



NAVIGATING STRESS, SUPPORT AND SUPERVISION: A QUALITATIVE STUDY OF DOCTORAL STUDENT WELLBEING IN NORWEGIAN ACADEMIA

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ABSTRACT

Aim/Purpose	This study addresses the need to understand the wellbeing of doctoral students and the factors influencing their academic trajectory.
Background	Doctoral students' wellbeing is crucial for their academic success and overall quality of life. This study explores the antecedent variables influencing doctoral students' wellbeing, complementing the Integrative Model on well-being in doctoral students.
Methodology	A qualitative case study approach was employed, involving in-depth interviews with 10 PhD students at a Norwegian university. Following the Integrative

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	Model on doctoral students' wellbeing, the study combined thematic and discourse analysis to examine students' experiences and perceptions.
Contribution	This research provides insights into doctoral students' experiences, feelings, and perceptions during their thesis process, contributing to a more nuanced understanding of factors influencing their well-being.
Findings	The results reveal that working conditions, particularly remunerated positions, significantly impact students' experiences. Common feelings include uncertainty, fear of failure, and stress, especially during writing. Stress and anxiety are prevalent, though often normalized. While loneliness is common, students generally report support from supervisors, peers, and family. Supervisors emerge as the primary source of support, with their relationship style greatly influencing student wellbeing.
Recommendations for Practitioners	Based on these findings and existing literature, the study proposes measures to enhance doctoral student well-being, including creating spaces for student interaction, implementing funding policies, offering mental health support, designing skill-building workshops, establishing mentoring programs, and providing supervisor training.
Recommendations for Researchers	Explore supervisory styles and their impact on student well-being in diverse academic contexts. Investigate the impact of supervisors' availability, time dedication, and communication patterns on doctoral supervision. Future research should examine supervisors' perspectives and investigate these relationships across different international settings using quantitative methodologies with larger samples to enhance generalizability.
Impact on Society	This research contributes to a deeper understanding of doctoral student experiences and offers a foundation for developing targeted interventions to support this population. Improving doctoral student well-being can lead to higher quality research outputs and more successful completion rates, benefiting academia and society.
Future Research	Quantitative studies with larger, more diverse samples from international contexts could further validate and expand upon these findings. Additional research could focus on the effectiveness of different supervisory styles and examine how institutional structures influence doctoral student wellbeing across various academic contexts.
Keywords	wellbeing, PhD students, supervisors, qualitative case study, academic stress

INTRODUCTION

Doctoral students' wellbeing has emerged as a critical concern in higher education, with implications extending beyond individual experiences to impact broader academic and societal outcomes (Levecque et al., 2017). Recent studies indicate growing concern about doctoral students' mental health and wellbeing due to the high-stress levels in this population (Bolotnyy et al., 2022; Evans et al., 2018). This significantly influences their research productivity, academic innovation, and the future of scholarly work. Studies have identified a widespread mental health crisis in academia, where intense publication pressure, funding competition, work-life imbalance, and career instability create a challenging environment that requires systematic institutional attention (Lau & Pretorius, 2019). Furthermore, the relationship between PhD students' wellbeing and the academic labor market is particularly significant, as these students represent the next generation of researchers and educators, which justifies

the importance of increasing the levels of resources to improve PhD students' wellbeing (Kulikowski et al., 2019). Therefore, understanding and supporting doctoral mental health is crucial not only for individual success but also for maintaining the quality and continuity of academic research and teaching in a context where the mental health of its members should be prioritized.

With regard to the requirements for entering academia, completing a doctoral thesis is a demanding and complex process that requires extensive effort over time and evokes a wide range of emotions. Despite growing research attention to doctoral students' well-being and achievements, many aspects of this multifaceted experience remain unexplored (Sverdlik et al., 2018, 2021). Doctoral candidates come from diverse backgrounds, and several variables influence their experience completing a thesis. Their state of mind can significantly impact their ability to complete the research, making PhD candidates' experiences fundamental to understanding their reality and the difficulties they encounter. In addition, this understanding facilitates the design of support strategies to improve their wellbeing.

This research was conducted in the Norwegian university context, which provides a unique setting for examining doctoral students' well-being. In this particular context, most doctoral students hold employment contracts as university staff members, combining thesis development with teaching duties. Specifically, within the social sciences at the Norwegian university where this study was developed, the doctoral program has a duration of four years, and most positions include funding, teaching responsibilities, and full employment benefits. This model differs significantly from many international contexts where doctoral studies might be self-funded or scholarship-based, without formal employment status. This employment-based model aims to provide financial security and professional integration. However, it also creates unique dynamics as doctoral students navigate their dual roles as both students and employees, influencing their future academic careers.

Given these specific contextual characteristics and their potential impact on doctoral experiences, it is crucial to establish a clear conceptual framework for understanding wellbeing in this setting. Although wellbeing has been widely studied and recent research has examined doctoral students' experiences, current literature lacks specific definitions that address the unique lifestyle and work environment of PhD candidates. Furthermore, studies on doctoral student wellbeing have generally proceeded without clear operational definitions, often relying on students' own interpretations of the concept, which limits our ability to develop a comprehensive understanding of wellbeing in this context (Sverdlik & Hall, 2020). Therefore, this research adopts the eudaimonic approach of the term presented by Diener et al. (2017), which understands wellbeing as being based on people's subjective perception of their lives, feelings, and experiences. To adapt this concept to our specific population and conduct a comprehensive study, we have used the Integrative Model on doctoral students' wellbeing (Martínez-García et al., 2024), which identifies variables that act as antecedents to wellbeing. Understanding these antecedent variables is crucial for designing and developing support strategies that enhance doctoral students' wellbeing and facilitate successful thesis completion.

THEORETICAL FRAMEWORK

ACADEMIC MENTAL HEALTH CRISIS IN DOCTORAL EDUCATION

Doctoral education faces a concerning mental health crisis that demands attention in academia. Recent studies in the literature have consistently revealed alarming rates of mental health challenges among PhD students. Some examples include a study conducted by Evans et al. (2018) with PhD students from 26 different countries (N = 2279), which found that the prevalence of anxiety and depression among these students was six times higher than average population rates. In another research study on mental health problems in PhD students (N = 3659), Levecque et al. (2017) reported that approximately one-third of PhD students face significant risk factors associated with psychiatric disorders, with depression being particularly prevalent. More recent evidence from Gushulak et al. (2023) reinforces these findings, highlighting the prevalence of mental health issues in doctoral education, particularly exacerbated by recent global events such as the post-pandemic period. A large-

scale survey by Woolston (2020) revealed that more than half of postdoctoral researchers contemplated abandoning their scientific careers due to work-related mental health issues, particularly affecting female researchers, while approximately half of the participants expressed a need for professional support to cope with depression and anxiety. Additionally, a systematic review of 26 international studies (Nicholls et al., 2022) identified multiple factors undermining researchers' wellbeing, including unstable employment conditions, rigid funding criteria, work-life imbalance, and excessive pressure for academic output, all contributing to psychological and physical health risks.

Collectively, these studies provide compelling evidence of a widespread wellbeing crisis in doctoral education, highlighting how academic career conditions and characteristics consistently affect PhD students' mental health across different global contexts. This convergence of findings underscores the critical situation faced by current doctoral students – the future generation of academics – and emphasizes the urgent need for further research on doctoral students' well-being to understand better and address these challenges.

ANTECEDENTS OF WELLBEING IN PHD STUDENTS

Research has identified multiple factors that directly impact doctoral students' wellbeing, operating at individual, interpersonal, and systemic levels. Understanding these antecedents and their influence on doctoral wellbeing is crucial for developing effective support strategies and interventions to improve doctoral students' experiences and outcomes. The following sections review what the literature reveals about these factors.

INDIVIDUAL FACTORS

Perceptions, emotions, and academic experiences

The way in which students experience the process of completing a doctoral thesis, as well as the associated feelings and emotions, are variables frequently studied in conjunction with students' performance. In general, research shows the prevalence of negative emotions such as anxiety, frustration, fear, stress, and exhaustion. One example is that of Moesarofah and Rahayu (2023), who, in their literature review, found that anxiety appears recurrently in the dissertation writing process. Bazrafkan et al. (2016) and Wang et al. (2019), in their respective research, also refer to the prevalence of stress and anxiety among doctoral students. Satinsky et al. (2021), in their meta-analysis, report that depression and anxiety are common among this group of students, according to the literature analyzed.

The literature also references the Imposter Syndrome and its relationship with the thesis process. Cornejo-Araya et al. (2022) reveal that some students do not feel valid for the task and experience doctoral studies as a negative and stressful experience. Among the moments that generate greater stress for students is the research presentation, which triggers an autonomic stress response, according to the results of Clemente-Suárez et al. (2021). The literature also mentions academic writing as an emotional process for PhD students (Fitzpatrick et al., 2021).

Work-life balance and career development

Work-life balance emerges as a crucial factor in PhD students' wellbeing, significantly impacting their mental, physical, and overall quality of life (Yusuf et al., 2020). Doctoral students often struggle with setting boundaries between academic and personal life, leading to potential burnout and decreased wellbeing. Research conducted by McAlpine et al. (2020) indicates that positive life-work relations help protect against exhaustion and cynicism, which are common challenges in doctoral education. While this balance helps mitigate the risk of burnout, it becomes particularly complex for female doctorate holders, who often report more challenging demands in managing these competing responsibilities within academia (Hjálmsdóttir & Rafnsdóttir, 2022).

As established in the literature, the maintenance of work-life balance is closely tied to institutional and social support systems. In this regard, authors such as Haider and Dasti (2021) affirm that effective mentoring significantly enhances research self-efficacy and work-life balance, while institutional

support through flexible schedules and tailored services plays a crucial role in students' wellbeing. Time management and priority setting emerge as essential skills, with students who effectively manage these aspects reporting better mental and physical health outcomes (Evwerhamre, 2020; Martinez et al., 2013). However, the challenge extends beyond daily management to include broader career development concerns, as uncertainty about career prospects and future employment opportunities has been identified as a significant source of stress for future academics.

INTERPERSONAL FACTORS

Supervision and mentoring relationships

Effective supervision and social relationships are fundamental aspects of the doctoral thesis process, serving as variables that affect the wellbeing of PhD students Sverdlik et al. (2021). This is affirmed by P. Määttä (2011), whose research finds that doctoral students significantly value social relationships with both their thesis supervisor and their family and friends. Specifically, supervision is conceived as a complex process that significantly influences both the student and the development of the doctoral thesis. Research focusing on the supervision process and the relationships between PhD students and their supervisors includes studies by K. Määttä (2012), Sambrook et al. (2008) and Pyhälä et al. (2015). The latter reveals that the relationship between student and supervisor significantly influences satisfaction with doctoral studies.

Tribe and Tunariu (2017) emphasize the importance of the relationship with supervisors, arguing that they should support and facilitate doctoral students' work. A final example in this regard is Kiguwa and Langa (2009), who provide research on how doctoral students experience supervision and how it affects their professional development. The literature also includes several studies focusing on supervisory styles. One example is Franke and Arvidsson (2011), who conclude that there are two styles of supervision that the authors call *research practice-oriented* and *research relation-oriented supervision*, which refer to the research approach shared by supervisor and PhD student. Regarding the management style, also Lindsay (2015), in her study, reveals that those who adopt a supervision style, called by the author "project-management style," help to complete the doctoral thesis. A final example is that of K. Määttä and Uusiautti (2016), who put the accent on the so-called "caring supervision style" with a commitment to their students to achieve the wellbeing of both students and supervisors. Lee (2008) and Halse (2011) offer research from the supervisors' perspective, providing insights into how they perceive their role and its implications.

Social and academic support networks

Research suggests that social support positively affects the well-being of doctoral students. Specifically, in their research, Jackman et al. (2022) revealed that higher levels of mental well-being were associated with students who reported high levels of support. Another example is the meta-analysis by Lozano-Blasco et al. (2024), which shows that social support – from peers, family, and the institution – is related to persistence in the doctoral program and prevents dropout, as well as mediating the consequences of stress.

It is necessary to point out that in the literature, a distinction is made between the support received from family and friends (social support) and that received from colleagues, supervisors, and the institution itself (academic support) (Mantai, 2019). The literature abounds with studies on the latter group. Specifically, Hlebec et al. (2011) state that "job-oriented social support" and the creation of networks in the work context are predictors of success in the development of doctoral studies. Corcelles-Seuba et al. (2023) also studied the support received from the research community and supervisors (N=1313), concluding that students with less support were more likely to have intentions of abandoning the doctoral thesis, as well as to suffer burnout and stress.

SYSTEMIC FACTORS

Institutional culture and support systems

The institutional environment plays a crucial role in doctoral students' experiences and success. Williams' (2000) research (N = 203) reveals that doctoral students often perceive the university campus social environment as unsupportive of their dissertation process. This finding highlights the need for institutions to develop supportive structures and foster positive social interactions among PhD students and colleagues (Weidman & Stein, 2003).

The literature suggests several institutional strategies to improve students' emotional well-being and productivity. Ferguson (2009) proposes the creation of dissertation writing groups, concluding that, in addition to benefits at the research production level, there are also psychological and motivational benefits. Barrett and Hussey (2015) suggest the use of visualizations as meta-cognitive tools that favor students' work processes and planning. Tribe and Tunariu (2017) offer suggestions for organization and timelines to facilitate the successful completion of the doctoral thesis with lower stress levels. Wang et al. (2019) propose offering counseling services for PhD students, training to improve the relationship between supervisors and PhD students, and flexibility in PhD studies. Another example of support strategies is offered by Lim et al. (2019), who propose using technologies to create a culture of commitment, improve communication between researchers, and develop services at department and university levels based on new technologies. Finally, social support should be taken into account since, as pointed out by Stubb et al. (2011), feelings of stress, anxiety, and exhaustion are less prevalent among students who have the support of their scholarly community and perceive it as empowering and inspiring.

Financial and job security

Financial and job security represent fundamental concerns for doctoral students, who generally face more precarious conditions compared to the general working population. Research indicates that financial stress is a major concern, as many students struggle to maintain adequate living standards on their doctoral funding and face uncertainty about their future (Szkody et al., 2022). This situation is exacerbated by various factors, including temporary contracts, lower financial incentives, and the impact of economic crises and academic reforms, which directly impact their mental health. According to the literature, financial stress influences wellbeing as it is associated with symptoms of depression and anxiety in doctoral students (Mackie & Bates, 2018; Parthi & Rohilla, 2017). Regarding job security, PhD graduates experience significant challenges, particularly in academia. Specifically, Friedrich et al. (2023) found in their research that job security is a predictor of anxiety and stress for doctorates. The transition from doctoral education to stable employment involves multiple obstacles, including the prevalence of temporary contracts, limited long-term career opportunities, and the demanding academic labor market. In addition, the precarious nature of academic employment and limited permanent positions create additional pressure that significantly affects students' mental health and career decisions.

Gender and diversity challenges

PhD students face significant gender and diversity challenges that are deeply embedded in systemic and cultural structures. These challenges disproportionately affect women, LGBT+ individuals, black minority ethnic groups, and students with disabilities, creating multifaceted barriers to equity and inclusion in academia (Reggiani et al., 2024). Research indicates that women PhD students often experience intersectional disadvantages, including bullying and both gender and racial discrimination (Woolston, 2020). Studies highlight how the competitive academic job market exacerbates work-life balance challenges, particularly for women pursuing postdoctoral positions (Ysseldyk et al., 2019).

Within the institutional landscape, minority PhD students frequently report insufficient support and feelings of isolation (Mattocks & Briscoe-Palmer, 2016). Although female role models can enhance academic self-efficacy, effective mentorship often remains scarce, particularly for women (Gillooly et

al., 2021). These systemic inequities are especially pronounced in STEM fields, where decreasing numbers of women and high resignation rates underscore the need for systematically embedded programs to increase female enrollment and retention (Mendoza-Denton et al., 2017).

EXISTING RESEARCH IN PHD STUDENTS' WELLBEING

Research on PhD students' wellbeing has demonstrated several strengths through systematic reviews and mixed-methods approaches that have enhanced our understanding of this complex issue (Jackman et al., 2021; Martínez-García et al., 2024; Schmidt & Hansson, 2018; Scott & Takarangi, 2019). Studies have successfully identified key and protective factors influencing doctoral students' wellbeing, including supervision quality, career uncertainty, work-life balance, social support, and positive student-supervisor relationships (e.g., Dhirasasna et al., 2021; Hazell et al., 2020; Jackman et al., 2021). Additionally, research has explored the transition to doctoral study and its impact on mental health, providing insights into early intervention opportunities (Jackman et al., 2021). The literature also includes studies that have provided valuable insights into specific populations and cultural contexts, contributing to a more nuanced understanding of the challenges faced by different groups of doctoral students (Mattocks & Briscoe-Palmer, 2016; Mendoza-Denton et al., 2017; Reggiani et al., 2024).

However, significant limitations and gaps persist in the current body of research. Methodologically, many studies rely on cross-sectional designs, which limit causal inferences about the relationship between PhD studies and mental health (Martínez-García et al., 2024). The field also suffers from inconsistent measurement tools, many of which lack validation for the PhD student population (Scott & Takarangi, 2019), limiting comparative analysis across studies. Additionally, there is a particular need for qualitative research that can capture the multifaceted and complex nature of doctoral students' wellbeing experiences, a dimension this study examines through in-depth interviews.

THE AIM OF THE STUDY

This study aims to conduct an in-depth analysis of PhD students' perceptions of their reality while working on their thesis, focusing on their feelings, experiences of loneliness, stress levels, social life, and relationships with supervisors. The goal is to provide a foundation for understanding the reality of PhD students and to develop ideas for action strategies to improve their wellbeing.

Specifically, this research addresses the following questions:

- How do doctoral students experience and manage their emotional wellbeing during their thesis process, considering both individual and job-related factors?
- What factors contribute to feelings of stress and loneliness among doctoral students in the academia environment?
- How do social interactions, relationships, and support systems influence doctoral students' wellbeing and thesis progression?
- What role does supervision play in doctoral students' experience and wellbeing?

METHODOLOGY

The study employs a qualitative case study methodology (Yin, 1994), using a semi-structured interview as a data collection instrument. The case study design was chosen as the most suitable approach due to the unique context of Norwegian doctoral education, where most PhD students hold positions as university staff members. The boundaries of this case study were clearly defined by focusing on doctoral students from a single department within social sciences, allowing for an intensive examination of wellbeing within this specific academic context. This approach was particularly appropriate for applying the Integrative Model of Wellbeing (Martínez-García et al., 2024), as it enabled a detailed examination of how institutional, personal, and social factors interact within the specific context of employed doctoral students. Through participants' testimonies, this methodology provided a better

understanding of PhD students' situations and the circumstances underlying their academic performance.

The study followed all institutional and national guidelines for research conduct that were in place at the time of data collection. The research adhered to all required protocols for data protection and privacy. All data were subsequently anonymized in accordance with privacy regulations, and the research was conducted following established ethical principles in educational research, including informed consent from all participants, protection of participants' confidentiality and privacy, and the right to withdraw from the study at any time without consequences.

PARTICIPANTS

The sample comprises 10 PhD students (eight women and two men) from a Norwegian university. All participants were from the same department within the social sciences area of knowledge. Participants have been selected through incidental sampling, determined according to established criteria for the data collection: students developing their PhD at the moment of the data collection and from the same department. The number of participants is determined by the principle of theoretical saturation for qualitative studies (Glaser et al., 1968). Data collection was stopped when new incidents no longer provided new information after coding a category multiple times.

INSTRUMENTS

The study is based on applying a 45-minute in-depth interview designed ad-hoc for the research, taking the aims of the study as a reference. The interview begins with an introductory paragraph of informed consent that indicates the voluntary nature of participation, anonymity, and confidential treatment of data. After that, there are different sections, such as a brief introduction of specific questions that they can take as a point of reference and make their speech about the issues they consider more important in the topic. The interviews covered the following topics:

- General information and demographic data.
- Experiences of the PhD process and encountered hindrances.
- Feelings experiences, including stress, anxiety, or emotional exhaustion.
- Social relationships.
- Relationship with the supervisor.

To ensure anonymity, interviews were coded. These codes appear at the end of each quote in the results section. The interviews were recorded for later transcription.

PROCEDURE OF DATA COLLECTION

Interviews were conducted at the participants' universities, either at their personal desks or in meeting rooms. All interviews were audio-recorded for later transcription.

DATA ANALYSIS PROCEDURE

The qualitative analysis was conducted using a combination of Thematic Analysis (Braun & Clarke, 2006, 2022; Bryman, 2012) – particularly suitable for studies within an existing theoretical framework while remaining open to emerging themes – and Discourse Analysis approaches. In our case, we worked within an established framework, the Integrative Model, on doctoral students' well-being (Martínez-García et al., 2024). Therefore, the coding process combined deductive codes derived from the theoretical framework with inductive codes emerging from the data itself. The data analysis process began with the familiarization with the data through repeated reading of transcripts, followed by systematic initial coding based on the Integrative Model. These initial codes were subsequently reviewed and redefined in relation to both the coded extracts and the entire interviews.

Once the interviews were transcribed and to enhance analytical rigor, regular team meetings were held to discuss and refine the coding framework. Data analysis involved content analysis through the

development of a category system, and the NVIVO 10 software package was used for the analysis. The category system that has been designed is developed ahead (Table 1).

Table 1. Category system

Code	Category	Meaning
JC	Job condition	Characteristics and terms of employment contracts for doctoral candidates. This category encompasses factors such as contract length, additional duties, and workplace facilities provided to PhD students.
P&F	Process and feelings	Students' perceptions of the thesis writing process and the associated emotional responses. This category explores both the practical challenges of thesis writing and the emotional journey students undergo, including their coping strategies and emotional fluctuations.
SAPS	Stress, anxiety, and physical symptoms	Stress, anxiety, and physical symptoms experienced during thesis completion. This category encompasses the psychological challenges and physical manifestations of stress that PhD students experience during their thesis completion process.
LNSS	Loneliness	Experiences of social disconnection and solitude among PhD students. This category explores the various dimensions of loneliness and social isolation experienced by PhD students, including both academic and personal aspects of social disconnection.
SI	Social interactions	PhD students' relationships within and outside academia. This category explores the various social relationships and interactions that PhD students maintain during their studies, both within the academic environment and in their personal lives.
SPV	Supervisor	Nature of the relationship with the supervisor and the support they provide. This category examines the multifaceted relationship between PhD students and their supervisors, including the nature of their interactions, the types of support provided, and the overall quality of the supervisory relationship.

FINDINGS

The results of the study are presented below according to the research objectives. First, we discuss the characteristics of the work that the participants perform as doctoral students. Second, we explore the feelings and hindrances experienced in the process of completing the thesis. Subsequently, we examine the stress and anxiety suffered, followed by the feeling of loneliness experienced by the participants. Finally, we analyze their social life and relationships with their supervisors.

WRITING THE THESIS AS A FULL-TIME JOB

One of the aspects that characterizes the study is the unique context in which the participants develop the doctoral thesis. At the university where the data were collected, all participants were pursuing their doctoral studies on a contract basis. This means they received a salary for a period of four years, had assigned teaching obligations, and enjoyed the rights of any university employee (e.g., paternity and maternity leave).

I'm sure in Norway, it's quite ... the arrangements are quite nice. You get paid and you know, you can actually combine this is more job within, within higher education for me. (Interview 3)

Although there was no specific question about this arrangement, the majority of participants referred to it at some point during the interview, relating it to various aspects of their doctoral experience that it most influenced.

In general, the testimonies refer to positive aspects of this fact, with participants commenting that they feel fortunate for their circumstances. Some examples include:

I feel really, really lucky. Because I know that it's a huge opportunity ... and then Norway, you get paid while you're studying, so it's not that many people that get this opportunity. (Interview 7)

I think I just keep, if I think of it, as this is my job, this is what I'm being paid to do. And I think it's pretty awesome. (Interview 5)

However, it is evident that this fact substantially influences the participants, making their conditions as students similar to those of a work environment. This fact shapes the process of completing their thesis as well as the feelings generated and their perceptions. One aspect to highlight is that despite being employed, they are working in a university context with the conditions typical of academia.

This must be taken into account as working conditions in the university context are particular and different from any other work environment. These include academic freedom, the absence of a senior manager or boss who directly determines their work, the possibility of time management, and flexibility in workplace attendance, among others. These aspects influence students and their perceptions and experiences. One participant explains it as follows:

Here, a PhD position is much more like a job, you know, I have a contract, I have pay, I have sick leave, I have a set amount of time to do my PhD, I have teaching responsibilities. So, the way I see it is like if I look at it as a job, it's a really great job for four years, I have flexibility, I'm my own boss, to a large extent, I can focus the way I work, you know what I work on. And I'm pretty sure I will never in my life have as much time and freedom to kind of write my mind. So those sides are all good. But at the same time, you have to work on the same thing for four years, mostly by yourself, which is boring and demotivating. (Interview 5)

This analysis reveals how the contractual nature of doctoral studies shapes doctoral students' experiences and wellbeing. On the positive side, job-related factors such as a stable salary provide financial security, enabling life planning and work-family stability. Additionally, this early immersion in academia facilitates professional integration and support networks, allowing students to understand the professional academic environment and familiarize themselves with university structures, requirements, and institutional dynamics. However, the data shows that students must navigate a dual identity as this arrangement also presents challenges. Students face uncertainties associated with starting a new position, navigate the inherent solitude of academic work, and sometimes struggle to establish support networks. Departmental culture and climate can significantly impact their experience while teaching responsibilities and administrative tasks, though valuable for professional development, can detract from thesis progress. These findings suggest that the employment structure, while providing essential stability, introduces its own set of challenges in managing the psychological demands of sustained, independent research work that can influence doctoral students' wellbeing.

FEELINGS AND HINDRANCES IN THE THESIS PROCESS

When participants were asked about how they felt in the process of writing a thesis, we received diverse responses. However, they can be categorized into two groups. On the one hand, there are the feelings experienced in the process of doing the thesis: challenge, self-evaluation, and impostor syndrome, writing as a difficult process, pressure from other tasks or time constraints, stress/pressure related to family/maternity responsibilities, and lack of social interaction. On the other hand, there are general feelings: stress, anxiety, feeling overwhelmed, and positive emotions.

Referring to the first group, feelings about the process, three of the participants perceive **the process of completing the thesis as challenging** due to the difficulty of the task and what it requires of them:

It's challenging. It's a challenging task. (...) I'm asking myself more and more, what more can I contribute in this area? So, it's challenging ... (Interview 1)

This is intellectually challenging, and that sort of, you know, impacts also ... let's put it this way, your emotional setting or your emotional condition because this challenge of getting a better understanding of your topic and trying to ... you know, revise it constantly rewrite constantly, this is, I think this is the most challenging process for me. (Interview 4)

I think it's challenging. Because I always have very high expectations, to my own work. (Interview 8)

This perception of the doctoral thesis process as challenging appears linked to the high academic standards the students set for themselves. The recurring emphasis in the quotes on intellectual challenge reveals how doctoral students perceive academic expectations, leading to a complex relationship between professional development and personal pressure.

Likewise, references are made to self-evaluation processes and feelings related to impostor syndrome or the perception that they cannot perform the task or are not sufficiently competent:

Sometimes evaluate yourself and feel silly a bit. (Interview 1)

However, these feelings or perceptions are mostly mentioned when participants are asked about their psychological hindrances. In this case, we have individuals who perceive that others possess knowledge they lack. One participant refers to this as uncertainty in oneself.

And all I'm feeling that maybe everybody else knows ... and me, I don't know. Yes, that kind of uncertainty in yourself and how much you can do, you know? Yeah, that's my feeling. (Interview 1)

On the other hand, we find testimonies affirming that the desire for perfection and the fear of failure arise in the process, sometimes making them less efficient in their tasks.

... that I always want to do the things. I want to do everything good. I want to do everything right. I don't want to, I'm afraid of failure. (Interview 7)

Oh, I think that I want it to be perfect. And I just wanted to be too good, which is ..., stops me from being very efficient. (Interview 8)

Others talk about not feeling confident enough and about how this perception or feeling has improved throughout the thesis process.

I think overall, like emotionally and psychologically, it's more of a confidence thing of going. My work is no worse than anyone else is. And also having the confidence to come to a conclusion (...) And I recently I'm like I think I have as much authority as anyone to have an opinion on what I think is happening, and to make suggestions. (Interview 5)

Finally, on this topic, in one of the testimonies, we find that the student is worried about not demonstrating knowledge to the supervisor.

I feel like in the beginning, there was more worrying about looking stupid in front of my supervisor. (Interview 2)

These feelings of inadequacy or impostor syndrome can be interpreted as manifestations of the transition from student to independent researcher and the fears that emerge from this process. This complex psychological transition reflects how the combination of high personal standards and perceived knowledge gaps creates a particular vulnerability in early stages that can be influenced by aspects related to students' personality traits and other associated personal variables. The gradual improvement in confidence will be part of the developmental process of establishing academic identity and engaging in personal and psychological work when needed.

There is a second group of testimonies that, when asked about their feelings when writing the thesis, refer to the writing process as being difficult. We call this category "writing is hard," and some testimonies that illustrate it are the following:

Right now, I'm sort of working on the first article or chapter, which will go into the sort of overall thesis. And that is, you know ... writing is hard. (Interview 2)

It's a bit hellish because I find the writing very hard. I like doing the research and I knew the field where if I'm writing up really hard, but it's okay (...). But I mean, the writing, writing stuff is hard. (Interview 5)

So ... it's always hard to get started in a way. It's when I started writing, for example, for instance. (Interview 8)

In some cases, this writing process is perceived as a source of stress.

So, I mean, I think in general, I find the writing very hard. And I suppose that's more of a skill thing. But I get quite stressed about the writing, because I know I'm not very good at it. And I'm much better at talking about my work than writing about my work and that has been like a lifelong problem. And that makes me avoid the writing, because it's hard, and I'm a bit shifty. And then I'm not happy with what I've written. (Interview 5)

There is a consistent identification of writing as a significant challenge, which reveals how the transition from thinking to written expression has become a critical milestone in doctoral progress. This difficulty is especially significant as writing is the main way doctoral students demonstrate their academic capabilities. Therefore, the emotional stress associated with this process suggests this is a critical point in the development of PhD students as academics.

The **pressure to balance other tasks**, such as the teaching obligations required by their contracts, with thesis work is another element that participants mention. **The pressure of the time they** have to finish the thesis is another element that the participants give in response when they are asked both about how they feel and the hindrances they find:

And right now, I'm feeling some time pressure in terms of sort of conflicting commitments with teaching. I'm teaching a bunch this fall, working on other parts of the dissertation (...) I feel like I've done like six months, and I haven't done anything (...) So, a year and a half in it feels like ... I have too much to do, but I know at least what I want to be working on. (Interview 2)

We also found a case that refers to the time requirement that the research demands and mentions it as the greatest hindrance:

Well, so I have a family and I have two small kids. They're four and seven. And so, really, in some ways that helped me structure my day, I need to be effective when I'm here. But now that I'm working on my first article, I realize that it's not the kind of thing that you can do from nine to four. It's like a 24 hours project for quite a few months, really. And so that's the, that's the hardest struggle of it to make sort of everyday life work. (Interview 10)

As shown in the previous section of results, the job-oriented PhD creates specific demands on students' time. This is evidenced by their struggle to balance multiple demands in both work and personal contexts. In this sense, teaching obligations and family responsibilities create tensions not just with time management but with the focus required for thesis work, as students have to manage different types of cognitive and emotional demands.

Regarding the second group, general feelings described as **stress, feeling overwhelmed**, or even **experiencing anxiety** are also found to be related to the process of completing the doctoral thesis, as reflected in testimonies such as the following:

I think it's stressing now, at the end. And there's been ups and downs, I would say. So sometimes really frustrated, stressed. A bit anxious at one time. Because one paper didn't turn out the way we planned it to. (Interview 6)

I also feel kind of stressed about the responsibility that comes with this opportunity. So, it's sometimes it's difficult even I know I just started, but I feel like I have these feelings of stress coming. (Interview 7)

I think sometimes I feel anxiety. Yeah. Because sometimes, I may have no idea. But maybe I just stop on one point and cannot escape. (Interview 9)

However, we found one participant who comments explicitly that he has not experienced these feelings:

I guess, during my PhD, but I haven't had this really emotional distress or psychological anxiety periods of that. (Interview 3)

Specifically, one of the testimonies refers to the fact that this stress is associated with having everything ready to be able to enjoy maternity leave, noting that it is different from the stress felt at the beginning of the thesis:

So that, in addition to this sort of pressure of getting ready to go out on maternity leave is, is one kind of stress, I think that's a really different kind of stress than where I was a year ago, when I was like six months into the PhD program. (Interview 2)

Although there is a specific question about **loneliness in the process of writing the thesis** and there is a category for it, two of the participants refer to it when asked about the general feelings of the thesis process.

The lack of meaning or social interaction in daily life is, of course, the biggest negative feeling. (Interview 3)

But I would like to say that there's a feeling of loneliness. (Interview 1)

Finally, we refer to the last category analyzed. This includes cases in which the thesis has generated **positive feelings such as happiness, motivation, and excitement:**

I've been excited about the results we found, both my collaboration partners, our progress. So, both positive and negative feelings. (Interview 6)

I felt really motivated. (Interview 7)

Of? Well, it's, you know, I think it's scary in a good way (...). I mean, it is supposed to be a contribution to the literature, so it has to be on a higher level. So that is scary, but it's fun at the same time. And, yeah, I mean, I often feel like I'm doing things that I really don't know how to do, but it's not a negative thing. (Interview 10)

The testimonies show a complex emotional landscape, ranging from stress and anxiety to excitement and motivation, and reflect the multifaceted nature of doctoral studies. The coexistence of positive and negative emotions suggests that wellbeing in this group of students is a dynamic process influenced by academic, personal, and institutional factors. This fact justifies the need for an in-depth personal analysis of each case.

STRESS AND ANXIETY FEELINGS IN THE THESIS PROCESS

Another category of our study refers to experienced stress or anxiety in the process of completing the thesis, as well as the physical symptoms experienced. Of the total participants, six students claim to have suffered stress or anxiety, as illustrated by the following comments selected as an example:

I mean, of course, you feel stressed and you feel you're nervous. (Interview 3)

I think it's stressing now, at the end. And there's been ups and downs, I would say. So sometimes really frustrated, stressed. A bit anxious. (Interview 6)

However, in some cases where participants respond negatively to the question, their testimonies reflect that they have experienced physical symptoms, such as fatigue, despite not identifying them as symptoms derived from a state of stress.

I don't think so. No, no, nothing ... I mean of course, I'm stressed in the sense of that. That's always something to do. And they are certainly recently there was a period where I was like, let's call it tired or exhausted. (Interview 4)

Not during PhD I think ... I mean, I've had periods where I've been extremely tired, definitely, and that's maybe a physical symptom, but not any like anything more than that. (Interview 8)

We also find cases that normalize stress, stating that it is something common that all people experience and that this job is not more stressful than any other.

All these small stressors, of course, but I haven't like I felt I need to be on sick leave for a couple of weeks to get my head strength again. It's ... it hasn't been very severe. Everyone feel stressed ... and I feel stressed sometimes. (Interview 3)

But to be honest, I don't think it's necessarily the way it's done here, at least, it's not necessarily any more stressful than any job because you have this huge deadline of finishing your PhD. (Interview 5)

This normalization of stress in PhD students reveals an academic culture where pressure is seen as inherent to the process. Furthermore, the tendency to compare doctoral stress with other professional contexts and minimize it suggests there is a need to address students' perceptions of stress with the aim of clarifying what constitutes normal versus concerning stress levels in a work environment. These aspects could be addressed through institutional support or preventive training strategies that promote mental health.

Regarding the causes that trigger the feeling of stress experienced, we found that these are varied and different in each case. These can vary even for the same participant, and the same person can refer to multiple triggers for the stress suffered. An example is that of participant 7, who establishes that the stress felt is due to his own personality and character:

I think it's more like a personal thing because I have that kind of personality that gets stressed. (Interview 7)

However, this participant also states that another cause of the stress suffered is the responsibility felt regarding the contract acquired.

But I also feel kind of stressed about the responsibility that comes with this opportunity. (Interview 7)

We also find cases where stress generators are the lack of self-confidence or uncertainties about parts of the thesis or some of the publications associated with it.

Maybe self-confidence in me as a researcher. (Interview 6)

There was this one time where we struggled with one paper. And we have two or three papers in our thesis. And then I really felt anxious and lost, because I didn't know what the third paper was going to be. (Interview 6)

Before presenting something or like you admit the paper and you're like, "oh, my god, that was probably wrong ...!" (Interview 3)

Other stressors mentioned in the interviews are related to family issues, compatibility with raising children, or maternity leave:

So that, in addition to this sort of pressure of getting ready to go out on maternity leave is, is one kind of stress. (Interview 2)

I have two children who have like health issues, which means they don't sleep, I've been incredibly stressed and exhausted. (Interview 5)

Also, due to organizational reasons, deadlines, or timetables:

I think I coming into the last year, and I imagine I will be stressed when I'm having to like finalize things and send it off. (Interview 5)

I was very stressed to come back to books taken me a lot of time, months to really come back to read, that was really stress, and I realize that there is not time for that. You have to read, you have to do the assignments, and that is stressful. (Interview 1)

The diversity of stress triggers demonstrates how personal characteristics interact with institutional demands, family situations, and academic expectations. Based on the testimonies, we can affirm that whether arising from internal pressures or external obligations, these factors reflect the complex relationship between individual factors and the demands of doctoral studies.

Regarding the physical symptoms associated with stress, not all participants claim to have suffered from them. However, among those that are mentioned are difficulty sleeping or a lack of mental clarity:

I cannot sleep well (Interview 9)

I felt very sick and got lost completely (...) Mentally disoriented, that instead of reading, you find yourself thinking of other things far away, or your family, your books ... in the end, you have lost the day ... and that evaluation stresses you. (Interview 1)

The manifestation of physical symptoms associated with stress or anxiety highlights how academic stress transcends psychological boundaries and affects PhD students' general well-being. The variation in reported symptoms and their recognition suggests different levels of awareness and coping strategies among doctoral students who deserve further study to develop appropriate support services.

LONELINESS AND THE PHD

This category includes testimonies that refer to the feelings of loneliness experienced by students, how they perceive this loneliness, and what motivates it. The results show loneliness in different areas: as a solitary job because of the characteristics of the work, because they don't have contact with other people or colleagues, because of a lack of presence of the supervisor, or because of a lack of institutional support.

Of the total number of interviews, four participants stated that they did not feel alone in the process or, if they did, they did not experience it negatively due to having the support of their supervisor and/or colleagues or because they were part of a project. Therefore, when asked if they have felt alone in the process, responses such as the following have been obtained:

No, not really, because ... Well, I feel alone with my own thinking, because I know no one can understand really how I feel, but I've not physically alone. And I always have colleagues, and my two supervisors are available and helpful. (Interview 7)

No, not really. I mean, it has been sort of a good sense of loneliness. I don't mind working alone. I enjoy that because at the same time, I'm part of a bigger research project. I can sort of get support and discuss things easily with colleagues that are working in the same project. (Interview 10)

It is, of course, a one man show in the sense of that there's no one who writes that thing for you. But you can get and you have a support structure, whether it concerns your supervisors or whether it concerns colleagues ... (Interview 4)

Although these testimonies share a common thread indicating that students either do not feel lonely or perceive it as a normal part of the doctoral process, this divergence in experiences of loneliness

appears to be closely tied to students' integration into academic networks and research projects and their understanding of the thesis process. As we will see in the next section, the presence of structured collaboration opportunities emerges as a crucial factor in mitigating academic isolation, suggesting that institutional initiatives can influence students' sense of connection with the department or the faculty.

The rest of the participants do refer to the loneliness they felt and how it has affected their process of completing the thesis. An example of such testimony is the following:

The biggest emotion now is loneliness. (...) I live myself. So, I think sometimes I can't communicate to other people. (Interview 9)

On several occasions, the participants affirm that this loneliness and lack of contact with others brings a lack of meaning or motivation to their work:

The biggest problem for me is sort of the lack of contact with people in everyday work. Because it doesn't get that meaning of ... you know, when you see people or help people or do something for people ... in me, you get this immediate Oh, my job is worth something! But when you're sitting in your office and you think, well if I die ... You have to find the motivation or like meaning in the work. (Interview 3)

I find hardest in terms of motivation is the isolation of it. Because I don't do my best work sitting alone in a room. (Interview 5)

The testimonies reveal a link between isolation and motivation, highlighting how social connection serves not only an emotional function but also impacts research productivity. This finding reveals the essential role of the community in sustaining academic engagement and maintaining social and academic networks.

In relation to the causes of loneliness, on several occasions, it is due to **academic issues and organizational reasons**. Also, belonging to other areas of knowledge seems to isolate students instead of enriching them. In this case, from the testimonies, it is evident that the departments do not promote multidisciplinary, nor do they provide support to people who research topics in other areas of interest different from those developed in the same department, so they are forced to seek support in other departments or areas:

... this also has to do with me coming from sociology to another department. (...), people in academia they're very like shut offs and they work on their things. Even though we have a research group (...). I haven't felt the connection with other people like "oh yeah you work on the same thing, let's discuss this ..." (Interview 3)

But the challenge in this respect is definitely if you do not have colleagues, for example, PhD colleagues that work on the same area as you do. And this is particularly the case in my field right now (...). I have to seek for support by other PhD colleagues outside of my department. (Interview 4)

We also find testimonies that refer to the fact that they are not supported by the research groups they belong to, which increases their feeling of loneliness.

Here the whole idea is you're supposed to be attached to a research group. (...) I think our research groups, they're not always great at supporting people, or making people feel involved if their research isn't a neat fit of the research group. (Interview 5)

We also found that the issue of belonging to research groups of departments differs from those in which they were trained; this fact causes doctoral students not to feel integrated into the organization.

At this department, we are organizing research groups. So, we have different groups, and the size of the groups is different. And the research group that I am part of is two departments, at this department and another department from the same faculty, and most of the members of the group are

in the other department. And it's only me and three other persons in the field right now, and then PhD students at my department in my research area. So, I think in that sense, I found a bit lonely. (Interview 8)

An important aspect to consider in this regard is that departmental structures and research topics emerge as either facilitators or barriers to social integration. The previously mentioned institutional organization of academic work can promote isolation, particularly for researchers working across traditional disciplinary fields who are in the early stages of their academic careers.

Another aspect to consider from the interviews is that when the participants talk about loneliness, the topic of the supervisors, the relationship that exists with them, and the perceived support that appears in their testimonies. In general, the participants feel satisfied and accompanied by the supervisors, as illustrated by the following comment:

I think I've had pretty good supervision. (Interview 2)

Specifically, in cases like the following, the supervisors are the ones who, with their periodic meetings, compensate for the loneliness felt by not having colleagues with whom to share reflections on their research:

I write until when I'll have an appointment with a supervisor. Nobody will look into my script and say this or that. (Interview 1)

We also found that the supervisors are the ones who accompany them and make up for the shortcomings experienced in the case of those students who belong to departments of other areas of knowledge and who have been previously described.

... my supervisor that is also a case like that. She's also from sociology. So, when she came in, and she became my main supervisor, it was like, finally! We understand each other. (Interview 3)

However, we also found a single case in which the participant stated that the supervisor contributed to the feeling of loneliness. An example is this student who answers affirmatively to the question if they feel alone and answers by commenting on the following at specific times with their supervisor:

... especially when my supervisor hasn't been here, and she's had a hectic period, or if we disagree on something, or if the co-authors are disagreeing, and I'm in the middle. (Interview 6)

Although a feeling of loneliness generally appears in the process of writing the doctoral thesis, students claim to feel accompanied by other PhDs who are in the department. In the following section, this fact is investigated further.

Regarding supervisory relationships and their contribution to feelings of loneliness, the testimonies reveal how the different roles adopted by supervisors in addressing loneliness illustrate how supervision can either compensate for these feelings and provide companionship or contribute to solitude and create feelings of abandonment or isolation in the process. Although this topic will be addressed later in the results, this suggests that effective supervision requires awareness of both academic progress and students' social integration and personal needs.

BEING SOCIAL AND INTERACTING WITH OTHER PHD STUDENTS: KEY ASPECTS IN THE PROCESS OF DOING A THESIS

The study also reported on the social relationships of the students, both with their own doctoral colleagues in the workplace and in leisure situations, including family and/or friends. In general, all the students interviewed claim to currently share or have once shared an office with other students. In fact, in one case, it is a normal practice and policy of the department:

The sort of rule here is that if you're a PhD student, you have to be prepared to share an office, although you may have an office to yourself, and that you share with another PhD student. (Interview 2)

This fact helps the interviewees, in all cases, to affirm that they maintain regular contact with their colleagues who are in the same process of writing a doctoral thesis.

Yes, some contact with the other PhD students in their offices ... (Interview 7)

This institutional policy of shared offices maybe due to either departmental space constraints or an intentional practice that promotes doctoral student interaction, reflecting an understanding of how physical space can foster academic community. Regardless of the motivation, according to the testimonies, these shared, and the benefits reported by students demonstrate the important role that environment plays in both doctoral student development and their daily thesis progress.

We also find cases of people who have frequent contact with colleagues since they participate in the same research project. This fact helps in the process of completing the thesis by providing a feeling of belonging to a community.

My colleague who I share the office with is working on the same project. So that's really helpful. And we started at the same time. So, we will follow each other through the whole process, and it's really good. (Interview 7)

One of the big advantages of being part of a project, ... you know, your sense of community. (Interview 10)

However, there are also two testimonies that state that they do not have contact with other doctoral students if tasks are not organized at a formal level. Sometimes, the frequency of contact depends on the type of relationship is less than desired due to reasons related to the characteristics of the academia:

Not many. But I also belong to one of the research groups. So sometimes we organize and fellowship together. (Interview 1)

It depends. The one I sometimes I may connect to some colleagues more frequently than others. And I mean, that depends on our relationships. (Interview 9)

I also think it has something to do with the structure of how academia works ... like half of the people here have worked from home, half of the people just have their lunch by their desk. And, you know ... it's not the very friendly community necessarily. That's part of the problem. (Interview 3)

In general, in cases where there is regular interaction, this daily contact with other colleagues is valued positively by all those interviewed. This is sometimes due to academic reasons, as it allows them to share concerns and reflections about their research.

I think, social support for the hard work seems important. (Interview 2)

Yeah, definitely. I think it's have been because their projects are more related to my project (...) so it's helpful, content wise, because I can exchange ideas and thoughts with them, and have a discussion or someone that understands my project better. (Interview 8)

In addition to the physical interaction spaces promoted by the department's organizational structure, there are collaborative opportunities at the project level that foster interactions. The testimonies show that the integration into research projects emerges as an effective mechanism for building meaningful academic relationships. This structured collaboration provides social support, creates a sense of shared purpose, and develops research competencies in students, enhancing the doctoral experience.

Other times, it allows them to learn things, act as motivation for work, or ask for help when needed.

Yeah, absolutely. He may grasp or master some skills or, you know, some soft skills or knowledge, I can learn or ask him or to help. (Interview 9)

Yeah, it's been good. I shared with a really clever, hard-working woman who made me feel guilty about not being clever, hard-working, and so it make me to work hard, so it was really good.
(Interview 5)

It also allows them to share problems in moments when they struggle. According to the testimonies of the participants, knowing of cases of people in the same situation comforts them.

And we're a lot of PhD students here every day, so we can ask each other's about problems. That's, yeah, that's something I really wouldn't have been without. That is really important. (Interview 6)

Yes, I think so at least in a social way, because we are in the same situation, and it's helpful to see other people struggle with the same problems. It is kind of weird that it's helpful to see. It helps, because then you know, you're not alone. (Interview 7)

It really helps. It helps the confidence; it helps to know that there are people struggling like you, and also see successes. (Interview 1)

One of the benefits provided by this type of contact is the validation that comes from shared experiences, which serves multiple functions such as emotional support, professional development, and professional identity development. This peer support is particularly valuable because it combines an understanding of both academic challenges and emotional companionship.

Finally, a positive aspect of social contact is the fact that it encourages them to maintain a daily routine when it comes to eating or getting organized with work:

We are quite a few PhD students here in like, the hallway, and we have offices next to each other, which is good, because we have lunch together, you know, it's sort of structures also your day knowing that we will eat at twelve ... everyone is, you know, in the kitchen. (Interview 3)

I think having colleagues who I'm happy to have lunch with is an important part of sort of, like, quality of life stuff. (Interview 2)

I mean, it was my colleagues here. So, we have lunch. And I also have contact with some other PhD students from other countries that might add seminars or conferences or something like that.
(Interview 8)

These interactions are more beneficial and necessary in the first years as doctoral students.

Yeah, I think that has been very helpful. And now in the end, we're not sharing office, she sent another one now. And that's also helpful, because now we're so focused, yeah. But especially in the beginning, that was really helpful. (Interview 6)

Although on one occasion we found a participant who stated that the social life of sharing and office is sometimes a distraction.

I think in many ways, it's difficult to assess, because on the one hand, I would say sometimes it's more beneficial. Or it's better for your progress if you have an office on your own. Because there are too many things, it's too easy to get distracted. (Interview 4)

Referring to **social life and contact with other people in leisure time**, we find that, in general, participants claim to spend time with family or friends periodically and, therefore, have a balance between life and work.

I've got to a work-life balance, still having social life ... (Interview 5)

And we also have a lot of common friends. So, we also see ..., we always want to see our friends more often than we do. But absolutely, we are social. Yeah. But that's not because of the PhD. It's not the PhD work. That's, that's in the way of being social. (Interview 3)

I'm a social person. So, I really like to meet friends and especially because we're spending so much in front of the computer. (Interview 8)

In some cases, we find that the participants refer to the fact that they have children and use their free time mainly to be with them; in this case, the family is their only social circle.

Mostly with my son. So much of my free time is busy time with him. (Interview 1)

Yeah, well I have three kids, so I see them every day ... We live a very normal family life. Going to work in the morning coming on midafternoon, having dinner together every day, putting the kids to bed spending time together in the evening and also we have lots of family both me and him. And we see them every week. (Interview 3)

As I said, I have kids, I have three kids, and we live about takes a little more than our two from where I live, to get to work. So, when I come home, I try to spend as much time as I can with my kids. (Interview 7)

Although there are also comments that refer to the fact that having leisure time is difficult during the period of completing the doctoral thesis,

Well, first of all, I think there is no such thing as leisure. This is like a full-time commitment, but of course, you have to try, you have to find niches where you not necessarily think about research as your work. (Interview 4)

Other testimonies suggest that maintaining a life outside the doctorate is a priority, so they have divided their time to be able to enjoy leisure time. For instance:

I didn't want to only have a PhD in my life. So, before I had my kids, I did a lot of sports. And I made time for that. And you know, if I had to leave because I had to get to training, I had to leave and I left. (Interview 5)

This balance becomes more achievable due to the nature of the students' employment contracts, which provide a paid position with a structured schedule:

I work pretty normal hours. And then rest of the day is leisure time. (Interview 6)

Finally, some students report dedicating their free time to sports, which contributes to their social life:

I also have, you know, free time activities, which I tried to, you know, balance with more regular type of work. Yeah, as I said, I put a lot of emphasis on sports. So, I'm exercising regularly. I would say I think I've established okay, life balance. (Interview 4)

Regarding social life outside academia, social connections beyond the university emerge as a protective factor, although maintaining them remains challenging. The characteristics of the employment during the thesis suggest that working at the university generally facilitates work-life balance; however, institutional policies can always offer options to enhance students' ability to maintain broader social connections. Some suggestions include organizing periodic family events in the university context. This and other recommendations will be discussed in subsequent sections.

THE SUPERVISOR: THE MAIN SOURCE OF SUPPORT FOR DOCTORAL STUDENTS

The relationship between students and thesis supervisors reveals varied information, as each case is unique and influenced by several variables. However, in general, we can affirm that many testimonies reveal positive feelings generated from the relationship with the supervisor:

I'm very glad in my supervisor. (Interview 4)

I think I'm really lucky with my supervisor. Yeah, she cares. (Interview 10)

I think I have a really good relationship to my supervisor now. (Interview 8)

In these cases, supervisors foster this positive relationship by creating an environment that encourages communication, allowing students to express their needs and providing attentive listening when necessary.

My supervisors leave me to say what I want to say (...). I am lucky that they listen to me and listen, and they are open to me when they criticize. And I'm also I'm very open to criticisms. (Interview 1)

We also find examples where students report that their supervisor knows how to motivate them and adjust their communication style to suit the student's needs.

I think she's astute in that she knows what will motivate me. And so, I think she's been able to sort of adjust her feedback style to what she knows, will make me want to like to go out. (Interview 2)

As shown in the quotes, positive supervisory relationships appear to be characterized by a combination of professional guidance and emotional support, as previously mentioned. The emphasis in testimonies about "feeling lucky" with supervisors suggests that effective supervision is not common and extends beyond basic academic obligations.

In contrast, in five cases, participants reported experiencing difficulties in their relationship with their supervisor at some point, which generated negative feelings.

For example, one participant commented that the relationship with the supervisor was one of the biggest obstacles encountered in the process of completing the thesis, resulting in a depressive state. When asked about obstacles encountered, they responded:

The biggest maybe, is the process of communicate with my supervisor. I want to give support from him, but sometimes he never gives me support. So, this may make me depressed. (Interview 9)

In some cases, this discomfort is caused by work-related issues, such as students perceiving that the supervisor does not review their work adequately.

I sometimes wonder if he is actually read my work properly. You know? Because when I meet with him to have this discussion about my work, it's like, yes, well ... looks through the document, and then like, this, I think is good, you know, and it's like, yeah, I don't really trust like ... (Interview 3)

Some students report being given an excessive workload:

He arranged me too much work. And I have to sacrifice my free time to do this work. (Interview 9)

We also find cases where students feel their work is not progressing because they do not feel prepared to question their supervisor's knowledge, which hinders their ability to make independent decisions:

He's very knowledgeable and that I always try to ... that I maybe haven't come to the point where I think I can question that knowledge. ... that this running in circles thing that sometimes have the feeling it's not really making progress. (Interview 4)

Additionally, there are cases of discomfort generated by the nature of the relationship, regardless of the work itself.

It's been a process of learning how to deal with her feedback. ... for me, it has helped enormously to have two PhDs to two postdocs, in the group, one of whom did his PhD was the same person. So, he has sort of experience working with her (...). So it is great to have like other perspectives and be like, Oh, yeah, she does that weird thing with you, too. Thank goodness, it's not just me. (Interview 2)

In one case, this type of situation led to a change of supervisor.

I have changed my supervisor, like, last summer. So, I have had problems with my supervisors. (Interview 8)

In some cases, supervisory relationships reveal how power dynamics and communication patterns can significantly impact student well-being. These difficulties in supervisory relationships extend beyond purely academic issues and arise from doctoral students' expectations that are not aligned with supervision style or communication approaches that do not meet students' needs.

The interviews included a question about what **aspects students believe are relevant for establishing an effective relationship with their supervisor**. One participant suggests that the relationship is multi-causal and depends on the individuals involved, considering it successful when the thesis writing process proceeds without excessive emotional stress:

I think this is a very, very specific and case related issue (...) I wouldn't dare to say that there's like one right link. I think this is some something that you have to figure out for yourself (...) But in general, I think if you somehow managed to produce a thesis, without too much emotional stress so, then I think that has worked out well. (Interview 4)

Study participants mentioned several aspects they found relevant in the supervisory relationship. These include:

The need for the supervisor to support students' learning and growth:

When we just start as students, there are many things that we do not know. So, supervisors have a lot of experience about the things, and they should be willing to share and understand us that we need to grow. So, they should help us to grow and not to push us away. (Interview 1)

I think they need to be quite proactive and encouraging the PhD student to develop their own perspective. And like one of my supervisors has said: the point of a PhD is to develop yourself as an independent critical researcher. (Interview 5)

Greater dedication of time, availability, and approachability:

Time for one is an important factor that the supervisor has time and actually sets aside time. (...) that he gets enough hours to actually prioritize the students that it's not just this is something you do before going to sleep in the bed at 11pm. (...) So being close, I guess, physically, and having time is key, I think. (Interview 3)

For me, I think it's really important that they are available. And welcome the questions that I have. (Interview 7)

I think it's also something about the supervisors' role and responsibility. In that sense that for, for example, if I send a text to my supervisor, and we have an appointment, then I also expect her to be prepared for the meeting. And if she doesn't have time, then it's better to postpone it. And I wouldn't mind that, but I would, I wouldn't like to have a supervisor that wouldn't be prepared for what we have agreed on. For instance, I think it's also important that the supervisor takes it seriously. (Interview 8)

Regular face-to-face contact, which participants view as crucial for a successful supervisory relationship:

This regular contact I think is important. (Interview 4)

I think they should have more meeting. And not just by email, face to face. (Interview 9)

Mutual respect:

... respect him or her and also respecting yourself. (Interview 9)

The supervisor's personality and field of research, which can influence the quality of the student-supervisor relationship:

I guess ... personality has a lot to say. And also, how professional the supervisor is and research interests. (Interview 6)

Some testimonies place the responsibility for the relationship on the doctoral student, specifically in their ability to communicate their needs effectively:

I think it's important in the way that you also communicate what your needs (...) it's so important to communicate the way you like to work. But I think it is also difficult, because I think a lot of responsibility is on the student PhD candidate. (Interview 8)

... to think about what do I need from you in order to get the thing that I want done? And how, like, how do we work together on that? (Interview 2)

As we can see, the diverse elements identified as crucial for effective supervision highlight how the supervisor-student relationship requires a balance between academic guidance in the thesis process and support in personal areas, with the latter being predominant and more relevant to students. Furthermore, the emphasis on availability and preparation for academic work corrections suggests that successful supervision consists of providing mentorship and remaining accessible to students.

Regarding **areas where students receive the most help from supervisors**, research support predominates, either through the facilitation of relevant readings or guidance on methodological design:

They have also told me how to identify journals that may be interested in my area and told me to read about them and choose whichever. (Interview 1)

She helps me with methods, and also structure clarity, yeah, all those kinds of things, but she's not within my field. (Interview 6)

I think my main supervisor has helped me understand how I qualitative researcher things. (Interview 10)

Students also value the feedback and corrections provided by supervisors:

She's also very helpful. When I give her something to read. She always, she always read it very carefully, and gives me lots of good, you know, concrete feedback. (Interview 3)

... the way we work that I send her my, my written work, and she comments on my text, and then we discuss the articles. (Interview 8)

Assistance with deadlines and timing of different phases of the doctoral thesis is also mentioned:

... she's really good at the breaking down the big process of doing a PhD four years into what needs to happen now. Keeping an eye on the timing (...). She's been really good about saying, here's your deadline, here's the thing, you have to give me, do this now. (Interview 2)

Finally, one participant notes the broader academic guidance received, extending beyond the specific research project:

Yeah, of course, the topic, but also with some wisdoms about academia. (Interview 4)

The predominance of research support in supervisory relationships reflects that traditional academic focus still prevails in supervision styles. However, the students value a more comprehensive and holistic mentorship process that considers aspects related to professional academic development. This points to an evolution from purely academic supervision to a more holistic approach that helps students integrate into academia.

The interactions between students and supervisors are varied and multifaceted. Analysis of the doctoral students' accounts suggests various forms of interaction, giving rise to different supervision styles. While the following testimonies provide insights into this topic, further research would be needed to investigate it thoroughly, opening new lines of inquiry for future studies.

Those who listen and adapt and let the students take the initiative:

For example, they had recommended that I do a monography and say this many, many times. I have also said many many times that I want to do articles, but I also know that I don't know how to, I have no experience have articles and they do have a lot of experience with articles, but I've insisted and then they have listened. (Interview 1)

Directed style, controlling or preferring to be in control, very involved with monitoring and task assignment:

But, you know, we, we probably meet once a month to talk about ... my work, either looking at a text or, or talking about something that she's asked me to read or something like that ... And then there's the like, email, contact all all the time, it's not fair, but fairly regularly about like, the catering order, or the, you know, organizing the travel for the guys who are coming here. So there's a lot in there. (Interview 2)

They say that they will help me with the PhD courses, I can ask them to look at the papers I have to do for the courses. (Interview 7)

Those who allow students to take charge and give them responsibility:

... he shouldn't be the one who's telling me what to do. He's, you know, giving suggestions and doing the thing status in the end my task or my responsibilities. (Interview 4)

... when I asked them for advice, or to respond to something they will, but they don't maybe check in on me that much. I think that's fine. Like I kind of it's my responsibility to say, can I have help with this? And can we have a meeting? (Interview 5)

Those who are halfway, following up but allowing work to proceed, providing autonomy and support when needed:

I don't talk to her every day. But I know that I can always access her if I have some problems. But I don't do that very often, actually. Because most of the problems I managed to solve myself, I mean, I don't spend weeks on them, of course, and I would ask her, but yeah, but we meet regularly, maybe like, once a month or so. (Interview 8)

Those who are invisible and absent:

... it's a bit ... it goes in periods. So I haven't had supervision with her for a long time now, but now are going to a conference together and then writing stay together. So now, it will be very frequent. (Interview 6)

Those that are an obstacle for the student by making the process more difficult:

But he is like, seeing everything from a different angle. So, he thinks maybe what I've written this all new, but I'm like, No, no, this is common knowledge. This is established already. So, I need, you know, but then he doesn't give me the really the newest or greatest idea. So, either because it does know my field, and it's very busy. (Interview 3)

In practice, there are as many supervision styles as there are supervisors, and there are no pure styles, only tendencies. This variety of supervisory styles identified reflects how supervisor-student relationships depend on several variables: the supervisor's personal characteristics, student needs, and the institutional context. The effectiveness of each style appears less dependent on a specific approach and more on the alignment with student needs and expectations, although this does not always occur as supervisors direct according to their own characteristics and understanding of the academia without considering the need to adopt different styles depending on the student. Supervisors' perspectives on this issue would be an aspect worthy of further investigation. The results demonstrate the importance of flexibility and understanding of students' characteristics and circumstances in doctoral supervision to adapt it to improve student well-being in the thesis process.

DISCUSSION

This research provides an in-depth analysis of the variables that function as antecedents influencing the well-being of doctoral students. As a qualitative study, it aims to complement the antecedent variables comprising the Integrative Model of well-being in doctoral students (Martínez-García et al., 2024). The study draws on the perceptions and testimonies of doctoral students from a specific institution to achieve this goal.

The findings reveal that the conditions under which the doctoral thesis is undertaken significantly influence the thesis writing process. In this particular case, doctoral students conduct their research under a four-year employment contract with associated teaching obligations. This arrangement provides economic and personal stability through remuneration for research tasks. However, it also places the thesis work within a professional environment, which some participants view negatively. These concerns include teaching responsibilities and the unique characteristics of the university as a workplace, such as academic freedom, a loosely structured organization, micropolitics, and a lack of formal and informal leadership.

The study also yields insights into students' emotional experiences during their doctoral journey. The results indicate that feelings commonly associated with the process include imposter syndrome, aligning with findings by Cornejo-Araya et al. (2022), as well as self-doubt, fear of failure, lack of confidence, and stress related to writing. Major hindrances identified include time pressure, feeling overwhelmed, and balancing family responsibilities, particularly maternity leave. Although less numerous and less frequently mentioned, some testimonies do report feelings of happiness and excitement at certain moments during the thesis process.

Consistent with existing literature (Bazrafkan et al., 2016; Moesarofah & Rahayu, 2023; Satinsky et al., 2021; Wang et al., 2019), the testimonies reveal that experiencing stress and anxiety, often accompanied by physical symptoms, is common among participants. However, when directly asked, participants often claim not to experience these states, although their testimonies later reflect descriptions of physical symptoms. This suggests a normalization of stress within the doctoral process, with students often accepting symptoms such as fatigue, insomnia, or lack of mental clarity as inherent to their experience.

Regarding the stress trigger, there are many differences among participants. The personal variables and individual situation of each participant differ greatly, making broad generalizations challenging. However, several common themes emerge as frequent sources of stress. These include feelings of overwhelming responsibility, lack of self-confidence, uncertainty about various aspects of the doctoral process, and challenges related to family obligations and maternity. While these factors appear to be the most prevalent, it's important to note that the experience of stress remains highly individualized among doctoral students.

Regarding social relationships and support, the results corroborate Mantai's (2019) distinction between support received from academia (colleagues, institutions, and supervisors) and from family and friends. A pervasive feeling of loneliness during the doctoral process emerged as a significant theme. Some participants view this solitude as natural and even necessary for the writing process, while others experience it negatively. Supervisors and research groups often serve as crucial support systems in these cases. The study highlights that the characteristics of academia and the solitary nature of research often impede regular contact with colleagues, aligning with Williams' (2000) findings. This underscores Hlebec et al.'s (2011) assertion that job-oriented support is a predictor of academic success among doctoral students. Notably, experiences vary considerably based on research group membership and peer relationships. Regarding social life, students generally report social support both within the institution (from office colleagues, supervisors, and peers) and outside (from family, friends, and through sports or social activities). These findings align with P. Määttä's (2011) observation that doc-

toral students highly value social relationships. Sharing office space and maintaining a daily work routine, including shared mealtimes with colleagues, emerged as particularly beneficial aspects of students' daily lives.

The results further confirm the findings of Martínez-García et al. (2024) (Referenced removed for blinded version) systematic review, emphasizing the supervisor's role as the key source of support in the doctoral process (Pyhältö et al., 2015; Tribe & Tunariu, 2017). The study reveals multiple variables influencing supervisor-student relationships, which can either significantly facilitate or hinder thesis completion. Students particularly value supervisors' commitment to their work—related to the caring supervision style described by K. Määttä and Uusiautti (2016)—as well as time dedication, availability, regular contact, and effective communication. The study also indicates varied supervisory relationships, suggesting a spectrum of management styles ranging from highly controlling to laissez-faire approaches. This spectrum warrants further investigation, building on existing research on supervisory styles (Franke & Arvidsson, 2011; Lindsay, 2015; K. Määttä & Uusiautti, 2016).

Based on these findings, the study proposes several measures to enhance doctoral students' well-being:

- Create spaces fostering interaction among doctoral students, as suggested by Weidman and Stein (2003), utilizing ICT as proposed by Lim et al. (2019).
- Implement policies supporting funding or employment for doctoral students.
- Offer mental health support services, such as counseling, as recommended by Wang et al. (2019).
- Design workshops on thesis-related skills, including time management and organization (Tribe & Tunariu, 2017), scientific writing groups (Ferguson, 2009), and metacognitive tools like visualization (Barrett & Hussey, 2015).
- Establish mentoring programs addressing issues of self-confidence, uncertainty, and imposter syndrome.
- Provide training for supervisors and create opportunities for improved supervisor-student communication (Wang et al., 2019).

LIMITATIONS AND RESEARCH PROSPECTIVE

The limitations of the study derive from the chosen methodological design. While the qualitative approach allows for in-depth exploration of participants' perceptions, it inherently limits the generalizability of results to the broader population of doctoral students. Furthermore, the recruitment of participants from a single institution further constrains the study's generalizability. Referring to the perspective of the research, several promising avenues for future research have emerged from this study: further investigation on supervisory styles, building upon the work of Franke and Arvidsson (2011), Lindsay (2015), and K. Määttä and Uusiautti (2016); exploring the process of doctoral dissertation completion from supervisors' viewpoint, following the approach of Lee (2008) and Halse (2011). Regarding the research design, future research could employ quantitative methodologies to examine a larger, more diverse sample of doctoral students across different international contexts. This approach would enhance the generalizability of findings and potentially uncover broader patterns in doctoral student experiences.

CONCLUSIONS

This study explores doctoral students' well-being using a qualitative case study approach with in-depth interviews of ten PhD students at a Norwegian university through a combination of thematic and discourse analysis of their experiences and perceptions. Using the Integrative Model on doctoral students' well-being (Martínez-García et al., 2024) as a foundation, the analysis balanced structured framework application with openness to emerging themes. The research reveals the variables that

function as antecedents to doctoral students' well-being and proposes measures to support students based on the findings and relevant literature on the subject.

The results demonstrate that working conditions and the characteristics of the doctorate, particularly whether it is remunerated, significantly influence the process of thesis development. Referring emotional experiences, the most prevalent feelings among doctoral students include self-doubt, fear of failure, lack of confidence, and stress associated with the writing process. Furthermore, the findings confirm existing literature by revealing that stress and anxiety are common experiences among participants, although students often normalize these symptoms. In terms of social support, the results indicate a pervasive feeling of loneliness during the doctoral thesis process. However, participants generally report receiving support from friends, family, and supervisors. Social relationships are positively valued and play a crucial role in doctoral students completing theses. Notably, supervisors emerge as the primary source of support. Based on the needs identified through student testimonies and perceptions, as well as insights from the literature, the study proposes several recommendations for improving doctoral student well-being. These suggestions aim to address the challenges uncovered in the research and enhance the overall doctoral experience.

In conclusion, this study contributes to a deeper understanding of the factors influencing doctoral student well-being and provides a foundation for developing targeted interventions to support this population throughout their academic journey.

REFERENCES

- Barrett, T., & Hussey, J. (2015). Overcoming problems in doctoral writing through the use of visualisations: Telling our stories. *Teaching in Higher Education*, 20, 48-63. <https://doi.org/10.1080/13562517.2014.957266>
- Bazrafkan, L., Shokrpour, N., Yousefi, A., & Yamani, N. (2016). Management of stress and anxiety among PhD students during thesis writing: A qualitative study. *The Health Care Manager*, 35(3), 231-240. <https://doi.org/10.1097/HCM.0000000000000120>
- Bolotnyy, V., Basílico, M., & Barreira, P. (2022). Graduate student mental health: Lessons from American economics departments. *Journal of Economic Literature*, 60(4), 1188-1222. <https://doi.org/10.1257/jel.20201555>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage. https://doi.org/10.1007/978-3-319-69909-7_3470-2
- Bryman, A. (2012). *Social research methods* (4th ed.). Oxford University Press.
- Clemente-Suárez, V. J., Herrera-Mendoza, K., Montañez-Romero, M., Navarro, M. C., Crespo-Ribera, W., Vargas, C., Arroyo-Alvis, K., Morales-Osorio, M., Cadena-Díaz, I., & Cala-Urbe, J. (2021). Autonomic stress response in PhD students. *Cultura, Educación y Sociedad*, 12(1), 9-18. <https://doi.org/10.17981/culteducsoc.12.1.2021.01>
- Corcelles-Seuba, M., Suñé-Soler, N., Sala-Bubaré, A., & Castelló, M. (2023). Doctoral student perceptions of supervisory and research community support: Their relationships with doctoral conditions and experiences. *Journal of Further and Higher Education*, 47(4), 481-491. <https://doi.org/10.1080/0309877X.2022.2142102>
- Cornejo-Araya, C., Salas, G., & Gallardo-Lazo, M. E. (2022). A stroke of (bad) luck? The impostor phenomenon as a challenge in the scientific training of PhD students. *Cuadernos de Neuropsicología/Panamerican Journal of Neuropsychology*, 16(3), 81-88.
- Dhirasasna, N., Suprun, E., Macaskill, S., Hafezi, M., & Sahin, O. (2021). A systems approach to examining PhD students' well-being: An Australian case. *System*, 9(1), 17. <https://doi.org/10.3390/systems9010017>
- Diener, E., Pressman, S. D., Hunter, J., & Delgado-Chase, D. (2017). If, why, and when subjective well-being influences health, and future needed research. *Applied Psychology: Health and Well-Being*, 9(2), 133-167. <https://doi.org/10.1111/aphw.12090>

- Evans, T. M., Bira, L., Gastelum, J. B., Weiss, L. T., & Vanderford, N. L. (2018). Evidence for a mental health crisis in graduate education. *Nature Biotechnology*, 36(3), 282-284. <https://doi.org/10.1038/nbt.4089>
- Evwerhamre, F. (2020). *Work-life balance experiences of international PhD students in UK higher education*. [Doctoral dissertation, Liverpool John Moores University]. <https://doi.org/10.24377/LJMU.T.00013700>
- Ferguson, T. (2009). The 'write' skills and more: A thesis writing group for doctoral students. *Journal of Geography in Higher Education*, 33(2), 285-297. <https://doi.org/10.1080/03098260902734968>
- Fitzpatrick, B., Chong, M., Tuff, J., Jamil, S., Hariri, K., Stocks, T., & Cumby, C. (2021). PhD students learning the process of academic writing: The role of the rhetorical rectangle. *Discourse and Writing/ Rédactologie*, 31, 136-152. <https://doi.org/10.31468/dwr.873>
- Franke, A., & Arvidsson, B. (2011). Research supervisors' different ways of experiencing supervision of doctoral students. *Studies in Higher Education*, 36(1), 7-19. <https://doi.org/10.1080/03075070903402151>
- Friedrich, J., Bareis, A., Bross, M., Bürger, Z., Rodríguez, Á., Effenberger, N., Kleinhansl, M., Kremer, F., & Schröder, C. (2023). "How is your thesis going?" – Ph.D. students' perspectives on mental health and stress in academia. *PLoS ONE*, 18(7), e0288103. <https://doi.org/10.1371/journal.pone.0288103>
- Gillooly, S. N., Hardt, H., & Smith, A. E. (2021). Having female role models correlates with PhD students' attitudes toward their own academic success. *PLoS ONE*, 16(8), e0255095. <https://doi.org/10.1371/journal.pone.0255095>
- Glaser, B., Strauss, A., & Strutzel, E. (1968). The discovery of grounded theory: Strategies for qualitative research. *Nursing Research*, 17(4), 364. <https://doi.org/10.1097/00006199-196807000-00014>
- Gushulak, C. A. C., Bodmer, P., Carvalho, C. R., Gladstone-Gallagher, R. V., Lee, Y. P., Lowman, H. E., Oguguah, N. M., Meinikmann, K., Rii, Y. M., Rodríguez-Cardona, B. M., & Bizic, M. (2023). The silent mental health and well-being crisis of early career researchers in aquatic sciences. *Limnology and Oceanography Bulletin*, 32(1), 16-17. <https://doi.org/10.1002/lob.10539>
- Haider, Z., & Dasti, R. (2021). Mentoring, research self-efficacy, work-life balance and psychological well-being of doctoral program students. *International Journal of Mentoring and Coaching in Education*, 11(2), 170-182. <https://doi.org/10.1108/ijmce-07-2020-0036>
- Halse, C. (2011). 'Becoming a supervisor': The impact of doctoral supervision on supervisors' learning. *Studies in Higher Education*, 36(5), 557-570. <https://doi.org/10.1080/03075079.2011.594593>
- Hazell, C., Chapman, L., Valeix, S., Roberts, P., Niven, J., & Berry, C. (2020). Understanding the mental health of doctoral researchers: A mixed methods systematic review with meta-analysis and meta-synthesis. *Systematic Reviews*, 9, Article 197. <https://doi.org/10.1186/s13643-020-01443-1>
- Hjálmsdóttir, A., & Rafnsdóttir, G. (2022). Gender, doctorate holders, career path, and work-life balance within and outside of academia. *Journal of Sociology*, 60, 192-208. <https://doi.org/10.1177/14407833221128842>
- Hlebec, V., Kogovsek, T., & Ferligoj, A. (2011). The influence of social support and personal networks on doctoral student performance. *Advances in Methodology and Statistics*, 8(2), 157-171. <https://doi.org/10.51936/fmkb3056>
- Jackman, P., Jacobs, L., Hawkins, R., & Sisson, K. (2021). Mental health and psychological wellbeing in the early stages of doctoral study: A systematic review. *European Journal of Higher Education*, 12, 293-313. <https://doi.org/10.1080/21568235.2021.1939752>
- Jackman, P., Slater, M., Carter, E., Sisson, K., & Bird, M. (2022). Social support, social identification, mental wellbeing, and psychological distress in doctoral students: A person-centred analysis. *Journal of Further and Higher Education*, 47(1), 45-58. <https://doi.org/10.1080/0309877X.2022.2088272>
- Kiguwa, P., & Langa, M. (2009). The doctoral thesis and supervision: the student perspective. *Perspectives in Education*, 27(1), 50-57. https://www.researchgate.net/publication/268814962_The_doctoral_thesis_and_supervision_The_student_perspective
- Kulikowski, K., Potoczek, A., Antipow, E., & Krol, S. (2019). How to survive in academia: Demands, resources and study satisfaction among Polish PhD students. *Educational Sciences: Theory and Practice*, 19(4), 65-79. <https://doi.org/10.12738/estp.2019.4.005>

- Lau, R. W. K., & Pretorius, L. (2019). Intrapersonal wellbeing and the academic mental health crisis. In L. Pretorius, L. Macaulay, & B. Cahusac de Caux (Eds.), *Wellbeing in doctoral education* (pp. 37-45). Springer. https://doi.org/10.1007/978-981-13-9302-0_5
- Lee, A. (2008). How are doctoral students supervised? Concepts of doctoral research supervision. *Studies in Higher Education*, 33(3), 267-281. <https://doi.org/10.1080/03075070802049202>
- Levecque, K., Anseel, F., De Beuckelaer, A., Van der Heyden, J., & Gisle, L. (2017). Work organization and mental health problems in PhD students. *Research Policy*, 46(4), 868-879. <https://doi.org/10.1016/j.respol.2017.02.008>
- Lim, J., Covrig, D., Freed, S., De Oliveira, B., Ongo, M., & Newman, I. (2019). Strategies to assist distance doctoral students in completing their dissertations. *The International Review of Research in Open and Distributed Learning*, 20(5), 192-210. <https://doi.org/10.19173/irrodl.v20i5.4532>
- Lindsay, S. (2015). What works for doctoral students in completing their thesis? *Teaching in Higher Education*, 20(2), 183-196. <https://doi.org/10.1080/13562517.2014.974025>
- Lozano-Blasco, R., Romero-Gonzalez, B., & Soto-Sánchez, A. (2024). How to survive the doctorate? A meta-analysis of success in PhD candidates. *Educación XX1*, 27(1), 105-129. <https://doi.org/10.5944/educxx1.36566>
- Määttä, K. (2012). The pedagogy of supervising doctoral theses. In K. Määttä (Ed.), *Obsessed with the doctoral theses*. (pp. 143-160). Sense Publishers. https://doi.org/10.1007/978-94-6091-678-6_26
- Määttä, K., & Uusiautti, S. (2016). The resources of good supervision. *European Scientific Journal*, 12(10), 180-191.
- Määttä, P. (2011). The dissertation process described by doctoral students in Finland. *E-Uluslararası Eğitim Araştırmaları Dergisi*, 2(1), 66-80.
- Mackie, S., & Bates, G. (2018). Contribution of the doctoral education environment to PhD candidates' mental health problems: A scoping review. *Higher Education Research & Development*, 38, 565-578. <https://doi.org/10.1080/07294360.2018.1556620>
- Mantai, L. (2019). 'A source of sanity': The role of social support for doctoral candidates' belonging and becoming. *International Journal of Doctoral Studies*, 14, 367-382. <https://doi.org/10.28945/4275>
- Martinez, E., Ordu, C., Sala, M., & McFarlane, A. (2013). Striving to obtain a school-work-life balance: The full-time doctoral student. *International Journal of Doctoral Studies*, 8, 39-59. <https://doi.org/10.28945/1765>
- Martínez-García, I., De Witte, H., García-Martínez, J., & Cano-García, J. F. (2024). A systematic review and a comprehensive approach to PhD students' wellbeing. *Applied Psychology: Health and Well-Being*, 16(4), 1565-1583. <https://doi.org/10.1111/aphw.12541>
- Mattocks, K., & Briscoe-Palmer, S. (2016). Diversity, inclusion, and doctoral study: Challenges facing minority PhD students in the United Kingdom. *European Political Science*, 15, 476-492. <https://doi.org/10.1057/S41304-016-0071-X>
- McAlpine, L., Skakni, I., & Pyhältö, K. (2020). PhD experience (and progress) is more than work: Life-work relations and reducing exhaustion (and cynicism). *Studies in Higher Education*, 47, 352-366. <https://doi.org/10.1080/03075079.2020.1744128>
- Mendoza-Denton, R., Patt, C., Fisher, A., Eppig, A., Young, I., Smith, A., & Richards, M. A. (2017). Differences in STEM doctoral publication by ethnicity, gender and academic field at a large public research university. *PLoS ONE* 12(4), e0174296. <https://doi.org/10.1371/journal.pone.0174296>
- Moesarofah, M., & Rahayu, E. (2023). Emotional engagement in undergraduate thesis writing: Systematic review. *Buana Pendidikan: Jurnal Fakultas Keguruan dan Ilmu Pendidikan*, 19(1), 142-151. <https://doi.org/10.36456/bp.vol19.no1.a6823>
- Nicholls, H., Nicholls, M., Tekin, S., Lamb, D., & Billing, J. (2022). The impact of working in academia on researchers' mental health and well-being: a systematic review and qualitative meta-synthesis. *PLoS ONE*, 17, e0268890. <https://doi.org/10.1371/journal.pone.0268890>
- Parthi, K., & Rohilla, S. (2017). Impact of financial difficulties on mental health among research students of Panjab University, Chandigarh, India. *LAHRW International Journal of Social Sciences Review*, 5(2), 180-184.

- Pyhältö, K., Vekkaila, J., & Keskinen, J. (2015). Fit matters in the supervisory relationship: Doctoral students and supervisors perceptions about the supervisory activities. *Innovations in Education and Teaching International*, 52, 4-16. <https://doi.org/10.1080/14703297.2014.981836>
- Reggiani, M., Gagnon, J., & Lunn, R. (2024). A holistic understanding of inclusion in STEM: Systemic challenges and support for women and LGBT+ academics and PhD students. *Science Education*, 108(6), 1637-1669. <https://doi.org/10.1002/sce.21899>
- Sambrook, S., Stewart, J., & Roberts, C. (2008). Doctoral supervision ... A view from above, below and the middle! *Journal of Further and Higher Education*, 32(1), 71-84. <https://doi.org/10.1080/03098770701781473>
- Satinsky, E. N., Kimura, T., Kiang, M. V., Abebe, R., Cunningham, S., Lee, H., Lin, X., Liu, C. H., Rudan, I., Sen, S., Tomlinson, M., Yaver, M., & Tsai, A. C. (2021). Systematic review and meta-analysis of depression, anxiety, and suicidal ideation among Ph.D. students. *Scientific Reports*, 11, 14370. <https://doi.org/10.1038/s41598-021-93687-7>
- Schmidt, M., & Hansson, E. (2018). Doctoral students' well-being: A literature review. *International Journal of Qualitative Studies on Health and Well-being*, 13(1), Article 1508171. <https://doi.org/10.1080/17482631.2018.1508171>
- Scott, H., & Takarangi, M. K. T. (2019). Measuring PhD student's psychological well-being: Are we seeing the whole picture? *Student Success*, 10(3), 14-24. <https://doi.org/10.5204/ssj.v10i3.1294>
- Stubb, J., Pyhältö, K., & Lonka, K. (2011). Balancing between inspiration and exhaustion: PhD students' experienced socio-psychological well-being. *Studies in Continuing Education*, 33(1), 33-50. <https://doi.org/10.1080/0158037X.2010.515572>
- Sverdlík, A., & Hall, N. C. (2020). Not just a phase: Exploring the role of program stage on well-being and motivation in doctoral students. *Journal of Adult and Continuing Education*, 26(1), 97-124. <https://doi.org/10.1177/1477971419842887>
- Sverdlík, A., Hall, N. C., McAlpine, L., & Hubbard, K. (2018). The PhD experience: A review of the factors influencing doctoral students' completion, achievement, and well-being. *International Journal of Doctoral Studies*, 13, 361-388. <https://doi.org/10.28945/4113>
- Sverdlík, A., McAlpine, L., & Hall, N. (2021). Insights from a survey "comments" section: Extending research on doctoral well-being. *Studies in Graduate and Postdoctoral Education*, 12(2), 262-282. <https://doi.org/10.1108/SGPE-06-2020-0035>
- Szkody, E., Hobaica, S., Owens, S., Boland, J., Washburn, J., & Bell, D. (2022). Financial stress and debt in clinical psychology doctoral students. *Journal of Clinical Psychology*, 79(3), 835-853. <https://doi.org/10.1002/jclp.23451>
- Tribe, R., & Tunariu, A. (2017). Preparing for and writing up your doctoral thesis. *Counselling Psychology Review*, 32(2), 57-66. <https://doi.org/10.53841/bpscpr.2017.32.2.57>
- Wang, X., Wang, C., & Wang, J. (2019). Towards the contributing factors for stress confronting Chinese PhD students. *International Journal of Qualitative Studies on Health and Well-Being*, 14(1), Article 1598722. <https://doi.org/10.1080/17482631.2019.1598722>
- Weidman, J., & Stein, E. (2003). Socialization of doctoral students to academic norms. *Research in Higher Education*, 44, 641-656. <https://doi.org/10.1023/A:1026123508335>
- Williams, K. (2000). Perceptions of social support in doctoral programs among minority students. *Psychological Reports*, 86, 1003-1010. <https://doi.org/10.2466/pr0.2000.86.3.1003>
- Woolston, C. (2020). Postdocs under pressure: "Can I even do this anymore?" *Nature*, 587, 689-692. <https://doi.org/10.1038/d41586-020-03235-y>
- Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Sage.
- Ysseldyk, R., Greenaway, K. H., Hassinger, E., Zutrauen, S., Lintz, J., Bhatia, M. P., Frye, M., Starckenburg, E., & Tai, V. (2019). A leak in the academic pipeline: Identity and health among postdoctoral women. *Frontiers in Psychology*, 10, 1297. <https://doi.org/10.3389/fpsyg.2019.01297>

Yusuf, J., Saitgalina, M., & Chapman, D. (2020). Work-life balance and well-being of graduate students. *Journal of Public Affairs Education*, 26, 458-483. <https://doi.org/10.1080/15236803.2020.1771990>

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