Well-being Survey 2024

Aspects of PhD students' well-being at the
University of Groningen and University Medical Center Groningen

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Preface

This is the fourth edition of the University of Groningen's comprehensive survey on the well-being of our PhD candidates. The initiative began in 2018, in response to alarming international reports on the mental health challenges faced by PhD students. Our own findings soon showed that candidates in Groningen were experiencing levels of stress and psychological strain similar to those reported elsewhere in the Netherlands and Belgium.

In response, the University launched *PhD Support*—a wide-ranging programme aimed at both preventing unnecessary stress and providing targeted support. It includes training for supervisors, preventive courses for PhD candidates, e-health tools, and the availability of PhD counsellors as accessible first points of contact. Dedicated PhD psychologists offer individual counselling, and support groups assist neurodivergent candidates, those with disabilities, and others managing chronic health challenges—ensuring that all have the opportunity to succeed on their own terms.

This survey is the first to offer a meaningful indication of the impact of these measures. The 2022 edition was still heavily shaped by the effects of the COVID-19 pandemic; by contrast, nearly half of this year's respondents began their PhD trajectory post-pandemic, allowing more reliable comparisons with the 2018 baseline.

We are pleased to observe clear signs of progress. The proportion of respondents who report that doing a PhD has a positive effect on their mental health has risen from 19.4% in 2018 to 24.6% in 2024, while those reporting a negative impact has decreased by 4.7%. More PhD candidates now take full advantage of their holiday entitlement, and fewer report excessive working hours—indicating a healthier work-life balance.

Insecurity about personal capabilities remains the most frequently cited stressor. Dedication, perseverance, and resilience—hallmarks of the PhD journey—remain essentially unchanged. Encouragingly, the perceived sense of belonging has improved since 2022, suggesting that efforts to foster connection are beginning to bear fruit. Still, many PhD candidates continue to report feelings of disconnection from their research groups and academic communities, highlighting the need for continued focus on inclusion and academic culture.

Further insights show that unclear expectations are cited by 22.8% of PhD candidates who report negative mental health effects—emphasizing the need for transparent communication and goal-setting. Procrastination and lack of motivation are also commonly mentioned (30%), pointing to the value of structured support in time management and self-regulation.

These findings underline that while support services are having a positive impact, well-being depends just as much on a culture of mentorship, community, and recognition. We see this survey not as an endpoint, but as a renewed call to action: to strengthen academic culture, foster inclusive environments, and ensure every PhD candidate feels supported throughout their journey.

I would like to sincerely thank all PhD candidates who took the time to share their experiences through this survey. Your input is invaluable in guiding our ongoing efforts to improve the doctoral environment at our university. I also wish to express my deep appreciation to Bilge Gencoglu and Marjon Fokkens-Bruinsma for their outstanding work in designing the survey, analysing the data, and presenting the results with clarity and care. Their continued commitment ensures that we have the insights needed to translate data into meaningful action.

Prof. Petra Rudolf, Dean of Graduate Studies

Management Summary

In May 2024, the Well-being Survey was sent to all PhD students at the UG/UMCG 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. A total of 1134 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

Almost half of the 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 Assessment Committee before the end of the contract) was lower. On average, PhD students were satisfied with their PhD trajectory overall and with their supervision. The PhD students were reasonably confident that they would be able to find a suitable and interesting job after completing their PhD. PhD students indicated that they were rather satisfied with the meetings with their supervisors. Finally, PhD students reported an average work atmosphere within the department. In general, these findings show an improvement in PhDs' progress and satisfaction compared to 2022.

Impact of the COVID-19 pandemic

PhD students were asked to indicate how COVID-19 had impacted their ability to engage in certain aspects of the PhD project. In general PhD students reported a negative effect of the pandemic rather than a positive effect. Similar to the 2022 survey, this concerned discussing ideas and findings with colleagues and peers in particular. PhD students were somewhat more positive on the ability to engage in writing and data analysis, as well as on the future career prospects. When asked about more specific aspects related to PhD students' well-being, the most frequently reported effect attributed to the COVID-19 pandemic was a lack of sense of belonging to the research group. Overall, the negative impact of COVID-19 pandemic has become less prominent compared to the 2022 survey.

Mental health

Mental health was measured using the WHO scale, which ranges from 0-100. PhD students scored slightly below the midpoint of this scale. Regarding the General Health Questionnaire, PhD students scored above the cut-off score of 12, which is to be considered a case for concern. PhD students also rated their average mental health during the PhD trajectory, on a scale of 1 to 10. Their average current mental health was 6.8, which was higher than their reported mental health during the COVID-19 pandemic (5.9). Despite this, PhD students were most positive about their health during their Bachelor and Master programmes. PhD students scored a 6.9 on the happiness scale (0-10), where lower scores indicate lower levels of happiness. PhD students scored 3.3 out of 5 on the resilience scale, indicating a moderate level of resilience. These findings show a slight improvement in PhD's mental health compared to the 2022 survey.

Almost half of the PhD students indicated that doing a PhD affected their mental health sometimes positively, sometimes negative. This concerned aspects such as insecurities about own capabilities and not achieving good results or doubts about achieving good results.

Positive effect concerned aspects related to interest, positive relationships with colleagues and peers as well as with supervisors. PhD students also indicated the opportunity to develop personally and gain professional skills.

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 (3.63) and cynicism (3.50) were slightly above the scale midpoint, indicating moderate levels of burnout symptoms in these dimensions. In contrast, PhD students scored well above the scale midpoint on professional efficacy (4.99), suggesting strong perceptions of their own competence. Work engagement, measured by vigour and dedication, showed differing patterns. The mean score for vigour (4.01) was around the scale midpoint, indicating moderate energy levels, while the mean score for dedication (4.67) was above the scale midpoint, reflecting a higher level of enthusiasm and commitment. Overall, these findings show lower levels of burnout symptoms and higher levels of engagement compared to the 2022 survey.

We asked PhD students whether they worry about their career, and, if so what they worried about. These career worries seem to be quite common: 37% of the PhD students sometimes worry about their career and 34% worries about it often or all of the time. In particular they worry about aspects such as the high competition to obtain the job they want, being unsure whether they are good enough for the kind of job they want, and not knowing what kind of career they want.

There were several significant relationships between the mental health indicators and aspects of satisfaction and progress. For example, GHQ-12 was moderately related to satisfaction with the PhD trajectory overall, satisfaction with performance within the PhD, satisfaction with supervision, and having considered quitting the PhD project. The aspects of burnout – exhaustion, cynicism, and professional efficacy – and of work engagement – vigour and dedication – were moderately to strongly related to satisfaction with the PhD trajectory overall, satisfaction with performance within the PhD, satisfaction with supervision, and having considered quitting the PhD project. Mental health, measured by the WHO, GHQ-12 and current mental health had a moderate relationship with resilience and moderate to strong relationships with all aspects of burnout and work engagement in the expected direction.

Mental health support at the UG and UMCG

Although respondents would talk to someone at the UG/UMCG if they were to experience mental health problems, they scored higher on talking with a professional outside the UG/UMCG. Regarding the question about whether they knew whom to contact if they experienced mental health issues, the respondents in 2024 had similar scores as in 2022, so no further increase was observed. The mean score is slightly above the scale mid-point indicating that there still is a group of PhD students who does not know whom to talk to. Both supervisors scored high on the PhD students' expectation regarding supportive behaviour in case they would share their mental health problems.

PhD students were most aware of the courses and workshops offered through PhD support and the Career Perspectives series (close to 90%). However, less than two thirds knew about individual counseling services, and only about half were aware of the availability of PhD psychologists. Awareness was lower for other resources, with about one third knowing about

the independent ombuds person. Overal the visibility of PhD student mental health support increased compared to 2022.

The PhD students who experienced mental health problems in the past or who are experiencing them currently were asked whom they talked to about their problems. Most often, the supervisor or colleagues were mentioned. When asked how helpful it was to talk to someone, the majority of the PhD students (86%) benefitted from talking to someone about their mental health problems.

Lifestyle characteristics

Of the respondents, 65% reported not being involved in a structural activity in addition to their PhD project. Almost half of the PhD students work more hours than their contract requires, with an average score of 12 hours extra per week, while the average score was 13 hours in 2022. Almost half of the PhD students that work more hours experience stress because of it. Three quarters of the PhD students take all the vacation/leave days that they are entitled to. When looking at the respondent's work-life balance we observe that all scores are around the scale midpoint. However, compared to 2022, PhD students experienced less difficulties in maintaining their work-life balance.

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 and type of contract. For nationality and graduate school there was not a clear trend. Regarding type of contract, there were consistent differences. PhD students whose contracts/scholarships have ended and are completing their PhD on their own time score less positively on the different themes. Similarly, consistent differences were found based on phase of the project. Junior PhD students score more positively on the questionnaire compared to senior PhD students.

Concluding remarks

The results of the 2024 survey show many similarities with the 2022 survey. PhD students still rate their current well-being as worse than during their Bachelor's and Master's studies. However, compared to 2022, there is a general trend of improvement, with PhD students reporting a more positive outlook on their well-being.

The 2024 survey included a considerably larger number of open questions related to aspects such as improving the PhD trajectory and social safety. For both of them PhD students listed the following aspects as being of importance:

- Improving the quality of supervision and better monitoring the quality of the supervision, both related to the PhD process and to issues of social safety.
- Enhancing sense of belonging and creating a stronger sense of community.
- Raising awareness concerning mental health and social safety aspects.
- Providing PhD students with opportunities to give (anonymous) feedback to their supervisors.

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/UMCG. 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 in 2018, in 2020, and in 2022. In May 2024, the Well-being Survey was distributed again among UG/UMCG PhD students. The main goals of this study were:

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 as a PhD student by UG/UMCG, scholarship from UG/UMCG, externally financed PhD student), 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 UG/UMCG;
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. Impact of the COVID-19 pandemic
3. Mental health
4. Support at the UG/UMCG
5. Burnout and work engagement
6. Resilience
7. Sociodemographic and lifestyle questions
8. Background characteristics

The Well-being Survey was sent to all PhD students from the UG/UMCG *via* an email from the Groningen Graduate Schools (using Qualtrics mailing system), 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. Besides the initial invitation and reminders that was sent through Qualtrics, PhD students were approached through other avenues (such as individual graduate schools) as well in order to motivate them to participate. By the end of July 2024, the survey was closed. Participation in the survey was voluntary and anonymity was guaranteed. Respondents were asked to give their informed consent and were free to withdraw from the survey at any time.

In the present report, we focus on the most important results for all topics. First the background characteristics are described in 'Sample description' (section 1). Sections 2-7 present the results for the different topics regarding/considering the total sample of PhD students. Section 8 summarizes the main differences between groups. Tables that show the group differences in more detail are presented in the appendix.

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

Sample Description

The total sample consisted of 1464 PhD students (which equals a response percentage of 34%), of which 1134 completed at least two thirds of the survey and indicated that their data could be used for improvement purposes. The background questions for the sample description were in the final part of the survey and were therefore not completed by all 1134 respondents. As Table 1 shows, 60% of the respondents were female. This is comparable to the number of female respondents in the 2022 survey (61% female respondents).

Table 1. Gender - number and percentage of respondents' gender

	Number	Percentage
Female	678	59.8
Male	423	37.3
Other / prefer not to say	32	2.8
Missing	1	0.1
Total	1134	100

Table 2 shows the distribution of respondents' nationalities. About 40% of the respondents were Dutch, 19% were non-Dutch European, 39% had another nationality. This is comparable to the respondents in 2022: 45%, 21% and 34%.

Table 2. Nationality - number and percentage of respondents' nationality

	Number	Percentage
Dutch	458	40.4
Nationality from EEA country (non-Dutch)	214	18.9
Other nationality	441	38.9
Prefer not to say	21	1.9
Total	1134	100

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

Table 3 shows the number and percentage of respondents by graduate school. Beside that, the table shows the response percentage per graduate school. Most of the PhD students were part of the Graduate School of Medical Sciences (33%), and the Graduate School of Science and Engineering (33%), followed by the Graduate School of Behavioural and Social Sciences (10%). The remaining 24% were part of the Graduate School for the Humanities, the Graduate School of Economics and Business, the Graduate School of Spatial Sciences, the Graduate School of Campus Fryslân, the Graduate School of Law, the Graduate School of Theology and Religious Studies, the Graduate School of Philosophy, or 'preferred not to say'. This response is representative for the PhD population in Groningen, where 1/3 of the PhD students are part of the Graduate School of Medical Sciences, 1/3 part of the Gradute School of Science and Engineering and 1/3 is part of the Federation of Graduate Schools consisting of the eight Graduate Schools of the Faculty of Economics and Business, the Faculty of Behavioural and Social Sciences, The Faculty of Arts, The Faculty of Law, the Faculty of Religion, Culture and Society, the Faculty of Philosophy, the Faculty of Spatial Sciences, and the Campus Fryslân.

Compared to the 2022 data, the number of respondents at the Graduate School of Behavioural and Social Sciences, the Graduate School of Economics and Business, and the Graduate School of Graduate School of Theology and Religious Sciences increased approximately by 5%. The number of respondents at the Graduate School of Humanities increased by 8%. The number

of respondents at the Graduate School of Campus Fryslan showed 4% decreased while the other Graduate Schools showed an increase between 12-17%.
The highest response percentages can be found for the Graduate School of Behavioural and Social Sciences and the Graduate School of Spatial Sciences, the lowest response percentage for the Graduate Philosophy.

Table 3. Graduate School - number and percentage of respondents from each graduate school

	Number	Percentage	Response percentage
GSBSS	110	9.7	33.8
GSCF	12	1.1	25.0
GSEB	43	3.8	22.8
GSH	88	7.8	25.0
GSL	41	3.6	23.6
GSMS	377	33.2	22.1
GSP	5	0.4	12.8
GSSE	376	33.2	29.0
GSSS	41	3.6	33.1
GSTRS	13	1.1	25
Don't know / prefer not to say	28	2.4	-
Total	1134	100	

Note: groups marked green contain more than 30 respondents and are used to investigate possible differences based on the graduate school.
Acronyms: GSBSS = Graduate School of Behavioural and Social Sciences, GSCF = Graduate School of Campus Fryslân, GSEB = Graduate School of Economics and Business, GSH = Graduate School of Humanities, GSL = Graduate School of Law, GSMS = Graduate School of Medical Sciences, GSP = Graduate School of Philosophy, GSSE = Graduate School of Science and Engineering, GSSS = Graduate School of Spatial Sciences, GSTRS = Graduate School of Theology and Religious Sciences

We asked the PhD students what type of contract they had. Table 4 shows that half of the respondents (52%) were employed as a PhD student by the UG/UMCG, while 25% were scholarship student (promotiestudent) at the UG/UMCG, 6% were externally financed PhD students[1], 3% were medical doctor MD/PhD students at the UMCG, and 5% had ended their contract/scholarship at the UG/UMCG and were completing their PhD in their own time or already completed their PhD. We recoded the 'other' category into the main categories where possible. The remaining other types of contracts were mainly a combination of different contracts, a sandwich position, external PhD students who do not get paid for their PhD research or unable to classify. These numbers are comparable with 2022.

[1] These are PhD students who have a contract with an external institution/organization that allows them to spend part of their working hours on the PhD trajectory.

Table 4. Type of contract - number and percentage of respondents per type of contract

	Number	Percentage
Employed as a PhD student by UG/UMCG	591	52.1
Externally financed PhD student	73	6.4
Scholarship student at the UG/UMCG	280	24.7
MD/PhD at UMCG	35	3.1
End of contract and finishing PhD in own time	46	4.1
End of contract and have already finished the thesis	10	0.9
Other	80	7.1
Don't know/Prefer not to say	19	1.7
Total	1134	100

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

The distribution of the respondents' allotted time for their PhD projects is shown in Table 5. This table shows that 77% of PhD students planned 4 years for their project, 6% expected more than 4 years, 8% planned 3 years, and 4% planned less than 3 years. These percentages are comparable to those found in the 2022 survey.

Table 5. Allotted time - number and percentage of allotted time period for the PhD project

	Number	Percentage
< 3 years	49	4.3
3 years	88	7.8
4 years	868	76.5
> 4 years	69	6.1
Other[1]	40	3.5
Don't know / no contract	18	1.6
Missing	2	0.2
Total	1134	100

[1] *Change in contract, open-end contract, prolongation, variations of contracts between 2-7 years, not defined.*

Table 6 shows that 68% of the PhD students work full-time on their project, while 11% work fewer than 36 hours per week, and 9% have a different contract or scholarship. This distribution is similar to the 2022 data.

Table 6. Number and percentage of respondents working full-time or part-time

	Number	Percentage
Full-time	771	68.0
Part-time (<36 hours)	108	9.5
Other[1]	99	8.7
Missing	156	13.8
Total	1134	100

[1] *E.g. change of hours during PhD-project, scholarship, no salary*

Table 7 shows that the respondents were almost equally distributed over the first year (28%), second year (23%), and third year (22%). The remaining 26% were either in their fourth year (16%), fifth year (6%), or more (4%). This distribution resembles that of the respondents in 2022 surveys with the exception that this year the percentage of first year PhD students is a little lower.

Table 7. Year of PhD - number and percentage of respondents per current year of PhD

	Number	Percentage
First year	314	27.7
Second year	263	23.2
Third year	254	22.4
Fourth year	182	16.0
Fifth year	67	5.9
Over five years	41	3.6
Missing	13	1.1
Total	1134	100

Table 7.1. Phase of the project - number and percentage of respondents per phase of the project

	Number	Percentage
Junior	577	50.9
Senior	544	48.0
Missing	13	1.1
Total	1134	100

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

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 8). PhD students' own satisfaction with their performance is lower than their supervisors' satisfaction, while the PhD students rated the workload and complexity high. PhD students indicated that they know what supervisors expect of them. Furthermore, the PhD students are generally confident that they will finish their thesis, even though their confidence in being able to submit their thesis to the assessment committee before the end of their contract is a little lower. Their confidence in finding an interesting and suitable job after their PhD is above the scale mid-point. These results mirror the 2022 data.

Table 8. 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	3.60 (1.00)
Overall, my primary supervisor (promotor) is satisfied with how I am performing	3.98 (0.75)
Overall, my daily supervisor is satisfied with how I am performing	4.01 (0.72)
Overall, I know what my supervisors expect of me	3.84 (0.86)
The workload in my PhD is high	3.69 (0.91)
The complexity of my PhD is high	3.88 (0.88)
I am confident that I will, eventually, finish my PhD	4.28 (0.81)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract	3.10 (1.29)
I am confident that I will find a suitable and interesting job after I have finished my PhD	3.68 (1.06)

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, 42% of the respondents reported to be on schedule, 21% to have fallen behind but able to finish on time, and 15% to be behind schedule and not able to finish on time. The remaining 22% 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 9). Compared to 2022, the percentage of students who think they will be able to finish their PhD in time had increased with 7%. The percentage of PhD students who were unable to finish in time and are currently on an extension with decreased with three percent, and who was unable to finish in time and are currently finishing my thesis in my own time with had increased with two percent.

Table 9. 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	473	41.7
No, I have fallen behind but I still think I can finish in time	240	21.2
No, I have fallen behind and I don't think I will be able to finish in time	172	15.2
I was unable to finish in time and am currently on an extension	37	3.3
I was unable to finish in time and am currently finishing my thesis in my own time	50	4.4
I have already defended my thesis or sent the manuscript to the assessment committee	11	1.0
I don't know / other[1]	151	13.3
Total	1134	100

[1] *(COVID-19) extension granted but is no guarantee for finishing in time, expecting to fall behind due to unrealistic workload, on track now but feeling insecure about being able to finish in time, health issues, not applicable because just started.*

Students who were (expecting) to fall behind gave the following reasons: delays in the research process (data collection, limited lab access, redesign of study), mental and physical health problemes (due to the COVID-19 pandemic and the war in Ukraine), going through major life events (such as deaths in family, illness, pregnancy), delays due to dependency on other people/available data, unrealistic expectations/planning of PhD, insufficient supervision (not enough available time, unskilled), lack of support when data collection/analysis were not going according to plan, too many non-research related additional tasks (above PhD trajectory requirements), insufficient facilities (labs, working equipment, office space), personal bad time- and project-management, combining PhD with an external job, lack of motivation.

PhD students made several suggestions on how to support them with the delay these pertained to extensions, realistic expectations, professionalisation and time for PhD supervisors. They also mentioned more clarity on procedures such as Data Protection Impact Assesment, ethical clearances, sick leave.

Furthermore, 60% of the PhD students had never considered quitting their thesis. Satisfaction with the PhD trajectory and its supervision are above the scale midpoint (Table 10).

Table 10. Considerations of quitting, and satisfaction with trajectory and supervision

	Mean (SD)
Have you ever considered quitting your PhD project? [1]	4.03 (1.25)
How satisfied are you with your PhD trajectory so far? [2]	3.6 (0.94)
How satisfied are you with the supervision you receive? [2]	3.88 (1.02)

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).*

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 with both daily supervisor and primary supervisor (Table 11). Compared to the data from 2022, the satisfaction with the meetings slightly increased.

Table 11. Mean (SD) of frequency and satisfaction with (online) supervision

	Mean (SD)
Frequency of (online) meetings with daily supervisor[1]	2.70 (1.11)
Frequency of (online) meetings with primary supervisor[1]	3.39 (1.14)
Satisfaction meetings with daily supervisor[2]	4.19 (0.97)
Satisfaction meetings with primary supervisor[2]	4.06 (0.95)

Note: answers were given on a scale from 1 to 5.

[1] *(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] *(1 = very dissatisfied, 5 = very satisfied).*

The PhD students were asked to explain why they were (dis)satisfied with the meetings with their supervisors. Concerning the meetings with their **daily supervisor** PhD students appreciated the following aspects: efficient use of time, supervisor's availability for meetings and questions, supervisor providing guidance to keep them on track with the research, receiving helpful input and constructive feedback which allows them to move forward, room for discussion, feeling supported and instilling confidence, safe environment to freely share ideas and struggles, showing interest in personal matters and wellbeing of PhD student, helping them with developing an academic profile and network, and having expertise in the research field.

Aspects that were considered negative were: lack of guidance in keeping them on track, critical feedback but no help in how to change, too strong of a focus on supervisor's own work, too little time available because the supervisor is too busy, meetings being cancelled, lack of interest in personal matters and well-being of PhD students, unsupportive attitude, unsafe environment and being treated in a diminuative way, and insufficient expertise in the research topic or methodology. Most of the negative aspects mentioned are the opposite of the positive aspects. Positive and negative aspects of the meetings with the **primary supervisor** were very similar. In addition to that, there was a stronger emphasis on the lack of expertise in the research topic and methodology.

Formal relationships (*e.g.* collaboration, discussions about work, asking for help), informal relationships (*e.g*. interpersonal relationships between colleagues, interest of colleagues in how they are doing) and a sense of belonging were measured with scales based on Meeuwisse *et al*. (2010). On the scale from 1 to 5, a higher score indicates a stronger and more positive

sense of (in)formal relationships between colleagues. The PhD students scored just above average for the scales formal relationships, informal relationships, and a sense of belonging in their department (Table 12). This shows an increase in the scores compared to 2022.

Table 12. Means and standard deviation regarding the atmosphere within the department

	Mean (SD)
Formal relationships	3.52 (0.69)
Informal relationships	3.31 (0.90)
Sense of belonging	3.74 (0.76)

Impact of Covid-19 Pandemic

This chapter addresses the impact of COVID-19 on students' progression of the PhD project and on their wellbeing. The questions were inspired by Vitae[2], which performed a large study in the United Kingdom on the impact of COVID-19 on doctoral students and early career research staff, and were also included in the PhD Survey 2021[3] and PhD Survey 2023[4] of the University of Groningen.

At the time of filling out the questionnaire (summer of 2024), COVID-19 was officially considered to no longer be a pandemic. 380 PhD students (34%) mentioned that they were doing a PhD at the University of Groningen during the COVID-19 pandemic. The following responses were collected from these 380 PhDs who were pursuing their PhD during the COVID-19 pandemic.

The strongest negative perceived effect of COVID-19 on PhD students' project concerned discussing ideas and findings with colleagues and peers and data collection (Table 13). PhD students also experienced a negative effect on dissemination and sharing research findings with stakeholders and others, and data collection. The pandemic had a small positive effect on writing and data analysis.

Table 13. Impact of Covid-19 on the ability to engage in aspects of the PhD project

What impact has COVID-19 had on the ability to engage in this work:	Mean (SD)
Data collection	2.12 (.93)
Data analysis	2.58 (.84)
Writing	2.74 (.88)
Discussing ideas and findings with colleagues and peers	1.93 (.86)
Dissemination and sharing research finding with stakeholders and other	2.06 (.91)

Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive).

PhD students reported a small negative effect of COVID -19 on their mental health and progress of their PhD project (Table 14). For the progress of PhD project they indicated a small negative effect while for future career prospects they indicated a small positive effect.

Table 14. Impact of Covid-19 on other aspects

What impact did COVID-19 have on your:	Mean (SD)
Motivation to work on PhD project	2.58 (0.85)
Progress of PhD projects	2.19 (0.96)
Future career prospects	2.70 (0.68)
Mental health	2.38 (0.89)
Work-life balance	2.64 (1.09)
Contact with daily supervisor/promotor	2.43 (0.80)

Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive).

Additional questions were asked about specific aspects of their well-being (Table 15). Approximately one in seven students reported feeling anxious in social situations, while nearly one in six felt lonely. About one in ten students experienced feelings of depression.

[2] https://www.vitae.ac.uk/impact-and-evaluation/covid-19-impact-on-researchers
[3] https://www.rug.nl/education/phd-programmes/about/phd-survey/2021.pdf
[4] https://www.rug.nl/education/phd-programmes/about/phd-survey/2023.pdf

Furthermore, nearly one in five felt overwhelmed in larger groups of people, and almost one in four students reported not feeling a sense of belonging to their research group. An additional group, around one in six, expressed other concerns not captured in the specific categories provided.

In 2022, one third of the PhD students felt overwhelmed in bigger groups of people due to the COVID-19 pandemic, one quarter did not feel a sense of belonging to their research group, one fifth felt anxious in social situations or felt lonely. Almost one sixth felt depressed due to the COVID-19 pandemic. More than 16% of the PhD students listed other negative and positive effects.

Negative effects that were mentioned: anxiety and stress due to delays, lack of motivation, anxiety about COVID-19 infections, feeling behind on networking and attending conferences, long-COVID symptoms, feeling wasted and lost time and opportunities during COVID-19. PhDs also mentioned that they do not feel any impact anymore.

Table 15. Effects attributed to COVID-19 pandemic

Due to the COVID-19 pandemic I currently... (multiple answers are possible)	Number	Percentage
feel anxious in social situations	56	14.7
feel overwhelmed in bigger groups of people	69	18.1
feel lonely	57	15.0
feel depressed	39	10.2
do not feel a sense of belonging to my research group	85	22.4
Other – please explain	58	15.3

Mental Health

General mental health

To gain more insight into PhD students' mental health as well as the extent to which pursuing a PhD was seen as a cause of mental health problems, several questions were asked (Table 16). Firstly, a general WHO score (Topp *et al*., 2015) was calculated based on the PhD students' current mood from the last two weeks, with a lower score indicating better mental health (0–100). PhD students scored slightly below the scale midpoint. Furthermore, respondents were asked to complete the General Health Questionnaire GHQ-12 (GHQ-12© David Goldberg, 1978). On the sum scale of 0-36 (with a lower score indicating a better health) 12 is considered a cut-off point to identify case for concern[5]. Almost 56% of the PhD students had a score of 12 or higher, 9% scored 24 or higher.

Respondents were also asked to rate their current mental health (*i.e.,* during their PhD), their mental health during the COVID-19 pandemic, and their mental health during their Bachelor's and Master's studies, on a scale of 0 to 10 with a higher score indication better mental health (Table 16). Respondents reported a mean of 6.8 for their current mental health, a lower score of 5.9 during the COVID-19 pandemic, and a higher score of 7.1 for the time during their Bachelor's or Master's degree. This mirrors the results of the survey from 2022.

Respondents were asked to rate their happiness on a scale (Abdek-Khalek, 2006) from 0 – 10 with a lower score indicating less happiness (Table 16). The average score was 6.9 and 31% of the PhD students scored 6 or lower.

In our study, we measured PhD students resilience with Smiths *et al*., (2008) Brief Resilience Scale (BRS). It consists of a 5-point scale with a lower score indicating less resilience. Resilience refers to the ability to quickly and succesfully recover from stressful and difficult events. The PhD students' score was above the midscale point.

Table 16. Mental health indicators

	Mean (SD)
WHO score (0-100)[1]	44.44 (20.10)
GHQ-12 (0-36)[2]	13.64 (6.36)
Mental health, current[3]	6.77 (1.86)
Mental health, during-COVID-19 pandemic[3]	5.92 (2.14)
Mental health during Bachelor's / Master's [3]	7.08 (1.72)
Do you feel happy in general? [4]	6.91 (1.77)
Resilience [5]	3.33 (0.74)

[1] *Answers were given on a scale of 0 = all the time to 5=at no time. A sum score of the 5 WHO items was calculated and multiplied by 4.*

[2] *Answers were given on a scale of 0 to 3. A sum score of the 12 GHQ items was calculated.*

[3] *Answers were given on a scale of 0 = extremely poor to 10 = extremely good.*

[4] *An answer was given on a scale of 0 = minimum score to 10 = maximum score.*

[5] *Answers were given on a scale of 1= completely disagree to 5 = completely agree.*

[5] https://support.gl-education.com/knowledge-base/assessments/general-health-questionnaire-support/about-the-general-health-questionnaire/faqs/

Mental health and PhD trajectory

According to 8% of the respondents following a PhD trajectory did not affect their mental health at all, 20% reported a negative effect, 44% sometimes a negative and sometimes a positive effect and 25% reported a positive effect (Table 17).

Table 17. In your experience, is doing a PhD affecting your mental health?

	Number	Percentage
No	91	8.0
Overall, doing a PhD has a large negative effect on my mental health	101	8.9
Overall, doing a PhD has a small negative effect on my mental health	128	11.3
Sometimes doing a PhD has a negative effect on my mental health, sometimes a positive effect	499	44.0
Overall, doing a PhD has a small positive effect on my mental health	137	12.1
Overall, doing a PhD has a large positive effect on my mental health	142	12.5
I don't know	36	3.2

Respondents who indicated a negative effect were asked what aspects of their PhD trajectory negatively affected their mental health (Table 18). Aspects that were mentioned by more than one third of the PhD students were: insecurities about own capabilities, not achieving good results or doubts about achieving good results, problems with work-life balance, high workload, and not being able to finish in time or doubts about being able to finish in time. Compared to the data from 2022, high workload, problems with work-life balance, high levels of competition in academia, and procastination/lack of motivation all show a decrease of more than 4%. Insecurities about future career and issues due to practical setbacks in the project show an increase of 0.3-0.4%. Not achieving good results or doubts about achieving good results remains the same.

Table 18. Aspects of doing a PhD trajectory that negatively affect mental health

	Number	Percentage
High workload	338	34.2
Problems with work-life balance	391	34.5
Insecurities about future career	331	29.2
Insecurities about own capabilities	510	45.0
Not being able to finish in time or doubts about being able to finish in time	388	34.2
Not achieving good results or doubts about achieving good results	399	35.2
Issues due to practical setbacks in the project	304	26.8
Publication pressure	281	24.8
Problems with supervisors	167	14.7
Problems with colleagues	60	5.3
High level of competition in academia	189	16.7
Unclear expectations	259	22.8
Procrastination, lack of motivation	348	30.7
Other[1]	72	6.3

[1] *Other issues negatively affecting the respondents' mental health were balancing PhD with other jobs/personal life, additional task on top of PhD tasks, lack of support from UG in case of problems, practical problems (lack of finances, housing), COVID-19 pandemic, lack of social contacts, working indivividually without collegial support.*

Respondents who indicated a positive effect on their mental health were asked what aspects of following a PhD trajectory positively affected their mental health. They addressed the following aspects: opportunity to learn about and dive into a topic of their interest, interacting with colleagues (sparring and receiving support), feelings of accomplishing something, having

a goal, and experiencing growth, freedom and flexibility in research and working hours, support and acknowledment from supervisors, contribution to personal development, gaining professional skills, provision of income and opportunities for future career.

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) had sufficient reliability. The average levels of exhaustion and cynicism were below the scale-midpoint of 4 and the average level of professional efficacy was above the scale midpoint (Table 19). Work engagement consisted of three factors: dedication, vigour, 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 ($\alpha = 0.55$) and was therefore not included in the analysis. The average level of dedication was above the scale midpoint of 4 and vigour was at the scale midpoint. These findings mirror the data from 2022.

Table 19. Mean and standard deviation of the different factors of burnout and engagement

	Mean (SD)
Burn out: Exhaustion	3.63 (1.14)
Burn out: Cynicism	3.50 (1.42)
Burn out: Professional efficacy	4.99 (0.81)
Work engagement: Dedication	4.67 (1.04)
Work engagement: Vigour	4.01 (0.99)

Note: answers were given on a scale of 1 (never) to 7 (all the time).

Mental health and career

We asked PhD students whether they worry about their career and if so what they worried about. Career worries seem to be quite common: 37% of the PhD students worry about it sometimes, 25% often, and 9% all the time (Table 20). In general PhD students worry a little less about their career than in 2022. Over one third of all PhD students worries about the high competition to obtain the job they want, not knowing what kind of career they want and being unsure whether they are good enough for the kind of job they want (Table 21). Compared to 2022, while some career worries among PhD students have increased, others have decreased. PhD students are experiencing less of the following career worries: not knowing what kind of career they want, feeling unprepared for the job they want, the work-life balance in their future job, and being insecure about their skills in writing application letters and/or job interviews.

Table 20. Percentage reporting how often there are worries about future career

	Number	Percentage
Never	96	8.5
Rarely	230	20.3
Sometimes	422	37.2
Often	286	25.2
All of the time	98	8.6

Table 21. Types of career worries

	Number	Percentage
Not knowing what kind of career I want	374	33.0
Being unsure whether I am good enough for the kind of job I want	406	35.8
Having to move to another place for a new job	319	28.1
Feeling unprepared for the job I want	229	20.2
The high competition to obtain the job I want	451	39.8
Having to start a new job while my PhD thesis is not yet finished	249	22.0
The work-life balance in my future job	254	22.4
Being insecure about my skills in writing application letters and/or job interviews	175	15.4
Other[1]	77	6.8

[1] *Other represents availability of jobs, finding suitable job based on skills and interests, finding job compatible for needs of family/private life, lack of financial security (e.g. temporary contracts), discrimination/unequal opportunities, workpermits, language skills, mental health.*

Relationship between mental health aspects, progress, and satisfaction

The score on the general mental health test (WHO) had moderate correlations with satisfaction with the PhD trajectory overall, satisfaction with performance within the PhD, satisfaction with supervision, and having considered quitting the PhD project (Table 22). The aspects of burnout – exhaustion, cynicism, and professional efficacy – and of work engagement – vigour and dedication – had moderate to strong correlations with satisfaction with the PhD trajectory overall, satisfaction with performance within the PhD, satisfaction with supervision, and having considered quitting the PhD project. Mental health, measured by WHO, GHQ-12 and current mental health had a moderate correlation with resilience, cynicism, professional efficacy, vigour and dedication and a strong correlation with exhaustion.

Table 22. Correlations between mental health, satisfaction with PhD trajectory, quitting, burn out, work engagement and resilience

		Mental health				Satisfaction			Quitting	Burn out			Work engagement		Resilience
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mental health	WHO (1)	1													
	GHQ-12 (2)	.686	1												
	Current mental health (3)	-.737	-.744	1											
	Happiness (4)	-.700	-.690	.829	1										
Satisfaction with…	PhD trajectory overall (5)	-.528	-.493	.488	.472	1									
	Performance within PhD (6)	-.490	-.460	.459	.437	.598	1								
	Supervision (7)	-.375	-.316	.360	.315	.590	.338	1							
	Considered quitting (8)	-.408	-.392	.402	.361	.525	.414	.423	1						
Burn out	Exhaustion (9)	.662	.648	-.597	-.575	-.517	-.438	-.412	-.464	1					
	Cynicism (10)	.460	.462	-.406	-.425	-.559	-.454	-.415	-.512	.580	1				
	Professional efficacy (11)	-.467	-.450	.435	.481	.521	.588	.361	.391	-.465	-.585	1			
Work engagement	Vigour (12)	-.562	-.456	.466	.489	.465	.453	.360	.447	-.570	-.594	.647	1		
	Dedication (13)	-.504	-.441	.428	.451	.516	.499	.412	.446	-.513	-.683	.741	.779	1	
	Resilience (14)	-.461	-.423	.435	.445	.328	.330	.271	.255	-.417	-.318	.439	.405	.349	1

Note: all correlations are significant at the 0.01 level (2-tailed).

Support at the UG & UMCG

Access to support

The respondents were asked about the support that they receive from the UG/UMCG with their mental health problems (Table 23). First, they were asked whether they knew whom to contact if they experienced mental health issues. The respondents in 2024 comparable scores to those in 2022, so no further increase was seen. The mean score is slightly above the scale mid-point indicating that there still is a group of PhD students who does not know whom to talk to. Additionally, respondents agreed that they would like to talk to someone at the UG/UMCG and that their supervisors would be supportive. However, the respondents scored higher on talking to and expecting support from their daily supervisor rather than their primary supervisor. Although respondents would talk to someone at the UG/UMCG if they were to experience mental health problems, they scored slightly higher on talking with a professional outside the UG/UMCG.

Table 23. 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/UMCG	3.19 (1.16)
If I were to experience mental health problems, I would like to talk about it with someone at the University/UMCG	3.20 (1.11)
If I were to experience mental health problems, I would talk about this with my primary supervisor	3.14 (1.24)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems	3.99 (1.05)
If I were to experience mental health problems, I would talk about this with my daily supervisor	3.55 (1.16)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems	4.13 (0.97)
I would talk about this with a professional outside the University/UMCG.	3.95 (1.01)

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

Respondents were asked whether or not they knew they had access to certain forms of PhD support (Table 24). Nearly three quarters of students were aware of the PhD Support website, while over nine out of ten knew about the courses and workshops available (through PhD support). More than 85% were familiar with the Career Perspectives series. However, less than two thirds knew about individual counseling services, and only about half were aware of the availability of PhD psychologists. Awareness was lower for other resources, with about one third knowing about the independent ombuds person. Among the GSSE and GSMS PhD student 66% and 43% knew that they have access to a PhD counselor, respectively. Among the GSMS PhD students 68% knew that they had access to a PhD coach.

Table 24. Percentage of PhD students that knows about different forms of PhD support

Before filling out this survey, did you know that as a PhD student you have access to…	Yes	No
the PhD Support website	71.7	28.3
courses and workshops (through PhD support)	93.8	6.2
Career Perspectives series	87.7	12.3
individual counseling (through PhD support)	60.7	39.3
PhD psychologists	49.6	50.4
an independent ombuds person (onafhankelijke ombudsfunctionaris)	36.2	63.8
a confidential advisor (vertrouwenspersoon)	77.6	22.4
PhD mentor (only for GSBSS)[1]	86.2	13.8
PhD counselors at the faculty (only for GSSE)[1]	66.3	33.7
PhD counselors at the faculty (only for GSMS)[1]	43.2	56.8
PhD coach within Managing your PhD (only for GSMS)[1]	67.9	32.1

[1] *Note. percentages based on response of PhD students from those particular graduate schools only.*

Experiences with mental health support

We asked the PhD students whether or not they were experiencing or had experienced any kind of mental health problems during their PhD (Table 25). While 48% stated that they had never experienced mental health problems, 30% mentioned that they had experienced problems that affected their work. These scores are comparable to the scores reported in 2022. 15% reported that they are currently experiencing mental health problems whereas this percentage was 21% in 2022.

Table 25. 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	543	47.9
Yes, I have experienced mental health problems that affected my work	341	30.1
Yes, I am currently experiencing mental health problems that affect my work	171	15.1
Prefer not to say	79	7.0

The PhD students who experienced mental health problems in the past or who are experiencing them currently were asked whom they talked to about their problems at the UG/UMCG (Table 26). Approximately 10% said that they had not talked to anyone, which shows a small decrease compared to 2022. One quarter reported having talked to their supervisor or colleagues. More that 7% indicated that they talked to the PhD psychologist. Less than 4% talked to a confidential advisor, someone from the AMD, Student Support Services, career services and, PhD mentor or PhD counselor, which show a large decrease compared to 2022. The majority of the PhD students (86%) benefitted from talking to someone about their mental health problems (Table 27). Respondents reported that it was somewhat helpful to quite helpful to talk to their supervisor or colleagues about their problems.

Table 26. Number of PhD students who have talked about their mental health problems with someone at the UG/UMCG

	Number	Percentage
I have never talked to anyone at the UG/UMCG about my problems	116	10.2
I have talked to my supervisor	265	23.4
I have talked to a colleague / colleagues	267	23.5
I have talked to the psychologist for PhD students	86	7.6
I have talked to the confidential advisor	44	3.9
I have talked to my PhD coordinator or mentor	31	2.7
I have talked to someone from Student Support or Career Services	25	2.2
I have talked to someone from AMD (Health, Safety and Environment Service), *e.g.* an occupational health worker	42	3.7
Yes, to a PhD counselor (available for FSE and UMCG)	21	1.9
Other[1]	49	4.3

[1] *Other: external psychologist/therapist, GP, family & friends, other people at the UG/UMCG.*

Table 27. How helpful was talking to someone? Mean, SD, number and percentage of PhD students

How helpful was/is it to talk about your problems with the person(s) you indicated you talk(ed) to in the previous question?[1]	Mean (SD) 3.36 (0.90)
	Number	Percentage
Not helpful at all	11	2.9
Hardly helpful	43	11.3
Somewhat helpful	157	41.3
Quite helpful	135	35.5
Extremely helpful	34	8.9

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

We asked the PhD students who talked to someone at the UG/UMCG to elaborate on the support they received. The negative experiences they had encountered concerned feeling unsafe, weak, or not being taken seriously after sharing their struggles with their supervisors, although they felt that someone listened to their struggles it did not always lead to actual solutions, experiencing a lack of knowlegde of how to help with certain mental health issues, and insufficient and too general courses.

Positive experiences concerned supportive supervisors who made arrangements for the PhD student such as lightening their work load and taking leave hours, helpful sessions with the PhD psychologist and AMD, being referred to external/professional help, following courses (BALANS/PhD support), and being heard.

Those who did not talk to someone at the UG/UMCG indicated that they were already receiving help outside of the UG/UMCG (psychologist, GP, friends), were experiencing mental health issues that they had had for a longer time and knew how to handle them, had no time and energy to talk to someone, were afraid that they would be judged for it, that it might affect their future career, or that they would be seen as weak. Some of them also mentioned not knowing where to go for help, or to prefer not to talk about it and rather solve the problems they were experiencing by themselves.

Suggestions of PhD students to improve mental health and social safety

We asked the PhD students to name one thing that the UG/UMCG could do or change that would contribute to their well-being. The suggestion that was given most by the PhD students

called for an immediate shift in the time alotted for completion of a PhD programme. Another popular suggestion was improving the quality of the supervision offered to PhD students and better monitoring the quality of the supervision. It was also suggested that the well-being of PhD students could be improved by better financial support for conferences and courses, offering them more academic support (offering additional research and language courses), having better physical work environment, as well as improving the availability and visibility of mental health support at the university (in terms of increased availability and quality of student psychologists at the university). Focusing on fostering a stronger sense of community at the university was also often mentioned by students. By creating more moments where especially PhD students can come together, the PhD programme could feel much less lonely, and this would contribute to the overall well-being of students. Other often proffered suggestions included being more clear with guidelines and regulations of PhD trajectory, reducing the workload of PhD students, greatly improving the oversight of supervisor behaviour to curtail low-quality supervision or abuse towards students, showing more respect towards PhD scholarship students, and being aware of the pressure and stress PhD students experience.

Additionally, we invited PhD students to give comments related to PhD students‘ well-being at the UG/UMCG. The suggestions were mostly geared towards the mental health of PhD students, including: calling attention to the alarming and general poor mental health of PhD students, improving mental health support and its visibility at the university and a call to recognize signs of burnout at the university. Apart from mental health, improving the contracts of PhD students, the quality of PhD student supervision, and creating awareness among supervisors and other university staff were most mentioned. Other comments pertained to issues such as improving the communication of information at the university and normalizing respecting the work and time of PhD students at the university.

We asked PhD students what the UG/UMCG could do to increase social safety. Below, we will describe the suggestions that were frequently mentioned (for an overview see Appendix VI). PhD students indicated that social safety would benefit if:

- More attention was given to and more awareness was created about equity, diversity, inclusion, and social safety university-wide.
- Feedback from PhDs was received anonymously or at the end of their contract to get more honest feedback on their supervision.
- PhD students were more clearly informed of where they can go for help in case of problem or complaints, for example by spreading this information through newsletters or poster/flyers, as well as being aware of the hierarchy between PhDs and their supervisors.
- Supervisors and mentors participated in a mandatory training on how to supervise PhD students. PhD students also mentioned that it is important to follow-up non-acceptable behaviour with consequences, as to prevent future ‘abuse’ and continuation of unacceptable behaviour of supervisors and mentors.
- Social interaction with colleagues was promoted, for example by organizing social events (for meeting colleagues in general or specifically to enhance contact between international and Dutch colleagues) and creating a hang-out or coffee corner for PhD students in the department.
- Certain training was offered or even made mandatory for UG/UMCG staff, such as Intercultural Competence and Active Bystander training.

Lifestyle Questions

Additional (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 whereas this percentage was 65% in 2022. PhD students who did engage in additional activities were most likely to have another job or to be on the board of an organization or actively involved in an organization (Table 28). This mirrors the findings from 2022.

Table 28. Number and percentage of PhD students who engage in structural activities in addition to their PhD

	Number	Percentage
No additional activities	787	69.4
I have another job	150	13.2
I am on the board of an organization or actively involved in an organization	81	7.1
I am actively involved in a political party	7	0.6
I do voluntary work	55	4.9
I am an informal caregiver for a relative or other person	24	2.1
I am a professional / semi-professional athlete or musician	28	2.5
Other[1]	57	5.0

[1] *Other additional activities are mainly being self-employed, committee work, parenting or additional job/activity at university.*

Work-life balance

We asked the respondents about working overtime, taking vacation/leave days and whether working above the required hours causes them stress (Table 29). Almost half of the PhD students generally work more hours than their contract requires. This group (*n* = 487) indicated to work around 12 hours extra each week (Mean (*SD*) = 12.19 (*13.46*)). Almost half of the PhD students that work more hours experience stress because of it. Three quarters of the PhD students take all the vacation/leave days that they are entitled to. Among those who do not take off all the vacation/leave days, 52% experience stress because of it whereas this percentage was 62% in 2022.

Table 29. Working hours and vacation in percentages

	Yes	No	Not applicable	Prefer not to say
Do you generally work more hours than your contract requires?	45.8	39.0	9.5	5.7
Does working overtime cause you extra stress (for those who do work more hours)?	47.4	45.6	-	7.0
Do you generally take all the vacation/leave days you are entitled to each year?	75.0	15.1	6.4	3.4
Does not taking the vacation/leave days cause you extra stress (for those who do not take vacation/leave days)?	52.9	41.8	-	5.3

PhD students were asked what their reasons were for working overtime. Reasons that were mentioned are: too much work for the allotted time and feeling they have fallen behind, having to meet deadlines, feeling pressure from supervisors and the expectation to work more than the contract stipulates, working on experiments that require to work outside regular working hours, keeping on track with overall PhD trajectory, self-motivation and interest in the topic, compensation for inefficient work time /procrastination /guilt of not doing enough /bad time management, additional tasks and projects besides PhD-research, a job outside of

PhD trajectory, preferring to get things done (which then reduces the stress) or stay in the flow and finally, increasing future career opportunities.

PhD students were also asked what their reasons were for not taking the vacation/leave days they were entitled to. Here PhD students mentioned aspects such as deadlines, having to catch up, feeling pressure from supervisors, not being able to relax when there is still work to do, not feeling the need for vacation/time off, or not having a budget for vacation.

Respondents were asked questions related to their work-life balance (Table 30) (Brough *et al*., 2014; Waumsley *et al*., 2010). They reported that due to work, they had to change plans for their non-work activities. They also experienced difficulties balancing work and non-work activities, and indicated that the demands of work interfered with their non-work activities. Compared to 2022, PhD students experienced less difficulties in maintaining their work-life balance.

Table 30. The respondents' work-life balance

	Mean (SD)
I have difficulties balancing my work and non-work activities	2.98 (1.13)
The demands of my work interfere with my life away from work	3.03 (1.14)
The amount of time my work takes up makes it difficult to fulfil other interests	2.89 (1.13)
Things that I want to do at home do not get done because of work demands	2.77 (1.07)
My work produces strain that makes it difficult to fulfil other responsibilities and duties	2.87 (1.09)
Due to my work, I have to make changes to my plans for activities outside of work	3.16 (1.15)
Overall, I believe that my work and non-work life are balanced	3.27 (1.07)

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

Differences

In this chapter several group-based differences are discussed. We will focus on significant differences based on gender (female, male), nationality (Dutch, nationality from EEA country other than Dutch, other nationality), graduate school (GSBSS, GSEB, GSH, GSL, GSMS, GSSE, GSSS), type of contract (employed as a PhD student by UG/UMCG, externally financed PhD students, scholarship from UG/UMCG, MD/PhD trajectory at UMCG, PhDs whose contract/scholarship has ended and who finish their PhD in their own time), and phase of the PhD project (junior/senior). For each of these groups we will indicate the differences and include a reference to the tables in the appendix. Differences were found for most of the themes discussed in the previous chapters.

Gender-based differences (appendix I)

There were few differences based on gender.

Progress and satisfaction

- Female PhD students reported a lower understanding of their supervisors' expectations compared to male PhD students.
- Female PhD students had less often considered quitting their project than male PhD students.
- Female PhD students had more frequent meetings with the daily and primary supersivor than male PhD students.

Impact of COVID-19 pandemic

We found gender differences regarding the impact of COVID-19 on the future career prospects, favouring the female PhD students; however the differences are very small.

Mental health

- Female PhD students reported they feel happier in general compared to male PhD students.

Nationality-based differences (appendix II)

There were several significant differences based on nationality in terms of progress and satisfaction, the impact of COVID-19, mental health and lifestyle.

Progress and satisfaction

- Dutch PhD students are overall more satisfied with how they are performing in their PhDs than EEA students.
- Dutch PhD students are more confident about their primary (promotor) and daily supervisors being satisfied with their performance than PhD students from EEA and outside the EEA.
- PhD students with an EEA nationality find the workload higher than Dutch students, followed by students outside the EEA.
- PhD students with an EEA nationality find the complexity higher than Dutch students and students outside the EEA.

- PhD students with a nationality outside the EEA were more confident that they would be able to submit their thesis to the assesment committee before the end of the contract than Dutch and EEA students.
- Dutch PhD students are more confident that they will find a suitable and interesting job after finishing the PhD trajectory compared to their colleagues with EEA and other nationalities.
- PhD students with a nationality from outside the EEA differed from their non-Dutch EEA colleagues in that they indicated that they considered quitting more often in their PhD project.
- Dutch PhD students are more satisfied with their PhD trajectory than students with a nationality from outside the EEA.
- Dutch PhD students had more frequent meetings with the primary supersivor than students outside the EEA.
- Differences were also found in terms of atmosphere within the department. PhD students outside the EEA experienced lower informal relationships with their colleagues than Dutch PhD students and non-Dutch EEA students. Dutch PhD students reported higher sense of belonging than PhDs outside the EEA and non-Dutch EEA students.

Impact of COVID-19 pandemic

- Dutch PhD students expected more negative impact on their future career prospects and work-life balance than non-EEA students.

Mental health

- We found many significant differences for the mental health indicators. Non-Dutch students from EEA countries indicated the highest scores in WHO and GHQ-12, in contrast Dutch students indicated better mental health (current, during COVID-19 pandemic, and during Bachelor's/Master's) and happy feeilings in general, and resilience.
- Significant differences were also found in terms of exhaustion and cynicism (highest for respondents with EEA nationality), and vigour (highest for respondents from outside the EEA).
- Dutch students are less worried about their future career and/or the career decisions they have to make than non-Dutch EEA and outside of the EEA students.

Lifestyle

- Significant differences were found regarding the perception of a balanced work and non-work life. PhD students with EEA nationality reported the most negative scores. Overall, Dutch PhD students report a higher sense of balance between their work and non-work life compared to non-Dutch EEA students.

Graduate school-based differences (appendix III)

There were several significant differences based on graduate school in terms of progress and satisfaction, the impact of COVID-19, mental health and lifestyle.

Progress and satisfaction

- GSBSS scored higher than GSSE about daily supervisors' satisfaction with PhD performance.
- GSH scored higher on the complexity of the PhD than GSMS.
- Significant differences in confidence about finding a suitable and interesting job after completing a PhD were found between graduate schools: GSH scored lower than GSSE, GSBSS, and GSMS, and GSMS scored higher than GSSE and GBSS.
- GSBSS scored higher than GSMS and GSSE about the satisfaction with the supervision they receive.
- There were also differences related to the frequency of meetings with both daily supervisor and primary supervisor. Here, GSL PhD students had the most frequent meetings with the daily supervisor, GSH had the most frequent meetings with the primary supervisor, and GSMS had the least frequent meetings with both daily and primary supervisor.
- Differences were also found in terms of atmosphere within the department. PhD students from GSMS experienced stronger and more positive formal relationships with their colleagues than PhD students from GSEB and GSH.

Impact of COVID-19 pandemic

- GSMS scored higher than GSEB regarding the impact of COVID-19 on work-life balance.

Mental health

Differences related to mental health concerned both mental health indicators and burnout and engagement scores.

- We found significant differences in mental health during COVID-19 pandemic, mental health during Bachelor's/Master's, related to the happiness scale, and related to resilience. GSMS PhD students reported better mental health during COVID-19, and higher resilience scores than GSH and GSSE students. They also reported higher happiness scores than GSSE.

Life style

- Significant differences were observed between GSMS and GSSE. GSMS PhD students scored lower in work interfering with other interests and higher in overall work-life balance than GSSE students.

Type of contract-based differences (appendix IV)

We compared five groups of PhD students based on their type of contract, *i.e.* employed as a PhD student by the UG/UMCG, externally financed PhD students, PhD scholarship students at the UG/UMCG, MD/PhD at UMCG, and End of contract/scholarship at the UG/UMCG and finishing PhD in own time. We found the most consistent group differences for type of contract. The overall picture that emerges is that PhD students who are at the end of contract/scholarship and finishing PhD in own time are doing worse than the other PhDs.

Progress and satisfaction

- PhD students whose contracts/scholarships have ended and are completing their PhD on their own time reported lower overall satisfaction with their performance

compared to employed PhDs, externally funded PhDs, scholarship PhDs, and MD/PhDs.

- PhD students with an employment contract scored higher than PhDs who have scholarships and who are completing their PhD on their own time about primary (promotor) and daily supervisors' satisfaction with their performance. MD/PhDs report higher primary (promotor) and daily supervisors' satisfaction compared to scholarship PhDs and PhDs completing on their own time.
- PhDs with scholarships find the workload lower than PhDs with an employment contract and PhDs whose contracts/scholarships have ended and are completing their PhD on their own time.
- MD/PhD students are more confident that they will find a suitable and interesting job after finishing the PhD trajectory compared to their colleagues with an employment, scholarship, and who are completing their PhD on their own time.
- PhD students whose contracts/scholarships have ended and are completing their PhD on their own time reported the lowest levels of satisfaction with their PhD trajectory and indicated that they considered quitting more often in their PhD project than PhDs with an employment contract.
- PhD students whose contracts/scholarships have ended and are completing their PhD on their own time reported the most frequent meetings with their supervisors, but least satisfaction meetings with their primary supervisors.
- Differences were also found regarding the atmosphere within the department. PhD students employed at the UG/UMCG experienced stronger and more positive formal and informal realtionships with their colleagues and sense of belonging than PhD students with a scholarship at the UG/UMCG, PhD students who are externally financed, and PhD students whose contracts/scholarships have ended and are completing their PhD on their own time.

Impact of COVID-19 pandemic

- PhD students with scholarships scored higher regarding the impact of COVID-19 on dissemination and sharing research findings with stakeholders and others compared to employed PhD students and scored higher regarding the progress of their PhD projects compared to PhD students whose contracts/scholarships have ended and are completing their PhD on their own time.

Mental health

- We found many significant differences for the mental health indicators. PhD students whose contracts/scholarships have ended and are completing their PhD on their own time struggle more in terms of mental health indicators. They indicated lower mental health currently, during COVID-19 pandemic, and general happiness compared to the other PhD students. On the other hand, MD/PhDs indicated better scores in terms of mental health indicators, resilience, and happiness in general. They indicated higher scores in WHO, resilience, and general happiness than PhDs who are employed, have scholarship and are finishing on their own time; and higher scores in GHQ-12 than PhDs who are employed, have scholarship and are finishing on their own time.
- PhD students whose contracts/scholarships have ended and are completing their PhD on their own time reported higher scores on exhaustion than the other PhD students. They also reported higher scores on cynicism than employed and externally financed PhD students.

Life style

We asked different questions regarding work-life balance (*e.g.* balancing, demands of work, strain). There were significant differences, again pointing to PhD students whose contracts/scholarships have ended and are completing their PhD on their own time having a worse work-life balance.

Phase of the project-based differences (appendix V)

We found some group differences for phase of the project. The overall picture that emerges is that junior PhD students feel better and are more content than their senior colleagues.

Progress and satisfaction

- We found many significant differences regarding their progress and satisfaction, pointing to junior PhD students having better perceptions of their progress, higher confidence, satisfaction with their PhD trajectory and satisfaction with the supervision compared to senior PhD students.
- Senior PhD students indicated fewer meetings with daily and primary supervisor, they were also less satisfied with the meetings with primary supervisor.
- Junior PhD students were more positive about their formal and informal relationships and sense of belonging.

Impact of COVID-19 pandemic

We did not find significant differences regarding the impact of COVID-19 pandemic. Only 10 junior PhD students reporting doing a PhD during the COVID-19 pandemic, compared to 359 senior PhD students.

Mental health

- We found significant differences in terms of WHO score, GHQ-12 score, current mental health, mental health during COVID-19 pandemic, and happiness scale. For these indicators junior PhD students scored more positively than senior PhD students.
- When looking at the burnout and engagement scales, differences were found for cynicism, professional efficacy, and dedication in the sense that junior PhD students scored in a way indicating better mental health.

Lifestyle

- Regarding the questions about work-life balance, we found a significance difference in one item: junior PhD students reported better overall work-life balance.

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Appendix I – Tables per Gender

Table 2.1. Percentage of respondents' nationality, per gender

Gender	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Male	35.7	18.9	44.0
Female	43.5	18.6	36.9

Tabel 3.1. Percentage of respondents from each graduate school, per gender

Gender	GSBSS	GSCF	GSEB	GSH	GSL	GSMS	GSP	GSSE	GSSS	GSTRS
Male	7.6	2.1	5.0	5.4	4.3	23.2	0.2	47.8	2.6	1.2
Female	11.1	0.4	2.9	9.1	2.9	40.1	0.4	24.8	4.1	1.0

Table 4.1. Percentage of respondents per type of contract, per gender

Gender	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PHD	End of contract	Other
Male	51.5	7.1	25.5	1.9	4.5	6.9
Female	52.7	5.9	24.5	4.0	3.7	7.2

Table 5.1. Percentage of allotted time period for the PhD project, per gender

Gender	< 3 years	3 years	4 years	> 4 years	Other	Don't know
Male	3.3	5.9	82.3	5.7	1.7	1.2
Female	5.0	8.9	72.8	6.5	4.9	1.9

Table 6.1. Percentage of respondents working full-time or part-time, per gender

Gender	Full-time	Part-time	Other/don't know
Male	70.9	5.2	9.9
Female	67.1	11.9	8.0

Table 7.1. Percentage of respondents per current year of PhD, per gender

Gender	First year	Second year	Third year	Fourth year	Fifth year	Over five years
Male	29.6	21.5	22.0	16.3	5.9	3.8
Female	26.1	24.5	22.7	16.4	5.9	3.4

Table 7.1.1. Percentage of junior and senior respondents, per gender

Gender	Junior	Senior
Male	51.1	48.0
Female	50.6	48.4

Table 8.1. Mean (SD) of satisfaction with performance, project characteristics, and confidence, per gender

	Male	Female
Overall, I am satisfied with how I am performing in my PhD.	3.64 (1.01)	3.58 (0.97)
Overall, my primary supervisor (promotor) is satisfied with how I am performing.	4.00 (0.73)	3.97 (0.77)
Overall, my daily supervisor is satisfied with how I am performing.	3.97 (0.73)	4.04 (0.71)
Overall, I know what my supervisors expect of me*	**3.92 (0.81)**	**3.80 (0.87)**
The workload in my PhD is high.	3.71 (0.87)	3.68 (0.93)
The complexity of my PhD is high.	3.94 (0.85)	3.85 (0.90)
I am confident that I will, eventually, finish my PhD.	4.34 (0.80)	4.25 (0.81)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.	3.26 (1.31)	3.00 (1.28)
I am confident that I will find a suitable and interesting job after I have finished my PhD.	3.68 (1.06)	3.69 (1.06)

*Note: Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 9.1. 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	48.2	37.2
No, I have fallen behind but I still think I can finish in time	17.5	23.9
No, I have fallen behind and I don't think I will be able to finish in time	13.2	16.7
I was unable to finish in time and am currently on an extension	2.6	3.8
I was unable to finish in time and am currently finishing my thesis in my own time	4.7	4.0
I have already defended my thesis or sent the manuscript to the assessment committee	1.2	0.7
I don't know / other	12.5	13.7

Table 10.1. Mean (SD) 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]* **	**4.18 (1.19)**	**3.97 (1.28)**
How satisfied are you with your PhD trajectory so far? [2]	3.68 (0.92)	3.56 (0.93)
How satisfied are you with the supervision you receive? [2]	3.98 (1.03)	3.84 (1.01)

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).*

*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 11.1. Mean (SD) of frequency and satisfaction with (online) supervision, per gender

	Male	Female
Frequency of (online) meetings with daily supervisor[1]*	**2.66 (1.16)**	**2.71 (1.06)**
Frequency of (online) meetings with primary supervisor[1]**	**3.33 (1.19)**	**3.41 (1.10)**
Satisfaction meetings with daily supervisor[2]	4.27 (0.94)	4.15 (0.98)
Satisfaction meetings with primary supervisor[2]	4.14 (0.92)	4.02 (0.95)

Note: answers were given on a scale from 1 to 5.

[1] *(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] *(1 = very dissatisfied, 5 = very satisfied).*

*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 12.1. Mean (SD) of regarding the atmosphere within the department, per gender

	Male	Female
Formal relationships	3.55 (0.70)	3.50 (0.69)
Informal relationships	3.29 (0.89)	3.32 (0.91)
Sense of belonging	3.81 (0.74)	3.71 (0.76)

Note: On the scale from 1 to 5, a higher score indicates a stronger and more positive sense of (in)formal relationships between colleagues.

Table 13.1. Mean (SD) of impact of Covid-19 on the ability to engage in aspects of the PhD project, per gender

What impact has COVID-19 had on the ability to engage in this work:	Male	Female
Data collection	2.18 (0.97)	2.06 (0.89)
Data analysis	2.61 (0.93)	2.55 (0.78)
Writing	2.76 (0.96)	2.72 (0.83)
Discussing ideas and findings with colleagues and peers	1.91 (0.84)	1.93 (0.90)
Dissemination and sharing research finding with stakeholders and other	2.04 (0.90)	2.07 (0.91)

Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive).

Table 14.1. Mean (SD) of impact of Covid-19 on other aspects, per gender

What impact did COVID-19 have on your:	Male	Female
Motivation to work on PhD project	2.63 (0.93)	2.54 (0.79)
Progress of PhD projects	2.21 (1.04)	2.16 (0.91)
Future career prospects**	**2.64 (0.76)**	**2.74 (0.62)**
Mental health	2.37 (0.88)	2.38 (0.88)
Work-life balance	2.57 (1.10)	2.69 (1.08)
Contact with daily supervisor/promotor	2.41 (0.87)	2.45 (0.77)

*Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 15.1. Percentage of effects attributed to COVID-19 pandemic, per gender

Due to the COVID-19 pandemic I currently... (multiple answers are possible)	Male	Female
feel anxious in social situations	11.8	16.4
feel overwhelmed in bigger groups of people	13.2	21.7
feel lonely	15.3	15.0
feel depressed	13.9	8.0
do not feel a sense of belonging to my research group	16.7	24.8
Other – please explain	13.2	16.4

Note. percentage calculations are based on number of PhD students who were doing a PhD during COVID-19 pandemic.

Table 16.1. Mean (SD) of mental health indicators, per gender

	Male	Female
WHO score (0-100)[1]	42.46 (20.14)	45.37 (20.11)
GHQ-12 (0-36)[2]	13.18 (6.31)	13.85 (6.39)
Mental health, current[3]	6.84 (1.94)	6.75 (1.80)
Mental health, during-COVID-19 pandemic[3]	6.08 (2.17)	5.89 (2.10)
Mental health during Bachelor's / Master's [3]	7.28 (1.68)	7.00 (1.70)
Do you feel happy in general? [4]*	**6.90 (1.88)**	**6.94 (1.72)**
Resilience	3.41 (0.73)	3.29 (0.74)

[1] *Answers were given on a scale of 0 = all the time to 5=at no time. A sum score of the 5 WHO items was calculated and multiplied by 4.*
[2] *Answers were given on a scale of 0 to 3. A sum score of the 12 GHQ items was calculated.*
[3] *Answers were given on a scale of 0 = extremely poor to 10 = extremely good.*
[4] *An answer was given on a scale of 0 = minimum score to 10 = maximum score.*
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 17.1 Percentage of 'In your experience, is doing a PhD affecting your mental health?', per gender

	Male	Female
No	9.9	7.2
Overall, doing a PhD has a large negative effect on my mental health	8.5	8.8
Overall, doing a PhD has a small negative effect on my mental health	10.4	11.9
Sometimes doing a PhD has a negative effect on my mental health, sometimes positive effect	41.6	45.4
Overall, doing a PhD has a small positive effect on my mental health	12.8	11.5
Overall, doing a PhD has a large positive effect on my mental health	13.0	12.2
I don't know	3.8	2.8

Table 18.1. Percentages of aspects of doing a PhD trajectory that negatively affect mental health, per gender

	Male	Female
High workload	32.2	35.5
Problems with work-life balance	33.6	34.5
Insecurities about future career	31.4	27.6
Insecurities about own capabilities	39.7	48.4
Not being able to finish in time or doubts about being able to finish in time	34.8	33.5
Not achieving good results or doubts about achieving good results	35.2	35.5
Issues due to practical setbacks in the project	22.9	29.6
Publication pressure	26.0	24.6
Problems with supervisors	10.6	16.8
Problems with colleagues	3.8	6.3
High level of competition in academia	17.5	16.5
Unclear expectations	20.8	23.7
Procrastination, lack of motivation	27.0	32.7
Other	5.4	7.1

Table 19.1. Mean (SD) of the different factors of burnout and engagement, per gender

	Male	Female
Burn out: Exhaustion	3.55 (1.18)	3.67 (1.12)
Burn out: Cynicism	3.40 (1.43)	3.55 (1.41)
Burn out: Professional efficacy	5.04 (0.82)	5.00 (0.80)
Work engagement: Dedication	4.75 (1.07)	4.63 (1.02)
Work engagement: Vigour	4.12 (0.98)	3.96 (0.99)

Note: answers were given on a scale of 1 (never) to 7 (all the time).

Table 20.1. Percentage reporting how often there are worries about future career, per gender

	Male	Female
Never	11.6	7.0
Rarely	20.1	20.4
Sometimes	36.4	37.3
Often	22.5	27.2
All of the time	9.5	8.1

Table 21.1. Percentage of types of career worries, per gender

	Male	Female
Not knowing what kind of career I want	29.6	35.1
Being unsure whether I am good enough for the kind of job I want	30.0	39.2
Having to move to another place for a new job	27.0	28.8
Feeling unprepared for the job I want	18.7	21.5
The high competition to obtain the job I want	40.0	39.8
Having to start a new job while my PhD thesis is not yet finished	19.9	23.2
The work-life balance in my future job	21.7	22.6
Being insecure about my skills in writing application letters and/or job interviews	15.4	15.3
Other	6.1	6.8

Table 23.1. Mean (SD) of statements about talking about mental health problems, per gender

	Male	Female
If I were to experience mental health problems, I would know who I could talk to at the University/UMCG	3.22 (1.10)	3.18 (1.19)
If I were to experience mental health problems, I would like to talk about it with someone at the University/UMCG	3.23 (1.13)	3.20 (1.10)
If I were to experience mental health problems, I would talk about this with my primary supervisor	3.25 (1.24)	3.09 (1.23)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems	4.08 (0.98)	3.96 (1.08)
If I were to experience mental health problems, I would talk about this with my daily supervisor	3.59 (1.14)	3.53 (1.17)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems	4.16 (0.95)	4.11 (0.97)
I would talk about this with a professional outside the University/UMCG.	3.75 (1.07)	4.07 (0.94)

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

Table 24.1. Percentage of PhD students that knows about different forms of PhD support, per gender

Before filling out this survey, did you know that as a PhD student you have access to…	Male		Female	
	Yes	No	Yes	No
the PhD Support website	68.2	31.8	74.3	25.7
Courses and workshops (through PhD support)	94.1	5.9	93.9	6.1
Career Perspectives series	85.3	14.7	89.0	11.0
individual counseling (through PhD support)	60.7	39.3	60.8	39.2
PhD psychologists	47.5	52.5	50.9	49.1
an independent ombuds person (onafhankelijke ombuds functionaris)	39.0	61.0	34.3	65.7
a confidential advisor (vertrouwenspersoon)	77.7	22.3	77.9	22.1
PhD mentor (only for GSBSS)[1]	90.6	9.4	85.1	14.9
PhD counselors at the faculty (only for GSSE)[1]	62.8	37.2	71.1	28.9
PhD counselors at the faculty (only for GSMS)[1]	49.0	51.0	40.5	59.5
PhD coach within Managing your PhD (only for GSMS)[1]	69.4	30.6	67.3	32.7

[1] *Note. percentages based on response of PhD students from those particular graduate schools only.*

Table 25.1. Percentage of PhD students who are experiencing or have experienced mental health problems during their PhD, per gender

	Male	Female
No, I have never experienced mental health problems that affected my work	56.7	43.4
Yes, I have experienced mental health problems that affected my work	24.3	33.2
Yes, I am currently experiencing mental health problems that affect my work	13.0	15.8
Prefer not to say	5.9	7.7

Table 26.1. Percentage of PhD students who have talked about their mental health problems with someone at the UG/UMCG, per gender

	Male	Female
I have never talked to anyone at the UG/UMCG about my problems	9.2	10.9
I have talked to my supervisor	18.7	25.8
I have talked to a colleague / colleagues	17.7	26.7
I have talked to the psychologist for PhD students	4.5	9.1
I have talked to the confidential advisor	1.7	5.3
I have talked to my PhD coordinator or mentor or coach (UMCG)	2.4	2.8
I have talked to someone from Student Support or Career Services	0.5	3.1
I have talked to someone from AMD (Health, Safety and Environment Service), *e.g.* an occupational health worker	1.7	4.9
Yes, to a PhD counselor (available for FSE and UMCG)	2.8	1.2
Other[1]	4.3	3.8

[1] *Other: external psychologist/therapist, family & friends, other people at the UG/UMCG.*

Table 27.1. Percentage and Mean (SD) of 'How helpful was talking to someone?' per gender

	Male	Female
Not helpful at all	1.8	2.8
Hardly helpful	16.1	9.2
Somewhat helpful	45.5	39.6
Quite helpful	26.8	39.2
Extremely helpful	9.8	9.2
How helpful was/is it to talk about your problems with the person(s) you indicated you talk(ed) to in the previous question?[1] (Mean (SD))	3.27 (0.91)	3.43 (0.89)

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

Table 28.1. Percentage of PhD students who engage in structural activities in addition to their PhD, per gender

	Male	Female
No additional activities	70.4	68.3
I have another job	10.9	14.9
I am on the board of an organization or actively involved in an organization	7.3	7.1
I am actively involved in a political party	1.4	0.1
I do voluntary work	5.4	4.0
I am an informal caregiver for a relative or other person	1.9	2.4
I am a professional / semi-professional athlete or musician	3.3	2.1
Other	5.4	5.0

Table 29.1. Percentage of working hours and vacation, per gender

	Male		Female	
	Yes	No	Yes	No
Do you generally work more hours than your contract requires?	46.1	39.2	45.9	38.6
On average, how many hours do you work extra a week (M, SD)	13.46 (13.94)		11.21 (12.83)	
Does working overtime cause you extra stress (answered by respondents who do work more hours)?	46.7	46.7	47.2	45.6
Do you generally take off all the vacation/leave days you are entitled to each year?	71.4	17.3	77.9	13.6
Does not taking off the vacation/leave days cause you extra stress (answered by respondents who do not take vacation/leave days)?	49.3	42.5	53.8	42.9

Table 30.1. Mean (SD) of respondents' work-life balance, per gender

	Male	Female
I have difficulties balancing my work and non-work activities	2.94 (1.11)	2.99 (1.13)
The demands of my work interfere with my life away from work	2.98 (1.12)	3.04 (1.16)
The amount of time my work takes up makes it difficult to fulfil other interests	2.94 (1.11)	2.84 (1.14)
Things that I want to do at home do not get done because of work demands	2.76 (1.07)	2.75 (1.07)
My work produces strain that makes it difficult to fulfil other responsibilities and duties	2.85 (1.08)	2.86 (1.10)
Due to my work, I have to make changes to my plans for activities outside of work	3.15 (1.15)	3.15 (1.15)
Overall, I believe that my work and non-work life are balanced	3.28 (1.09)	3.28 (1.06)

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

Appendix II – Tables per Nationality

Table 1.2 Percentage of male and female survey respondents, per nationality

Nationality	Male	Female
Dutch	33.0	64.4
Nationality from EEA country (non-Dutch)	37.4	58.9
Other nationality	42.3	56.8

Table 3.2. Percentage of respondents in graduate schools, per nationality

Nationality	GSBSS	GSCF	GSEB	GSH	GSL	GSMS	GSP	GSSE	GSSS	GSTRS
Dutch	10.3	1.1	3.3	9.4	4.8	43.4	0.7	21.6	2.8	1.3
Nationality from EEA country (non-Dutch)	12.1	0.9	6.1	9.3	3.7	20.6	0.5	38.8	3.7	0.5
Other nationality	8.4	1.1	3.4	5.2	2.3	29.5	0.2	42.6	4.3	1.4

Table 4.2. Percentage of respondents' type of contract, per nationality

Nationality	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PHD	End of contract	Other
Dutch	64.2	7.9	9.6	5.9	3.7	7.6
Nationality from EEA country (non-Dutch)	62.1	6.5	15.9	1.9	4.7	6.5
Other nationality	35.8	5.2	44.9	0.9	3.2	6.6

Table 5.2. Percentage of allotted time period for the PhD project, per nationality

Nationality	< 3 Years	3 Years	4 Years	> 4 Years	Other	Don't know
Dutch	5.0	9.0	68.3	9.4	6.1	2.2
Nationality from EEA country (non-Dutch)	3.8	9.4	78.9	2.3	2.8	2.8
Other nationality	4.1	5.2	84.6	4.5	1.1	0.5

Table 6.2. Percentage of full time/part time, per nationality

Nationality	Full-time	Part-time	Other/don't know
Dutch	62.2	17.2	7.9
Nationality from EEA country (non-Dutch)	76.2	6.1	4.2
Other nationality	71.2	3.4	12.2

Table 7.2 Percentage of current year of PhD, per nationality

Nationality	First year	Second year	Third year	Fourth year	Fifth year	Over five years
Dutch	28.4	19.7	23.1	14.8	7.2	5.5
Nationality from EEA country (non-Dutch)	25.7	22.9	25.7	15.9	6.1	3.3
Other nationality	28.8	26.5	20.2	17.5	3.9	1.8

Table 7.2.1. Percentage of junior and senior PhD students, per nationality

Nationality	Junior	Senior
Dutch	48.0	50.7
Nationality from EEA country (non-Dutch)	48.6	50.9
Other nationality	55.3	43.3

Table 8.2. Mean (SD) of satisfaction with performance, project characteristics, and confidence, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Overall, I am satisfied with how I am performing in my PhD.*	**3.69 (0.94)**	**3.46 (1.01)**	**3.58 (0.98)**
Overall, my primary supervisor (promotor) is satisfied with how I am performing.***	**4.14 (0.65)**	**3.92 (0.82)**	**3.85 (0.80)**
Overall, my daily supervisor is satisfied with how I am performing.**	**4.15 (0.63)**	**3.98 (0.77)**	**3.90 (0.75)**
Overall, I know what my supervisors expect of me	3.81 (0.87)	3.82 (0.85)	3.89 (0.83)
The workload in my PhD is high.***	**3.71 (0.91)**	**3.97 (0.78)**	**3.55 (0.94)**
The complexity of my PhD is high.***	**3.82 (0.89)**	**4.15 (0.78)**	**3.82 (0.89)**
I am confident that I will, eventually, finish my PhD.	4.31 (0.82)	4.27 (0.81)	4.26 (0.79)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.***	**2.96 (1.29)**	**2.86 (1.26)**	**3.35 (1.26)**
I am confident that I will find a suitable and interesting job after I have finished my PhD.***	**3.87 (1.05)**	**3.52 (1.06)**	**3.57 (1.05)**

*Note: Answers were given on a scale of 1 (completely disagree) to 5 (completely agree). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 9.2. Progress of the PhD students with their thesis; percentage of respondents per statement, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Yes, I think I will be able to finish my PhD in time	40.4	36.4	46.0
No, I have fallen behind but I still think I can finish in time	17.9	22.0	24.7
No, I have fallen behind and I don't think I will be able to finish in time	15.1	17.3	14.3
I was unable to finish in time and am currently on an extension	3.7	3.3	2.7
I was unable to finish in time and am currently finishing my thesis in my own time	4.8	6.5	2.3
I have already defended my thesis or sent the manuscript to the assessment committee	0.9	1.4	0.9

I don't know/other	17.3	13.0	9.1

Table 10.2. Mean (SD) of consideration of quitting, and satisfaction with the trajectory and the supervision, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Have you ever considered quitting your PhD project? [1]**	**4.03 (1.21)**	**3.83 (1.35)**	**4.16 (1.22)**
How satisfied are you with your PhD trajectory so far? [2]***	**3.74 (0.90)**	**3.56 (0.94)**	**3.51 (0.95)**
How satisfied are you with the supervision you receive? [2]	3.93 (1.01)	3.85 (1.01)	3.89 (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).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 11.2 Mean (SD) of frequency and satisfaction with (online) supervision, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Frequency of (online) meetings with daily supervisor[1]	2.73 (1.10)	2.80 (1.18)	2.60 (1.06)
Frequency of (online) meetings with primary supervisor[1]*	**3.49 (1.10)**	**3.43 (1.20)**	**3.28 (1.13)**
Satisfaction meetings with daily supervisor[2]	4.26 (0.93)	4.26 (0.93)	4.13 (1.01)
Satisfaction meetings with primary supervisor[2]	4.05 (0.94)	4.09 (0.91)	4.08 (0.98)

Note: answers were given on a scale from 1 to 5.
[1] (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] (1 = very dissatisfied, 5 = very satisfied).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 12.2. Mean (SD) of regarding the atmosphere within the department, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Formal relationships	3.56 (0.70)	3.53 (0.69)	3.47 (0.68)
Informal relationships***	**3.39 (0.94)**	**3.44 (0.92)**	**3.17 (0.82)**
Sense of belonging***	**3.84 (0.77)**	**3.67 (0.82)**	**3.69 (0.69)**

*Note: On the scale from 1 to 5, a higher score indicates a stronger and more positive sense of (in)formal relationships between colleagues. Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 13.2. Mean (SD) of impact of Covid-19 on the ability to engage in aspects of the PhD project, per nationality

What impact has COVID-19 had on the ability to engage in this work:	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Data collection	2.05 (0.92)	2.27 (0.98)	2.17 (0.93)
Data analysis	2.61 (0.77)	2.68 (0.93)	2.50 (0.87)
Writing	2.74 (0.80)	2.77 (1.02)	2.74 (0.93)
Discussing ideas and findings with colleagues and peers	1.85 (0.81)	1.87 (0.88)	2.09 (0.97)
Dissemination and sharing research finding with stakeholders and other	1.99 (0.81)	2.12 (1.7)	2.16 (0.93)

*Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 14.2. Mean (SD) of impact of Covid-19 on other aspects, per nationality

What impact did COVID-19 have on your:	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Motivation to work on PhD project	2.53 (0.80)	2.58 (0.98)	2.65 (0.84)
Progress of PhD projects	2.13 (0.89)	2.31 (1.00)	2.23 (1.05)
Future career prospects* **	**2.84 (0.56)**	**2.67 (0.68)**	**2.57 (0.77)**
Mental health	2.44 (0.84)	2.44 (0.91)	2.27 (0.94)
Work-life balance*	**2.83 (1.15)**	**2.54 (1.04)**	**2.43 (0.99)**
Contact with daily supervisor/promotor	2.42 (0.77)	2.44 (0.75)	2.48 (0.89)

*Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 15.2. Percentage of effects attributed to COVID-19 pandemic, per nationality

Due to the COVID-19 pandemic I currently... (multiple answers are possible)	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
feel anxious in social situations	7.74	11.11	27.73
feel overwhelmed in bigger groups of people	15.47	15.28	24.37
feel lonely	9.95	13.89	22.69
feel depressed	5.53	5.56	19.33
do not feel a sense of belonging to my research group	18.79	22.22	28.57
Other – please explain	14.37	15.28	5.55

Note. percentage calculations are based on number of PhD students who were doing a PhD during COVID-19 pandemic.

Table 16.2. Mean (SD) of mental health indicators, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
WHO score (0-100)[1]* **	**40.74 (18.46)**	**49.78 (18.75)**	**45.43 (21.35)**
GHQ-12 (0-36)[2] **	**12.91 (5.75)**	**14.69 (6.19)**	**13.92 (6.86)**
Mental health, current[3]***	**7.07 (1.65)**	**6.35 (1.95)**	**6.66 (1.96)**
Mental health, during-COVID-19 pandemic[3]***	**6.29 (1.75)**	**5.33 (2.34)**	**5.85 (2.33)**
Mental health during Bachelor's / Master's[3]*	**7.25 (1.48)**	**6.88 (1.94)**	**7.04 (1.80)**
Do you feel happy in general?[4]***	**7.25 (1.47)**	**6.69 (1.81)**	**6.70 (1.97)**
Resilience***	**3.48 (0.74)**	**3.14 (0.72)**	**3.27 (0.79)**

[1] *Answers were given on a scale of 0 = all the time to 5=at no time. A sum score of the 5 WHO items was calculated and multiplied by 4.*

[2] *Answers were given on a scale of 0 to 3. A sum score of the 12 GHQ items was calculated.*

[3] *Answers were given on a scale of 0 = extremely poor to 10 = extremely good.*

[4] *An answer was given on a scale of 0 = minimum score to 10 = maximum score.*

*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 17.2. Percentage of 'In your experience, is doing a PhD affecting your mental health?', per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
No	8.3	6.1	8.6
Overall, doing a PhD has a large negative effect on my mental health	7.9	10.7	8.8
Overall, doing a PhD has a small negative effect on my mental health	11.6	15.0	9.1
Sometimes doing a PhD has a negative effect on my mental health, sometimes a positive effect	44.3	48.1	42.4
Overall, doing a PhD has a small positive effect on my mental health	13.5	7.9	12.5
Overall, doing a PhD has a large positive effect on my mental health	11.4	8.4	15.4
I don't know	3.1	3.7	3.2

Table 18.2. Percentages of aspects of doing a PhD trajectory that negatively affect mental health, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
High workload	36.0	46.7	26.8
Problems with work-life balance	34.9	43.0	29.7
Insecurities about future career	20.3	39.3	32.7
Insecurities about own capabilities	43.2	56.5	41.5
Not being able to finish in time or doubts about being able to finish in time	29.5	42.1	35.1
Not achieving good results or doubts about achieving good results	28.4	45.8	37.6
Issues due to practical setbacks in the project	28.4	30.4	24.0
Publication pressure	14.6	30.4	32.4
Problems with supervisors	13.3	15.9	15.4
Problems with colleagues	4.6	7.0	5.0
High level of competition in academia	11.1	22.0	20.0
Unclear expectations	23.1	28.0	19.7
Procrastination, lack of motivation	29.7	34.6	29.7
Other	8.3	5.6	4.5

Table 19.2. Mean (SD) of the different factors of burnout and engagement, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Burn out: Exhaustion* **	**3.50 (1.12)**	**3.86 (1.07)**	**3.65 (1.16)**
Burn out: Cynicism* **	**3.39 (1.43)**	**3.83 (1.33)**	**3.43 (1.40)**
Burn out: Professional efficacy	5.05 (0.77)	4.87 (0.79)	4.98 (0.85)
Work engagement: Dedication	4.73 (1.02)	4.53 (0.98)	4.67 (1.08)
Work engagement: Vigour* **	**3.99 (0.98)**	**3.79 (0.98)**	**4.13 (0.98)**

*Note: answers were given on a scale of 1 (never) to 7 (all the time). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 20.2. Percentage reporting how often there are worries about future career, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Never	14.0	4.2	5.0
Rarely	27.7	17.3	14.3
Sometimes	34.7	36.4	40.4
Often	20.1	30.4	27.7
All of the time	3.3	11.7	12.5

Table 21.2. Percentage of types of career worries, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Not knowing what kind of career I want	35.4	42.1	25.6
Being unsure whether I am good enough for the kind of job I want	24.7	43.0	43.5
Having to move to another place for a new job	24.0	38.8	27.4
Feeling unprepared for the job I want	12.7	23.4	26.1
The high competition to obtain the job I want	27.1	45.3	50.1
Having to start a new job while my PhD thesis is not yet finished	19.0	28.5	22.0
The work-life balance in my future job	18.3	25.7	24.5
Being insecure about my skills in writing application letters and/or job interviews	9.0	16.4	21.3
Other	7.0	6.5	6.8

Table 23.2. Mean (SD) of statements about talking about mental health problems, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
If I were to experience mental health problems, I would know who I could talk to at the University/UMCG	3.15 (1.15)	3.02 (1.19)	3.32 (1.12)
If I were to experience mental health problems, I would like to talk about it with someone at the University/UMCG	3.09 (1.10)	3.04 (1.07)	3.38 (1.12)
If I were to experience mental health problems, I would talk about this with my primary supervisor	3.19 (1.24)	2.90 (1.27)	3.22 (1.21)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems	4.05 (1.02)	3.94 (1.14)	3.99 (1.01)
If I were to experience mental health problems, I would talk about this with my daily supervisor	3.67 (1.12)	3.45 (1.23)	3.50 (1.15)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems	4.23 (0.96)	4.22 (0.94)	4.02 (0.95)
I would talk about this with a professional outside the University/UMCG.	4.02 (1.00)	4.06 (1.02)	3.84 (1.00)
How helpful was/is it to talk about your problems with the person(s) you indicated you talk(ed) to in the previous question?	3.35 (0.86)	3.36 (0.84)	3.45 (0.95)

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

Table 24.2. Percentage of PhD students that knows about different forms of PhD support, per nationality

Before filling out this survey, did you know that as a PhD student you have access to…	Dutch		Nationality from EEA country (non-Dutch)		Other nationality	
	Yes	No	Yes	No	Yes	No
the PhD Support website	72.7	27.3	66.8	32.7	73.0	26.8
Courses and workshops (through PhD support)	95.2	4.6	93.5	6.1	91.6	7.7
Career Perspectives series	91.3	8.5	89.3	9.8	82.8	16.8
individual counseling (through PhD support)	58.3	41.3	63.1	36.0	60.5	38.5
PhD psychologists	51.5	48.0	48.6	50.9	46.7	52.6
an independent ombuds person (onafhankelijke ombuds functionaris)	42.6	57.0	36.4	62.6	28.8	70.3
a confidential advisor (vertrouwenspersoon)	90.4	9.4	77.6	21.5	63.5	25.6
PhD mentor (only for GSBSS)[1]	84.8	15.2	84.6	15.4	89.2	10.8
PhD counselors at the faculty (only for GSSE)[1]	61.6	38.4	64.2	35.8	70.3	29.7
PhD counselors at the faculty (only for GSMS)[1]	42.9	57.1	34.1	65.9	46.1	53.9
PhD coach within Managing your PhD (only for GSMS)[1]	69.4	30.7	56.8	43.2	69.2	30.8

[1] *Note. percentages based on response of PhD students from those particular graduate schools only.*

Table 25.2. Percentage of PhD students who are experiencing or have experienced mental health problems during their PhD, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
No, I have never experienced mental health problems that affected my work	49.1	40.7	50.1
Yes, I have experienced mental health problems that affected my work	29.3	35.0	27.9
Yes, I am currently experiencing mental health problems that affect my work	16.6	15.9	13.4
Prefer not to say	5.0	8.4	8.6

Table 26.2. Percentage of PhD students who have talked about their mental health problems with someone at the UG/UMCG, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
I have never talked to anyone at the UG/UMCG about my problems	9.4	11.2	11.1
I have talked to my supervisor	28.4	23.8	17.9
I have talked to a colleague / colleagues	24.5	29.0	19.5
I have talked to the psychologist for PhD students	6.1	9.8	7.7
I have talked to the confidential advisor	4.6	3.7	2.7
I have talked to my PhD coordinator or mentor	2.2	1.4	3.6
I have talked to someone from Student Support or Career Services	0.4	2.8	3.2
I have talked to someone from AMD (Health, Safety and Environment Service), *e.g.* an occupational health worker	5.7	2.3	2.3
Yes, to a PhD counselor (available for FSE and UMCG)	1.3	1.9	2.0
Other	4.1	4.2	4.1

Table 27.2. Percentage and Mean (SD) of 'How helpful was talking to someone?, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Not helpful at all	1.8	1.2	4.1
Hardly helpful	13.3	12.3	7.3
Somewhat helpful	40.0	43.2	41.5
Quite helpful	38.2	35.8	34.1
Extremely helpful	6.7	7.4	13.0
How helpful was/is it to talk about your problems with the person(s) you indicated you talk(ed) to in the previous question?[1] (Mean (SD))	3.35 (0.86)	3.36 (0.84)	3.45 (0.95)

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

Table 28.2. Percentage of PhD students who engage in structural activities in addition to their PhD, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
No additional activities	58.1	69.2	81.0
I have another job	20.7	11.7	6.8
I am on the board of an organization or actively involved in an organization	9.2	10.3	3.9
I am actively involved in a political party	1.3	-	0.2
I do voluntary work	6.6	2.8	3.9
I am an informal caregiver for a relative or other person	3.9	0.5	1.1
I am a professional / semi-professional athlete or musician	3.7	3.3	0.9
Other[1]	6.1	4.7	3.9

[1]*Other additional activities are mainly being self-employed, committee work, parenting or additional job/activity at university.*

Table 29.2. Percentage of working hours and vacation, per nationality

	Dutch		Nationality from EEA country (non-Dutch)		Other nationality	
	Yes	No	Yes	No	Yes	No
Do you generally work more hours than your contract requires?	45.0	44.8	50.5	34.6	44.2	35.2
On average, how many hours do you work extra a week (M, SD)	8.98 (9.20)		11.37 (13.47)		16.11 (16.09)	
Does working overtime cause you extra stress (answered by respondents who do work more hours)?	43.1	53.9	60.2	34.3	44.1	44.6
Do you generally take off all the vacation/leave days you are entitled to each year?	82.8	12.9	81.8	8.9	64.6	20.6
Does not taking off the vacation/leave days cause you extra stress (answered by respondents who do not take vacation/leave days)?	64.4	33.9	68.4	21.1	42.2	51.1

Table 30.2. Mean (SD) of respondents' work-life balance, per nationality

	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
I have difficulties balancing my work and non-work activities**	**2.96 (1.12)**	**3.21 (1.06)**	**2.89 (1.14)**
The demands of my work interfere with my life away from work***	**3.03 (1.13)**	**3.33 (1.06)**	**2.87 (1.15)**
The amount of time my work takes up makes it difficult to fulfil other interests***	**2.81 (1.12)**	**3.15 (1.07)**	**2.82 (1.14)**
Things that I want to do at home do not get done because of work demands**	**2.79 (1.08)**	**2.95 (1.04)**	**2.65 (1.06)**
My work produces strain that makes it difficult to fulfil other responsibilities and duties***	**2.84 (1.13)**	**3.19 (1.00)**	**2.73 (1.06)**
Due to my work, I have to make changes to my plans for activities outside of work**	**3.13 (1.15)**	**3.42 (1.09)**	**3.05 (1.15)**
Overall, I believe that my work and non-work life are balanced**	**3.37 (1.05)**	**3.09 (1.08)**	**3.28 (1.07)**

*Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Appendix III – Tables per Graduate School

Table 1.3. Percentage of male and female PhD students, per graduate school

Graduate school	Male	Female
GSBSS	29.1	68.2
GSEB	48.8	46.5
GSH	26.1	70.5
GSL	43.9	48.8
GSMS	26.1	72.3
GSSE	53.7	44.7
GSSS	26.8	68.3

Table 2.3. Percentage of respondents' nationalities, per graduate school

Graduate school	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
GSBSS	42.7	23.6	33.6
GSEB	34.9	30.2	34.9
GSH	48.9	22.7	26.1
GSL	53.7	19.5	24.4
GSMS	52.8	11.7	34.5
GSSE	26.3	22.1	50.0
GSSS	31.7	19.5	46.3

Table 4.3. Percentage of respondents' type of contract, per graduate school

Graduate school	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PHD	End of contract	Other
GSBSS	51.8	9.1	24.5	-	4.5	8.2
GSEB	65.1	-	27.9	-	2.3	4.7
GSH	35.2	9.1	28.4	-	4.5	20.5
GSL	58.5	-	19.5	-	2.4	14.6
GSMS	55.2	6.4	17.8	9.3	4.8	5.8
GSSE	55.6	6.9	27.7	-	5.6	2.9
GSSS	34.1	7.3	41.5	-	7.3	9.8

Table 5.3. Percentage of allotted time period for the PhD project, per graduate school

Graduate school	< 3 Years	3 Years	4 Years	> 4 Years	Other	Don't know
GSBSS	2.7	0.9	70.0	18.2	3.6	3.6
GSEB	-	16.3	69.8	7.0	4.7	2.3
GSH	-	6.8	75.0	8.0	3.4	6.8
GSL	-	7.3	75.6	9.8	4.9	2.4
GSMS	8.8	15.6	65.3	3.7	5.8	0.8
GSSE	3.2	1.9	90.4	2.9	1.1	0.5
GSSS	-	9.8	80.5	7.3	2.4	-

Table 6.3. Percentage of full time/part time, per graduate school

Graduate school	Full-time	Part-time	Other/don't know
GSBSS	58.2	17.3	9.1
GSEB	81.4	7.0	4.7
GSH	47.7	11.4	13.6
GSL	61.0	9.8	7.3
GSMS	66.0	13.3	9.3
GSSE	78.2	3.7	8.2
GSSS	68.3	7.3	7.3

Table 7.3. Percentage of current year of PhD, per graduate school

Graduate school	First year	Second year	Third year	Fourth year	Fifth year	Over five years
GSBSS	28.2	24.5	20.0	11.8	6.4	6.4
GSEB	27.9	32.6	18.6	4.7	11.6	4.7
GSH	28.4	20.5	21.6	20.5	5.7	3.4
GSL	24.4	31.7	26.8	7.3	2.4	7.3
GSMS	28.6	24.1	23.3	13.8	6.1	2.7
GSSE	29.0	19.4	22.1	19.9	5.1	3.2
GSSS	14.6	31.7	17.1	29.3	7.3	-

Table 7.3.1. Percentage of junior and senior respondents, per graduate school

Graduate school	Junior	Senior
GSBSS	52.7	44.5
GSEB	60.5	39.5
GSH	48.9	51.1
GSL	56.1	43.9
GSMS	52.8	45.9
GSSE	48.4	50.3
GSSS	46.3	53.7

Table 8.3. Mean (SD) of satisfaction with performance, project characteristics, and confidence, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Overall, I am satisfied with how I am performing in my PhD.	3.73 (0.94)	3.50 (0.94)	3.62 (0.94)	3.70 (1.09)	3.64 (0.97)	3.55 (0.97)	3.51 (1.12)
Overall, my primary supervisor (promotor) is satisfied with how I am performing.	4.11 (0.68)	3.95 (0.72)	4.04 (0.70)	3.89 (0.91)	4.03 (0.75)	3.93 (0.75)	3.72 (0.97)
Overall, my daily supervisor is satisfied with how I am performing.*	**4.19 (0.60)**	**3.97 (0.71)**	**4.04 (0.73)**	**4.07 (0.81)**	**4.07 (0.74)**	**3.92 (0.68)**	**3.91 (0.87)**
Overall, I know what my supervisors expect of me.	4.06 (0.78)	3.81 (0.79)	3.95 (0.73)	3.72 (1.09)	3.79 (0.87)	3.82 (0.84)	3.95 (0.90)
The workload in my PhD is high.	3.55 (0.97)	3.72 (0.91)	3.77 (0.95)	3.45 (0.88)	3.70 (0.95)	3.73 (0.86)	3.63 (0.92)
The complexity of my PhD is high.*	**3.91 (0.90)**	**3.88 (0.85)**	**4.10 (0.86)**	**3.95 (0.88)**	**3.76 (0.94)**	**3.93 (0.79)**	**3.78 (1.01)**
I am confident that I will, eventually, finish my PhD.	4.39 (0.70)	4.29 (0.77)	4.27 (0.78)	3.98 (1.04)	4.28 (0.83)	4.28 (0.80)	4.37 (0.86)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.	3.21 (1.23)	3.37 (1.39)	3.10 (1.22)	3.36 (1.16)	3.01 (1.33)	3.10 (1.28)	2.75 (1.13)
I am confident that I will find a suitable and interesting job after I have finished my PhD.* **	**3.67 (1.05)**	**3.55 (1.11)**	**3.07 (1.16)**	**3.67 (1.07)**	**3.93 (1.02)**	**3.61 (0.97)**	**3.59 (1.29)**

*Note: Answers were given on a scale of 1 (completely disagree) to 5 (completely agree). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 9.3. Progress of the PhD students with their thesis; percentage of respondents per statement, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Yes, I think I will be able to finish my PhD in time	44.5	46.5	42.0	56.1	38.5	43.1	29.3
No, I have fallen behind but I still think I can finish in time	19.1	14.0	19.3	12.2	23.3	21.8	26.8
No, I have fallen behind and I don't think I will be able to finish in time	17.3	16.3	15.9	12.2	15.4	13.6	26.8
I was unable to finish in time and am currently on an extension	0.9	4.7	2.3	2.4	3.2	4.3	-
I was unable to finish in time and am currently finishing my thesis in my own time	3.6	7.0	4.5	4.9	4.8	3.2	7.3
I have already defended my thesis or sent the manuscript to the assessment committee	2.7	-	1.1	-	0.8	1.1	-
I don't know /other	11.9	11.6	14.8	12.2	14.1	13.0	9.7

Table 10.3. Mean (SD) of consideration of quitting, and satisfaction with the trajectory and the supervision, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Have you ever considered quitting your PhD project? [1]	4.30 (1.15)	3.88 (1.22)	4.09 (1.19)	4.10 (1.22)	3.91 (1.32)	4.09 (1.21)	4.22 (1.15)
How satisfied are you with your PhD trajectory so far? [2]	3.78 (0.93)	3.51 (0.91)	3.78 (0.90)	3.59 (1.05)	3.61 (0.97)	3.56 (0.89)	3.41 (1.00)
How satisfied are you with the supervision you receive? [2]**	**4.18 (0.90)**	**3.95 (1.00)**	**4.14 (0.89)**	**3.78 (1.11)**	**3.84 (1.03)**	**3.80 (1.00)**	**4.00 (1.23)**

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).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 11.3. Mean (SD) of frequency and satisfaction with (online) supervision, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Frequency of (online) meetings with daily supervisor[1]***	**2.67 (0.94)**	**3.05 (0.96)**	**3.36 (1.11)**	**3.60 (1.17)**	**2.44 (0.96)**	**2.57 (1.17)**	**3.02 (1.01)**
Frequency of (online) meetings with primary supervisor[1]***	**3.28 (0.97)**	**3.40 (0.96)**	**3.98 (1.02)**	**3.80 (1.03)**	**3.25 (1.10)**	**3.26 (1.21)**	**3.92 (0.89)**
Satisfaction meetings with daily supervisor[2]	4.46 (0.71)	4.22 (0.91)	4.29 (1.11)	4.26 (1.13)	4.15 (1.01)	4.13 (0.93)	4.23 (1.11)
Satisfaction meetings with primary supervisor[2]	4.29 (0.80)	4.12 (0.97)	4.20 (0.93)	4.00 (1.13)	4.00 (0.98)	4.01 (0.95)	4.18 (0.85)

Note: answers were given on a scale from 1 to 5.
[1] (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] (1 = very dissatisfied, 5 = very satisfied).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 12.3. Mean (SD) of regarding the atmosphere within the department, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Formal relationships***	**3.43 (0.64)**	**3.29 (0.61)**	**3.35 (0.65)**	**3.71 (0.68)**	**3.64 (0.68)**	**3.52 (0.70)**	**3.31 (0.74)**
Informal relationships	3.13 (0.90)	3.19 (0.76)	3.16 (0.98)	3.55 (0.86)	3.35 (0.91)	3.37 (0.91)	3.23 (0.81)
Sense of belonging	3.74 (0.69)	3.69 (0.77)	3.64 (0.69)	3.93 (0.68)	3.75 (0.81)	3.76 (0.74)	3.81 (0.70)

*Note: On the scale from 1 to 5, a higher score indicates a stronger and more positive sense of (in)formal relationships between colleagues. Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 13.3. Mean (SD) of impact of Covid-19 on the ability to engage in aspects of the PhD project, per graduate school

What impact has COVID-19 had on the ability to engage in this work:	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Data collection	2.03 (0.82)	2.31 (1.25)	1.93 (0.94)	2.69 (0.86)	2.07 (0.96)	2.15 (0.86)	2.38 (1.03)
Data analysis	2.73 (0.80)	2.54 (1.05)	2.37 (0.84)	3.10 (0.74)	2.57 (0.78)	2.50 (0.82)	2.56 (0.96)
Writing	2.95 (0.92)	2.54 (1.05)	2.55 (1.03)	2.77 (0.83)	2.83 (0.79)	2.66 (0.91)	2.50 (0.73)
Discussing ideas and findings with colleagues and peers	2.14 (0.93)	1.58 (0.67)	1.65 (0.76)	2.23 (1.09)	1.92 (0.89)	1.94 (0.85)	1.56 (0.51)
Dissemination and sharing research finding with stakeholders and other	2.24 (0.98)	1.92 (0.90)	1.78 (0.75)	2.17 (1.03)	2.05 (0.91)	2.05 (0.87)	1.93 (1.03)

*Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive). *p < .05; **p < .01; ***p < .001.*

Table 14.3. Mean (SD) of impact of Covid-19 on other aspects, per graduate school

What impact did COVID-19 have on your:	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Motivation to work on PhD project	2.66 (0.66)	2.38 (0.96)	2.40 (1.10)	2.77 (1.01)	2.57 (0.82)	2.52 (0.80)	2.69 (0.87)
Progress of PhD projects	2.29 (0.90)	2.08 (1.19)	2.16 (1.07)	2.50 (0.94)	2.11 (0.91)	2.14 (0.94)	2.19 (1.11)
Future career prospects	2.86 (0.59)	2.82 (0.60)	2.62 (0.86)	2.67 (0.89)	2.81 (0.62)	2.59 (0.65)	2.54 (0.66)
Mental health	2.40 (0.73)	2.23 (0.73)	2.10 (0.94)	2.62 (0.87)	2.50 (0.94)	2.33 (0.83)	2.27 (0.88)
Work-life balance*	**2.81 (0.89)**	**1.85 (0.69)**	**2.32 (1.11)**	**2.71 (1.27)**	**2.83 (1.09)**	**2.52 (1.09)**	**2.73 (1.39)**
Contact with daily supervisor/promotor	2.67 (0.72)	2.00 (0.91)	2.58 (0.77)	2.15 (0.80)	2.54 (0.73)	2.33 (0.81)	2.06 (1.12)

*Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 15.3. Percentage of effects attributed to COVID-19 pandemic, per graduate school

Due to the COVID-19 pandemic I currently... (multiple answers are possible)	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
feel anxious in social situations	11.6	7.7	9.7	28.6	18.1	15.0	6.3
feel overwhelmed in bigger groups of people	14.0	23.1	22.6	14.3	18.1	18.1	25.0
feel lonely	18.6	38.5	16.1	-	11.2	18.1	18.8
feel depressed	4.7	-	19.4	7.1	7.8	14.2	18.8
do not feel a sense of belonging to my research group	16.3	23.1	32.3	7.1	22.4	22.8	18.8
Other – please explain	14.0	-	32.3	-	12.1	15.8	12.5

Note. percentage calculations are based on number of PhD students who were doing a PhD during COVID-19 pandemic.

Table 16.3. Mean (SD) of mental health indicators, per graduate school.

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
WHO score (0-100)[1]	41.56 (20.09)	45.30 (18.30)	45.24 (19.44)	43.90 (18.77)	42.70 (19.89)	46.46 (20.25)	45.37 (21.65)
GHQ-12 (0-36)[2]	13.22 (6.05)	13.44 (5.65)	13.78 (6.01)	13.44 (5.50)	13.44 (6.57)	13.90 (6.24)	14.60 (7.53)
Mental health, current[3]	6.75 (1.65)	6.81 (1.59)	6.56 (1.99)	6.88 (1.35)	6.98 (1.75)	6.62 (1.98)	6.49 (2.20)
Mental health, during-COVID-19 pandemic[3]* **	**5.83 (1.96)**	**6.05 (1.94)**	**5.43 (1.99)**	**5.80 (1.95)**	**6.38 (1.89)**	**5.61 (2.37)**	**5.98 (2.08)**
Mental health during Bachelor's / Master's[3]	7.16 (1.48)	7.45 (1.35)	6.64 (1.83)	6.76 (1.86)	7.21 (1.60)	7.05 (1.87)	7.48 (1.66)
Do you feel happy in general?[4]*	**7.02 (1.66)**	**7.05 (1.68)**	**6.78 (1.82)**	**7.42 (1.26)**	**7.11 (1.65)**	**6.67 (1.92)**	**6.73 (1.95)**
Resilience**	**3.45 (0.71)**	**3.31 (0.86)**	**3.17 (0.78)**	**3.36 (0.70)**	**3.43 (0.73)**	**3.25 (0.73)**	**3.29 (0.59)**

[1] *Answers were given on a scale of 0 = all the time to 5=at no time. A sum score of the 5 WHO items was calculated and multiplied by 4.*
[2] *Answers were given on a scale of 0 to 3. A sum score of the 12 GHQ items was calculated.*
[3] *Answers were given on a scale of 0 = extremely poor to 10 = extremely good.*
[4] *An answer was given on a scale of 0 = minimum score to 10 = maximum score.*
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 17.3. Percentage of 'In your experience, is doing a PhD affecting your mental health?', per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
No	7.3	4.7	8.0	9.8	8.8	8.0	9.8
Overall, doing a PhD has a large negative effect on my mental health	6.4	4.7	9.1	7.3	9.0	9.6	17.1
Overall, doing a PhD has a small negative effect on my mental health	12.7	18.6	10.2	19.5	8.8	11.2	9.8
Sometimes doing a PhD has a negative effect on my mental health, sometimes a positive effect	40.0	44.2	43.2	36.6	45.1	45.5	46.3
Overall, doing a PhD has a small positive effect on my mental health	15.5	23.3	8.0	17.1	13.0	9.6	12.2
Overall, doing a PhD has a large positive effect on my mental health	15.5	2.3	18.2	7.3	12.2	12.5	4.9
I don't know	2.7	2.3	3.4	2.4	3.2	3.7	-

Table 18.3. Percentages of aspects of doing a PhD trajectory that negatively affect mental health, per graduate school.

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
High workload	32.7	27.9	36.4	26.8	36.3	33.2	34.1
Problems with work-life balance	33.6	25.6	37.5	29.3	33.7	36.7	31.7
Insecurities about future career	25.5	32.6	38.6	36.6	23.6	31.1	39.0
Insecurities about own capabilities	42.7	44.2	46.6	43.9	42.2	47.1	51.2
Not being able to finish in time or doubts about being able to finish in time	26.4	32.6	33.0	39.0	34.2	34.8	48.8
Not achieving good results or doubts about achieving good results	30.9	32.6	25.0	31.7	34.0	41.2	34.1
Issues due to practical setbacks in the project	26.4	18.6	20.5	19.5	30.5	27.9	26.8
Publication pressure	20.9	23.3	19.3	12.2	23.3	30.1	36.6
Problems with supervisors	7.3	9.3	14.8	19.5	17.0	14.4	14.6
Problems with colleagues	3.6	2.3	1.1	4.9	6.9	5.9	4.9
High level of competition in academia	19.1	20.9	20.5	12.2	13.5	17.8	24.4
Unclear expectations	20.9	23.3	23.9	26.8	22.5	22.3	31.7
Procrastination, lack of motivation	23.6	30.2	34.1	36.6	27.6	34.3	26.8
Other	10.0	2.3	9.1	4.9	5.0	5.6	17.1

Table 19.3. Mean (SD) of the different factors of burnout and engagement, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Burn out: Exhaustion	3.39 (1.05)	3.57 (1.16)	3.61 (1.31)	3.50 (1.30)	3.60 (1.13)	3.74 (1.11)	3.83 (1.17)
Burn out: Cynicism	3.40 (1.40)	3.54 (1.55)	3.50 (1.40)	3.49 (1.54)	3.54 (1.43)	3.48 (1.39)	3.60 (1.46)
Burn out: Professional efficacy	5.12 (0.64)	4.93 (0.89)	5.09 (0.73)	5.05 (0.82)	4.99 (0.82)	4.91 (0.82)	5.01 (0.81)
Work engagement: Dedication	4.80 (0.99)	4.64 (1.02)	4.82 (1.10)	4.77 (1.20)	4.60 (1.05)	4.64 (1.00)	4.50 (0.84)
Work engagement: Vigour	4.14 (0.91)	3.94 (1.03)	3.99 (1.01)	3.97 (1.23)	3.97 (0.96)	4.02 (0.97)	3.94 (0.84

Note: answers were given on a scale of 1 (never) to 7 (all the time). Significant differences are indicated in bold.

Table 20.3. Percentage reporting how often there are worries about future career, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Never	15.5	7.0	8.0	14.6	7.2	7.2	9.8
Rarely	22.7	25.6	10.2	17.1	23.1	18.6	24.4
Sometimes	27.3	39.5	38.6	29.3	38.5	42.3	24.4
Often	27.3	23.3	29.5	26.8	25.2	22.6	26.8
All of the time	7.3	4.7	13.6	12.2	5.8	9.3	12.2

Table 21.3. Percentage of types of career worries, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Not knowing what kind of career I want	20.9	32.6	35.2	26.8	33.2	36.7	34.1
Being unsure whether I am good enough for the kind of job I want	30.9	27.9	34.1	41.5	35.0	39.6	34.1
Having to move to another place for a new job	28.2	27.9	36.4	29.3	24.7	29.5	19.5
Feeling unprepared for the job I want	16.4	11.6	18.2	12.2	20.2	24.2	22.0
The high competition to obtain the job I want	42.7	51.2	55.7	36.6	35.5	39.4	26.8
Having to start a new job while my PhD thesis is not yet finished	15.5	16.3	25.0	24.4	23.6	21.3	26.8
The work-life balance in my future job	15.5	23.3	23.9	26.8	26.0	21.8	2.4
Being insecure about my skills in writing application letters and/or job interviews	4.5	14.0	11.4	14.6	15.4	22.6	7.3
Other	7.3	2.3	12.5	7.3	5.3	5.6	14.6

Table 23.3. Mean (SD) of statements about talking about mental health problems, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
If I were to experience mental health problems, I would know who I could talk to at the University/UMCG	3.32 (1.15)	3.15 (1.35)	3.20 (1.21)	3.15 (1.04)	3.13 (1.20)	3.20 (1.10)	3.14 (1.25)
If I were to experience mental health problems, I would like to talk about it with someone at the University/UMCG	3.14 (1.07)	3.49 (1.14)	3.24 (1.07)	3.08 (1.16)	3.16 (1.13)	3.22 (1.12)	3.14 (1.00)
If I were to experience mental health problems, I would talk about this with my primary supervisor	3.45 (1.15)	3.38 (1.19)	3.31 (1.20)	2.86 (1.40)	3.13 (1.26)	3.00 (1.23)	3.12 (1.24)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems	4.22 (0.83)	4.08 (0.98)	4.26 (0.94)	3.97 (1.16)	3.88 (1.11)	3.96 (1.04)	3.85 (1.25)
If I were to experience mental health problems, I would talk about this with my daily supervisor	3.77 (1.01)	3.59 (1.09)	3.83 (1.14)	3.39 (1.34)	3.57 (1.17)	3.39 (1.17)	3.40 (1.17)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems	4.36 (0.74)	4.16 (0.86)	4.37 (0.86)	4.22 (1.22)	4.09 (1.00)	4.03 (0.99)	4.05 (1.12)
I would talk about this with a professional outside the University/UMCG.	3.91 (1.03)	4.00 (1.11)	4.07 (1.02)	4.18 (0.96)	4.02 (0.95)	3.84 (1.01)	3.83 (1.26)
How helpful was/is it to talk about your problems with the person(s) you indicated you talk(ed) to in the previous questions.	3.48 (0.80)	3.33 (0.72)	3.76 (0.72)	3.07 (0.73)	3.33 (0.95)	3.30 (0.95)	3.22 (1.06)

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

Table 24.3. Percentage of PhD students that knows about different forms of PhD support, per graduate school

Before filling out this survey, did you know that as a PhD student you have access to…	GSBSS		GSEB		GSH		GSL		GSMS		GSSE		GSSS	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
the PhD Support website	67.3	32.7	65.1	34.9	71.6	28.4	58.5	41.5	71.6	28.4	73.4	26.1	80.5	19.5
Courses and workshops (through PhD support)	90.9	9.1	95.3	4.7	87.5	11.4	95.1	4.9	93.9	5.8	93.9	5.6	99.5	0.5
Career Perspectives series	85.5	14.5	88.4	11.6	92.0	6.8	87.8	12.2	86.5	13.3	85.1	14.1	100	-
individual counseling (through PhD support)	62.7	37.3	53.5	44.2	50.0	48.9	48.8	51.2	58.9	41.1	63.6	35.1	65.9	31.7
PhD psychologists	60.9	39.1	32.6	67.4	56.8	42.0	39.0	61.0	43.2	56.5	50.3	48.7	58.5	41.5
an independent ombuds person (onafhankelijke ombuds functionaris)	49.1	50.9	41.9	55.8	42.0	56.8	63.4	36.6	31.6	68.2	27.1	71.5	51.2	48.8
a confidential advisor (vertrouwenspersoon)	79.1	20.0	72.1	27.9	85.2	12.5	87.8	12.2	82.0	17.8	68.4	30.9	73.2	26.8
PhD mentor (only for GSBSS)[1]	85.5	13.6	-	-	-	-	-	-	-	-	-	-	-	-
PhD counselors at the faculty (only for GSSE)[1]	-	-	-	-	-	-	-	-	-	-	65.4	33.2	-	-
PhD counselors at the faculty (only for GSMS)[1]	-	-	-	-	-	-	-	-	42.7	56.5	-	-	-	-
PhD coach within Managing your PhD (only for GSMS)[1]	-	-	-	-	-	-	-	-	67.9	32.1	-	-	-	-

[1] *Note. percentages based on response of PhD students from those particular graduate schools only.*

Table 25.3. Percentage of PhD students who are experiencing or have experienced mental health problems during their PhD, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
No, I have never experienced mental health problems that affected my work	49.1	46.5	34.1	43.9	51.5	50.0	41.5
Yes, I have experienced mental health problems that affected my work	32.7	30.2	38.6	34.1	27.9	28.2	29.3
Yes, I am currently experiencing mental health problems that affect my work	11.8	14.0	18.2	14.6	15.1	14.1	22.0
Prefer not to say	6.4	9.3	9.1	7.3	5.6	7.7	7.3

Table 26.3. Percentage of PhD students who have talked about their mental health problems with someone at the UG/UMCG, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
I have never talked to anyone at the UG/UMCG about my problems	14.5	7.0	13.6	12.2	10.3	8.8	4.9
I have talked to my supervisor	24.5	25.6	33.0	24.4	21.8	19.9	26.8
I have talked to a colleague / colleagues	20.9	18.6	34.1	26.8	23.9	20.2	26.8
I have talked to the psychologist for PhD students	9.1	11.6	10.2	12.2	5.6	5.9	17.1
I have talked to the confidential advisor	2.7	-	3.4	9.8	6.1	2.1	2.4
I have talked to my PhD coordinator or mentor	-	7.0	3.4	2.4	4.0	2.4	-
I have talked to someone from Student Support or Career Services	1.8	2.3	2.3	-	1.3	2.7	2.4
I have talked to someone from AMD (Health, Safety and Environment Service), *e.g.* an occupational health worker	-	9.3	6.8	-	3.2	3.7	4.9
Yes, to a PhD counselor (available for FSE and UMCG)	-	-	-	-	1.6	4.0	-
Other	1.8	7.0	4.5	2.4	3.4	4.5	9.8

Table 27.3. Percentage and Mean (SD) of 'How helpful was talking to someone?, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
Not helpful at all	3.0	-	-	-	4.2	3.4	5.6
Hardly helpful	3.0	13.3	5.4	21.4	11.8	12.7	22.2
Somewhat helpful	42.4	40.0	24.3	50.0	40.3	45.8	22.2
Quite helpful	45.5	46.7	59.5	28.6	34.5	27.1	44.4
Extremely helpful	6.1	-	10.8	-	9.2	11.0	5.6
How helpful was/is it to talk about your problems with the person(s) you indicated you talk(ed) to in the previous question?[1] (Mean (SD))	3.48 (0.80)	3.33 (0.72)	3.76 (0.72)	3.07 (0.73)	3.33 (0.95)	3.30 (0.95)	3.22 (1.06)

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

Table 28.3. Percentage of PhD students who engage in structural activities in addition to their PhD, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
No additional activities	57.3	74.4	53.4	63.4	69.5	79.8	56.1
I have another job	20.9	11.6	26.1	17.1	15.1	4.3	24.4
I am on the board of an organization or actively involved in an organization	8.2	7.0	11.4	12.2	6.4	5.6	4.9
I am actively involved in a political party	2.7	-	-	2.4	0.3	-	2.4
I do voluntary work	6.4	2.3	8.0	4.9	5.3	3.7	4.9
I am an informal caregiver for a relative or other person	4.5	-	2.3	4.9	1.3	1.6	2.4
I am a professional / semi-professional athlete or musician	1.8	2.3	1.1	-	2.9	2.9	2.4
Other[1]	6.4	2.3	8.0	7.3	4.5	4.3	4.9

[1]*Other additional activities are mainly being self-employed, committee work, parenting or additional job/activity at university.*

Table 29.3. Percentage of working hours and vacation, per graduate school

	GSBSS		GSEB		GSH		GSL		GSMS		GSSE		GSSS	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Do you generally work more hours than your contract requires?	29.1	55.5	39.5	30.2	27.3	42.0	31.7	56.1	56.8	34.7	48.7	36.7	31.7	39.0
On average, how many hours do you work extra a week (M, SD)	9.70 (10.40)		14.53 (19.18)		9.83 (9.46)		11.75 (9.79)		12.04 (13.66)		13.22 (14.27)		13.50 (13.07)	
Does working overtime cause you extra stress (answered by respondents who do work more hours)?	74.2	9.7	35.3	64.7	43.5	30.4	53.8	30.8	46.3	50.5	47.5	45.9	30.8	53.8
Do you generally take off all the vacation/leave days you are entitled to each year?	78.2	14.5	67.4	20.9	65.9	15.9	82.9	12.2	81.2	13.0	72.6	17.3	63.4	19.5
Does not taking off the vacation/leave days cause you extra stress (answered by respondents who do not take vacation/leave days)?	43.8	43.8	44.4	55.6	57.1	35.7	80.0	20.0	54.2	43.8	47.7	46.2	87.5	12.5

Table 30.3. Mean (SD) of respondents' work-life balance, per graduate school

	GSBSS	GSEB	GSH	GSL	GSMS	GSSE	GSSS
I have difficulties balancing my work and non-work activities	2.97 (1.13)	2.98 (1.12)	3.12 (1.14)	2.85 (1.05)	2.84 (1.18)	3.07 (1.07)	3.07 (1.21)
The demands of my work interfere with my life away from work	2.98 (1.20)	2.98 (1.10)	3.30 (1.12)	3.10 (1.08)	2.93 (1.20)	3.04 (1.06)	3.24 (1.16)
The amount of time my work takes up makes it difficult to fulfil other interests* **	**2.77 (1.17)**	**2.95 (1.07)**	**2.99 (1.07)**	**2.58 (1.06)**	**2.70 (1.15)**	**3.07 (1.07)**	**2.95 (1.16)**
Things that I want to do at home do not get done because of work demands	2.67 (1.03)	2.70 (0.94)	2.80 (0.94)	2.58 (1.06)	2.70 (1.11)	2.88 (1.07)	2.73 (1.16)
My work produces strain that makes it difficult to fulfil other responsibilities and duties	2.73 (1.00)	2.56 (0.85)	3.03 (1.07)	2.93 (1.19)	2.76 (1.13)	2.97 (1.04)	2.95 (1.18)
Due to my work, I have to make changes to my plans for activities outside of work	2.97 (1.23)	3.33 (1.04)	3.22 (1.12)	3.00 (1.11)	3.13 (1.18)	3.20 (1.13)	3.24 (1.07)
Overall, I believe that my work and non-work life are balanced*	**3.38 (1.03)**	**3.19 (0.93)**	**3.17 (1.02)**	**3.49 (0.95)**	**3.41 (1.12)**	**3.15 (1.03)**	**3.20 (1.21)**

*Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Appendix IV – Tables by Type of contract

Table 1.4. Percentage of male and female respondents, per type of contract

Type of contract	Male	Female
Employed UG/UMCG	36.9	60.4
Externally financed	41.1	54.8
Scholarship UG/UMCG	38.6	59.3
MD/PhD at UMCG	22.9	77.1
End of contract and finishing PhD in own time	41.3	54.3

Table 2.4. Percentage of respondents' nationalities, per type of contract

Type of contract	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Employed UG/UMCG	49.7	22.5	26.7
Externally financed	49.3	19.2	31.5
Scholarship UG/UMCG	15.7	12.1	70.7
MD/PhD at UMCG	77.1	11.4	11.4
End of contract and finishing PhD in own time	37.0	21.7	30.4

Table 3.4. Percentage of respondents in graduate schools, per type of contract

Type of contract	GSBSS	GSCF	GSEB	GSH	GSL	GSMS	GSP	GSSE	GSSS	GSTRS
Employed UG/UMCG	9.6	-	4.7	5.2	4.1	35.2	0.5	35.4	2.4	1.0
Externally financed	13.7	2.7	-	11.0	-	32.9	-	35.6	4.1	-
Scholarship UG/UMCG	9.6	3.2	4.3	8.9	2.9	23.9	0.7	37.1	6.1	1.1
MD/PhD at UMCG	-	-	-	-	-	100	-	-	-	-
End of contract and finishing PhD in own time	8.7	2.2	2.2	8.7	2.2	30.4	-	34.8	6.5	-

Table 5.4. Percentage of allotted time period for the PhD project, per type of contract

Type of contract	< 3 Years	3 Years	4 Years	> 4 Years	Other	Don't know
Employed UG/UMCG	1.7	10.5	79.0	5.8	2.5	0.3
Externally financed	1.4	6.8	64.4	17.8	6.8	2.7
Scholarship UG/UMCG	3.9	2.1	90.4	2.5	1.1	-
MD/PhD at UMCG	48.6	8.6	28.6	14.3	-	-
End of contract and finishing PhD in own time	8.7	4.3	82.6	4.3	-	-

Table 6.4. Percentage of full time/part time, per type of contract

Type of contract	Full-time	Part-time	Other/don't know
Employed UG/UMCG	87.5	10.2	2.2
Externally financed	47.9	23.3	28.8
Scholarship UG/UMCG	72.9	7.1	20.0
MD/PhD at UMCG	42.9	31.4	25.7
End of contract and finishing PhD in own time	-	-	-

Table 7.4. Percentage of current year of PhD, per type of contract

Type of contract	First year	Second year	Third year	Fourth year	Fifth year	Over five years
Employed UG/UMCG	36.5	22.8	21.0	13.4	4.6	1.2
Externally financed	27.4	27.4	24.7	13.7	4.1	2.7
Scholarship UG/UMCG	16.8	27.5	28.6	24.3	1.8	1.1
MD/PhD at UMCG	37.1	22.9	22.9	14.3	-	2.9
End of contract and finishing PhD in own time	2.2	-	8.7	8.7	50.0	30.4

Table 7.4.1. Percentage of junior and senior respondents, per type of contract

Type of contract	Junior	Senior
Employed UG/UMCG	59.4	40.1
Externally financed	54.8	45.2
Scholarship UG/UMCG	44.3	55.7
MD/PhD at UMCG	60.0	40.0
End of contract and finishing PhD in own time	2.2	97.8

Table 8.4. Mean (SD) of satisfaction with performance, project characteristics, and confidence, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Overall, I am satisfied with how I am performing in my PhD.**	**3.63 (0.95)**	**3.61 (1.02)**	**3.56 (0.96)**	**3.86 (0.95)**	**3.07 (1.14)**
Overall, my primary supervisor (promotor) is satisfied with how I am performing.***	**4.10 (0.66)**	**3.95 (0.79)**	**3.76 (0.83)**	**4.18 (0.80)**	**3.76 (0.90)**
Overall, my daily supervisor is satisfied with how I am performing.***	**4.10 (0.66)**	**4.03 (0.75)**	**3.88 (0.73)**	**4.21 (0.78)**	**3.68 (0.94)**
Overall, I know what my supervisors expect of me.	3.86 (0.87)	3.97 (0.76)	3.80 (0.82)	3.80 (0.83)	3.72 (0.91)
The workload in my PhD is high.**	**3.74 (0.89)**	**3.67 (0.83)**	**3.54 (0.89)**	**3.60 (1.06)**	**3.95 (0.91)**
The complexity of my PhD is high.	3.94 (0.89)	3.71 (0.91)	3.82 (0.86)	3.60 (1.12)	3.89 (1.15)
I am confident that I will, eventually, finish my PhD.	4.31 (0.78)	4.29 (0.86)	4.25 (0.80)	4.46 (0.56)	4.39 (0.95)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.***	**3.14 (1.25)**	**3.32 (1.19)**	**3.19 (1.25)**	**3.29 (1.12)**	**1.53 (1.11)**
I am confident that I will find a suitable and interesting job after I have finished my PhD.***	**3.70 (1.02)**	**4.05 (0.99)**	**3.49 (1.04)**	**4.34 (0.77)**	**3.67 (1.34)**

*Note: Answers were given on a scale of 1 (completely disagree) to 5 (completely agree). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 9.4. Progress of the PhD students with their thesis; percentage of respondents per statement, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Yes, I think I will be able to finish my PhD in time	46.2	45.2	38.6	31.4	8.7
No, I have fallen behind but I still think I can finish in time	18.4	26.0	30.0	45.7	-
No, I have fallen behind and I don't think I will be able to finish in time	14.9	15.1	18.2	14.3	4.3
I was unable to finish in time and am currently on an extension	3.9	2.7	1.8	-	4.3
I was unable to finish in time and am currently finishing my thesis in my own time	-	-	1.8	2.9	76.1
I have already defended my thesis or sent the manuscript to the assessment committee	0.2	-	-	2.9	4.3
I don't know	10.3	5.5	5.7	2.9	-
other[1]	6.1	5.5	3.9	-	2.2

Table 10.4. Mean (SD) of consideration of quitting, and satisfaction with the trajectory and the supervision, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Have you ever considered quitting your PhD project? [1]*	**4.10 (1.22)**	**4.10 (1.26)**	**3.98 (1.28)**	**3.91 (1.31)**	**3.46 (1.52)**
How satisfied are you with your PhD trajectory so far? [2]***	**3.71 (0.88)**	**3.62 (0.94)**	**3.46 (0.93)**	**3.80 (0.99)**	**2.89 (1.12)**
How satisfied are you with the supervision you receive? [2]	3.91 (1.02)	3.92 (1.02)	3.82 (1.02)	4.14 (0.73)	3.61 (0.93)

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).*

*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001*

Table 11.4 Mean (SD) of frequency and satisfaction with (online) supervision, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Frequency of (online) meetings with daily supervisor[1]* **	**2.56 (1.09)**	**2.65 (0.97)**	**2.67 (1.01)**	**2.69 (0.96)**	**3.49 (1.12)**
Frequency of (online) meetings with primary supervisor[1]* **	**3.27 (1.14)**	**3.68 (1.06)**	**3.36 (1.14)**	**3.53 (0.93)**	**3.95 (1.04)**
Satisfaction meetings with daily supervisor[2]	4.21 (0.95)	4.21 (0.99)	4.12 (1.00)	4.44 (0.82)	4. 03 (0.83)
Satisfaction meetings with primary supervisor[2] *	**4.03 (0.98)**	**4.21 (0.86)**	**4.05 (0.95)**	**4.26 (0.85)**	**3.65 (0.95)**

Note: answers were given on a scale from 1 to 5.
[1] (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] (1 = very dissatisfied, 5 = very satisfied).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 12.4. Mean (SD) of regarding the atmosphere within the department, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Formal relationships* **	**3.62 (0.69)**	**3.45 (0.69)**	**3.40 (0.62)**	**3.66 (0.81)**	**3.30 (0.77)**
Informal relationships* **	**3.47 (0.91)**	**2.94 (0.90)**	**3.22 (0.79)**	**3.39 (1.01)**	**2.99 (0.99)**
Sense of belonging* **	**3.83 (0.73)**	**3.61 (0.78)**	**3.67 (0.76)**	**3.96 (0.82)**	**3.42 (0.94)**

*Note: answers were given on a scale of 1 to 5; a higher score indicates a stronger and more positive sense of (in)formal relationships between colleagues. Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 13.4. Mean (SD) of impact of Covid-19 on the ability to engage in aspects of the PhD project, per type of contract

What impact has COVID-19 had on the ability to engage in this work:	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Data collection	2.16 (0.92)	1.87 (0.99)	2.30 (0.98)	2.08 (0.79)	1.82 (0.76)
Data analysis	2.65 (0.83)	2.53 (0.92)	2.54 (0.76)	2.55 (0.69)	2.35 (0.89)
Writing	2.75 (0.88)	2.67 (0.97)	2.81 (0.78)	2.90 (0.32)	2.50 (0.99)
Discussing ideas and findings with colleagues and peers	1.78 (0.85)	1.79 (0.86)	2.08 (0.93)	2.00 (0.78)	1.98 (0.72)
Dissemination and sharing research finding with stakeholders and other*	**1.89 (0.89)**	**2.06 (0.90)**	**2.27 (0.93)**	**2.00 (0.67)**	**2.10 (0.90)**

*Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 14.4. Mean (SD) of impact of Covid-19 on other aspects, per type of contract

What impact did COVID-19 have on your:	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Motivation to work on PhD project	2.57 (0.82)	2.37 (0.83)	2.62 (0.84)	2.50 (0.80)	2.49 (0.93)
Progress of PhD projects**	**2.16 (0.91)**	**1.89 (0.66)**	**2.37 (1.01)**	**2.58 (0.79)**	**1.80 (0.95)**
Future career prospects	2.74 (0.63)	2.69 (0.75)	2.67 (0.70)	2.73 (0.65)	2.50 (0.86)
Mental health	2.41 (0.81)	2.21 (0.71)	2.31 (0.88)	2.83 (0.94)	2.27 (1.07)
Work-life balance	2.63 (1.06)	2.47 (1.12)	2.60 (1.02)	3.25 (0.97)	2.63 (1.28)
Contact with daily supervisor/promotor	2.39 (0.82)	2.33 (0.84)	2.46 (0.84)	2.67 (0.65)	2.37 (0.77)

*Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 15.4. Percentage of effects attributed to COVID-19 pandemic, per type of contract

Due to the COVID-19 pandemic I currently... (multiple answers are possible)	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
feel anxious in social situations	13.7	5.3	21.0	8.3	7.3
feel overwhelmed in bigger groups of people	16.7	5.3	26.0	16.7	12.2
feel lonely	14.9	10.5	16.0	8.3	24.4
feel depressed	8.3	10.5	13.0	8.3	17.1
do not feel a sense of belonging to my research group	22.6	31.6	21.0	8.3	24.4
Other – please explain	13.1	15.8	16.0	16.7	2.4

Note. percentage calculations are based on number of PhD students who were doing a PhD during COVID-19 pandemic.

Table 16.4. Mean (SD) of mental health indicators, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
WHO score (0-100)[1]* **	**44.16 (19.58)**	**46.47 (18.62)**	**45.14 (20.17)**	**33.60 (17.17)**	**52.26 (21.42)**
GHQ-12 (0-36)[2] **	**13.33 (6.02)**	**13.10 (6.11)**	**14.44 (6.75)**	**11.86 (5.55)**	**15.94 (7.40)**
Mental health, current[3]* **	**6.75 (1.87)**	**7.07 (1.47)**	**6.75 (1.81)**	**7.63 (1.42)**	**5.74 (1.93)**
Mental health, during-COVID-19 pandemic[3]* **	**5.93 (2.08)**	**6.26 (2.15)**	**5.70 (2.21)**	**6.94 (1.68)**	**5.15 (2.35)**
Mental health during Bachelor's / Master's[3]	7.04 (1.74)	6.94 (1.62)	7.04 (1.77)	7.49 (1.22)	7.13 (1.80)
Do you feel happy in general?[4]* **	**6.91 (1.79)**	**7.12 (1.33)**	**6.80 (1.75)**	**7.80 (1.28)**	**5.98 (1.97)**
Resilience **	**3.35 (0.77)**	**3.36 (0.69)**	**3.26 (0.67)**	**3.75 (0.63)**	**3.14 (0.67)**

[1] *Answers were given on a scale of 0 = all the time to 5=at no time. A sum score of the 5 WHO items was calculated and multiplied by 4.*
[2] *Answers were given on a scale of 0 to 3. A sum score of the 12 GHQ items was calculated.*
[3] *Answers were given on a scale of 0 = extremely poor to 10 = extremely good.*
[4] *An answer was given on a scale of 0 = minimum score to 10 = maximum score.*
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 17.4. Percentage of 'In your experience, is doing a PhD affecting your mental health?', per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
No	8.8	8.2	6.1	14.3	-
Overall, doing a PhD has a large negative effect on my mental health	7.6	12.3	8.2	5.7	26.1
Overall, doing a PhD has a small negative effect on my mental health	12.4	6.8	12.1	-	8.7
Sometimes doing a PhD has a negative effect on my mental health, sometimes a positive effect	45.0	47.9	44.6	37.1	47.8
Overall, doing a PhD has a small positive effect on my mental health	12.7	11.0	8.9	22.9	4.3
Overall, doing a PhD has a large positive effect on my mental health	10.7	11.0	16.1	17.1	8.7
I don't know	2.9	2.7	3.9	2.9	4.3

Table 18.4. Percentages of aspects of doing a PhD trajectory that negatively affect mental health, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
High workload	35.7	35.6	28.9	22.9	50.0
Problems with work-life balance	33.9	32.9	35.7	28.6	56.5
Insecurities about future career	27.4	27.4	35.4	5.7	43.5
Insecurities about own capabilities	44.8	49.3	46.4	31.4	50.0
Not being able to finish in time or doubts about being able to finish in time	29.6	38.4	38.2	28.6	65.2
Not achieving good results or doubts about achieving good results	32.1	32.9	43.6	25.7	39.1
Issues due to practical setbacks in the project	26.4	31.5	25.7	34.3	37.0
Publication pressure	21.3	26.0	33.9	5.7	26.1
Problems with supervisors	13.9	12.3	17.9	5.7	21.7
Problems with colleagues	6.6	2.7	3.6	2.9	8.7
High level of competition in academia	16.2	11.0	20.7	5.7	21.7
Unclear expectations	23.0	23.3	23.2	14.3	28.3
Procrastination, lack of motivation	29.9	31.5	35.0	17.1	45.7
Other	5.9	6.8	6.4	-	13.0

Table 19.4. Mean (SD) of the different factors of burnout and engagement, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Burn out: Exhaustion* **	**3.60 (1.11)**	**3.57 (1.01)**	**3.74 (1.06)**	**3.23 (1.24)**	**4.28 (1.38)**
Burn out: Cynicism* **	**3.43 (1.42)**	**3.21 (1.48)**	**3.67 (1.33)**	**3.44 (1.43)**	**4.17 (1.42)**
Burn out: Professional efficacy	5.01 (0.78)	5.04 (0.71)	4.92 (0.85)	5.12 (0.75)	4.77 (0.83)
Work engagement: Dedication	4.70 (1.00)	4.72 (1.06)	4.61 (1.06)	4.77 (1.01)	4.44 (1.06)
Work engagement: Vigour	3.97 (0.97)	4.18 (1.02)	4.05 (0.98)	4.10 (0.90)	3.77 (1.08)

Note: answers were given on a scale of 1 (never) to 7 (all the time).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 20.4. Percentage reporting how often there are worries about future career, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Never	6.8	12.3	5.4	11.4	15.2
Rarely	22.5	24.7	14.3	31.4	15.2
Sometimes	39.8	35.6	37.9	31.4	26.1
Often	23.0	23.3	32.1	22.9	32.6
All of the time	7.8	4.1	10.4	2.9	10.9

Table 21.4. Percentage of types of career worries, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Not knowing what kind of career I want	36.7	27.4	32.1	31.4	30.4
Being unsure whether I am good enough for the kind of job I want	34.0	28.8	43.9	37.1	30.4
Having to move to another place for a new job	28.3	28.8	29.3	31.4	23.9
Feeling unprepared for the job I want	18.8	12.3	26.4	11.4	26.1
The high competition to obtain the job I want	38.1	30.1	49.3	31.4	41.3
Having to start a new job while my PhD thesis is not yet finished	21.8	15.1	21.1	22.9	50.0
The work-life balance in my future job	21.0	23.3	23.9	31.4	23.9
Being insecure about my skills in writing application letters and/or job interviews	12.9	13.7	21.1	8.6	19.6
Other	6.4	4.1	7.5	-	6.5

Table 23.4. Mean (SD) of statements about talking about mental health problems, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
If I were to experience mental health problems, I would know who I could talk to at the University/UMCG	3.16 (1.17)	3.10 (1.16)	3.35 (1.08)	3.00 (1.16)	2.87 (1.17)
If I were to experience mental health problems, I would like to talk about it with someone at the University/UMCG	3.18 (1.15)	2.83 (1.14)	3.35 (1.00)	2.88 (1.25)	2.95 (0.99)
If I were to experience mental health problems, I would talk about this with my primary supervisor	3.06 (1.25)	3.20 (1.26)	3.23 (1.19)	3.26 (1.22)	2.93 (1.26)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems	3.98 (1.08)	4.20 (0.93)	3.97 (1.03)	4.13 (0.83)	3.74 (1.15)
If I were to experience mental health problems, I would talk about this with my daily supervisor	3.51 (1.17)	3.82 (1.15)	3.51 (1.17)	3.61 (1.12)	3.35 (1.32)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems	4.14 (0.98)	4.30 (0.98)	4.08 (0.95)	4.33 (0.82)	3.95 (1.17)
I would talk about this with a professional outside the University/UMCG.	3.97 (1.02)	3.99 (1.08)	3.84 (1.04)	3.94 (0.94)	4.23 (0.81)

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

Table 24.4. Percentage of PhD students that knows about different forms of PhD support, per type of contract

Before filling out this survey, did you know that as a PhD student you have access to…	Employed UG/UMCG		Externally financed		Scholarship UG/UMCG		MD/PhD at UMCG		End of contract and finishing PhD in own time	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
the PhD Support website	72.5	27.5	56.2	43.8	75.4	24.3	60.0	40.0	73.9	26.1
Courses and workshops (through PhD support)	93.9	5.9	87.7	12.3	95.0	4.3	88.6	11.4	95.7	4.3
Career Perspectives series	89.7	10.0	91.8	8.2	86.4	12.9	65.7	34.3	93.5	6.5
individual counseling (through PhD support)	62.3	37.1	50.7	47.9	63.6	35.7	48.6	51.4	65.2	34.8
PhD psychologists	49.6	50.1	46.6	52.1	47.1	47.1	42.9	57.1	54.3	45.7
an independent ombuds person (onafhankelijke ombuds functionaris)	36.7	62.4	24.7	75.3	35.0	64.3	31.4	68.6	39.1	60.9
a confidential advisor (vertrouwenspersoon)	82.4	17.1	71.2	27.4	71.1	28.2	80.0	20.0	73.9	26.1
PhD mentor (only for GSBSS)[1]	91.1	8.9	90.0	10.0	81.5	18.5	-	-	100.0	-
PhD counselors at the faculty (only for GSSE)[1]	69.6	30.4	65.4	34.6	63.1	36.9	-	-	71.4	28.6
PhD counselors at the faculty (only for GSMS)[1]	43.4	56.5	16.7	83.3	52.3	47.7	45.7	54.3	35.7	64.3
PhD coach within Managing your PhD (only for GSMS)[1]	70.7	29.3	37.5	62.5	74.6	25.4	77.1	22.9	42.9	57.1

[1] *Note. percentages based on response of PhD students from those particular graduate schools only.*

Table 25.4. Percentage of PhD students who are experiencing or have experienced mental health problems during their PhD, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
No, I have never experienced mental health problems that affected my work	48.9	47.9	46.1	65.7	23.9
Yes, I have experienced mental health problems that affected my work	28.4	34.2	31.1	22.9	52.2
Yes, I am currently experiencing mental health problems that affect my work	16.4	11.0	14.3	11.4	17.4
Prefer not to say	6.3	6.8	8.6	-	6.5

Table 26.4. Percentage of PhD students who have talked about their mental health problems with someone at the UG/UMCG, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
I have never talked to anyone at the UG/UMCG about my problems	11.5	9.6	7.5	11.4	10.9
I have talked to my supervisor	23.4	24.7	23.2	14.3	41.3
I have talked to a colleague / colleagues	23.4	20.5	25.7	14.3	34.8
I have talked to the psychologist for PhD students	5.2	4.1	11.8	8.6	13.0
I have talked to the confidential advisor	4.2	5.5	2.5	2.9	6.5
I have talked to my PhD coordinator or mentor	2.5	1.4	2.9	2.9	4.3
I have talked to someone from Student Support or Career Services	0.8	1.4	4.6	-	4.3
I have talked to someone from AMD (Health, Safety and Environment Service), *e.g.* an occupational health worker	4.1	2.7	2.5	-	10.9
Yes, to a PhD counselor (available for FSE and UMCG)	1.7	1.4	1.8	-	6.5
Other	3.9	4.1	3.6	2.9	10.9

Table 27.4. Percentage and Mean (SD) of 'How helpful was talking to someone?, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
Not helpful at all	3.1	4.0	1.0	-	3.8
Hardly helpful	13.5	4.0	11.9	14.3	3.8
Somewhat helpful	39.6	36.0	40.6	28.6	65.4
Quite helpful	34.4	48.0	37.6	57.1	23.1
Extremely helpful	9.4	8.0	8.9	-	3.8
How helpful was/is it to talk about your problems with the person(s) you indicated you talk(ed) to in the previous question?[1] (Mean (SD))	3.33 (0.93)	3.52 (0.87)	3.42 (0.85)	3.43 (0.79)	3.19 (0.75)

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

Table 28.4. Percentage of PhD students who engage in structural activities in addition to their PhD, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
No additional activities	75.1	52.1	78.2	51.4	39.1
I have another job	6.9	37.0	7.5	20.0	43.5
I am on the board of an organization or actively involved in an organization	7.3	8.2	5.4	17.1	4.3
I am actively involved in a political party	0.5	1.4	0.7	-	-
I do voluntary work	4.4	4.1	3.9	5.7	6.5
I am an informal caregiver for a relative or other person	1.4	1.4	1.4	2.9	8.7
I am a professional / semi-professional athlete or musician	3.6	2.7	0.7	8.6	-
Other	3.9	8.2	3.2	5.7	2.2

Table 29.4. Percentage of working hours and vacation, per type of contract

	Employed UG/UMCG		Externally financed		Scholarship UG/UMCG		MD/PhD at UMCG		End of contract and finishing PhD in own time	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Do you generally work more hours than your contract requires?	49.7	45.2	46.6	41.1	37.9	36.8	57.1	37.1	-	-
On average, how many hours do you work extra a week (M, SD)	11.05 (12.36)		7.69 (4.26)		16.78 (18.63)		10.10 (8.95)		14.20 (11.31)	
Does working overtime cause you extra stress (answered by respondents who do work more hours)?	46.3	48.0	34.4	59.4	48.1	44.3	45.0	55.0	-	-
Do you generally take off all the vacation/leave days you are entitled to each year?	82.7	14.9	86.3	5.5	67.1	17.1	82.9	14.3	50.0	15.2
Does not taking off the vacation/leave days cause you extra stress (answered by respondents who do not take vacation/leave days)?	52.3	43.2	50.0	25.5	46.8	44.7	20.0	80.0	71.4	28.6

Table 30.4. Mean (SD) of respondents' work-life balance, per type of contract

	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PhD at UMCG	End of contract and finishing PhD in own time
I have difficulties balancing my work and non-work activities*	**2.95 (1.13)**	**2.95 (1.08)**	**2.96 (1.09)**	**2.77 (1.31)**	**3.48 (1.11)**
The demands of my work interfere with my life away from work**	**3.00 (1.14)**	**2.97 (0.99)**	**2.91 (1.15)**	**2.86 (1.19)**	**3.61 (1.02)**
The amount of time my work takes up makes it difficult to fulfil other interests**	**2.85 (1.14)**	**2.92 (1.05)**	**2.85 (1.09)**	**2.54 (1.20)**	**3.43 (1.11)**
Things that I want to do at home do not get done because of work demands*	**2.74 (1.09)**	**2.75 (0.98)**	**2.73 (1.04)**	**2.74 (1.12)**	**3.26 (1.16)**
My work produces strain that makes it difficult to fulfil other responsibilities and duties***	**2.85 (1.09)**	**2.93 (1.02)**	**2.83 (1.07)**	**2.56 (1.05)**	**3.52 (1.09)**
Due to my work, I have to make changes to my plans for activities outside of work	3.13 (1.16)	3.04 (1.21)	3.10 (1.11)	3.26 (1.17)	3.52 (1.15)
Overall, I believe that my work and non-work life are balanced**	**3.31 (1.09)**	**3.34 (0.96)**	**3.25 (1.01)**	**3.54 (1.22)**	**2.72 (1.11)**

*Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Appendix V – Tables per Phase of the project

Table 1.5. Percentage of male and female respondents, per phase of project

Phase	Male	Female
Junior	37.4	59.4
Senior	37.3	60.3

Table 2.5. Percentage of respondents' nationalities, per phase of project

Phase	Dutch	Nationality from EEA country (non-Dutch)	Other nationality
Junior	38.1	18.0	42.3
Senior	42.6	20.0	35.1

Table 3.5. Percentage of respondents in graduate schools, per phase of project

Type of contract	GSBSS	GSCF	GSEB	GSH	GSL	GSMS	GSP	GSSE	GSSS	GSTRS
Junior	10.1	1.0	4.5	7.5	4.0	34.5	0.7	31.5	3.3	0.3
Senior	9.0	1.1	3.1	8.3	3.3	31.8	0.2	34.7	4.0	2.0

Table 4.5. Percentage of respondents' type of contract, per phase of project

Phase	Employed UG/UMCG	Externally financed	Scholarship UG/UMCG	MD/PHD	End of contract	Other
Junior	60.8	6.9	21.5	3.6	0.2	5.7
Senior	43.6	6.1	28.7	2.6	8.3	8.6

Table 5.5. Percentage of allotted time period for the PhD project, per phase of project

Phase	< 3 Years	3 Years	4 Years	> 4 Years	Other	Don't know
Junior	4.2	9.9	79.0	3.3	3.1	0.5
Senior	4.2	5.3	74.3	9.2	4.0	2.8

Table 6.5. Percentage of full time/part time, per phase of the project

Phase	Full-time	Part-time	Other/don't know
Junior	75.2	8.1	9.5
Senior	61.9	11.0	7.9

Table 7.5. Percentage of current year of PhD, per phase of project

Phase	First year	Second year	Third year	Fourth year	Fifth year	Over five years
Junior	54.4	45.6	-	-	-	-
Senior	-	-	46.7	33.5	12.3	7.5

Table 8.5. Mean (SD) 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.* **	**3.68 (0.92)**	**3.51 (1.03)**
Overall, my primary supervisor (promotor) is satisfied with how I am performing. **	**4.03 (0.70)**	**3.93 (0.81)**
Overall, my daily supervisor is satisfied with how I am performing.*	**4.06 (0.66)**	**3.96 (0.77)**
Overall, I know what my supervisors expect of me. **	**3.86 (0.80)**	**3.82 (0.92)**
The workload in my PhD is high.*	**3.55 (0.91)**	**3.84 (0.89)**
The complexity of my PhD is high.	3.86 (0.85)	3.91 (0.92)
I am confident that I will, eventually, finish my PhD.	4.25 (0.79)	4.31 (0.83)
I am confident that I will be able to submit my thesis to the assessment committee before the end of my contract.* **	**3.49 (1.06)**	**2.71 (1.38)**
I am confident that I will find a suitable and interesting job after I have finished my PhD. **	**3.74 (1.01)**	**3.61 (1.12)**

*Note: Answers were given on a scale of 1 (completely disagree) to 5 (completely agree). Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 9.5. 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	53.9	29.0
No, I have fallen behind but I still think I can finish in time	20.1	22.8
No, I have fallen behind and I don't think I will be able to finish in time	7.1	23.9
I was unable to finish in time and am currently on an extension	0.2	6.4
I was unable to finish in time and am currently finishing my thesis in my own time	-	9.0
I have already defended my thesis or sent the manuscript to the assessment committee	-	1.3
I don't know / other	18.8	7.6

Table 10.5. Mean (SD) 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]* **	**4.27 (1.11)**	**3.80 (1.36)**
How satisfied are you with your PhD trajectory so far? [2]* **	**3.74 (0.85)**	**3.45 (1.01)**
How satisfied are you with the supervision you receive? [2]* **	**4.03 (.92)**	**3.74 (1.09)**

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).*

*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 11.5 Mean (SD) of frequency and satisfaction with (online) supervision, per phase of project

	Junior	Senior
Frequency of (online) meetings with daily supervisor[1]**	**2.54 (1.03)**	**2.84 (1.16)**
Frequency of (online) meetings with primary supervisor[1]*	**3.33 (1.10)**	**3.47 (1.18)**
Satisfaction meetings with daily supervisor[2]	4.29 (0.93)	4.10 (1.00)
Satisfaction meetings with primary supervisor[2] **	**4.20 (0.86)**	**3.90 (1.02)**

Note: answers were given on a scale from 1 to 5.
[1] (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] (1 = very dissatisfied, 5 = very satisfied).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 12.5 . Mean (SD) of regarding the atmosphere within the department, per phase of project

	Junior	Senior
Formal relationships***	**3.60 (0.65)**	**3.43 (0.73)**
Informal relationships***	**3.31 (0.83)**	**3.30 (0.98)**
Sense of belonging***	**3.84 (0.70)**	**3.63 (0.81)**

*Note: answers were given on a scale of 1 to 5; a higher score indicates a stronger and more positive sense of (in)formal relationships between colleagues. Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 13.5. Mean (SD) of impact of Covid-19 on the ability to engage in aspects of the PhD project, per phase of project

What impact has COVID-19 had on the ability to engage in this work:	Junior	Senior
Data collection	2.50 (0.93)	2.12 (0.93)
Data analysis	2.75 (0.71)	2.57 (0.84)
Writing	2.88 (0.64)	2.73 (0.90)
Discussing ideas and findings with colleagues and peers	2.38 (0.92)	1.91 (0.87)
Dissemination and sharing research finding with stakeholders and other	2.63 (0.74)	2.05 (0.90)

Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive).

Table 14.5. Mean (SD) of impact of Covid-19 on other aspects, per phase of project

What impact did COVID-19 have on your:	Junior	Senior
Motivation to work on PhD project	2.62 (0.52)	2.58 (0.86)
Progress of PhD projects	2.33 (0.71)	2.18 (0.97)
Future career prospects	2.67 (0.87)	2.70 (0.68)
Mental health	2.75 (0.71)	2.37 (0.89)
Work-life balance	2.67 (1.00)	2.64 (1.08)
Contact with daily supervisor/promotor	2.50 (0.93)	2.42 (0.81)

Note: answers were given on a scale of 1 (strongly negative) to 5 (strongly positive).

Table 15.5. Percentage of effects attributed to COVID-19 pandemic, per phase of project

Due to the COVID-19 pandemic I currently... (multiple answers are possible)	Junior	Senior
feel anxious in social situations	7.0	2.6
feel overwhelmed in bigger groups of people	2.0	3.4
feel lonely	3.0	2.7
feel depressed	2.0	1.9
do not feel a sense of belonging to my research group	3.0	4.2
Other – please explain	2.0	2.8

Note. percentage calculations are based on number of PhD students who were doing a PhD during COVID-19 pandemic.

Table 16.5 Mean (SD) of mental health indicators, per phase of project

	Junior	Senior
WHO score (0-100)[1]* **	**41.68 (19.05)**	**47.22 (20.78)**
GHQ-12 (0-36)[2]*	**12.91 (6.07)**	**14.38 (6.58)**
Mental health, current[3]* **	**6.97 (1.78)**	**6.56 (1.92)**
Mental health, during-COVID-19 pandemic[3]*	**6.04 (2.06)**	**5.81 (2.22)**
Mental health during Bachelor's / Master's[3]	6.85 (1.74)	7.33 (1.68)
Do you feel happy in general? [4] **	**7.05 (1.71)**	**6.75 (1.84)**
Resilience	3.39 (0.72)	3.27 (0.76)

[1] *Answers were given on a scale of 0 = all the time to 5=at no time. A sum score of the 5 WHO items was calculated and multiplied by 4.*
[2] *Answers were given on a scale of 0 to 3. A sum score of the 12 GHQ items was calculated.*
[3] *Answers were given on a scale of 0 = extremely poor to 10 = extremely good.*
[4] *An answer was given on a scale of 0 = minimum score to 10 = maximum score.*
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Table 17.5. Percentage of 'In your experience, is doing a PhD affecting your mental health?', per phase of project

	Junior	Senior
No	9.0	7.0
Overall, doing a PhD has a large negative effect on my mental health	4.0	13.6
Overall, doing a PhD has a small negative effect on my mental health	9.2	13.4
Sometimes doing a PhD has a negative effect on my mental health, sometimes a positive effect	45.2	43.2
Overall, doing a PhD has a small positive effect on my mental health	15.3	8.6
Overall, doing a PhD has a large positive effect on my mental health	13.7	11.4
I don't know	3.6	2.8

Table 18.5. Percentages of aspects of doing a PhD trajectory that negatively affect mental health, per phase of project

	Junior	Senior
High workload	29.5	39.2
Problems with work-life balance	30.0	39.2
Insecurities about future career	22.9	36.0
Insecurities about own capabilities	43.5	46.5
Not being able to finish in time or doubts about being able to finish in time	27.0	41.5
Not achieving good results or doubts about achieving good results	34.3	36.2
Issues due to practical setbacks in the project	22.0	31.4
Publication pressure	18.0	32.0
Problems with supervisors	8.8	20.8
Problems with colleagues	4.3	6.4
High level of competition in academia	13.7	19.5
Unclear expectations	21.1	24.4
Procrastination, lack of motivation	28.6	32.9
Other	5.0	7.9

Table 19.5. Mean (SD) of the different factors of burnout and engagement, per phase of project

	Junior	Senior
Burn out: Exhaustion	3.39 (1.09)	3.88 (1.14)
Burn out: Cynicism*	**3.15 (1.32)**	**3.86 (1.42)**
Burn out: Professional efficacy*	**5.05 (0.78)**	**4.92 (0.83)**
Work engagement: Dedication*	**4.81 (0.98)**	**4.53 (1.08)**
Work engagement: Vigour	4.13 (0.94)	3.90 (1.02)

Note: answers were given on a scale of 1 (never) to 7 (all the time).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001..*

Table 20.5. Percentage reporting how often there are worries about future career, per phase

	Junior	Senior
Never	10.2	6.6
Rarely	23.6	16.7
Sometimes	40.7	33.5
Often	18.9	32.0
All of the time	6.2	11.2

Table 21.5. Percentage of types of career worries, per phase of project

	Junior	Senior
Not knowing what kind of career I want	30.7	35.3
Being unsure whether I am good enough for the kind of job I want	34.7	37.1
Having to move to another place for a new job	23.2	33.1
Feeling unprepared for the job I want	16.8	23.3
The high competition to obtain the job I want	37.1	42.5
Having to start a new job while my PhD thesis is not yet finished	15.4	28.9
The work-life balance in my future job	22.4	22.1
Being insecure about my skills in writing application letters and/or job interviews	14.0	16.9
Other	5.0	8.6

Table 23.5. Mean (SD) of statements about talking about mental health problems, per phase of project

	Junior	Senior
If I were to experience mental health problems, I would know who I could talk to at the University/UMCG	3.22 (1.16)	3.14 (1.16)
If I were to experience mental health problems, I would like to talk about it with someone at the University/UMCG	3.26 (1.11)	3.12 (1.11)
If I were to experience mental health problems, I would talk about this with my primary supervisor	3.14 (1.23)	3.13 (1.25)
My primary supervisor would act supportively if I told him/her I am experiencing mental health problems	4.09 (0.96)	3.89 (1.13)
If I were to experience mental health problems, I would talk about this with my daily supervisor	3.53 (1.16)	3.57 (1.18)
My daily supervisor would act supportively if I told him/her I am experiencing mental health problems	4.19 (0.90)	4.06 (1.04)
I would talk about this with a professional outside the University/UMCG	3.87 (1.03)	4.04 (0.99)

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

Table 24.5. Percentage of PhD students that knows about different forms of PhD support, per phase of project

Before filling out this survey, did you know that as a PhD student you have access to…	Junior		Senior	
	Yes	No	Yes	No
the PhD Support website	72.3	27.7	71.2	28.7
Courses and workshops (through PhD support)	92.0	7.5	94.9	4.8
Career Perspectives series	84.9	14.6	89.5	10.1
individual counseling (through PhD support)	60.1	39.3	60.1	39.0
PhD psychologists	48.4	51.0	49.8	49.8
an independent ombuds person (onafhankelijke ombuds functionaris)	34.0	65.2	37.9	61.6
a confidential advisor (vertrouwenspersoon)	77.6	21.5	76.5	23.2
PhD mentor (only for GSBSS)[1]	88.9	11.1	87.8	12.2
PhD counselors at the faculty (only for GSSE)[1]	69.5	30.5	65.3	34.7
PhD counselors at the faculty (only for GSMS)[1]	45.5	54.6	40.1	59.9
PhD coach within Managing your PhD (only for GSMS)[1]	68.3	31.8	69.0	31.0

[1] *Note. percentages based on response of PhD students from those particular graduate schools only.*

Table 25.5. Percentage of PhD students who are experiencing or have experienced mental health problems during their PhD, per phase of project

	Junior	Senior
No, I have never experienced mental health problems that affected my work	55.8	39.2
Yes, I have experienced mental health problems that affected my work	22.9	37.9
Yes, I am currently experiencing mental health problems that affect my work	14.0	16.4
Prefer not to say	7.3	6.6

Table 26.5. Percentage of PhD students who have talked about their mental health problems with someone at the UG/UMCG, per phase of project

	Junior	Senior
I have never talked to anyone at the UG/UMCG about my problems	12.8	7.7
I have talked to my supervisor	14.7	32.4
I have talked to a colleague / colleagues	15.9	31.6
I have talked to the psychologist for PhD students	5.2	10.1
I have talked to the confidential advisor	2.8	5.1
I have talked to my PhD coordinator or mentor	1.6	3.9
I have talked to someone from Student Support or Career Services	1.4	2.9
I have talked to someone from AMD (Health, Safety and Environment Service), *e.g.* an occupational health worker	1.7	5.7
Yes, to a PhD counselor (available for FSE and UMCG)	1.2	2.6
Other	3.3	5.3

Table 27.5. Mean (SD) and percentage of 'How helpful was talking to someone?, per phase of project

	Junior	Senior
Not helpful at all	4.6	2.0
Hardly helpful	6.9	13.8
Somewhat helpful	40.0	42.7
Quite helpful	40.8	31.7
Extremely helpful	7.7	9.8
How helpful was/is it to talk about your problems with the person(s) you indicated you talk(ed) to in the previous question?[1] (Mean (SD))	3.40 (0.90)	3.33 (0.91)

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

Table 28.5. Percentage of PhD students who engage in structural activities in addition to their PhD, per phase of project

	Junior	Senior
No additional activities	72.4	66.4
I have another job	10.7	15.6
I am on the board of an organization or actively involved in an organization	7.6	6.8
I am actively involved in a political party	0.5	0.7
I do voluntary work	4.3	5.1
I am an informal caregiver for a relative or other person	2.1	2.2
I am a professional / semi-professional athlete or musician	2.8	2.0
Other	4.3	5.9

Table 29.5. Percentage of working hours and vacation, per phase of project

	Junior		Senior	
	Yes	No	Yes	No
Do you generally work more hours than your contract requires?	42.6	45.1	48.7	33.1
On average, how many hours do you work extra a week (M, SD)	11.70 (13.44)		12.65 (13.62)	
Does working overtime cause you extra stress (answered by respondents who do work more hours)?	39.6	53.1	53.8	39.4
Do you generally take off all the vacation/leave days you are entitled to each year?	76.6	15.9	73.3	14.2
Does not taking off the vacation/leave days cause you extra stress (answered by respondents who do not take vacation/leave days)?	41.8	49.5	64.9	33.8

Table 30.5. Mean (SD) of respondents' work-life balance, per phase of project

	Junior	Senior
I have difficulties balancing my work and non-work activities	2.80 (1.10)	3.15 (1.13)
The demands of my work interfere with my life away from work	2.83 (1.09)	3.22 (1.16)
The amount of time my work takes up makes it difficult to fulfil other interests	2.70 (1.09)	3.07 (1.14)
Things that I want to do at home do not get done because of work demands	2.58 (1.03)	2.95 (1.09)
My work produces strain that makes it difficult to fulfil other responsibilities and duties	2.70 (1.07)	3.06 (1.10)
Due to my work, I have to make changes to my plans for activities outside of work	3.04 (1.15)	3.27 (1.15)
Overall, I believe that my work and non-work life are balanced*	**3.41 (1.02)**	**3.13 (1.11)**

Note: answers were given on a scale of 1 (completely disagree) to 5 (completely agree).
*Significant differences are indicated in bold. *p < .05; **p < .01; ***p < .001.*

Appendix VI – Summary of PhD students' suggestions of what the UG/UMCG can do to increase social safety.

- Encourage more social interaction with colleagues:
    - Organize social events
    - Hang-out place/coffee corner for PhD-students in the department
    - Not planning meetings during lunch time
    - Host regular events for minorities such as different nationalities or for queers
- Inform PhD students more clearly of where they can go for help or when they have complaint
    - Repeated announcement in newsletter
    - Posters/flyers
    - Introduce (new) PhD-students in a more personal way to psychologist and confidential advisor, *e.g.* by organizing a meeting every half year
    - Communicate more clearly what the rights of PhD students are so they are more aware what is or is not acceptable when it comes to behaviour of colleagues/supervisors
    - More confidential advisors, possibly specialized for PhD students
- Offering (mandatory) training:
    - Intercultural competence
    - Active Bystander
    - Discussion on social safety, creating safe space to talk
    - Education against discrimination and racism
    - Make diversity and integrity training mandatory
    - Conflict resolution skills for those in leadership
- Concerning supervisors/promotors/mentors
    - Training in how to supervise
    - When supervisors/promotors are behaving in non-acceptable ways, there should be consequences to prevent future 'abuse' and continuation of unacceptable behaviours
    - Extend the mentorship programme *e.g.* by one-on-one meetings of PhD-student with PhD mentor
    - Enable feedback system to gather (anonymous) information from PhDs to monitor supervision quality
    - Facilitate peer mentoring among PhD students to share experiences
    - Introduce mechanisms for supervisors to encourage transparency, share rationale behind decisions, and clear communication
- Concerning relationship international PhD students and Dutch colleagues
    - Organize social events
    - Encourage speaking English with internationals around

    - Buddy system
    - More practical help for international PhD students when moving to the Netherlands (*e.g*. provide housing)
    - Allow international to celebrate their own holidays instead of focusing solely on Dutch holidays
- Facilities
    - Personal office space
    - Prayer room/place for wudu (practice of ritual washing before daily prayer)
- Pay more attentions to equity, diversity and inclusion in teams
    - Avoiding bias when hiring
    - Pay attention to diversity in teams
    - Encourage treating/appreciate PhD-students as fellow researchers, not as 'lower colleagues'
    - Ensure diverse representation in decision-making committees
- Other
    - Include social safety in R & O form
    - Apply zero tolerance policy in regard of sexism and racism (also to senior staff members)
    - Foster collaboration instead of competition
    - More contact between GS and PhD student (initiated by GS)
    - Create a platform for PhDs to share their concerns anonymously