additional activities is changing over the time and depends on the type of activity.

Table A178. Percentage of PhD students who are engaged in structural activities in addition to their PhD, per phase of project.

	Junior	Senior
No additional activities	73.0	67.4
Yes, I have another job	10.3	13.6
Yes, I am in the board of an organization or actively involved in an organization	5.8	8.5
Yes, I am actively involved in a political party	0.5	1.1
Yes, I do volunteer work	6.3	4.5
Yes, I am an informal caregiver for a relative or other person ('mantelzorger')	1.9	1.7
Yes, I am a (semi-) professional athlete or musician	2.1	3.0
Other ¹	4.0	4.9

¹Additional activities are mainly being a parent, education, hobbies, additional jobs at the university or running a Business.

Table A179. Answer to the question whether the time the PhD students spend on this activity has changed due to the COVID-19 pandemic in percentage, per phase of project.

	Junior	Senior
No	29.5	27.8
Less time	28.6	38.9
More time	35.7	28.5
Other ¹	6.3	4.9

¹The available time for additional activities is changing over the time and depends on the type of activity.

Marital status

Table A180. Percentage of PhD students per marital status, per gender.

	Male	Female
Single	32.8	29.1
In a relationship of <6 months	4.3	3.7
In a relationship of >6 months	42.8	43.2
Married	16.5	20
Prefer not to say	1.9	1.0
Other ¹	1.6	3.1

¹Cohabiting, divorced, engaged, registered partnership, widower

Table A181. Percentage of PhD students per marital status, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Single	40.0	28.0	28.2	32.1
In a relationship of <6 months	2.4	3.4	6.7	1.9

In a relationship of >6 months	24.2	51.5	50.3	37.7
Married	29.1	14.6	11.3	20.8
Prefer not to say	3.0	0.7	1.0	0
Other ¹	1.2	1.7	2.6	7.5

¹Cohabiting, divorced, engaged, registered partnership, widower

Table A182. Percentage of PhD students per martial status, per graduate school.

	BSS	EB	Hum	MS	SE
Single	27.0	31.8	21.1	25.3	39.4
In a relationship of <6 months	2.2	2.3	5.8	3.1	4.5
In a relationship of >6 months	46.1	43.2	50.0	49.0	36.9
Married	23.6	20.5	17.3	18.3	14.8
Prefer not to say	0	0	3.8	1.6	2.0
Other ¹	1.1	2.3	1.9	2.7	2.5

¹Cohabiting, divorced, engaged, registered partnership, widower

Table A183. Percentage of PhD students per martial status, per graduate school.

	Employed	External RC	External AS	Employed	MD	Spare time
Single	32.1	46.7	5.4	35.1	22.2	32.1
In a relationship of <6 months	4.3	0	0	4.5	3.7	7.1
In a relationship of >6 months	50.6	33.3	37.8	38.4	55.6	21.4
Married	9.7	16.7	54.1	17.6	14.8	32.1
Prefer not to say	0.9	3.3	0	2.0	3.7	3.6
Other ¹	2.5	0	2.7	2.4	0	3.6

¹Cohabiting, divorced, engaged, registered partnership, widower

Table A184. Percentage of PhD students per martial status, per phase of project.

	Junior	Senior
Single	34.0	27.8
In a relationship of <6 months	4.9	2.8
In a relationship of >6 months	44.1	42.7
Married	12.4	23.5
Prefer not to say	1.9	1.3
Other ¹	2.8	1.9

¹Cohabiting, divorced, engaged, registered partnership, widower

Children

Table A185. Percentage of PhD students who have children, per gender.

	Male	Female
Yes	12.4	12.6
No	87.1	86.8
Prefer not to say	0.5	.6

Table A186. Effect of children at home during pandemic on productivity in percentage, per gender.

	Male	Female
My children did affect my productivity	65.2	68.8
My children did not affect my productivity	28.3	9.4
My children still went to daycare during the pandemic	0	6.3
Not applicable (e.g. children are living elsewhere)	6.5	15.6

Table A187. Percentage of PhD students who have children, per nationality.

	Asian	Dutch	European	South-American
Yes	14.7	13.9	5.6	9.4
No	85.3	85.6	93.8	90.6
Prefer not to say	0	0.2	0.5	0

Table A188. Effect of children at home during pandemic on productivity in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
My children did affect my productivity	62.5	68.1	90.9	80.0
My children did not affect my productivity	16.7	16.1	9.1	20.0
My children still went to daycare during the pandemic	4.2	5.4	0	0
Not applicable (e.g. children are living elsewhere)	16.7	12.5	0	0

Table A189. Percentage of PhD students who have children, per graduate school.

	BSS	EB	Hum	MS	SE
Yes	17.0	18.2	13.5	14.1	7.6
No	83.0	81.8	80.8	85.9	91.3
Prefer not to say	0	0	5.8	0	1.1

Table A190. Effect of children at home during pandemic on productivity in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
My children did affect my productivity	66.7	75.0	57.1	74.3	66.7
My children did not affect my productivity	22.0	12.5	28.6	11.4	25.9
My children still went to daycare during the pandemic	13.3	0	0	2.9	0
Not applicable (e.g. children are living elsewhere)	0	12.5	14.3	11.4	7.4

Table A191. Percentage of PhD students who have children, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Yes	6.6	3.3	58.3	9.9	11.1	24.1
No	92.7	90.0	51.7	89.3	88.9	75.9
Prefer not to say	0.7	6.7	0	0.8	0	0

Table A192. Effect of children at home during pandemic on productivity in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
My children did affect my productivity	62.1	100	76.2	70.8	-	-
My children did not affect my productivity	20.7	0	9.5	16.7	-	-
My children still went to daycare during the pandemic	6.9	0	4.8	4.2	-	-

Not applicable (e.g. children are living elsewhere)	10.3	0	9.5	8.3	-	-
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Table A193. Percentage of PhD students who have children, per phase of project.

	Junior	Senior
Yes	7.0	16.8
No	92.5	82.2
Prefer not to say	0.5	1.1

Table A194. Effect of children at home during pandemic on productivity in percentage, per phase of project.

	Junior	Senior
My children did affect my productivity	43.3	75.3
My children did not affect my productivity	30.0	13.0
My children still went to daycare during the pandemic	6.7	2.6
Not applicable (e.g. children are living elsewhere)	20.0	9.1

Sleep

Table A195. Percentage of PhD students per number of hours of sleep on weekdays, per gender.

	Male	Female
Less than 6 hours	7.7	5.4
6 to 7 hours	36.7	30.6
7 to 8 hours	46.8	52.3
More than 8 hours	7.7	11.4
Don't know / prefer not to say	1.1	0.2

Table A196. Influence of COVID-19 pandemic on sleep in percentage, per gender.

	Male	Female
No change	40.2	44.1
I sleep less	25.1	22.5
I sleep more	34.3	33.4

Table A197. Percentage of PhD students per number of hours of sleep on weekdays, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Less than 6 hours	10.3	2.9	6.7	15.1
6 to 7 hours	41.2	23.2	39.5	43.4
7 to 8 hours	38.8	61.5	46.2	34.0
More than 8 hours	9.7	12.2	6.7	5.7
Don't know / prefer not to say	0	0.2	1	1.9

Table A198. Influence of COVID-19 pandemic on sleep in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No change	40.9	50.0	37.4	26.4
I sleep less	22.4	18.1	27.7	34.0
I sleep more	36.6	31.9	34.9	39.6

Table A199. Percentage of PhD students per number of hours of sleep on weekdays, per graduate school.

	BSS	EB	Hum	MS	SE
Less than 6 hours	1.1	4.5	3.8	5.8	8.9
6 to 7 hours	28.1	25.0	23.1	32.3	38.4
7 to 8 hours	59.6	59.1	59.6	50.6	42.6
More than 8 hours	11.2	11.4	11.5	11.3	8.9
Don't know / prefer not to say	0	0	1.9	0	1.1

Table A200. Influence of COVID-19 pandemic on sleep in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
No change	48.9	40.9	48.1	38.5	43
I sleep less	19.3	20.5	25.0	22.6	24.6
I sleep more	31.8	38.6	26.9	38.9	32.4

Table A201. Percentage of PhD students per number of hours of sleep on weekdays, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Less than 6 hours	6.5	3.3	2.7	6.5	0	10.3
6 to 7 hours	29.6	23.3	32.4	37.8	37.0	41.4
7 to 8 hours	53.7	53.3	51.4	45.1	48.1	37.9
More than 8 hours	9.5	16.7	10.8	10.2	14.8	10.3
Don't know / prefer not to say	0.7	3.3	2.7	0.4	0	0

Table A202. Influence of COVID-19 pandemic on sleep in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No change	40.9	55.2	51.4	39.6	48.1	50.0
I sleep less	23.9	31.0	32.4	22.4	14.8	25.0
I sleep more	35.2	13.8	16.2	38.0	37.0	25.0

Table A203. Percentage of PhD students per number of hours of sleep on weekdays, per phase of project.

	Junior	Senior
Less than 6 hours	5.8	7.0
6 to 7 hours	28.9	36.6
7 to 8 hours	54.1	46.2
More than 8 hours	10.5	9.4
Don't know / prefer not to say	0.7	0.8

Table A204. Influence of COVID-19 pandemic on sleep in percentage, per phase of project.

	Junior	Senior
No change	38.7	46.8
I sleep less	24.5	22.1
I sleep more	36.8	31.1

Sports

Table A205. PhD students' frequency of sports activities in percentage, per gender.

	Male	Female
No sport	15.7	14.0
On average one hour per week	16.8	18.8

On average 2 hours per week	21.0	23.1
On average 3 hours per week	20.2	22.1
On average 4 or more hours per week	24.7	21.6
Prefer not to say	1.6	0.4

Table A206. Influence of COVID-19 pandemic on sport in percentage, per gender.

	Male	Female
No change	23.9	25.5
I spend less time on sports	54.2	46.3
I spend more time on sports	22.0	28.2

Table A207. PhD students' frequency of sports activities in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No sport	17.6	12.7	14.4	18.9
On average one hour per week	17.6	17.1	18.5	17.0
On average 2 hours per week	24.2	23.7	20.5	24.5
On average 3 hours per week	18.8	22.7	21.0	22.6
On average 4 or more hours per week	20.6	23.5	24.6	17.0
Prefer not to say	1.2	0.2	1.0	0

Table A208. Influence of COVID-19 pandemic on sport in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No change	27.6	27.9	21.2	15.1
I spend less time on sports	52.1	46.7	49.7	58.5
I spend more time on sports	20.2	25.4	29.0	26.4

Table A209. PhD students' frequency of sports activities in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
No sport	13.5	15.9	13.5	14.1	15.0
On average one hour per week	15.7	22.7	11.5	18.8	18.1
On average 2 hours per week	25.8	11.4	19.2	24.6	19.5
On average 3 hours per week	21.3	18.2	36.5	22.3	20.3
On average 4 or more hours per week	22.5	31.8	17.3	19.9	25.9
Prefer not to say	1.1	0	1.9	0.4	1.1

Table A210. Influence of COVID-19 pandemic on sport in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
No change	23.0	22.7	25.0	28.8	22.3
I spend less time on sports	51.7	56.8	51.9	40.9	54.6
I spend more time on sports	25.3	20.5	23.1	30.4	23.1

Table A211. PhD students' frequency of sports activities in percentage, per type of contract4

	Employed	External RC	External AS	Scholarship	MD	Spare time
No sport	17.6	10.0	5.4	11.8	7.4	20.7
On average one hour per week	17.0	16.7	27.0	17.9	3.7	17.2

On average 2 hours per week	22.6	23.3	27.0	20.7	11.1	31.0
On average 3 hours per week	19.9	16.7	21.6	22.4	44.4	17.2
On average 4 or more hours per week	22.9	23.3	18.9	26.8	33.3	6.9
Prefer not to say	0	10.0	0	0.4	0	6.9

Table A212. Influence of COVID-19 pandemic on sport in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No change	25.3	33.3	34.3	20.8	40.7	31.0
I spend less time on sports	50.6	50.0	40.0	49.0	25.9	55.2
I spend more time on sports	24.0	16.7	25.7	30.2	33.3	13.8

Table A213. PhD students' frequency of sports activities in percentage, per phase of project.

	Junior	Senior
No sport	16.1	13.6
On average one hour per week	15.6	19.6
On average 2 hours per week	20.7	23.2
On average 3 hours per week	23.1	19.8
On average 4 or more hours per week	24.0	22.1
Prefer not to say	0.5	1.5

Table A214. Influence of COVID-19 pandemic on sport in percentage, per phase of project.

	Junior	Senior
No change	24.1	25.8
I spend less time on sports	48.8	50.1
I spend more time on sports	27.1	24.1

Alcohol consumption

Table A215. PhD students' frequency of alcohol consumption in percentage, per gender.

	Male	Female
Never	16.2	13.6
Once every month or less	17.6	25.0
Two to four times every month	33.5	34.5
Two to three times every week	24.7	20.5
Four or more times every week	7.7	5.6
Prefer not to say	0.3	0.8

Table A216. Number of glasses PhD students drink on an average day they drink alcohol in percentage, per gender.

	Male	Female
1 or 2 glasses	64.4	76.9
3 or 4 glasses	26.0	19.5
5 or 6 glasses	6.7	2.0
7, 8 or 9 glasses	2.2	0.2
10 glasses or more	0.3	0
Prefer not to say	0.3	1.3

Table A217. How often PhD students drink more than six glasses in one day in percentage, per gender.

	Male	Female
Never	36.0	52.0
Less than once a month	36.3	34.3
Once per month	16.2	9.4
Once per week	6.7	2.5
Two or three times per week	2.2	0.2
(Almost) daily	0	0
Prefer not to say / I don't know	2.5	1.3

Table A218. Influence of COVID-19 pandemic on alcohol consumption in percentage, per gender.

	Male	Female
No change	50.2	54.6
I drink less alcohol	34.2	26.5
I drink more alcohol	15.7	18.9

Table A219. PhD students' frequency of alcohol consumption in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Never	34.5	9.0	7.2	11.3
Once every month or less	35.2	17.3	20.0	17.0
Two to four times every month	21.8	36.1	37.9	45.3
Two to three times every week	7.3	29.5	23.6	22.6
Four or more times every week	1.2	7.8	10.8	1.9
Prefer not to say	0	0.2	0.5	1.9

Table A220. Number of glasses PhD students drink on an average day they drink alcohol in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
1 or 2 glasses	88.0	68.4	74.0	48.9
3 or 4 glasses	10.2	25.7	18.2	42.6
5 or 6 glasses	0.9	4.3	5.5	4.3
7, 8 or 9 glasses	0	1.3	1.1	2.1
10 glasses or more	0	0.3	0	0
Prefer not to say	0.9	0	1.1	2.1

Table A221. How often PhD students drink more than six glasses in one day in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Never	70.4	38.1	42.5	31.9
Less than once a month	22.2	38.9	38.1	44.7
Once per month	0.9	16.4	11.6	12.8
Once per week	0.9	4.8	3.9	8.5
Two or three times per week	0	1.6	1.1	2.1
(Almost) daily	0	0	0	0
Prefer not to say / I don't know	5.6	0.3	2.8	0

Table A222. Influence of COVID-19 pandemic on alcohol consumption in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No change	66.4	50.4	47.8	43.5
I drink less alcohol	22.4	31.6	31.7	39.1
I drink more alcohol	11.2	18.0	20.6	17.4

Table A223. PhD students' frequency of alcohol consumption in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Never	11.2	20.5	13.5	11.7	17.0
Once every month or less	18.0	22.7	9.6	25.3	21.7
Two to four times every month	38.2	31.8	26.9	33.5	33.7
Two to three times every week	27.0	18.2	38.5	24.5	21.2
Four or more times every week	5.6	4.5	11.5	5.1	5.6
Prefer not to say	0	2.3	0	0	0.8

Table A224. Number of glasses PhD students drink on an average day they drink alcohol in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
1 or 2 glasses	74.7	68.6	82.2	71.4	72.1
3 or 4 glasses	22.8	17.1	13.3	24.7	20.8
5 or 6 glasses	1.3	11.4	4.4	2.2	4.4
7, 8 or 9 glasses	0	2.9	0	0.9	1.3
10 glasses or more	0	0	0	0.4	0
Prefer not to say	1.3	0	0	0.4	1.3

Table A225. How often PhD students drink more than six glasses in one day in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Never	45.6	42.9	42.2	43.2	45.3
Less than once a month	39.2	28.6	46.7	40.5	33.6
Once per month	11.4	20.0	11.1	11.5	11.7
Once per week	2.5	2.9	0	2.6	5.4
Two or three times per week	0	2.9	0	0.9	1.3
(Almost) daily	0	0	0	0	0
Prefer not to say / I don't know	1.3	2.9	0	1.3	2.7

Table A226. Influence of COVID-19 pandemic on alcohol consumption in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
No change	54.4	54.3	37.8	54.4	54.1
I drink less alcohol	25.3	25.7	22.2	30.5	30.7
I drink more alcohol	20.3	20.0	40.0	15.0	15.2

Table A227. PhD students' frequency of alcohol consumption in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Never	11.1	16.7	16.2	18.7	11.1	10.3
Once every month or less	20.3	20.0	18.9	24.4	18.5	20.7

Two to four times every month	37.7	36.7	29.7	28.9	44.4	37.9
Two to three times every week	24.2	23.3	27.0	19.1	25.9	20.7
Four or more times every week	6.3	0	8.1	7.7	0	10.3
Prefer not to say	0.5	3.3	0	1.2	0	0

Table A228. Number of glasses PhD students drink on an average day they drink alcohol in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
1 or 2 glasses	67.5	68.0	93.5	75.5	75.0	84.6
3 or 4 glasses	25.6	24.0	6.5	19.0	20.8	11.5
5 or 6 glasses	4.3	0	0	4.5	4.2	3.8
7, 8 or 9 glasses	1.8	0	0	0.5	0	0
10 glasses or more	0	0	0	0	0	0
Prefer not to say	0.8	8.0	0	0.5	0	0

Table A229. How often PhD students drink more than six glasses in one day in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Never	40.2	32.0	67.7	48.0	37.5	50.0
Less than once a month	37.4	44.0	25.8	32.0	45.8	42.3
Once per month	14.8	12.0	6.5	11.0	12.5	3.8
Once per week	4.6	0	0	5.5	4.2	0
Two or three times per week	1.3	0	0	1.0	0	0
(Almost) daily	0	0	0	0	0	0
Prefer not to say / I don't know	1.8	12.0	0	2.5	0	3.8

Table A230. Influence of COVID-19 pandemic on alcohol consumption in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No change	51.3	58.3	54.8	50.5	62.5	50.0
I drink less alcohol	32.7	29.2	12.9	27.3	25.0	38.5
I drink more alcohol	16.0	12.5	32.3	22.2	12.5	11.5

Table A231. PhD students' frequency of alcohol consumption in percentage, per phase of project.

	Junior	Senior
Never	13.3	15.7
Once every month or less	19.1	24.9
Two to four times every month	36.8	30.6
Two to three times every week	23.5	21.3
Four or more times every week	6.5	6.8
Prefer not to say	0.7	0.6

Table A232. Number of glasses PhD students drink on an average day they drink alcohol in percentage, per phase of project.

	Junior	Senior
1 or 2 glasses	69.4	74.7
3 or 4 glasses	24.2	19.7
5 or 6 glasses	4.6	3.3
7, 8 or 9 glasses	1.1	1.0
10 glasses or more	0	0
Prefer not to say	0.8	1.3

Table A233. How often PhD students drink more than six glasses in one day in percentage, per phase of project.

	Junior	Senior
Never	42.7	47.1
Less than once a month	33.6	37.7
Once per month	15.3	9.1
Once per week	4.8	3.3
Two or three times per week	1.9	0.3
(Almost) daily	0	0
Prefer not to say / I don't know	1.6	2.6

Table A234. Influence of COVID-19 pandemic on alcohol consumption in percentage, per phase of project.

	Junior	Senior
No change	47.6	57.9
I drink less alcohol	32.7	25.9
I drink more alcohol	19.7	16.2

Significant life events

Table A235. Percentage of PhD students who have experienced significant life events, per gender.

	Male	Female
Death of someone close	17.3	17.1
Severe problems in personal relationships	21.8	20.3
Financial problems	13.8	14.0
Severe illness of yourself or someone close	20.5	19.4
Being in the process of buying a house	8.2	8.7
Getting married	2.1	3.3
Expecting a child	2.9	5.0
None of these events	37.2	39.0
Prefer not to say	1.9	1.0
Other ¹	6.4	8.3

¹Injuries, burnout, losing a job, moving

Table A236. Extent to which the life event affected work in percentage, per gender.

	Male	Female
Not at all	10.0	8.3
Hardly	21.0	13.9
Somewhat	44.3	35.1
Quite a lot	19.6	29.5
Extremely	5.0	13.2

Table A237. Percentage of PhD students who had talked about the life event(s) with their supervisor(s), per gender.

	Male	Female
No	52.3	37.0
Yes	47.7	63.0

Table A238. Perceived support by supervisor(s) in dealing with life event(s) in percentage, per gender.

	Male	Female
Not at all	1.4	1.4
Hardly	8.3	7.4
Somewhat	30.6	35.1
Quite a lot	43.1	41.9
Extremely	16.7	14.2

Table A239. Reasons why PhD students chose not to talk to their supervisor(s) about significant life events in percentage, per gender.

	Male	Female
It doesn't affect my work that much that he/she needs to know	12.8	7.4
I already receive support elsewhere	3.5	4.5
It is none of his/hers business	6.1	5.6
I would feel uncomfortable talking about this with him/her	10.1	8.7
I think he/she would not understand	3.2	4.5
I think it would be bad for my career to discuss this	5.1	3.1
Prefer not to say	0.8	0.4
Other ¹	1.4	1.4

¹Limited contact to supervisor, no personal relationship to supervisor, will do so in the future

Table A240. Percentage of PhD students who have experienced significant life events, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Death of someone close	18.8	14.6	13.8	22.6
Severe problems in personal relationships	24.2	15.6	26.2	32.1
Financial problems	17.6	6.1	17.9	20.8
Severe illness of yourself or someone close	18.8	17.3	20.5	32.1
Being in the process of buying a house	3.6	12.2	8.7	1.9
Getting married	3.0	2.0	3.1	5.7
Expecting a child	5.5	4.4	1.0	5.7
None of these events	37.0	43.4	34.4	24.5
Prefer not to say	1.8	0.2	1.5	7.5
Other ¹	4.8	8.0	7.7	7.5

¹Injuries, burnout, losing a job, moving

Table A241. Extent to which the life event affected work in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American

Not at all	9.3	9.0	10.7	3.5
Hardly	9.3	22.6	16.4	8.8
Somewhat	50.5	33.0	38.5	47.4
Quite a lot	23.7	24.9	24.6	31.6
Extremely	7.2	10.4	9.8	8.8

Table A242. Percentage of PhD students who had talked about the life event(s) with their supervisor(s), per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No	49.4	32.5	58.4	28
Yes	50.6	67.5	41.6	72.0

Table A243. Perceived support by supervisor(s) in dealing with life event(s) in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Not at all	2.5	2.0	0	0
Hardly	2.5	8.8	10.8	0
Somewhat	30.0	34.3	32.4	33.3
Quite a lot	47.5	41.2	40.5	44.4
Extremely	17.5	13.7	16.2	22.2

Table A244. Reasons why PhD students chose not to talk to their supervisor(s) about significant life events in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
It doesn't affect my work that much that he/she needs to know	10.9	6.3	15.4	5.7
I already receive support elsewhere	4.8	3.2	3.6	3.8
It is none of his/hers Business	9.7	2.2	8.7	7.5
I would feel uncomfortable talking about this with him/her	12.1	5.1	12.3	11.3
I think he/she would not understand	5.5	2.2	3.6	1.9
I think it would be bad for my career to discuss this	4.8	2.2	6.2	0
Prefer not to say	1.2	0	1.0	0
Other ¹	1.0	0.9	1.4	1.4

¹Limited contact to supervisor, no personal relationship to supervisor, will do so in the future

Table A245. Percentage of PhD students who have experienced significant life events, per graduate school.

	BSS	EB	Hum	MS	SE
Death of someone close	14.6	18.2	21.2	16.0	15.3
Severe problems in personal relationships	22.5	27.3	25.0	15.6	23.1
Financial problems	12.4	13.6	21.2	10.1	15.3
Severe illness of yourself or someone close	22.5	29.5	28.8	16.7	17.8
Being in the process of buying a house	7.9	11.4	5.8	11.3	5.6
Getting married	3.4	0	1.9	2.3	3.3
Expecting a child	3.4	4.5	1.9	3.9	3.6
None of these events	42.7	31.8	30.8	40.9	40.7

Prefer not to say	0	0	0	1.6	1.4
Other ¹	3.4	9.1	9.6	10.5	5.6

¹Injuries, burnout, losing a job, moving

Table A246. Extent to which the life event affected work in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Not at all	4.0	0	8.3	14.2	10.1
Hardly	12.0	13.8	22.2	19.1	16.7
Somewhat	32.0	48.3	19.4	35.5	41.4
Quite a lot	32.0	34.5	33.3	21.3	25.8
Extremely	20.0	3.4	16.7	9.9	6.1

Table A247. Percentage of PhD students who had talked about the life event(s) with their supervisor(s), per graduate school.

	BSS	EB	Hum	MS	SE
No	21.4	40.0	44.0	42.6	50.3
Yes	78.6	60.0	56.0	57.4	57.4

Table A248. Perceived support by supervisor(s) in dealing with life event(s) in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Not at all	0	0	0	3.7	1.4
Hardly	9.1	20.0	7.1	3.7	6.9
Somewhat	36.4	33.3	35.7	35.2	33.3
Quite a lot	51.5	40.0	50.0	35.2	43.1
Extremely	3.0	6.7	7.1	22.2	15.3

Table A249. Reasons why PhD students chose not to talk to their supervisor(s) about significant life events in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
It doesn't affect my work that much that he/she needs to know	7.9	15.9	7.7	6.2	10.3
I already receive support elsewhere	2.2	6.8	3.8	3.9	4.7
It is none of his/hers Business	1.1	4.5	5.8	3.9	8.1
I would feel uncomfortable talking about this with him/her	5.6	13.6	9.6	8.2	9.5
I think he/she would not understand	0	2.3	5.8	3.1	5.6
I think it would be bad for my career to discuss this	4.5	6.8	3.8	3.1	3.9
Prefer not to say	0	0	0	0	1.4
Other ¹	0	1	0.9	1.4	1.4

¹Limited contact to supervisor, no personal relationship to supervisor, will do so in the future

Table A250. Percentage of PhD students who have experienced significant life events, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Death of someone close	16.7	16.7	13.5	17.1	11.1	13.8
Severe problems in personal relationships	22.1	26.7	16.2	22.8	7.4	24.1
Financial problems	9.0	6.7	16.2	21.1	7.4	20.7
Severe illness of yourself or someone close	18.3	33.3	27	19.9	22.2	17.2
Being in the process of buying a house	8.4	6.7	21.6	6.1	11.1	10.3

Getting married	2.0	13.3	0	2.0	3.7	3.4
Expecting a child	3.2	3.3	5.4	2.4	3.7	13.8
None of these events	39.3	26.7	40.5	37.4	48.1	34.5
Prefer not to say	0.9	3.3	0	1.2	3.7	6.9
Other ¹	8.1	10.0	10.8	5.7	7.4	3.4

¹Injuries, burnout, losing a job, moving

Table A251. Extent to which the life event affected work in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Not at all	10.1	15.0	10.0	4.1	9.1	6.3
Hardly	17.5	25.0	20.0	15.0	27.3	25.0
Somewhat	39.7	35.0	35.0	39.5	54.5	31.3
Quite a lot	24.1	20.0	30.0	29.9	9.1	12.5
Extremely	8.6	5.0	5.0	11.6	0	25.0

Table A252. Percentage of PhD students who had talked about the life event(s) with their supervisor(s), per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No	46.8	33.3	42.9	42.0	42.9	45.5
Yes	53.2	66.7	57.1	58.0	57.1	54.5

Table A253. Perceived support by supervisor(s) in dealing with life event(s) in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Not at all	2.0	0	0	0	0	0
Hardly	4.0	12.5	37.5	8.7	0	16.7
Somewhat	34.3	12.5	25.0	33.3	25.0	50.0
Quite a lot	44.4	75.0	37.5	40.6	50.0	33.3
Extremely	15.2	0	0	17.4	25.0	0

Table A254. Reasons why PhD students chose not to talk to their supervisor(s) about significant life events in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
It doesn't affect my work that much that he/she needs to know	9.7	10.0	5.4	9.8	7.4	10.3
I already receive support elsewhere	5.0	3.3	0	2.4	11.1	6.9
It is none of his/hers Business	5.9	0	5.4	8.5	0	3.4
I would feel uncomfortable talking about this with him/her	10.4	0	8.1	11.8	3.7	6.9
I think he/she would not understand	2.7	0	2.7	6.9	0	6.9
I think it would be bad for my career to discuss this	4.1	0	2.7	6.1	0	3.4
Prefer not to say	0.7	0	2.7	0.4	0	0
Other ¹	0	0	1	0.9	1.4	1.4

¹Limited contact to supervisor, no personal relationship to supervisor, will do so in the future

Table A255. Percentage of PhD students who have experienced significant life events, per phase of project.

	Junior	Senior
Death of someone close	16.3	17.7
Severe problems in personal relationships	21.0	20.9
Financial problems	13.8	13.6
Severe illness of yourself or someone close	18.4	21.3
Being in the process of buying a house	9.1	8.1
Getting married	2.3	3.2
Expecting a child	2.3	5.3
None of these events	38.9	37.4
Prefer not to say	0.5	2.1
Other ¹	8.2	6.8

¹Injuries, burnout, losing a job, moving

Table A256. Extent to which the life event affected work in percentage, per phase of project.

	Junior	Senior
Not at all	10.0	7.3
Hardly	20.3	14.2
Somewhat	40.6	38.3
Quite a lot	23.1	27.0
Extremely	6.0	13.1

Table A257. Percentage of PhD students who had talked about the life event(s) with their supervisor(s), per phase of project.

	Junior	Senior
No	44.6	42.8
Yes	55.4	57.2

Table A258. Perceived support by supervisor(s) in dealing with life event(s) in percentage, per phase of project.

	Junior	Senior
Not at all	0	1.6
Hardly	4.1	11.4
Somewhat	27.8	39.0
Quite a lot	51.5	35.8
Extremely	16.5	12.2

Table A259. Reasons why PhD students chose not to talk to their supervisor(s) about significant life events in percentage, per phase of project.

	Junior	Senior
It doesn't affect my work that much that he/she needs to know	10.3	9.4
I already receive support elsewhere	4.2	4.3
It is none of his/hers Business	4.0	7.9
I would feel uncomfortable talking about this with him/her	10.0	9.1
I think he/she would not understand	4.0	4.0
I think it would be bad for my career to discuss this	3.7	4.3
Prefer not to say	0.5	0.6
Other ¹	1.4	1.4

¹Limited contact to supervisor, no personal relationship to supervisor, will do so in the future

Diagnosis mental disorder

Table A260. Percentage of PhD students who have ever been officially diagnosed with a mental disorder, per gender.

	Male	Female
No	86.4	81.2
Yes	10.4	15.9
Prefer not to say	3.2	2.9

Table A261. Mental disorders PhD students been officially diagnosed with in percentage of total sample, per gender.

	Male	Female
Depression or other mood disorder	6.1	9.7
Attention disorder, e.g. ADD or ADHD	2.9	1.0
Autism spectrum disorder	1.6	0.6
Anxiety disorder	2.9	8.1
Personality disorder	1.1	1.7
Eating disorder	0	1.4
Prefer not to say	0	0.2
Other ¹	1.1	1.4

¹Burnout, Dyslexia, PTSD, OCD, substance abuse

Table A262. Percentage of the extent to which the disorder affects PhD students' work, per gender.

	Male	Female
Not at all	7.7	15.9
Hardly	25.6	18.3
Somewhat	41.0	31.7
Quite a lot	23.1	23.2
Extremely	2.6	11.0

Table A263. Percentage of PhD students who talked to their supervisor(s) about their disorder, per gender.

	Male	Female
No	42.3	46.3
Yes	57.7	53.7

Table A264. Perceived support by supervisor(s) regarding dealing with a disorder at work in percentage, per gender.

	Male	Female
Not at all	6.7	3.4
Hardly	6.7	6.9
Somewhat	26.7	34.5
Quite a bit	40.0	31.0
Extremely	20.0	24.1

Table A265. Reasons why PhD students chose not to talk to their supervisor(s) about a diagnosis in percentage, per gender.

	Male	Female
It doesn't affect my work that much that he/she needs to know	1.9	1.7
I already receive support elsewhere	1.9	1.6
It is none of his/hers Business	0	1.2
I would feel uncomfortable talking about this with him/her	0.8	3.3
I think he/she would not understand	1.1	2.1

I think it would be bad for my career to discuss this	0.5	2.1
Prefer not to say	0	0.2
Other	0	0

Table A266. Percentage of PhD students who have ever been officially diagnosed with a mental disorder, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No	90.2	82.4	80.5	79.2
Yes	8.5	14.6	14.4	18.9
Prefer not to say	1.2	2.9	5.1	1.9

Table A267. Mental disorders PhD students been officially diagnosed with in percentage of total sample, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Depression or other mood disorder	5.5	7.8	8.7	13.2
Attention disorder, e.g. ADD or ADHD	0	2.2	2.6	1.9
Autism spectrum disorder	0	1.7	1	0
Anxiety disorder	5.5	5.1	7.7	9.4
Personality disorder	1.8	1.7	0.5	1.9
Eating disorder	0	1.5	0.5	0
Prefer not to say	0.6	0	0	0
Other ¹	0	1	2.6	1.9

¹*Burnout, Dyslexia, PTSD, OCD, substance abuse*

Table A268. Percentage of the extent to which the disorder affects PhD students' work, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Not at all	0	18.3	14.3	0
Hardly	21.4	28.3	14.3	0
Somewhat	35.7	33.3	32.1	60.0
Quite a lot	21.4	18.3	25.0	30.0
Extremely	21.4	1.7	14.3	10.0

Table A269. Percentage of PhD students who talked to their supervisor(s) about their disorder, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No	9.1	50.0	55.0	30.0
Yes	90.9	50.0	45.0	70.0

Table A270. Perceived support by supervisor(s) regarding dealing with a disorder at work in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Not at all	10.0.	6.3	0	0
Hardly	10.0	0	11.1	0

Somewhat	40.0	43.8	11.1	28.6
Quite a bit	20.0	31.3	33.3	57.1
Extremely	20.0	18.8	44.4	14.3

Table A271. Reasons why PhD students chose not to talk to their supervisor(s) about a diagnosis in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
It doesn't affect my work that much that he/she needs to know	0	2.7	2.1	0
I already receive support elsewhere	0	1.7	2.6	1.9
It is none of his/hers Business	0	0.2	1.5	1.9
I would feel uncomfortable talking about this with him/her	0.6	2.0	3.1	3.8
I think he/she would not understand	0.6	1.0	2.6	3.8
I think it would be bad for my career to discuss this	0	1.0	2.6	3.8
Prefer not to say	0	0	0.5	0
Other	0	0	0	0

Table A272. Percentage of PhD students who have ever been officially diagnosed with a mental disorder, per graduate school.

	BSS	EB	Hum	MS	SE
No	75.3	86.4	80.8	85.2	84.1
Yes	20.2	13.6	17.3	12.1	12.8
Prefer not to say	4.5	0	1.9	2.7	3.1

Table A273. Mental disorders PhD students been officially diagnosed with in percentage of total sample, per graduate school.

	BSS	EB	Hum	MS	SE
Depression or other mood disorder	10.1	6.8	11.5	6.6	8.6
Attention disorder, e.g. ADD or ADHD	1.1	4.5	3.8	0	1.9
Autism spectrum disorder	0	2.3	0	0.8	1.4
Anxiety disorder	10.1	4.5	7.7	5.4	5.3
Personality disorder	3.4	4.5	0	1.2	1.1
Eating disorder	2.2	0	1.9	0.8	0
Prefer not to say	0	0	0	0.4	0
Other ¹	4.5	0	1.9	0.8	0.8

¹Burnout, Dyslexia, PTSD, OCD, substance abuse

Table A274. Percentage of the extent to which the disorder affects PhD students' work, per graduate school.

	BSS	EB	Hum	MS	SE
Not at all	22.2	16.7	11.1	16.1	10.9
Hardly	22.2	16.7	44.4	16.1	19.6
Somewhat	50.0	33.3	33.3	29.0	30.4
Quite a lot	0	33.3	11.1	25.8	30.4
Extremely	5.6	0	0	12.9	8.7

Table A275. Percentage of PhD students who talked to their supervisor(s) about their disorder, per graduate school.

	BSS	EB	Hum	MS	SE
No	30.0	50.0	100	33.3	40.6
Yes	70.0	50.0	0	66.7	59.4

Table A276. Perceived support by supervisor(s) regarding dealing with a disorder at work in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Not at all	0	0	0	7.1	5.3
Hardly	0	0	0	7.1	10.5
Somewhat	57.1	0	0	21.4	31.6
Quite a bit	28.6	50.0	0	42.9	31.6
Extremely	14.3	50.0	0	21.4	21.1

Table A277. Reasons why PhD students chose not to talk to their supervisor(s) about a diagnosis in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
It doesn't affect my work that much that he/she needs to know	2.2	2.3	1.9	1.6	0.8
I already receive support elsewhere	1.1	0	1.9	1.6	1.9
It is none of his/hers Business	0	0	1.9	1.2	0.3
I would feel uncomfortable talking about this with him/her	1.1	0	5.8	1.6	2.5
I think he/she would not understand	0	0	3.8	1.6	1.9
I think it would be bad for my career to discuss this	1.1	0	5.8	0.8	1.4
Prefer not to say	0	2.3	0	0	0
Other	0	0	0	0	0

Table A278. Percentage of PhD students who have ever been officially diagnosed with a mental disorder, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No	82.4	76.7	75.7	83.7	96.3	79.3
Yes	15.3	10.0	13.5	13.5	3.7	17.2
Prefer not to say	2.3	13.3	10.8	2.9	0	3.4

Table A279. Mental disorders PhD students been officially diagnosed with in percentage of total sample, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Depression or other mood disorder	9.3	3.3	10.8	7.7	0	13.8
Attention disorder, e.g. ADD or ADHD	2.0	0	0	2.4	0	3.4
Autism spectrum disorder	1.8	3.3	0	0	0	0
Anxiety disorder	6.8	3.3	0	6.9	3.7	3.4
Personality disorder	1.1	3.3	0	1.6	0	3.4
Eating disorder	1.1	0	0	0.4	0	3.4
Prefer not to say	0	0	0	0	0	0
Other ¹	1.6	0	2.7	1.2	0	0

¹Burnout, Dyslexia, PTSD, OCD, substance abuse

Table A280. Percentage of the extent to which the disorder affects PhD students' work, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Not at all	19.1	0	20.0	6.1	100	0
Hardly	22.1	33.3	20.0	21.2	0	20.0
Somewhat	27.9	66.7	60.0	42.4	0	40.0
Quite a lot	27.9	0	0	18.2	0	20.0
Extremely	2.9	0	0	12.1	0	20.0

Table A281. Percentage of PhD students who talked to their supervisor(s) about their disorder, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No	45.0	100	66.7	41.7	0	25.0
Yes	55.0	0	33.3	58.3	0	75.0

Table A282. Perceived support by supervisor(s) regarding dealing with a disorder at work in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Not at all	4.5	0	0	0	0	0
Hardly	0	0	0	7.1	0	66.7
Somewhat	31.8	0	100	21.4	0	0
Quite a bit	36.4	0	0	42.9	0	33.3
Extremely	27.3	0	0	28.6	0	0

Table A283. Reasons why PhD students chose not to talk to their supervisor(s) about a diagnosis in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
It doesn't affect my work that much that he/she needs to know	2.0	3.3	5.4	1.2	0	0
I already receive support elsewhere	2.0	3.3	2.7	0.8	0	0
It is none of his/hers Business	0.7	3.3	0	0.8	0	0
I would feel uncomfortable talking about this with him/her	1.8	6.7	2.7	2.4	0	0
I think he/she would not understand	1.6	0	0	2.0	0	3.4
I think it would be bad for my career to discuss this	1.6	3.3	0	1.2	0	0
Prefer not to say	0.2	0	0	0	0	0
Other	0	0	0	0	0	0

Table A284. Percentage of PhD students who have ever been officially diagnosed with a mental disorder, per phase of project.

	Junior	Senior
No	85.8	80.6
Yes	12.1	14.9
Prefer not to say	2.1	4.5

Table A285. Mental disorders PhD students been officially diagnosed with in percentage of total sample, per phase of project.

	Junior	Senior
Depression or other mood disorder	8.4	8.3
Attention disorder, e.g. ADD or ADHD	1.9	1.7
Autism spectrum disorder	1.2	0.9
Anxiety disorder	5.4	6.8
Personality disorder	1.4	1.5
Eating disorder	0.7	0.9
Prefer not to say	0	0
Other ¹	1.2	1.3

¹*Burnout, Dyslexia, PTSD, OCD, substance abuse*

Table A286. Percentage of the extent to which the disorder affects PhD students' work, per phase of project.

	Junior	Senior
Not at all	11.5	15.7
Hardly	30.8	12.9
Somewhat	34.6	35.7
Quite a lot	19.2	25.7
Extremely	3.8	10.0

Table A287. Percentage of PhD students who talked to their supervisor(s) about their disorder, per phase of project.

	Junior	Senior
No	53.3	42.0
Yes	46.7	58.0

Table A288. Perceived support by supervisor(s) regarding dealing with a disorder at work in percentage, per phase of project.

	Junior	Senior
Not at all	0	3.4
Hardly	0	10.3
Somewhat	35.7	31.0
Quite a bit	28.6	37.9
Extremely	35.7	17.2

Table A289. Reasons why PhD students chose not to talk to their supervisor(s) about a diagnosis in percentage, per phase of project.

	Junior	Senior
It doesn't affect my work that much that he/she needs to know	2.3	1.3
I already receive support elsewhere	2.1	1.5
It is none of his/hers Business	0.2	1.3
I would feel uncomfortable talking about this with him/her	1.9	2.8
I think he/she would not understand	1.4	1.9
I think it would be bad for my career to discuss this	0.9	2.1
Prefer not to say	0	0.2
Other	0	0

Work schedule

Table A290. Percentage of the PhD students regarding the number of evenings they work on weekdays in an average week, per gender.

	Male	Female
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None	14.4	20.3
One or two evenings	38.6	42.4
Three or four evenings	28.7	26.9
All five weekday evenings	18.4	10.3

Table A291. Duration of time they usually work on an average evening in percentage, per gender.

	Male	Female
Less than one hour	5.9	6.1
One or two hours	44.4	50.6
Two to three hours	38.5	29.9
More than three hours	11.2	13.4

Table A292. Percentage of the PhD students regarding the question whether or not they compensate for the time, per gender.

	Male	Female
Never	11.5	11.5
Rarely	23.6	17.8
Sometimes	32.3	35.4
Usually	28.3	28.8
Always	4.3	6.6

Table A293. Percentage of the PhD students regarding the number of hours they worked during the weekends in the last two months, per gender.

	Male	Female
None	19.9	29.7
One to three hours	31.4	33.5
Three to six hours	28.7	22.9
Six to nine hours	12.2	9.7
More than nine hours	7.7	4.3

Table A294. Percentage of the PhD students regarding the number of evenings they work on weekdays in an average week, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
None	9.1	26.8	14.9	9.4
One or two evenings	33.5	51.5	34.4	24.5
Three or four evenings	36.4	17.6	33.3	35.8
All five weekday evenings	20.6	4.1	17.4	30.2

Table A295. Duration of time they usually work on an average evening in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Less than one hour	3.4	9.3	4.8	2.1
One or two hours	45.0	56.7	45.8	35.4
Two to three hours	38.3	26.7	35.5	37.5
More than three hours	13.4	7.3	13.9	25.0

Table A296. Percentage of the PhD students regarding the question whether or not they compensate for the time, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Never	9.4	16.1	9.6	6.3
Rarely	18.1	20.4	21.1	21.3
Sometimes	35.6	32.1	33.1	37.5
Usually	30.9	26.1	28.9	28.8
Always	6.0	5.4	7.2	6.3

Table A297. Percentage of the PhD students regarding the number of hours they worked during the weekends in the last two months, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
None	9.8	39.0	18.5	18.9
One to three hours	35.4	32.9	32.8	18.9
Three to six hours	36.0	17.6	27.2	35.8
Six to nine hours	12.8	7.1	12.3	20.8
More than nine hours	6.1	3.4	9.2	5.7

Table A298. Percentage of the PhD students regarding the number of evenings they work on weekdays in an average week, per graduate school.

	BSS	EB	Hum	MS	SE
None	30.3	20.5	23.1	19.1	14.2
One or two evenings	41.6	38.6	38.5	44.5	36.5
Three or four evenings	23.6	25.0	32.7	22.3	31.5
All five weekday evenings	4.5	15.9	5.8	14.1	17.8

Table A299. Duration of time they usually work on an average evening in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
Less than one hour	6.5	5.7	2.5	6.3	5.5
One or two hours	48.4	42.9	65.0	49.8	45.5
Two to three hours	37.1	34.3	17.5	33.3	36.0
More than three hours	8.1	17.1	15.0	10.6	13.0

Table A300. Percentage of the PhD students regarding the question whether or not they compensate for the time, per graduate school.

	BSS	EB	Hum	MS	SE
Never	11.3	5.7	7.5	13.5	10.7
Rarely	24.2	17.1	17.1	20.8	20.1
Sometimes	38.7	31.4	31.4	32.9	33.8
Usually	19.4	42.9	42.9	25.1	31.2
Always	6.5	2.9	2.9	7.7	4.2

Table A301. Percentage of the PhD students regarding the number of hours they worked during the weekends in the last two months, per graduate school.

	BSS	EB	Hum	MS	SE
None	44.9	25.0	28.8	30.5	16.4
One to three hours	27.0	34.1	38.5	35.5	32.9
Three to six hours	16.9	27.3	19.2	18.0	31.8
Six to nine hours	4.5	9.1	9.6	12.1	12.5
More than nine hours	6.7	4.5	3.8	3.9	6.4

Table A301. Percentage of the PhD students regarding the number of evenings they work on weekdays in an average week, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
None	19.6	23.3	18.9	17.6	18.5	10.3
One or two evenings	43.1	36.7	64.9	31.4	51.9	55.2
Three or four evenings	25.3	33.3	13.5	33.1	18.5	24.1
All five weekday evenings	12.0	6.7	2.7	18.0	11.1	10.3

Table A302. Duration of time they usually work on an average evening in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Less than one hour	7.9	0	3.3	3.5	9.1	3.8
One or two hours	52.2	65.2	66.7	37.6	50	53.8
Two to three hours	28.4	34.8	30	41.6	31.8	42.3
More than three hours	11.5	0	0	17.3	9.1	0

Table A304. Percentage of the PhD students regarding the question whether or not they compensate for the time, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Never	11.8	8.7	20.0	9.9	9.1	12.0
Rarely	18.3	30.4	20.0	21.3	13.6	12.0
Sometimes	33.4	47.8	36.7	32.7	31.8	36.0
Usually	29.5	13.0	23.3	30.2	36.4	32.0
Always	7.0	0	0	5.9	9.1	8.0

Table A305. Percentage of the PhD students regarding the number of hours they worked during the weekends in the last two months, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
None	28.7	23.3	29.7	21.6	22.2	31.0
One to three hours	34.3	36.7	40.5	29.8	40.7	20.7
Three to six hours	22.8	23.3	24.3	27.3	18.5	31.0
Six to nine hours	8.6	10.0	5.4	13.9	14.8	13.8
More than nine hours	5.6	6.7	0	7.3	3.7	3.4

Table A306. Percentage of the PhD students regarding the number of evenings they work on weekdays in an average week, per phase of project.

	Junior	Senior
None	20.5	16.2
One or two evenings	39.2	42.0
Three or four evenings	28.7	27.3
All five weekday evenings	11.7	14.5

Table A307. Duration of time they usually work on an average evening in percentage, per phase of project.

	Junior	Senior
Less than one hour	6.2	6.1
One or two hours	49.0	47.1

Two to three hours	33.7	33.3
More than three hours	11.1	13.5

Table A308. Percentage of the PhD students regarding the question whether or not they compensate for the time, per phase of project.

	Junior	Senior
Never	7.6	15.1
Rarely	19.1	20.9
Sometimes	35.2	32.4
Usually	30.2	27.3
Always	7.9	4.3

Table A309. Percentage of the PhD students regarding the number of hours they worked during the weekends in the last two months, per phase of project.

	Junior	Senior
None	24.5	27.3
One to three hours	34.3	30.9
Three to six hours	24.7	25.7
Six to nine hours	11.0	10.4
More than nine hours	5.6	5.5

Vacation

Table A310. Percentage of PhD students with official vacation days, per gender.

	Male	Female
Yes	60.2	60.2
No	34.8	35.9
I don't know	5.1	3.9

Table A311. Percentage of PhD students regarding their use of vacation days, per gender.

	Male	Female
All of them	5.3	9.0
Almost all of them	18.7	21.0
More than half of them	15.6	18.7
About half of them	12.0	15.8
Less than half of them	27.1	17.1
I don't remember / prefer not to say	8.9	6.8
Was not yet working at the university in 2019	0.9	11.6

Table A312. Reasons for not using more vacation days in percentage, per gender.

	Male	Female
I had too much to do	18.6	18.4
I felt working would be a better use of my time than holidays	9.3	9.1
There never seemed to be a good time to take off	15.7	16.7
I didn't feel the need for (many) days off	12.0	6.8
My supervisor wanted me to keep working	0.8	1.2
Other ¹	2.4	3.5

¹Started later during the year, had time off due to another reason, pressure from colleagues to keep working, saved vacation days for 2020

Table A313. Percentage of PhD students regarding their use of vacation days so far in 2020, per gender.

	Male	Female
None	30.2	23.2

One or two days	12.4	16.8
Three to five days	19.6	21.3
Five to ten days	23.1	22.6
More than ten days	6.7	11.9
I don't remember / prefer not to say	8.0	4.2

Table A314. Percentage of PhD students regarding their plan to use their vacation days in 2020, per gender.

	Male	Female
I plan to use them as soon as possible when the COVID-19 situation has improved (e.g. when travelling is possible again)	25.0	22.7
I plan to use them at the end of the year (e.g. take a long christmas break)	10.7	10.4
I plan to continue working this year and not use my vacation days at all or hardly use them	13.4	7.4
I plan to use (most of) my vacation days this summer, regardless of the COVID-19 situation	22.8	33.3
I don't know yet / prefer not to say	21.4	16.5
Other ¹	6.7	9.7

¹Use them at end of PhD, divide over the year, contract already ended

Table A315. Percentage of PhD students regarding the question whether or not the PhD students discussed their vacation plans with their supervisor yet, per gender.

	Male	Female
No	65.0	64.5
Yes, briefly	25.1	26.1
Yes	9.9	9.4

Table A316. Percentage of PhD students with official vacation days, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Yes	38.0	72.1	66.7	39.6
No	55.2	25.4	29.2	52.8
I don't know	6.7	2.4	4.1	7.5

Table A317. Percentage of PhD students regarding their use of vacation days, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
All of them	9.7	7.1	6.2	9.5
Almost all of them	16.1	19.7	25.4	14.3
More than half of them	17.7	19.7	15.4	14.3
About half of them	11.3	15.9	13.8	4.8
Less than half of them	21.0	21	20	14.3
I don't remember / prefer not to say	16.1	5.1	7.7	14.3
Was not yet working at the university in 2019	8.1	11.5	11.5	28.6

Table A318. Reasons for not using more vacation days in percentage, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
I had too much to do	11.5	22.9	19.5	9.4

I felt working would be a better use of my time than holidays	4.8	11.5	9.7	3.8
There never seemed to be a good time to take off	8.5	22.4	13.8	7.5
I didn't feel the need for (many) days off	4.2	13.4	6.7	5.7
My supervisor wanted me to keep working	0.6	1.2	1	1.9
Other ¹	0	4.6	3.1	0

¹Started later during the year, had time off due to another reason, pressure from colleagues to keep working, saved vacation days for 2020

Table A319. Percentage of PhD students regarding their use of vacation days so far in 2020, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
None	38.7	20.7	26.9	42.9
One or two days	9.7	16.9	13.1	19.0
Three to five days	8.1	23.4	22.3	14.3
Five to ten days	11.3	27.1	21.5	4.8
More than ten days	16.1	8.8	9.2	14.3
I don't remember / prefer not to say	16.1	3.0	6.9	4.8

Table A320. Percentage of PhD students regarding their plan to use their vacation days in 2020, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
I plan to use them as soon as possible when the COVID-19 situation has improved (e.g. when travelling is possible again)	33.3	18.6	30.0	19.0
I plan to use them at the end of the year (e.g. take a long christmas break)	21.7	7.1	10.0	23.8
I plan to continue working this year and not use my vacation days at all or hardly use them	10.0	9.5	9.2	4.8
I plan to use (most of) my vacation days this summer, regardless of the COVID-19 situation	11.7	35.6	30.8	9.5
I don't know yet / prefer not to say	21.7	18.3	13.1	29.4
Other ¹	1.7	10.8	6.9	9.5

¹Use them at end of PhD, divide over the year, contract already ended

Table A321. Percentage of PhD students regarding the question whether or not the PhD students discussed their vacation plans with their supervisor yet, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No	75.4	65.1	54.3	71.4
Yes, briefly	18.0	25.1	32.6	23.8
Yes	6.6	9.8	13.2	4.8

Table A322. Percentage of PhD students with official vacation days, per graduate school.

	BSS	EB	Hum	MS	SE
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Yes	67.4	68.2	58.8	60.2	63.6
No	29.2	29.5	37.3	35.5	32.2
I don't know	3.4	2.3	3.9	4.3	4.2

Table A323. Percentage of PhD students regarding their use of vacation days, per graduate school.

	BSS	EB	Hum	MS	SE
All of them	6.7	6.7	3.3	11.0	6.6
Almost all of them	30.0	3.3	26.7	27.9	15.4
More than half of them	21.7	16.7	6.7	17.5	18.5
About half of them	8.3	20.0	6.7	11.7	16.3
Less than half of them	20.0	40.0	36.7	11	22.5
I don't remember / prefer not to say	10.0	6.7	10.0	7.1	6.1
Was not yet working at the university in 2019	3.3	6.7	10.0	13.6	14.5

Table A324. Reasons for not using more vacation days in percentage, per graduate school.

	BSS	EB	Hum	MS	SE
I had too much to do	23.6	36.4	15.4	12.1	20.3
I felt working would be a better use of my time than holidays	5.6	18.2	9.6	7.0	10.9
There never seemed to be a good time to take off	19.1	27.3	13.5	11.3	18.4
I didn't feel the need for (many) days off	7.9	15.9	11.5	7.4	10.3
My supervisor wanted me to keep working	1.1	4.5	0	0.8	1.4
Other ¹	2.2	6.8	5.8	3.5	1.9

¹Started later during the year, had time off due to another reason, pressure from colleagues to keep working, saved vacation days for 2020

Table A325. Percentage of PhD students regarding their use of vacation days so far in 2020, per graduate school.

	BSS	EB	Hum	MS	SE
None	11.7	26.7	20.0	27.9	29.5
One or two days	11.7	13.3	10.0	18.8	15.9
Three to five days	18.3	16.7	33.3	20.8	18.9
Five to ten days	35.0	26.7	30.0	18.8	20.3
More than ten days	16.7	13.3	3.3	9.1	7.9
I don't remember / prefer not to say	6.7	3.3	3.3	0.6	1.3

Table A326. Percentage of PhD students regarding their plan to use their vacation days in 2020, per graduate school.

	BSS	EB	Hum	MS	SE
I plan to use them as soon as possible when the COVID-19 situation has improved (e.g. when travelling is possible again)	11.7	26.7	16.7	20.8	26.7
I plan to use them at the end of the year (e.g. take a long christmas break)	3.3	6.7	3.3	13.0	14.2
I plan to continue working this year and not use my vacation days at all or hardly use them	5.0	20.0	10.0	7.8	11.1
I plan to use (most of) my vacation days this summer, regardless of the COVID-19 situation	61.7	30.0	33.3	33.1	19.6
I don't know yet / prefer not to say	11.7	6.7	23.3	16.9	21.3

Other ¹	6.7	10.0	13.3	8.4	7.1
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¹Use them at end of PhD, divide over the year, contract already ended

Table A327. Percentage of PhD students regarding the question whether or not the PhD students discussed their vacation plans with their supervisor yet, per graduate school.

	BSS	EB	Hum	MS	SE
No	50.0	53.3	70.0	70.1	65.3
Yes, briefly	31.7	40.0	23.3	24.7	23.1
Yes	18.3	6.7	6.7	5.2	11.6

Table A328. Percentage of PhD students with official vacation days, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Yes	92.1	93.3	59.5	6.1	18.5	62.1
No	6.3	6.7	32.4	89.4	63.0	31.0
I don't know	1.6	0	8.1	4.5	18.5	6.9

Table A329. Percentage of PhD students regarding their use of vacation days, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
All of them	7.1	0	9.1	6.7	0	16.7
Almost all of them	19.7	14.3	36.4	26.7	40.0	16.7
More than half of them	17.4	21.4	4.5	13.3	0	5.6
About half of them	14.3	14.3	9.1	13.3	0	27.8
Less than half of them	21.4	32.1	18.2	6.7	0	27.8
I don't remember / prefer not to say	6.6	7.1	9.1	33.4	40.0	5.6
Was not yet working at the university in 2019	13.5	10.7	13.6	0	20.0	0

Table A330. Reasons for not using more vacation days in percentage, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
I had too much to do	27.3	36.7	13.5	0.8	0	37.9
I felt working would be a better use of my time than holidays	14.4	10.0	5.4	1.2	0	6.9
There never seemed to be a good time to take off	24.6	46.7	5.4	1.2	0	24.1
I didn't feel the need for (many) days off	14.9	16.7	5.4	0.4	0	6.9
My supervisor wanted me to keep working	2.3	0	0	0	0	0
Other ¹	4.5	10.0	0	0	0	3.4

¹Started later during the year, had time off due to another reason, pressure from colleagues to keep working, saved vacation days for 2020

Table A331. Percentage of PhD students regarding their use of vacation days so far in 2020, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
None	28.7	14.3	18.2	20.0	20.0	22.2
One or two days	15.0	21.4	0	13.3	40.0	16.7

Three to five days	20.1	17.9	27.3	20.0	40.0	16.7
Five to ten days	23.6	25.0	13.6	13.3	0	16.7
More than ten days	8.4	10.7	18.2	20.0	0	16.7
I don't remember / prefer not to say	4.2	10.7	22.7	13.3	0	11.2

Table A332. Percentage of PhD students regarding their plan to use their vacation days in 2020, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
I plan to use them as soon as possible when the COVID-19 situation has improved (e.g. when travelling is possible again)	25.1	18.5	9.1	21.4	0	16.7
I plan to use them at the end of the year (e.g. take a long christmas break)	10.8	11.1	4.5	14.3	0	5.6
I plan to continue working this year and not use my vacation days at all or hardly use them	8.6	7.4	18.2	28.6	0	16.7
I plan to use (most of) my vacation days this summer, regardless of the COVID-19 situation	29.0	29.6	45.5	28.6	80.0	16.7
I don't know yet / prefer not to say	18.1	22.2	18.2	7.1	20.0	33.4
Other ¹	8.4	11.1	4.5	0	0	11.1

¹Use them at end of PhD, divide over the year, contract already ended

Table A333. Percentage of PhD students regarding the question whether or not the PhD students discussed their vacation plans with their supervisor yet, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No	62.7	55.6	68.2	60.0	60.0	77.8
Yes, briefly	28.0	29.6	13.6	26.7	40.0	16.7
Yes	9.3	14.8	18.2	13.3	0	5.6

Table A334. Percentage of PhD students with official vacation days, per phase of project.

	Junior	Senior
Yes	65.5	55.8
No	29.6	41.0
I don't know	4.9	3.2

Table A335. Percentage of PhD students regarding their use of vacation days, per phase of project.

	Junior	Senior
All of them	7.1	7.7
Almost all of them	17.4	23.1
More than half of them	13.2	21.5
About half of them	11.7	16.5
Less than half of them	21.0	21.9

I don't remember / prefer not to say	7.2	8.9
Was not yet working at the university in 2019	22.4	0.4

Table A336. Reasons for not using more vacation days in percentage, per phase of project.

	Junior	Senior
I had too much to do	12.8	23.6
I felt working would be a better use of my time than holidays	8.4	9.8
There never seemed to be a good time to take off	14.7	17.4
I didn't feel the need for (many) days off	11.4	6.8
My supervisor wanted me to keep working	0.5	1.7
Other ¹	4.0	2.1

¹Started later during the year, had time off due to another reason, pressure from colleagues to keep working, saved vacation days for 2020

Table A337. Percentage of PhD students regarding their use of vacation days so far in 2020, per phase of project.

	Junior	Senior
None	29.2	22.3
One or two days	14.2	15.4
Three to five days	21.4	20.0
Five to ten days	19.6	26.9
More than ten days	10.0	9.2
I don't remember / prefer not to say	5.7	6.2

Table A338. Percentage of PhD students regarding their plan to use their vacation days in 2020, per phase of project.

	Junior	Senior
I plan to use them as soon as possible when the COVID-19 situation has improved (e.g. when travelling is possible again)	25.3	20.9
I plan to use them at the end of the year (e.g. take a long christmas break)	13.2	8.1
I plan to continue working this year and not use my vacation days at all or hardly use them	7.5	12.0
I plan to use (most of) my vacation days this summer, regardless of the COVID-19 situation	30.2	28.3
I don't know yet / prefer not to say	16.4	21.3
Other ¹	7.5	9.3

¹Use them at end of PhD, divide over the year, contract already ended

Table A339. Percentage of PhD students regarding the question whether or not the PhD students discussed their vacation plans with their supervisor yet, per phase of project.

	Junior	Senior
No	61.6	67.4
Yes, briefly	26.7	25.2
Yes	11.7	7.4

Emails

Table A340. Percentage of PhD students who receive work emails on their phone, per gender.

	Male	Female
No	25.8	43.0
Yes	74.2	57.0

Table A341. Percentage of the PhD students regarding the question how often they immediately read work email on their phone outside of work hours, per gender.

	Male	Female
Never	0.7	1.7
Rarely	8.6	5.8
Sometimes	22.6	19.4
Usually	40.5	41.5
Always	27.6	31.6

Table A342. Percentage of the PhD students regarding the question how often they immediately take action as response to a work email they receive on their phone outside of work hours, per gender.

	Male	Female
Never	0.4	0.7
Rarely	20.2	17.6
Sometimes	37.5	41.9
Usually	35.6	31.6
Always	6.3	8.1

Table A343. Percentage of the PhD students regarding the question whether or not checking their work emails outside of work hours does affect their ability to relax, per gender.

	Male	Female
Not at all	12.6	6.3
Hardly	32.8	27.6
Somewhat	38.3	44.1
Quite a lot	13.4	18.0
Extremely	2.8	4.0

Table A344. Percentage of PhD students who receive work emails on their phone, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
No	26.1	49.0	22.6	22.6
Yes	73.9	51.0	77.4	77.4

Table A345. Percentage of the PhD students regarding the question how often they immediately read work email on their phone outside of work hours, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Never	0.8	2.4	1.3	0
Rarely	9.9	7.2	6.0	7.3
Sometimes	22.3	25.4	17.9	17.1
Usually	38.0	45.0	40.4	29.3
Always	28.9	20.1	34.4	46.3

Table A346. Percentage of the PhD students regarding the question how often they immediately take action as response to a work email they receive on their phone outside of work hours, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Never	0	1.1	0.7	0

Rarely	8.3	27.0	17.9	23.7
Sometimes	41.7	43.9	37.9	26.3
Usually	39.8	24.3	34.3	36.8
Always	10.2	3.7	9.3	13.2

Table A347. Percentage of the PhD students regarding the question whether or not checking their work emails outside of work hours does affect their ability to relax, per nationality.

	Asian	Dutch	Non-Dutch European	South-American
Not at all	14.8	7.4	7.9	5.4
Hardly	23.1	37.6	32.1	16.1
Somewhat	47.2	42.9	30.0	51.8
Quite a lot	13.0	11.1	22.9	19.6
Extremely	1.9	1.1	7.1	7.1

Table A348. Percentage of PhD students who receive work emails on their phone, per graduate school.

	BSS	EB	Hum	MS	SE
No	44.9	20.5	40.4	53.3	23.1
Yes	55.1	79.5	59.6	46.7	76.9

Table A349. Percentage of the PhD students regarding the question how often they immediately read work email on their phone outside of work hours, per graduate school.

	BSS	EB	Hum	MS	SE
Never	0	0	6.5	2.5	0.7
Rarely	8.2	2.9	3.2	7.6	9.1
Sometimes	20.4	28.6	22.6	17.6	21.0
Usually	51.0	45.7	35.5	42.9	38.4
Always	20.4	22.9	32.3	29.4	30.8

Table A350. Percentage of the PhD students regarding the question how often they immediately take action as response to a work email they receive on their phone outside of work hours, per graduate school.

	BSS	EB	Hum	MS	SE
Never	4.4	0	0	0	0.4
Rarely	26.7	23.5	25.0	21.5	14.5
Sometimes	48.9	44.1	39.3	33.6	40.2
Usually	17.8	26.5	32.1	35.5	36.1
Always	2.2	5.9	3.6	9.3	8.8

Table A351. Percentage of the PhD students regarding the question whether or not checking their work emails outside of work hours does affect their ability to relax, per graduate school.

	BSS	EB	Hum	MS	SE
Not at all	4.4	11.8	3.6	11.2	9.6
Hardly	26.7	35.3	35.7	29.0	28.9
Somewhat	55.6	35.3	35.7	38.3	41.4
Quite a lot	11.1	14.7	25.0	16.8	16.1
Extremely	2.2	2.9	0	4.7	4.0

Table A352. Percentage of PhD students who receive work emails on their phone, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
No	36.6	40.0	40.5	28.0	59.3	37.9
Yes	63.4	60.0	59.5	72.0	40.7	62.1

Table A353. Percentage of the PhD students regarding the question how often they immediately read work email on their phone outside of work hours, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Never	2.8	0	0	0	0	0
Rarely	7.1	5.6	4.5	7.4	0	22.2
Sometimes	19.6	16.7	36.4	21.6	27.3	27.8
Usually	40.2	44.4	45.5	39.8	36.4	44.4
Always	30.2	33.3	13.6	31.3	36.4	5.6

Table A354. Percentage of the PhD students regarding the question how often they immediately take action as response to a work email they receive on their phone outside of work hours, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Never	1.2	0	0	0	0	0
Rarely	20.6	23.5	19.0	17.2	18.2	28.6
Sometimes	41.1	52.9	57.1	33.7	45.5	35.7
Usually	30.8	17.6	23.8	41.1	9.1	28.6
Always	6.3	5.9	0	8.0	27.3	7.1

Table A355. Percentage of the PhD students regarding the question whether or not checking their work emails outside of work hours does affect their ability to relax, per type of contract.

	Employed	External RC	External AS	Scholarship	MD	Spare time
Not at all	9.1	0	4.8	11.7	27.3	0
Hardly	28.9	52.9	33.3	31.3	27.3	35.7
Somewhat	43.5	35.3	47.6	36.2	27.3	50.0
Quite a lot	15.4	11.8	14.3	17.2	9.1	7.1
Extremely	3.2	0	0	3.7	9.1	7.1

Table A356. Percentage of PhD students who receive work emails on their phone, per phase of project.

	Junior	Senior
No	37.1	35.1
Yes	62.9	64.9

Table A357. Percentage of the PhD students regarding the question how often they immediately read work email on their phone outside of work hours, per phase of project.

	Junior	Senior
Never	1.1	1.6
Rarely	7.8	6.9
Sometimes	20.7	21.4
Usually	39.6	41.4
Always	30.7	28.6

Table A358. Percentage of the PhD students regarding the question how often they immediately take action as response to a work email they receive on their phone outside of work hours, per phase of project.

	Junior	Senior
Never	0.8	0.4
Rarely	19.5	19.4
Sometimes	39.0	40.6
Usually	32.9	33.5
Always	7.7	6.1

Table A359. Percentage of the PhD students regarding the question whether or not checking their work emails outside of work hours does affect their ability to relax, per phase of project.

	Junior	Senior
Not at all	11.4	7.6
Hardly	31.3	29.9
Somewhat	40.7	41.4
Quite a lot	14.2	17.3
Extremely	2.4	4.0

Table A360. Zero-order correlations between variables and mental health and satisfaction.

	1	2	3	4	5	6	7	8
1. exhaustion	1.00							
2. dedication	-.50**	1.00						
3. vigour	-.54**	.76**	1.00					
4. cynicism	.56**	-.65**	-.57**	1.00				
5. professional efficacy	-.45**	.70**	.62**	-.56**	1.00			
6. formal relationships	-.16**	.31**	.23**	-.21**	.30**	1.00		
7. informal relationship	0.00	.09**	0.04	-0.02	.14**	.50**	1.00	
8. sense of belonging	-.24**	.36**	.27**	-.27**	.28**	.46**	.43**	1.00
9. general mental health	.58**	-.44**	-.51**	.37**	-.40**	-.20**	-.09*	-.23**
10. current mental health	-.56**	.41**	.45**	-.38**	.39**	.22**	.12**	.23**
11. satisfaction performance	-.40**	.44**	.39**	-.38**	.54**	.25**	.13**	.25**
12. satisfaction supervision	-.33**	.32**	.27**	-.37**	.33**	.21**	.07*	.34**

Note: * $p < .05$; ** $p < .01$; *** $p < .001$