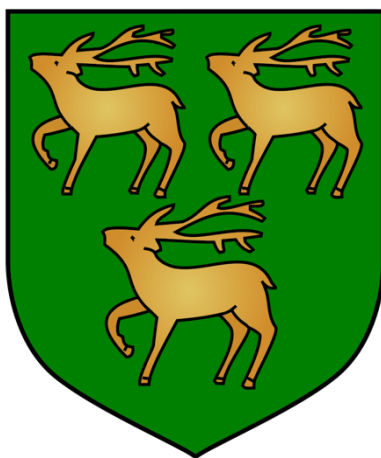


Students' Experiences of Mental Health and Studying Chemistry at Oxford



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Abstract

This study sought to assess the prevalence of mental illness among undergraduate chemistry students at Oxford, and to build an understanding of the relationship between studying chemistry and student mental health.

The data for this study was collected *via* an online anonymous survey, distributed to all Oxford undergraduate chemistry students. The survey featured the DASS-21 instrument, and free text questions. Demographic information was also collected pertaining to participants' year group, gender, and domestic/international status.

Participants scored higher levels of mental illness than similar groups. First-year students, female and gender-minority students showed the highest levels of depression, anxiety, and stress. There were no significant differences in levels of depression, anxiety, and stress between domestic and international students.

Participants' qualitative experience of the interaction between mental health and studying chemistry can be described as a balance between the expectations students experience (academic and otherwise) and students' capacity to meet those expectations. Factors affecting this interaction included: workload; the student-tutor relationship; and pre-existing conditions such as disability and illness. Poor mental health was qualitatively associated with a decreased capacity to learn effectively.

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Abbreviations

DASS-21:	Depression Anxiety Stress Scales – 21 Items
GP:	general practitioner
MH:	mental health
PWB:	psychological well-being
SSRI:	selective serotonin reuptake inhibitor (a class of antidepressant drugs used in the treatment of depression, anxiety and other psychological disorders)
SWB:	subjective well-being
Tute:	tutorial
WHO:	World Health Organisation

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Chapter 1: Introduction

1.1 Introduction

Students' mental health (MH) is situated in an interesting space between individual experiences, institutional policies, and societal expectations. This literature review aims to present the core pieces of theoretical and empirical research needed to understand the design and significance of the research in Chapters 3 and 4.

As the position of higher education institutions in wider society changes, students' priorities and rationale towards studying for a degree are shifting. It is still unclear how exactly recent changes in higher education – marketisation and increased participation – are affecting student MH, but it seems possible that both changes might lead to individual students feeling increased pressure to succeed academically.

Universities have a legal responsibility through the Equality Act 2010 to ensure equality of access between different protected groups, and to make reasonable adjustments for students with disabilities. The University of Oxford Student Wellbeing and Mental Health Strategy (2019) states:

“We are committed to supporting the mental health and wellbeing of everyone who studies here so that they can flourish as they develop intellectually and personally.”

In some cases, poor MH can be considered a disability, so understanding the experience of poor MH in the context of studying for a degree is a central question to fulfilling the legal and policy ambitions of Oxford.

In the chemistry education research space, there has been recent increased interest in diversity, equity and inclusion practices. Though these are largely focused on improving access to chemistry education for marginalised groups, there has been progress towards understanding the mechanisms of inequity, and development of strategies to

improve instruction and 'classroom culture' (Ryu et al., 2021). Little research has been done on the effects of chemistry student MH on access to learning.

It is important to first have a clear understanding of the concepts of MH and well-being, and how they evolve, shape, and materialise in the lived experiences of university students. Understanding these components of the literature is necessary to support the overall aim of this thesis: developing a rich exploration of students' experiences of MH on the Oxford MChem.

1.2 Mental Health and Well-Being

1.2.1 What is Mental Health?

Traditionally, MH has been characterised as the absence of symptoms which might constitute mental illness. However, there has been a recent shift to a more holistic conceptualisation of MH, in which MH is characterised not only by the absence of mental illness but also by the presence of positive emotions and positive social and psychological functioning (Galderisi et al., 2015).

The World Health Organisation (WHO) (2004) defines MH as *“a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.”* This description posits MH as its own fluctuating condition, distinct from the presence of mental illness symptoms.

The WHO definition of MH is in accordance with the *capabilities approach*, developed by Nussbaum and Sen. The capabilities approach distinguishes between one's “functionings” (the things a person actually does and achieves) and their “capabilities” (the things that are feasible for a person to do or to be) (Gereluk, 2020). According to the

capabilities approach, well-being can be improved by enhancing one's ability to realise their capabilities and engage in behaviours that they subjectively value (Sen, 2001).

Keyes (2002) proposes the Complete State Model of MH, which embraces the notions of MH, mental illness and well-being. The model represents MH as a dual continuum. Mental illness lies on one continuum from absent to present, and MH lies on a separate-but-related continuum from low to high (Slade, 2010). Those with high MH are said to be “flourishing”, and those with low MH are “languishing”. Complete MH describes the state in which one has low symptoms of mental illness and is flourishing. Conversely, a state of low MH and high occurrence of mental illness symptoms is described as complete mental illness. Within this model, it is therefore possible for one to both flourish and exhibit symptoms of mental illness, though Keyes (2002) found that adults who were flourishing were 85% less likely than moderately well adults to label their emotional health as “poor” or “fair”.

1.2.2 What is Well-Being?

The concept of well-being can be broadly described by two overlapping but distinct philosophical perspectives. One is a “hedonic” view, in which well-being is evaluated subjectively based on pleasant and unpleasant life experiences. The other is a “eudaimonic” approach, which emphasizes ideas about positive human functioning and the fulfilment of human potential (Ryan & Deci, 2001).

Keyes et al. (2002) differentiate between subjective well-being (SWB) and psychological well-being (PWB). SWB defines one's quality of life in terms of happiness (the balance between positive and negative affect) and overall life satisfaction. Conversely, the eudaimonic approach holds that not all subjectively-felt desires lead to

well-being when fulfilled (Ryan & Deci, 2001). A state of eudaimonic well-being is instead reached through efforts to live in accordance with one's "true self" or *daimon*. The daimon can be interpreted as an ideal version of oneself towards which one strives, and this can provide meaning and direction to one's life. Whilst hedonic enjoyment is associated with feeling relaxed, excited, content, and forgetting one's personal problems, this eudaimonic state is more strongly associated with feeling competent, having clear goals, feeling challenged, investing effort, and knowing how well one is doing (Waterman, 1993).

Defining well-being in terms of longer-term human development and the fulfilment of one's potential gave rise to a psychological approach to well-being, as distinct from the SWB someone can experience based on their own short-lived internal mental state (Ryan & Deci, 2001). (Ryff, 1989) formulates a multidimensional model of PWB. This model lists six criteria for positive human functioning: full acceptance of all aspects of oneself; the development of warm, meaningful relationships with others; a sense of autonomy over one's thoughts and actions; a sense of control and mastery of one's external environment; feeling like one's life has purpose and meaning; and a sense of personal growth and development over time. Ryff's definitions of these dimensions (and how they manifest when present or absent) are given in **Table 1.1**.

It is important to give proper weight to both subjective and psychological aspects of well-being. Human flourishing requires both.

Table 1.1 Ryff's (1989) descriptions of high and low scorers for each of her six dimensions of PWB

	High scorer	Low scorer
Self-acceptance	Possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self including good and bad qualities; feels positive about past life.	Feels dissatisfied with self; is disappointed with what has occurred in past life; is troubled about certain personal qualities; wishes to be different than what they are.
Positive relations with others	Has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection and intimacy; understands give and take of human relationships.	Has few close, trusting relationships with others; finds it difficult to be warm, open and concerned about others; not willing to make compromises to sustain important ties with others.
Autonomy	Is self-determining and independent; able to resist social pressures to think and act in certain ways; regulates behaviour from within; evaluates self by personal standards.	Is concerned about the expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways.
Environmental mastery	Has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.	Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.
Purpose in life	Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.	Lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose of past life; has no outlook or beliefs that give life meaning.
Personal growth	Has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing their potential; sees improvement in self and behaviour over time; is changing in ways that reflect more self-knowledge and effectiveness.	Has a sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviours.

1.3 Student Mental Health

1.3.1 Prevalence of Mental Illness in Higher Education

The increasing attention on student MH has led to many studies measuring the prevalence of mental illness among university students in various contexts. These studies generally assess prevalence through participants' self-assessments of their emotional well-being and symptoms of mental illness (Eisenberg et al., 2007).

Eisenberg et al. (2007) found 15.6% of undergraduate participants of a study in a US university (N = 1,181) screened positive for depression (13.8%), anxiety disorders (4.2%), or both (2.4%). 18.4% missed academic obligations due to MH reasons, and 44.4% reported their MH affected their academic performance. The suicidality rate (past four weeks: ideation, plans, attempts) was 2.5%.

In the UK, a large-scale study of student well-being (N = 37,654 across 140 UK universities) revealed that about one in four students experiences a MH problem each year (The Insight Network & Dig-In, 2019). Second- and third- year students were at an increased risk for feelings of worry and loneliness, substance misuse and thoughts of self-harm, and students identifying their gender as 'other' were also found to be at a higher risk for psychological difficulties and disorders. 50.3% of respondents reported thoughts of self-harm. It should be noted that this study was conducted before the COVID-19 pandemic.

Ibrahim et al. (2013) found that prevalence rates of depression in university students from 24 studies ranged from 10% to 84.5%. Gender differences also varied by study. Interestingly, there was an inverse relationship between the recorded prevalence rate of depression and the response rate of the study.

Much of the discipline-specific mental illness research pertains to students in the medical sciences (medicine, nursing, dentistry); chemistry students are underrepresented in the MH literature. The wide variation in literature rates of mental illness and suicidality also indicates the importance of contextualising MH data, and suggests that direct comparisons between studies might not be straightforward.

1.3.2 Importance of Student Mental Health in Higher Education

Flourishing (“*striving to achieve a life that lacks no activity that would make it better or more complete*”) is often used as the framework for discussing students’ MH. Gereluk (2020) draws on Nussbaum’s (2011) list of ten capabilities essential for human flourishing to establish four capabilities that can positively or negatively impact one’s well-being in academia: senses, imagination and thought; practical reason; affiliation; and control over one’s environment.

Nussbaum’s capabilities are ‘fundamental entitlements’. They are important not merely to facilitate other aspects of well-being, but because they hold innate value in and of themselves. Students have the right to flourish, and in Nussbaum’s conception flourishing should be antecedent to academic achievement responsibilities.

Support services and MH initiatives tend to focus on reducing symptoms of mental illness (White et al., 2016). However, prevention and treatment of mental illnesses are necessary but not themselves sufficient for well-being (Gereluk, 2020; Keyes, 2002). Successful MH strategies strive for both the absence of mental illness, but also the promotion of positive well-being (Keyes, 2016; Slade, 2010).

1.3.3 Poor Mental Health as a Disability

Under the Equality Act 2010, a person is “disabled” if they have a physical or mental impairment that has a ‘substantial’ and ‘long-term’ negative effect on your ability to do normal daily activities, where ‘substantial’ is “more than minor or trivial”, and ‘long-term’ means 12 months or more. Studying, including examinations, is included in the category of a normal daily activity (University of Oxford, 2022). Educational institutions (including universities) have a legal obligation to make “reasonable adjustments” so that impaired students studying within the institution are not disadvantaged relative to non-impaired people.

Mental illness can be considered a disability if it fulfils the “impairment plus substantial long-term effect on ability” criterion above. Different models of disability are useful to explain the ways in which mental illness can be disabling. These contrasting models are significant because they frame not only how people with disabilities shape their own identity but also how society views and treats people with disabilities (Retief and Letšosa, 2018). There are two broad discourses which dominate the disability studies domain: the medical model and the social model (LoBianco and Sheppard-Jones, 2007).

1.3.3.1 The Medical Model of Disability

The medical model frames disability as an individual pathological impairment, deficiency or abnormality which needs to be cured or fixed (Shakespeare, 2016). This is a strongly normative model; a person with a disability is defined by their inability to function as a “normal” person does (Mitra, 2006).

Under this model, mental illnesses, particularly depression and anxiety disorders, are a product of genetic and/or biochemical factors. Symptoms can be alleviated by

administration of various pharmacological drugs which target specific neurotransmitters in the brain (Thibaut, 2017).

1.3.3.2 The Social Model of Disability

The social model of disability makes a distinction between “impairment” and “disability”. An impairment is a physical or mental dysfunction, meanwhile disability is caused by the social or environmental barriers imposed by society which restrict or limit the person with the impairment in some way (Connor et al., 2008). For example, steps to a particular space can disable a wheelchair user by preventing them from accessing that space; or a lack of audio description or tactile text can disable a blind person trying to engage with certain types of visual media. The social model sees disability as a form of social oppression: this view does not centre on fixing the individual, but rather on changing society to remove the barriers which disable individuals (Bingham et al., 2013).

A ‘biopsychosocial’ model of mental illness exists which recognises that symptoms of depression and anxiety arise not only from biological factors but also from numerous environmental and social factors. Cvetkovich & Wilkerson (2016) discuss depression as a “shared feeling”. Affect (positive and negative) can be shared from person to person or through the environment, such as workplaces or educational environments. Schaberg (2022) discusses depression as *“a state of things a dispersed feeling of dread and weariness that has as much to do with cultural forces and planetary circumstances as it has to do with the intense feeling of solitary helplessness”*. These ideas speak to a social model of depression, insofar as the emergence of depression is a phenomenon involving individuals rooted within biopsychosocial contexts.

Psychological distress (e.g. depression, anxiety, or stress) affects academic behaviours so fundamentally that it can often be treated as a medical disability: it is hard to see how a lab course is able to teach someone with depression who is unable to get out of bed. Yet on the social model, this expectation that a student attends the lab space is exactly the thing which disables them. It is possible that such an extreme case of depression is more helpful to analyse using the medical model than the social model.

In the wider view, though, the disabling nature of depression can be seen as somewhat relating to the individual's environment. The expectations people face in their physical and social environments can contribute to a worsening of their mental state.

Ryan & Huta (2009) note that well-being can also be treated this way: *“Just like psychopathology, well-being is complex and multifaceted, and defined not only by mental states, but also by what gives rise to them”*. Considering both mental illness and MH in terms of their larger social contexts and wider environments is important in how we create policies to respectively combat and promote these mental states in individuals' lived experiences.

1.4 Student Experiences of Mental Health

A student's mental state affects nearly all aspects of how they navigate through life. Low MH and frequent symptoms of mental illness are likely to be associated with adverse student experiences and outcomes.

1.4.1 Factors Affecting Student Mental Health

Starting university marks an important transition in a young person's life. Many are living independently for the first time, and there are new personal, social, financial, and academic demands to contend with.

Many students experience some form of psychological distress in response to these increasing demands. Sprung & Rogers (2021) found that US college students experiencing poor work-life balance reported higher levels of stress, which in turn contributed to increased symptoms of anxiety and depression.

Baik et al. (2019) surveyed university students on what they thought could be done to improve student well-being. Responses covered a wide range of aspects of university life, including: academic teachers' attitudes and teaching practices; positive interactions between students, their peers and their teachers; improving access to support services; the environment and culture in their degree program; course design; program administration; assessment practices; and student society activities. Teacher attributes such as their approachability, empathy, and communication skills were particularly important factors affecting student well-being.

1.4.2 Effect on Learning

Hysenbegasi et al. (2005) found that depression in university students has an adverse effect on academic performance. Depressed students missed significantly more classes, assignments, and social activities than their non-depressed peers.

Prolonged psychological distress can negatively influence capacity for learning by impairing information processing, attention, memory, decision-making, motivation and impulse control (Baik et al., 2019). Two models can be particularly useful when considering the impacts of adverse mental states on cognitive functioning: Cognitive Load Theory and the Window of Tolerance.

1.4.2.1 Cognitive Load Theory

Learning requires new knowledge to enter someone's memory. How does this happen? On one model of information processing, it has three stages: (i) sensory information enters the brain; (ii) the brain filters important information into the working memory; (iii) the working memory then processes or discards this information, placing important material with the long-term memory.

Cognitive load theory posits that one's working memory capacity is limited: someone can be exposed to infinite external stimuli (and can in principle remember an infinite amount) but cannot process unlimited information for storage. If the total cognitive load associated with a learning task exceeds one's available working memory, cognitive overload occurs, and learning is impeded (de Jong, 2010).

Cranford et al. (2014) studied whether cognitive load could be measured by one's heart rate. They found that chemistry problems designed to elicit a higher cognitive load induced a greater change in heart rate in participants than problems designed to be of a lower cognitive load. Therefore, tasks with a high cognitive load place a certain amount of stress on a learner's body. If someone is already experiencing stress from poor MH and well-being, they may be at higher risk of experiencing cognitive overload.

If available working memory is finite, this means that cognitive capacity available for learning tasks is related to someone's current physiological, psychological, and emotional states (among other things). For example, negative thoughts can occupy working memory: adverse mental states (such as those associated with symptoms of mental illness) may therefore diminish someone's capacity for learning new information.

1.4.2.2 The Window of Tolerance

The theory of the window of tolerance models someone's emotional state as a measure of physiological arousal. When a person experiences overload, stress or overwhelm, they can enter one of two states: hyperarousal or hypoarousal. In a state of hyperarousal, someone might experience increased heart rate, feelings of panic and anxiety. It resembles the "fight or flight" stimulus response. When one's level of arousal falls below the window of tolerance (hypoarousal), they might experience tiredness, a lack of drive and motivation, and depressive-like symptoms (Ogden, 2009).

In both of these states, the brain becomes unable to process information as it usually would. The "window of tolerance" is the region of physiological arousal associated with regular cognitive functioning, in which one can *respond appropriately* to a stimulus rather than simply *react* to it. This is the region in which effective learning is most likely to take place. Mental illness symptoms which evoke hypoarousal (e.g. depression) or hyperarousal (e.g. anxiety, stress) are thus linked to decreased cognitive capacity, which is essential for effective learning.

1.4.3 Mental Health and Studying Chemistry

In many ways, chemistry degrees are unique. Learning occurs *via* multiple modes (lectures, tutorials, classes, teaching laboratories, independent learning), most of which involve rigidly-timetabled contact hours. Teaching laboratories in particular require students to be present in a laboratory at set working hours. This is not always easily achieved for students grappling with low MH.

Little research has been done thus far on affective experiences of chemistry students (Flaherty, 2020), though Seery et al. (2019) emphasize the importance of

affective aspects of learning in a laboratory setting, which they term a “complex learning environment”. More discipline-specific research is required to facilitate a better understanding of any distinctive features of chemistry students’ experiences, since the unique demands of chemistry degrees mean that it is not always appropriate to generalise findings from studies on MH of non-chemistry students.

1.5 Conclusion

University student MH and well-being is of increasing concern, and this is confirmed by the rise in research on this topic in recent years (Hernández-Torrano et al., 2020). Models of MH, well-being and cognition can be useful in building understanding of students’ experiences with MH and its effects on studying. This understanding is fundamental to developing effective policy to improve student well-being.

The experience of studying chemistry is unique, most particularly in the time-intensive pedagogy of practical lab work. Being a chemistry student at Oxford is also distinctive in several dimensions: terms are short and intense interspersed with longer ‘vacation’ periods; the Oxford MChem course structure is somewhat rigid, with fewer optional modules than are seen on other university chemistry courses; the assessment format is heavily exam-based (65% final exam, 10% practical laboratory performance, 25% Masters thesis); and there is no scope for a student to graduate with a classified Bachelor’s degree after three years.

The biopsychosocial model of mental illness acknowledges that the social and environmental contexts in which a student operates play a key role in their well-being. Students’ experiences, then, must be considered in the context of their environment.

Local-scale research into the experiences of a specific cohort is one way to access the necessary granularity.

Understanding the specific educational context of learners is essential to understanding their experience of MH in their studies. The rest of this thesis will focus on the context of the Oxford MChem.

Chapter 2: Aims and Objectives

Student mental health (MH) is a key factor in various important student outcomes, including academic attainment, retention rates, and student suicidality. As well as the outcomes from a degree, students' MH also has a substantial effect on the process of doing the degree: the quality of day-to-day experiences of being at university. Clarification of the factors affecting student MH enables evidence-led approaches to improving student well-being.

The overall aims of this study were to investigate the condition of student MH among chemistry undergraduates at Oxford, and to better understand the ways in which students' experiences of studying chemistry related to their MH (whether positively or negatively).

Research Questions:

- 1. How common are stress, anxiety and depression among undergraduate Oxford MChem students?*
- 2. How does studying chemistry interact with students' mental health?*

To answer these questions, we distributed an anonymous online survey to all current Oxford chemistry undergraduate students (for the academic year of October 2021 to June 2022). The survey featured a validated instrument to gather quantitative data on the incidence of depression, anxiety and stress, and free text questions to gather qualitative data on students' experiences of MH and studying chemistry. We also collected demographic data in the survey, to explore whether the experiences of certain groups of students had different experiences of MH while studying chemistry.

Chapter 3: Prevalence of Mental Illness Among Oxford Chemistry Students

3.1 Introduction

The prevalence of symptoms of mental illness is an important factor in student wellbeing. In the dual continua model of MH, mental illness and positive functioning are distinct but related scales (Westerhof & Keyes, 2010). MH has huge consequences for students' capacity to learn, rates of attrition and other important student outcomes (Baik et al., 2019), but also for the quality of students' experiences of university.

Nationally, depression and anxiety disorders are two of the most common mental illnesses reported by students (The Insight Network & Dig-In, 2019). The aim of the survey was to gather data to build a picture of the general landscape of the prevalence of mental illness among current chemistry students at Oxford.

3.2 Survey Design and Methodology

The electronic survey was hosted by the JISC website. It featured three main sections of data collection: first the Depression, Anxiety, Stress Scale – 21 Items (DASS-21); then three free text questions; and finally three demographic questions.

3.2.1 The Depression, Anxiety, Stress Scale – 21 Items

The DASS-21 is a self-administered questionnaire designed to quantify the extent of three negative emotional states: depression, anxiety and stress, as experienced by the respondent over the past week (Parkitny & McAuley, 2010). It features a set of three subscales of seven items each, where each item is rated on a four-point Likert-type scale from 0 ("Did not apply to me at all") to 3 ("Applied to me very much or most of the time"). The depression subscale relates to absence of positive affect, low self-esteem and

feelings of hopelessness; the anxiety subscale relates to autonomic arousal, fearfulness and physiological hyperarousal; and the stress subscale relates to persistent tension, irritability and low frustration intolerance (Brown et al., 1997).

The DASS-21 is a short-form version of the original DASS-42, developed by Lovibond & Lovibond (1995). Both have been used to assess the prevalence of emotional distress in numerous clinical and non-clinical contexts (Antony et al., 1998; Lee et al., 2019).

3.2.2 Free Text Questions

Participants were then presented with three free text questions:

1. *Can you describe a time in your degree when you felt that your experience of studying chemistry interacted with your mental health (either positively or negatively)?*
2. *What streams of support, if any, have you reached for in times of difficulty during your degree?*
3. *Is there anything else you would like to add?*

The aim of these questions was to gain a richer understanding of the various ways in which studying chemistry interacts with students' MH. The opener, "*Can you describe a time...*" invites students to draw on real experiences that they have had, rather than considering hypothetical situations which may have made them feel a certain way (Clarkson, 2021).

3.2.3 Self-Reported Demographic Data

Participants were then asked three demographic questions pertaining to their year group, gender, and status as an international or domestic student. This information allowed us to stratify the responses according to these different groupings.

3.2.4 Ethical Considerations in Survey Design

The subject matter meant that there were several ethical points (detailed below) to consider when designing the survey. We followed CUREC Approved Procedure 02 (AP02), intended for studies involving administration of (standardised) questionnaires on sensitive and/or medical topics. As part of AP02, the Part II researcher undertook an online Introduction to Safeguarding training course before launching the survey.

3.2.4.1 Consent

Explicit consent was obtained from participants *via* two tick-boxes on the first page of the survey: one asking the participant to confirm that they were a current Oxford MChem undergraduate student, and one to confirm that they agreed to participate in the survey. Only by ticking both boxes could the participant proceed to the survey.

3.2.4.2 Demographic Questions

The demographic questions asked participants to self-declare their year group, gender and status as an international or domestic student. Due to the limited size of the MChem undergraduate cohort, there existed a small possibility that some intersection of these characteristics would lead to a participant becoming identifiable from their responses to these questions. It was therefore decided to limit the gender question to just three categories (Male; Female; Non-binary/Other) in order to balance the need for anonymity with the ability to classify the survey responses.

3.2.4.3 Mental Health Resources & Early Withdrawal

Due to the sensitive subject matter, it was important that all participants felt supported both during and after completing the survey. A list of MH resources (University and

public services, see Appendix) was presented to all participants at the end of the survey, and also to any participants who withdrew from the survey part-way through.

3.2.4.4 Ethical Clearance

Before distribution of the survey, ethical clearance was obtained from the Medical Sciences Interdivisional Research Ethics Committee (reference: R79440/RE001).

3.2.5 Survey Distribution

The survey was distributed twice *via* email to all current Oxford Chemistry undergraduate students in years 1 to 4: once in late Hilary term 2022, and again at the beginning of Trinity term 2022. Recruitment flyers were also distributed within the department, which featured a QR code linking to the online survey.

3.3 Participants

76 current Oxford Chemistry undergraduate students completed the survey following the first recruitment email, and a further 26 responded following the second email. Of the 102 total respondents, 58 (56.9%) were female, 39 (38.2%) were male and 5 students (4.9%) disclosed their gender as non-binary/other. University of Oxford admissions data for years 2018 to 2020 show that of the UK-domiciled students admitted to study chemistry, 39.2% were female (University of Oxford, 2021). Though this figure does not account for international students, the gender distribution in our study does not closely reflect the gender balance of chemistry students at Oxford.

The year group distribution was as follows: 21 respondents (20.6%) from 1st year; 30 (29.4%) from 2nd year; 30 (29.4%) from 3rd year; and 21 (20.6%) from 4th year. Only 8 respondents (7.8%) self-declared as international students.

It is important to emphasise that the 102 survey participants constituted only 14% of the total student body of 728 students (University of Oxford, 2020). The participant population may not accurately represent the student body, and participants might be those with unusually strong views on MH. It seems likely that this would skew the results negatively because a key mechanism for forming strong views on MH is to experience poor MH. Care should be taken when making claims about the general population based on any survey of a self-selecting subgroup of that population.

3.4 DASS-21 Global Results

3.4.1 Score Calculation and Classification

Results from the DASS-21 yields three scores which are calculated by summing the numerical values for all items in each subscale, and then multiplying this by two (normative data is based on the full-length DASS-42 instrument). The three subscales have different thresholds for the classifications of scores into clinically relevant severity levels of the affective states (see **Table 3.1**). For this reason, deeper analysis throughout this chapter addresses each subscale individually, and discussions of scores are based on these classifications.

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Table 3.1 Score thresholds and their Associated Severity Labels (Lovibond & Lovibond, 1995)

3.4.2 Global Score Distributions

The number of participants scoring in each severity level are tabulated in **Table 3.2**.

	Depression	Anxiety	Stress
Normal	27 (26.5%)	28 (27.5%)	28 (27.5%)
Mild	10 (9.8%)	7 (6.9%)	13 (12.7%)
Moderate	20 (19.6%)	20 (19.6%)	23 (22.5%)
Severe	17 (16.7%)	13 (12.7%)	23 (22.5%)
Extremely Severe	28 (27.5%)	34 (33.3%)	15 (14.7%)

Table 3.2 No. of Students with Scores Indexed by Severity Level (and as a % of total respondents)

The data is not normally distributed, nor is it singly skewed (as might be expected since the range of scores denoting a “Normal” level of depression, anxiety or stress lies at the lower end of the scale in all three cases). This may point to a link between the Oxford MChem experience and occurrence of mental illness, or it could be a result of a self-selecting sample (the idea that students experiencing symptoms of mental illness have a vested interest in this research and are more likely to participate).

3.4.3 Mean, Median, Std. Deviation & Internal Consistency

The mean, median, standard deviation and internal consistencies of each subscale are tabulated in **Table 3.3**. The internal consistency of the survey was calculated using Cronbach’s Alpha (α). This assesses how closely related a set of items are and can be considered a measure of scale reliability. Cronbach’s Alpha ranges from 0 to 1, with values generally considered acceptable if they lie within the range $0.7 \leq \alpha \leq 0.95$.

	Mean	Median	SD	Cronbach’s α	Range of α in Lit.*
Depression	19.1	17	12.3	0.91	0.82-0.94
Anxiety	14.7	14	10.7	0.87	0.74-0.87
Stress	21.4	20	10.6	0.88	0.82-0.91
Overall	18.4	18	11.5	0.95	0.93**

Table 3.3 Mean, Median, Standard Deviation (SD) & Internal Consistency (given by Cronbach’s α). *From (Antony et al., 1998; **Henry & Crawford, 2005; Szabó, 2010; Zanon et al., 2021)

All subscale mean and median values lie in the range of “Moderate” severity, except the mean anxiety score which lies between the “Moderate” and “Severe” ranges. These

averages are all greater than reports in the literature for available comparator groups, including for medical students in Nigeria (Coker et al., 2018), a young adolescent sample in Australia (Szabó, 2010), and a large non-clinical adult sample in the UK (Henry & Crawford, 2005). Studies involving application of the DASS-21 in UK student populations are scarce. The scale showed good to excellent internal consistency for all subscales and for the scale as a whole, and these α values are in line with other DASS-21 studies.

3.5 Stratified Results

Scores were stratified according to the self-declared demographic information collected in the online survey: by gender, by year group and by domestic/international status.

3.5.1 Statistical Analysis

Two-tailed Mann-Whitney U tests were performed on all pairs of data sets within each stratification. These tests give an indication of whether two distributions are significantly different; results are considered statistically significant if the associated p-value is less than 0.05. P-values for each stratification are given alongside the stratified scores below.

3.5.2 Results By Gender: Overview

Participants identifying as non-binary/other had the highest median scores for all three subscales, and their scores were significantly greater than male participants' scores. Female participants had higher average scores than male participants, and this difference was statistically significant for the anxiety and stress subscales but not for depression. All ($n = 7$) participants who scored the maximum depression and/or stress scores (42) were female.

Median scores for all gender groups were at the moderate severity level and above. For students identifying as non-binary/other, all absolute scores fell at the moderate level and above, but it is important to note that only five non-binary/other identifying students participated.

3.5.2.1 Score Distributions

The median depression score for male students falls at the “Moderate” severity level, for female students at the lower end of the “Severe” level, and for non-binary/other students at the “Extremely Severe” level (**Fig. 3.1**). This is consistent with other studies which have shown that female and gender-minority populations generally show higher levels of mental illness than male populations (Baik et al., 2019; The Insight Network, 2019).

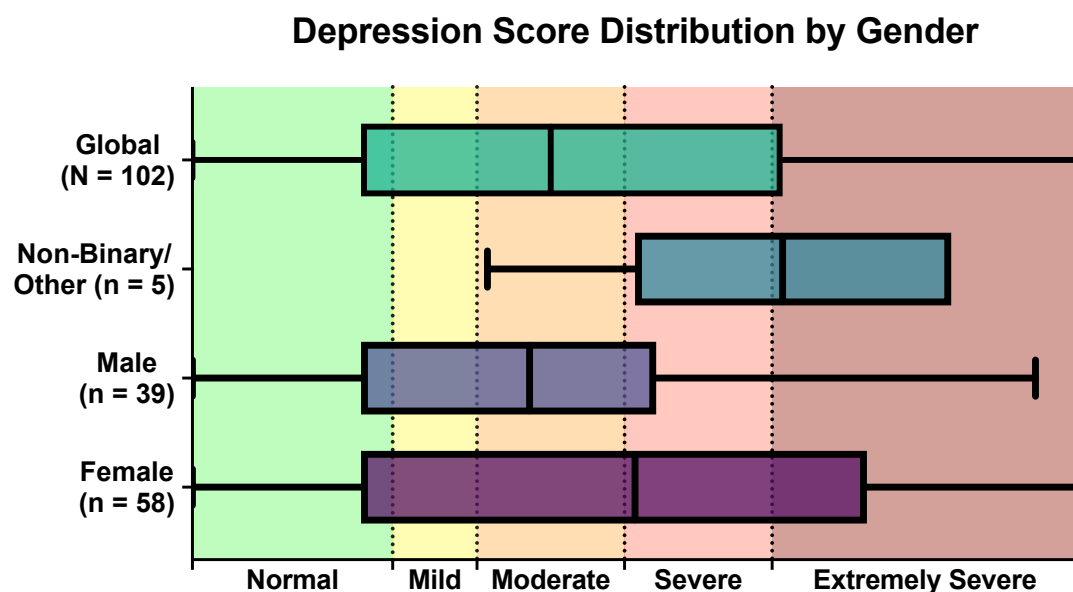


Fig. 3.1 Depression Score Distributions Stratified by Gender

The difference between male and non-binary/other students’ scores was statistically significant (**Table 3.4**). The broader interquartile range among females might somewhat reflect the larger sample size.

Similar to the depression subscale, the median score for anxiety fell at the “Moderate” level for males, the “Severe” level for females and the “Extremely Severe” level for non-binary/other students (**Fig. 3.2**). Female and non-binary/other students again showed higher average levels than males and these differences were statistically significant. The difference between females and non-binary/other students’ scores was not statistically significant (**Table 3.4**).

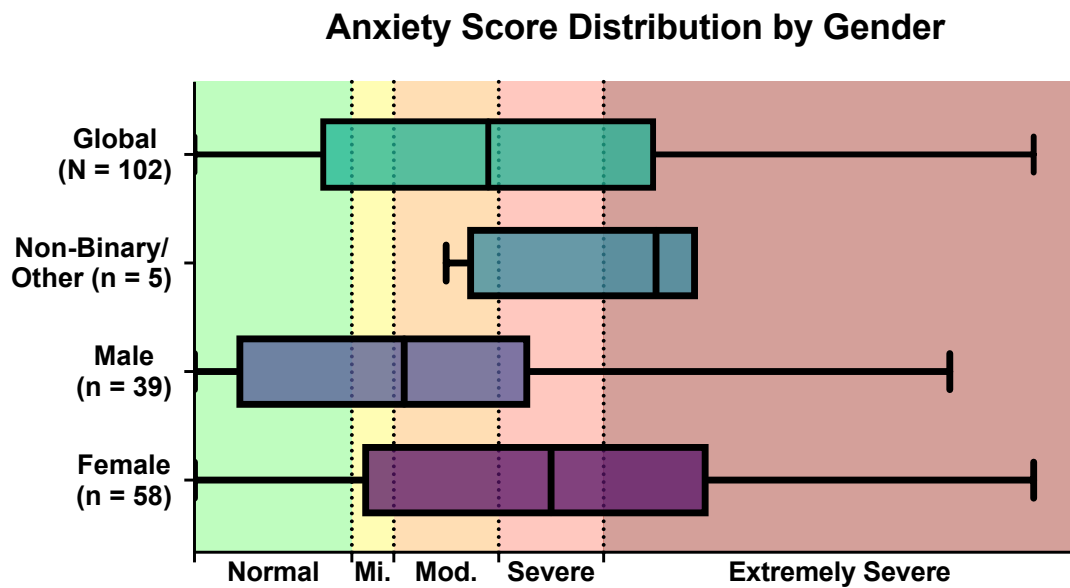


Fig. 3.2 Anxiety Score Distributions Stratified by Gender

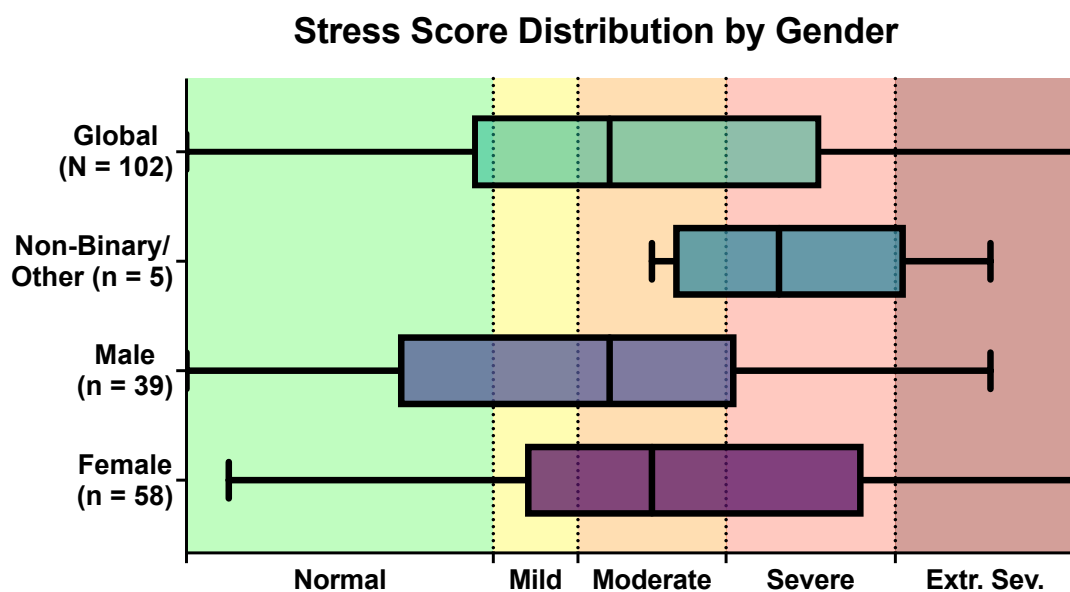


Fig. 3.3 Stress Score Distributions Stratified by Gender

Finally, the average scores for stress were at the “Moderate” level for male and female participants, and at the “Severe” level for participants identifying as non-binary/other (Fig. 3.3). Again, female and non-binary/other identifying students showed higher median levels of stress than males, and the differences in scores between these groups were statistically significant. The difference in scores between female and non-binary/other students was not statistically significant (Table 3.4).

Mann-Whitney U	Depression	Anxiety	Stress
Male & Female	0.0563	*0.0019	*0.0288
Female & Non-Binary/Other	0.2073	0.5989	0.2681
Male & Non-Binary/Other	*0.0139	*0.0215	*0.0234

Table 3.4 Mann-Whitney U test p-values for each pair of gendered data sets. Asterisks (*) denote where the difference is statistically significant ($p < 0.05$)

3.5.2.2 Item-by-Item Analysis

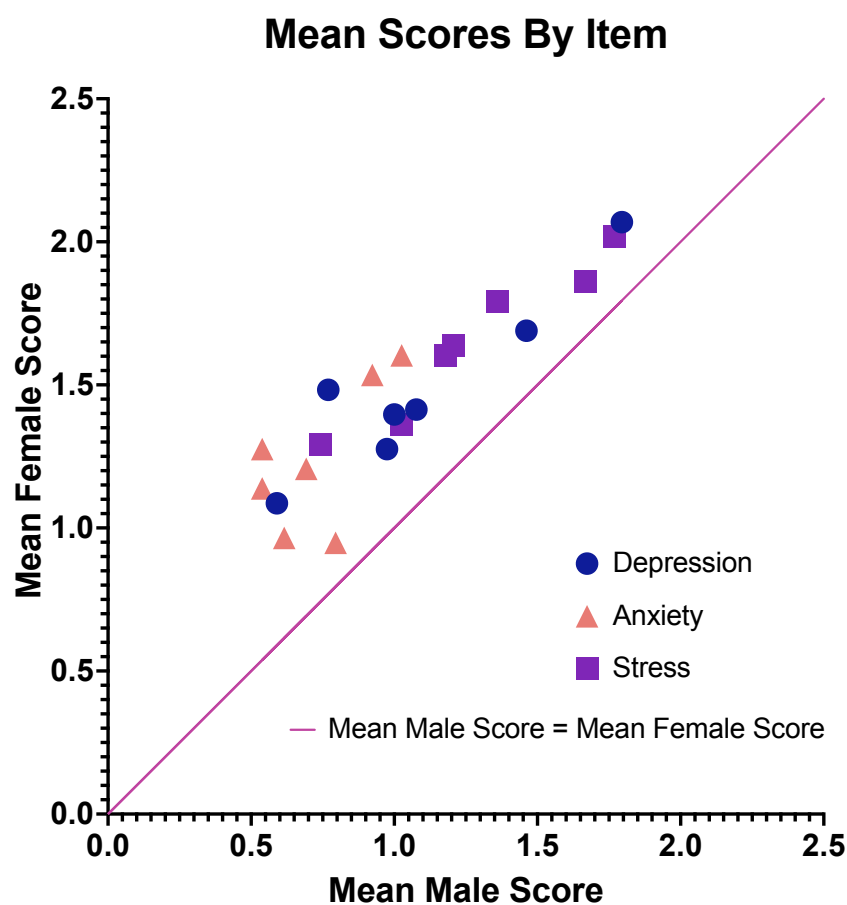


Fig. 3.4 Scatter Plot Comparing Mean Individual Item Scores for Male and Female Participants

Each item in the DASS-21 was rated on a Likert scale from 0 (“Did not apply to me at all”) to 3 (“Applied to me very much or most of the time”). Strikingly, the mean female score for individual items exceeded the corresponding mean male score for every single item (**Fig. 3.4**). This suggests that the difference in scores between male and female participants relates to something general about the survey rather than the responses to some outlier questions.

Respondents identifying as non-binary/other also had mean scores higher than male students for all items, and higher than female students in 18 of the 21 items. The mean difference between male and non-binary/other item scores was 0.77, and between male and female mean scores was 0.42.

3.5.3 Results By Year Group: Overview

First-years showed the highest median levels of depression, anxiety and stress, all of which were at the “Severe” level. Second-years showed significantly higher levels of depression than third- and fourth-years. First- and second-year participants had significantly higher scores for anxiety and stress than fourth-year participants. The differences in scores between first- and third-year students was high in all three subscales ($p < 0.1$) but none were significant to a 95% confidence interval (**Table 3.5**).

Across all subscales, median scores for year groups one to three fell at “Moderate” severity and above: at least half of the participants in each of year groups one to three were experiencing moderate, severe or extremely severe levels of depression, anxiety and/or stress.

3.5.3.1 Score Distributions

The median scores for depression were at the “Severe” level for first- and second-year students, and at the “Moderate” level for third- and fourth-year students (**Fig 3.5**).

The fourth-year median score for depression fell higher than the fourth-year median anxiety and stress scores, and depression was the only subscale in which the fourth-year median was higher than the third-year median, though the difference between third-year and fourth-year depression scores was not statistically significant (**Table 3.5**).

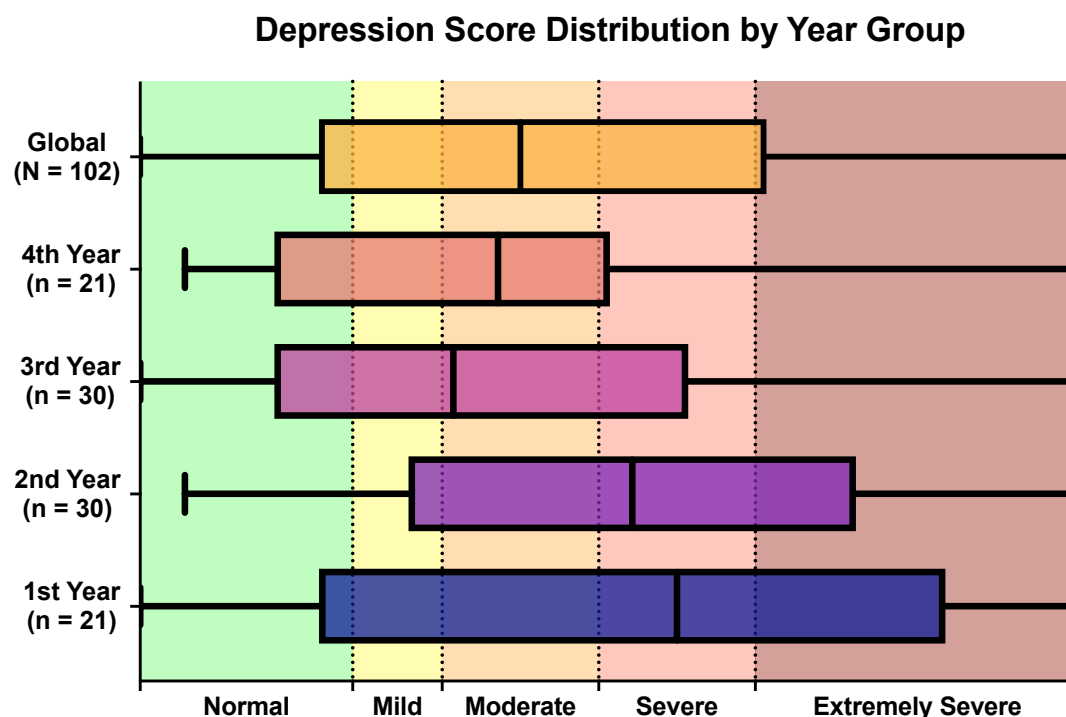


Fig. 3.5 Depression Score Distributions Stratified by Year Group

M-W U (Depr.)	Year 1	Year 2	Year 3	Year 4
Year 1				
Year 2	0.9205			
Year 3	0.0946	*0.0326		
Year 4	0.0702	*0.0345	0.9659	

Table 3.5 Mann-Whitney U test p-values for Depression Scores Stratified by Year Group. Asterisks (*) denote where the difference is statistically significant ($p < 0.05$)

The median anxiety score for first-year participants was at the “Severe” level, and second- and third-year medians lay in the range of “Moderate” severity (**Fig. 3.6**). Fourth-year participants had the lowest median anxiety score (“Mild”), and their anxiety scores were significantly lower than those of first- and second-year participants (**Table 3.6**). Differences in scores between other pairs of year groups were not statistically significant.

The relatively small interquartile range for first-years could suggest that there is something about the collective first-year experience that somehow promotes anxiety, though this could also be due to selection bias in the sample, and the small sample size. In contrast, the fourth-year skew towards the lower end of anxiety scores might point to something uniquely positive about being a fourth year on the Oxford MChem. Plausible academic reasons might link to distinctive features of the Part II year: the slower pace of an extended research project, a clearer work-life divide (and a sense of being able to “leave work at work”), or the thesis-viva assessment format.

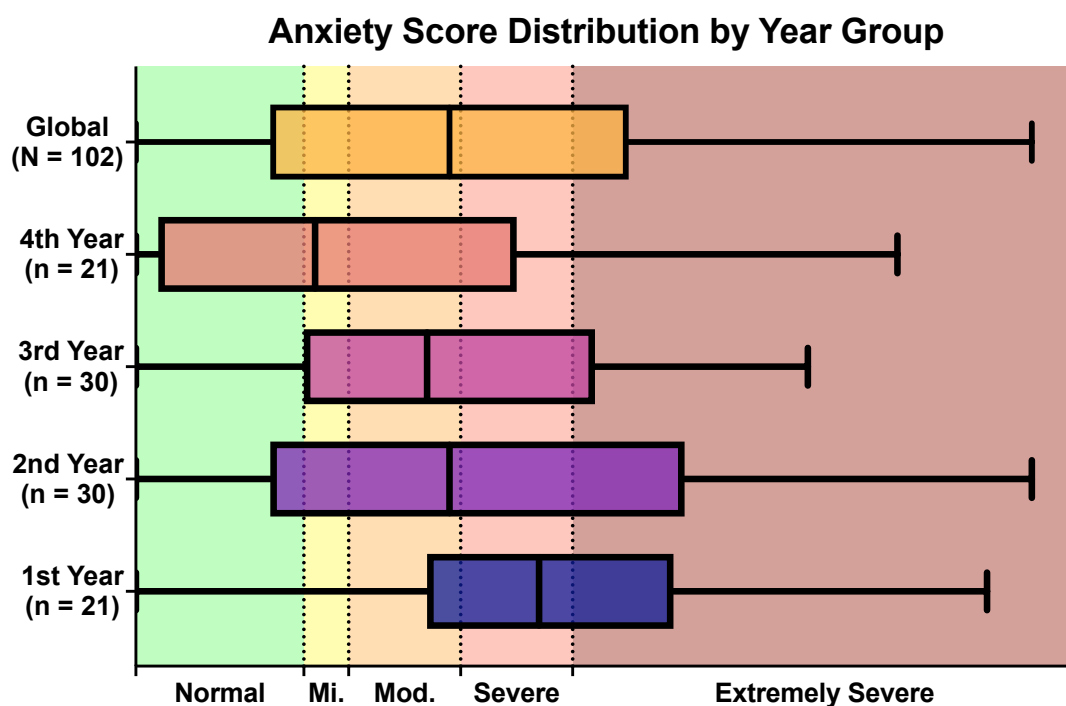


Fig. 3.6 Anxiety Score Distributions Stratified by Year Group

M-W U (Anx.)	Year 1	Year 2	Year 3	Year 4
Year 1				
Year 2	0.3286			
Year 3	0.0514	0.5101		
Year 4	*0.0059	*0.0458	0.1191	

Table 3.6 Mann-Whitney U test p-values for Anxiety Scores Stratified by Year Group. Asterisks (*) denote where the difference is statistically significant ($p < 0.05$)

Median scores for stress fell in the same ranges as those for anxiety for all year groups (Fig. 3.7). Fourth-year participants had significantly lower scores than first- and second-year participants (Table 3.7), though the median for fourth-years was still above the “Normal” level. Differences between other year groups were not statistically significant.

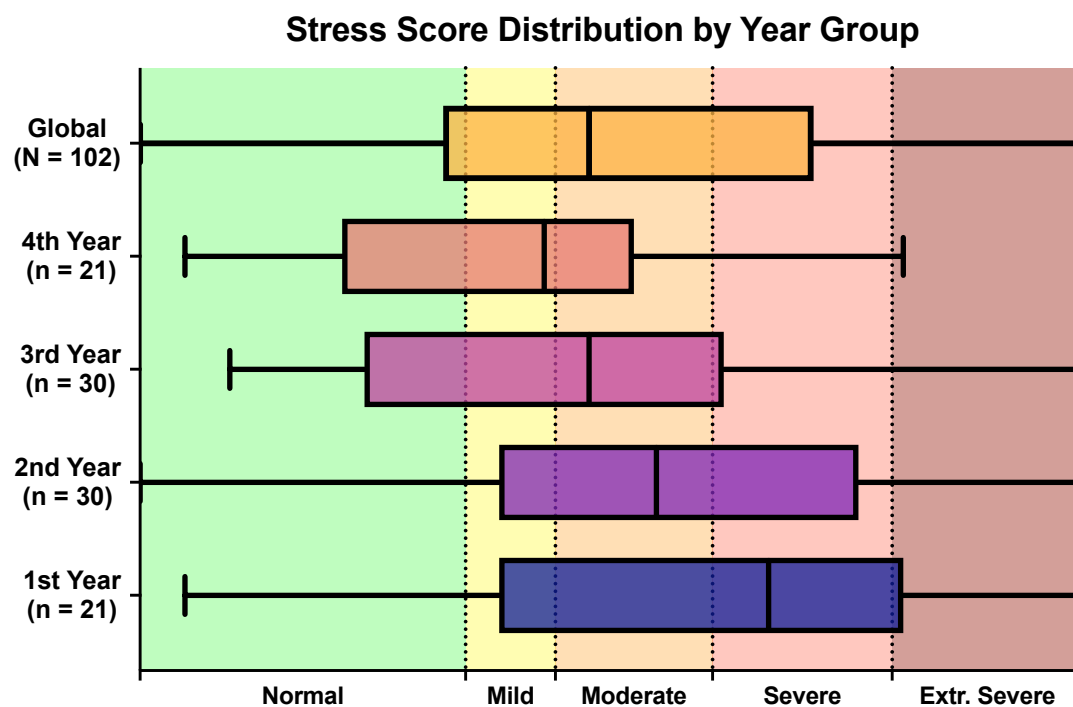


Fig. 3.7 Stress Score Distributions Stratified by Year Group

M-W U (Str.)	Year 1	Year 2	Year 3	Year 4
Year 1				
Year 2	0.5205			
Year 3	0.0720	0.1923		
Year 4	*0.0089	*0.0170	0.1984	

Table 3.7 Mann-Whitney U test p-values for Stress Scores Stratified by Year Group. Asterisks (*) denote where the difference is statistically significant ($p < 0.05$)

3.5.4 Results by Domestic or International Status

3.5.4.1 Score Distributions

In contrast to the previous stratifications of the data, there was little difference in the distributions for domestic and international students (Fig. 3.8 – 3.10). This is confirmed by the high Mann-Whitney U p-values (Table 3.8).

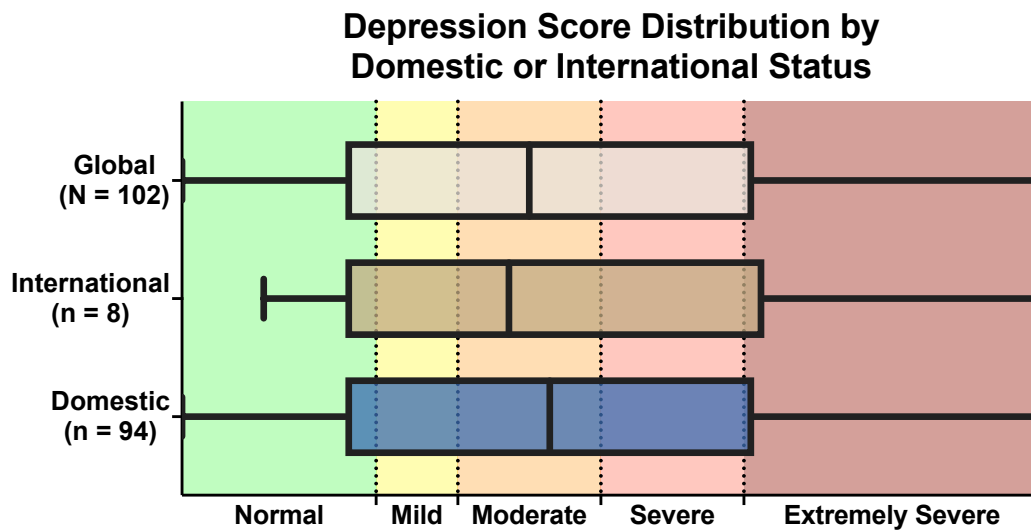


Fig. 3.8 Depression Score Distributions Stratified by Domestic or International Status

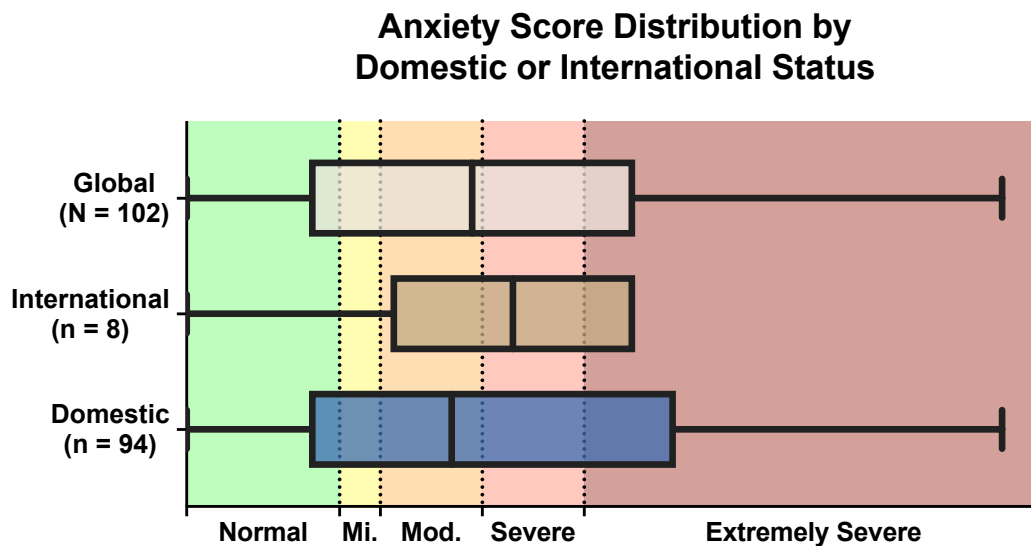


Fig. 3.9 Anxiety Score Distributions Stratified by Domestic or International Status

	M-W U	Depression	Anxiety	Stress
Domestic & International		0.9147	0.8472	0.8281

Table 3.8 Mann-Whitney U test p-values for Scores Stratified by Domestic/Intl. Status

The median for international students' anxiety scores lies in the "Severe" range (**Fig. 3.9**), which is greater than the domestic student median ("Moderate"). For the depression and stress subscales, the international student medians are actually lower than the domestic medians, however in all three subscales the differences are minimal. The difference in levels of mental illness (as measured by the DASS-21) between international and domestic students was statistically insignificant in this study, though their lived experiences must undoubtedly differ. Further research with larger sample sizes is needed to better understand why the domestic and international scores are so similar.

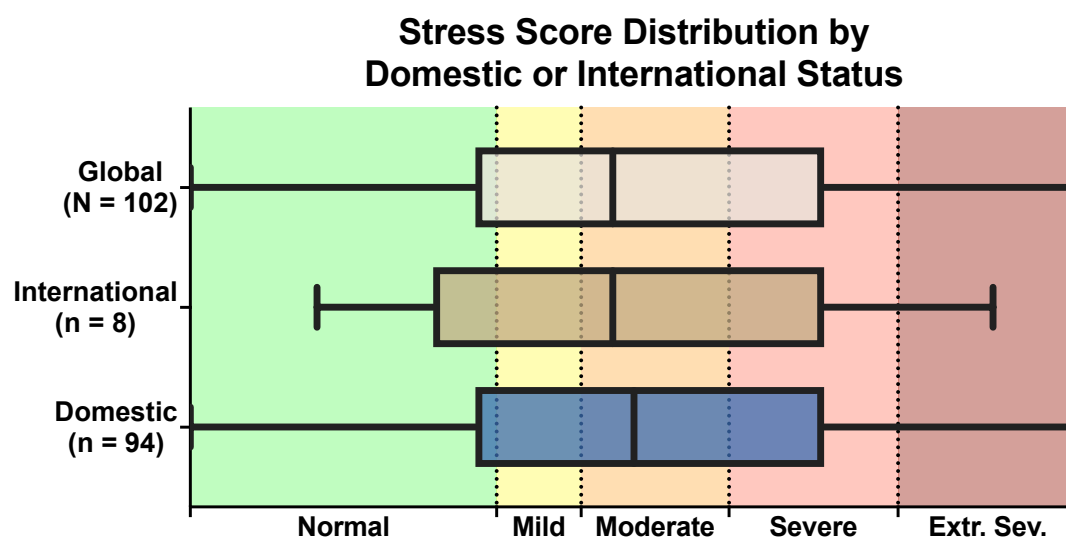


Fig. 3.10 Stress Score Distributions Stratified by Domestic or International Status

3.6 Do the Depression, Stress, and Anxiety Subscales Correlate?

The co-occurrence of depressive and anxiety disorders is the most common psychiatric comorbidity (ter Meulen et al., 2021). Watson & Clark (1984) coined the term 'negative affectivity', a construct designed to encompass many facets of general psychological distress. Henry & Crawford (2005) showed that variance in the DASS-21 could be optimally described by a 'quadripartite' model, in which DASS-21 items correlated not only with their associated depression, anxiety or stress constructs but also with a fourth common underlying negative affectivity factor. In their analysis, 20 out of 21 of the

DASS-21 items had higher correlation coefficients with this general negative affectivity factor than with the respective subscale constructs.

Pearson correlation analyses of the data revealed that there were reasonable positive correlations between all three subscales, as shown in **Table 3.9**. The coefficient of determination of two variables tells us how much of the variation in one variable is accounted for by variation in the other variable. The moderate values of r and r^2 support the notion that these constructs can often co-occur in individuals.

	Depr. & Anxiety	Depr. & Stress	Anxiety & Stress
Pearson Correlation Coefficient (r)	0.678	0.754	0.728
Coefficient of Determination (r^2)	46.0%	56.9%	53.0%

Table 3.9 Correlation Coefficients and Coefficients of Determination

It is worth noting that the subscales are non-linear; they scale at different rates. For example, a numerical score of 16 would be associated with a “Moderate” level for depression, “Severe” for anxiety and “Mild” for the stress subscale. However, the correlation analysis shows that there is a general positive relationship between the three constructs.

3.7 Conclusion

The central limitations of the survey are the small sample size and the possibility of a self-selection bias in participants. The sample represents only 14% of the current University of Oxford chemistry undergraduate cohort. Further research is needed to verify the prevalence of mental illness among chemistry undergraduate students at Oxford and elsewhere.

Even so, the DASS-21 results in this study seem troubling. 44% of participants exhibited “Severe” or “Extremely Severe” levels of depression, and a third of participants had anxiety scores in the “Extremely Severe” range. The global medians for depression, anxiety and stress all sit in the “Moderate” bracket. These absolute levels of depression, anxiety and stress among all participants are high, and should be cause for concern.

Non-binary/other students were seen to have significantly higher scores across all subscales relative to male students, and female students had significantly higher scores than males for anxiety and stress subscales, but not for the depression subscale. First-year students showed the highest median scores across the three subscales. Second-year students had significantly higher depression scores than third- and fourth-years. First- and second-years had significantly higher scores for anxiety and stress than fourth-year students.

The scores obtained from the DASS-21 show that a considerable proportion of participants in this study were exhibiting substantial symptoms of mental illness at the time of reporting. It is important to remember that every data point in this chapter represents a complex individual whose lived experiences cannot be adequately described by a set of numerical scores. In order to begin to understand chemistry undergraduates’ lived experiences of MH and mental illness, we need rich, descriptive data.

For this we turn in Chapter 4 to qualitative research methods. Engaging with first-hand accounts of students’ experiences lets us build a better picture of the social reality which results in such high scores for depression, stress, and anxiety.

Chapter 4: Mental Health & Studying Chemistry

4.1 Introduction

Positive mental health (MH) comprises of subjective (hedonic) and psychological (eudaimonic) well-being. Psychological well-being (PWB) is modelled as consisting of six dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, personal growth, and purpose in life (Ryff, 1989). Ryff's descriptions of low and high scorers for each dimension were provided above in **Table 1.1**.

A recent study has shown that levels of psychological distress were significantly associated with the number of days students reported they were unable to meet their work and study commitments, and the number of days students subjectively reported reduced capacity to fulfil their commitments (Wynaden et al., 2013). In this chapter, we explore the ways in which MH interacts with students' capacity to meet their academic commitments, through their free text survey responses.

4.2 Methodology

Students' responses to the free-text questions in the online survey were coded using a deductive analytical approach. The data were coded to each of Ryff's six dimensions of PWB in turn, and themes were constructed based on the Ryff-coded responses to all free text questions collectively (i.e. the student responses were not grouped by which of the three free-text questions they were responding to).

4.3 Expectations and Capacity

One component of the WHO's (2004) definition of MH is the ability to "cope with the normal stresses of life". The relationship between studying chemistry and student MH can be described through the balance between two factors: expectations of students

(academic and otherwise); and students' capacity to meet those expectations. When students' capacity exceeds expectations, they feel motivated and confident – their emotional and psychological well-being is high. If expectations in some way outweigh a student's capacity to meet those expectations, their well-being suffers.

Several themes were constructed which reflect the ways in which studying chemistry interacted with students' MH. These are discussed in turn below.

4.3.1 Students' Relationship with their Academic Work

The Oxford MChem workload (contact time, lab hours, lectures, tutorial sheets, amount of content) interacts with students' MH *via* its influence on students' capability beliefs. A central feature of Ryff's model of PWB is a positive regard for oneself, including acceptance of one's strengths, weaknesses, and past life decisions and events (Ryff & Singer, 2008). Those with a higher level of self-acceptance would therefore be expected to have a greater PWB (all other things being equal). In many survey responses, how students felt about themselves was dependent on their perceptions of their own academic ability. Some students explicitly stated that the quality of their academic work had a significant effect on their MH.

"[Studying chemistry] constantly interacts with my mental health. I feel smarter, more valuable and more positive when I understand things in tutorials/do well in exams. However there is a constant feeling of stress and a need to constantly work because the workload is massive, and not understanding things gives a feeling of dread for exams, as if it will never be possible to learn it all in time/know it all."

~ Female, 2nd year

"My mental health is strongly affected by how well I'm doing at the course - if I'm handling the content well at a specific time, I often feel motivated and enthusiastic to learn and improve. But I also burnt out or stressed out - sometimes very anxious or severely depressed - if things go wrong at all."

~ Female, 1st year

Laboratory practicals were cited multiple times as a part of the course which made students feel competent at chemistry. This led to better MH outcomes.

“Restarting labs and having success at practical chemistry benefitted my mental health as I felt like I was actually capable of doing something good.”
~ Female, 2nd year

For other students, labs interacted negatively with students' MH, as the RSC lab hour accreditation requirement and rigidity of the timetable meant that students let slide their MH needs for fear of not making up the required hours.

“The lab hours are what really make the degree very difficult and stressful. In my third year I have had the most relaxed time because of the fewer labs, since I have done a supplementary course and a literature review to take lab hours away. Going to two lectures without a break, then into a 6 hour lab, which would once a week be followed by a two hour physics class is simply not doable. 30 minutes break for lunch in labs is also not sufficient. It just felt like we'd be worked to the bone and then expected to wake up and do it all again, regardless of whether or not we understood the chemistry behind what we did.”

~ Male, 3rd year

“rigidity of lab schedule (and very difficult to rearrange them [especially] in first year) has meant going into the lab even when I know it will result in anxiety attacks (and feeling like I can't leave when this happens in case I don't get the 6 hours of credit for the day)”

~ Female, 3rd year

Students' perceptions of their ability were sometimes indistinct from their perceptions of how well they were managing the workload. Students who articulated feeling “overwhelmed” by the amount of work (or that they were unable to complete work to a standard that they were happy with) expressed poorer self-image (lower self-acceptance) and described symptoms of mental illness.

“Very regularly the high workload (which seems higher than most degrees) causes feelings of being overwhelmed, and stressed. I have deadlines on more days than not, this often leads to studying all day followed by all night and sometimes even 36 hours straight.”

~ Male, 1st year

“The content is hard and there is so much of it. We have so many contact hours and tute sheets to do every week that there isn't any time to stop and

understand a topic, let alone enjoy it. Doing 2 labs, 10 lectures and 3 tutorials a week is such a large work load and is barely [manageable]. I started anti depressants this year (second year) because I was really struggling. I felt overwhelmed by the work load, constantly stressed, like I couldn't ever catch my breath and that I wasn't good enough. I felt stupid every time I attempted work and couldn't understand it, I felt so overwhelmed with the amount of work I had to do that I physically couldn't get out of bed."

~ Female, 2nd year

These feelings of overwhelm are also indicative of a low level of environmental mastery. This is typically characterised as difficulty managing everyday affairs, feeling unable to change or improve the surrounding context, and a sense of lacking control over the external environment (Ryff, 1989). Overwhelm results when the workload exceeds students' capacity, and is detrimental for both short-term SWB and long-term PWB.

Another dimension of PWB affected by the MChem workload is personal growth (seeing the self as growing and expanding). Realising one's own abilities is also one of the components in the WHO (2004) definition of MH. Some students expressed that due to the high workload, their hard work did not always translate into good results. This led to reduced PWB since the results felt like they were not worth students' efforts. This might be due to the high volume of content not allowing students to properly digest the chemical concepts they encounter. In other words, their learning strategies may not be sufficiently effective. This had negative consequences for well-being.

[On how studying chemistry interacts with MH] *"Very very very negatively, this degree is a literal pile of garbage that no one should have to go through. Before uni I thought chemistry it's cool, now I think chemistry is god awful and a pile of shit that is too much work that is just forced open us with an expectation to just be fine with it. Why would anyone ever be fine with working 12 + hours a day and still feel like they are getting no where???? GARBAGE"*

~ Female, 3rd year

"In general, since the degree is extremely hands on, I've found myself unable to take care of my mental health. There is no time to wind down and work gets harder and harder. Most of the time (if not all) I feel very stressed as there is so much content and I'm afraid that I won't be able to get to learn it

all. Being stressed all the time has also brought up feelings of sadness as even though I've felt myself working extremely hard, I am [underperforming]."

~ Female, 2nd year

It is interesting to consider that from the DASS-21 data, 33% (n = 19) of female participants disclosed that item 17 ("I felt I wasn't worth much as a person") applied to them very much, or most of the time, compared to just 3% (n = 1) of male participants. Self-esteem can be seen to derive "at least in part, from the ability to adhere to the norms set by one's various sociocultural contexts" (Josephs et al., 1992). In other words, female students' expression of lower self-esteem – both quantitatively and qualitatively – may represent a reduced perceived ability (compared to males) to meet the expectations imposed on them when studying chemistry at Oxford. It seems possible that this may be influenced by a gendered conception of what the 'ideal' chemistry student is.

It really matters that students feel they are good at chemistry. Students' perceptions of their own academic ability have implications not only for short-term affect but for long-term well-being as well. This is consistent with Ryff & Keyes' (1995) findings that the self-acceptance and environmental mastery dimensions of PWB are moderately associated with happiness and life satisfaction (SWB).

4.3.2 No Time for Other Things

As time is a limited resource, the more time students spend on work, the less time they have to do other things which are important for well-being and positive functioning. Working long hours can therefore quickly lead to lower student wellbeing.

Academic workload is expected to take approximately 40 hours per week for Oxford undergraduate students (University of Oxford, 2022). Many respondents reported

spending longer than the recommended 40 hours a week on academic work, finding it difficult to “fit in” important self-regulating activities.

“in previous years the long hours (60-70 hour work weeks) for tutorial submissions led to a decline in mental health. Found it very difficult to juggle social/physical life with academic studies, especially for the first two years of the degree”

~ Male, 4th year

“The variety of workload between colleges for the same subject is one of the most demotivating factors. Some colleges having 10 hours of tutorial work per week, whilst mine has 40 hours per week, is very frustrating because it feels impossible to fit in any extracurricular activities or even sleeping at times, whilst others have 30 more hours in their week to fit things into.”

~ Female, 1st year

Students felt they had insufficient time for activities such as socialising, seeking help, and even taking care of their basic needs. All of these factors led to poorer MH outcomes.

“In first and second year in particular, I was overwhelmed with the workload of the degree and found myself constantly stressed. I would miss out on social activities and became socially reclusive in order to meet deadlines. I would have little to no downtime, and was often unable to find time for everyday necessities such as exercise, cooking/eating, hygiene, etc. As a result of this, the quality of my work began to suffer, adding further stress and becoming a vicious cycle.”

~ Male, 3rd year

From a eudaimonic perspective, this second mode of low environmental mastery (difficulty managing everyday affairs) results in lower PWB. However, students’ choice to prioritise their academic work above taking care of their immediate needs has far more sinister consequences.

In Maslow’s hierarchy of needs, physiological requirements for things like food, water, rest, and warmth form the foundation upon which all other human “goals” are grounded. If these fundamental “deficiency needs” are not met, motivation to pursue the higher level “growth needs” (e.g. knowledge and understanding, curiosity, self-actualisation) will be much lower (McLeod, 2007). Proper hygiene, nutrition and sleep

are therefore essential to positive functioning and individual human flourishing, and students cannot be expected to perform at their best if these needs are left unfulfilled.

“Several times (particularly in my second and third years) I found it impossible to balance the enormous workload with maintaining some semblance of a social life - I was working significantly more hours than my peers and yet always seemed to have more work than them. As a result I decided to start pulling all nighters 3 nights a week just to complete my work to a minimum standard; the subsequent lack of sleep and stress over the seemingly endless work decimated me mentally and left me at possibly the lowest point of my adult life.”

~ Male, 4th year

Having little time for things outside of studying chemistry also affected some students' sense of both purpose in life (having goals and a sense of directedness) and also personal growth (seeing the self as growing and expanding). These dimensions declined as a result of the large workload, which left little to no time for students to pursue personal goals.

“It is extremely time consuming (more like 50-55 than 40 hours a week) making it difficult at times to keep developing more holistically as an individual outside of the course. As quite a natural consequence many students start to very strongly associate their self-worth with how well [they're] doing academically while it's really difficult (and tutor-dependent!) to excel in chemistry at Oxford. There is so much content that sometimes it feels like the effort is not at all worth it - especially when tutorials in weeks 1/2/3 cover the term-worth of lecture courses.”

~ Female, 4th year

“I have regular breakdowns after getting negative tutorial feedback on work which I have spent 20+ hours doing and sacrificed my social life and mental health for. I would be able to handle criticism except Chemistry requires so much work and time that it will never feel worth it and satisfactory. It means I base my whole self worth around how well I do as it is the only thing that I do. Please let me have a life.”

~ Female, 1st year

Socialising is another activity many students had trouble making time for:

“The workload also leaves no time for much of a social life which also negatively impacts my mental health as it feels like my time at uni is being wasted.”

~ Male, 2nd year

“In my first year, the constant pressure of studying prevented me from doing as much socialising as I had wanted to. I didn't get the chance to make many

friends and this prevented me from building a good peer-support network, which would have really helped me during the pandemic and more generally around Oxford. The negative feelings of isolation have caused me to feel regularly depressed and lose enthusiasm for Chemistry or my motivation to study it.”

~ Male, 2nd year

Relatedness is essential for both hedonic and eudaimonic well-being (Keyes, 1998; Ryan & Deci, 2001). Within Ryff's (1989) model of PWB, developing and maintaining warm and trusting interpersonal relationships is another criterion of positive functioning. Positive relations with others have also been found to predict physiological functioning and health outcomes, including the release of oxytocin, which is associated with stress-relief and positive affect (Ryan & Deci, 2001).

“I was so driven to achieve success in my finals that I shut a lot of my social interactions out for a time because of stress. I [jeopardised] my romantic life as a result of shutting people out to focus purely on work. This was mostly a self-inflicted result in my opinion due my attitude to work but also the nature of the degree and the amount of content likely played a factor.”

~ Male, 4th year

“I think last year during the lockdown it was overall a negative experience. Chemistry work took up a good portion of my life and I found myself with barely enough time left over to maintain a good social life. I ended up sacrificing my hobbies and this meant I kind of lost sight of who I am outside of chemistry. However, this year it has been a much more positive experience. Having everything in person means that my motivation is high and my work life- social life balance is much better. Regaining my personality outside of the subject meant that studying chemistry is a lot more enjoyable again and I am all around happier.”

~ Female, 2nd year

Self-regulating activities are crucial for positive human functioning. If students feel they do not have enough time to properly take care of their somatic needs, to exercise, to spend time socialising, or to pursue personal endeavours, then they cannot hope to maintain good mental and physical health. Their capacity to complete academic tasks is therefore diminished, as is their overall well-being.

4.3.3 The Student-Tutor Relationship

The quality of the relationship between tutors and students has significant impacts on both emotional and psychological student well-being. This occurred in a few ways.

Tutors have a certain level of control over the weekly and termly workload of their students, and the ways in which workload interacts with student MH have been discussed above. Beyond this, tutors also influence students' capability beliefs. This can happen through tutors' expressions of academic expectations, or their perceived attitudes and behaviours towards students' work (and work ethic).

“My tutors tended to be supportive, except when I used sport as a means of regulating my mental health and having an outlet for my energy. There was a split between tutors being accommodating and other tutors seemingly being annoyed that I had another priority in my life that wasn't Chemistry.”

~ Female, 4th year

Students often rely on tutor feedback to gauge their academic ability and judge their progress. This may suggest a low level of autonomy, as their success is judged not on their own terms but instead on how tutors evaluate their progress. The manner in which feedback (positive or negative) is delivered has significant consequences both for the student-tutor relationship and also for students' capability beliefs. If students do not feel like they are competent and capable of succeeding, their PWB suffers (low self-acceptance; low environmental mastery; low personal growth).

“my tutors were not helpful- I got told in my first ever organic tutorial that I would never be a good organic chemist as I wasn't gifted at it, which didn't help.”

~ Female, 1st year

“an incident before covid was that in my first ever collections I received a mid 2.2 in one of my 4 collections, the rest were okay 2.1s or 1st. However my tutor for the subject for which I got my 2.2 in asked to speak to me one on one and asked if I really wanted to be here and that they would write me a reference to any university or transfer to a different programme such as earth sciences. This really took me by surprise as it was the first time I had experienced a university level exam and although I had done worse than I would have wanted I had not failed them by any stretch of the imagination.”

This led me to have continual self doubt every time I sat a collection or an exam knowing that one of my tutors, the people who are meant to teach you and help build you to be confident chemists, didn't even want me in the building and didn't think I deserved to be there."

~ Female, 4th year

Finally, since tutors are students' first point of contact regarding academic matters, it is important for well-being for students to feel able to approach them for help and support for both academic and pastoral matters (Baik et al., 2019). A constructive student-tutor relationship enhances PWB through the 'positive relations with others' dimension. Positive relations with tutors often led to more successful instances of help-seeking.

"At many times I found the experience rewarding, I remember receiving good support from my tutors in many cases and this having a positive impact."

~ Female, 4th year

"My head tutor - she was really lovely and really helpful and really does her best to support me and assure me that I am good enough. Academic support at college- also really helpful and lovely, referred me to counselling (my tutor helped me get a slot with the counselling service as they are always overbooked) counselling saw me for 2 sessions but nothing else because they are so overbooked but referred me to the GP to get antidepressants which I am currently on and they have really helped"

~ Female, 2nd year

Successful help-seeking increases students' SWB and PWB. On the other hand, some students reported negative outcomes when seeking support from tutors, which led to reduced well-being.

"I have reached out to tutors multiple times for help with little advice or assistance being provided [...] The consensus among my college tutors seems to be that if students are struggling, it is down to individual lack of motivation/ability, rather than poor teaching and excessive workloads. Among the first year chemistry cohort at my college, [x] suspended their studies last year, and a further [y*] have suspended this year and plan to restart in Hilary 2023. Rustication seems to be almost an inevitability at this point."*

~ Female, 1st year

*Figures redacted to maintain participant anonymity

"I have tried to talk to tutors about concerns with work load with my dyslexia. I believe they don't quite understand the strain it puts me under. The [accommodations] made from them were reasonable though, saying I didn't

need to complete sheets etc. But, this sometimes doesn't help as I still feel the pressure to complete things so as not to fall behind [...] Lots of these issues stem from the pace of the course: not aided by side comments from tutors about how people should read more, or the speed of speaking in tutorials when my short term memory is pretty bad."

~ Male, 3rd year

Strained student-tutor interactions can have immediate and lasting negative consequences on students' SWB and PWB. Meanwhile, a warm relationship between students and their tutors is likely to make for more rewarding interactions (academic and otherwise) for both parties. The student-tutor relationship therefore has high potential as an avenue for improving student well-being.

4.3.4 Disability

Under the medical model of disability, students with a pre-existing condition have a somewhat reduced capacity to manage their environment and meet all the demands of university life. This reduced capacity can put them at increased risk of feeling overworked and overwhelmed, and thus they may be worse equipped to manage the workload and learn effectively compared to their non-impaired peers.

Under the social model, difficulties faced by disabled students are a product of the learning environment itself. Social and structural barriers between impaired people and their capacity to function optimally are what disables them, for example step-access to a particular space could disable a student in a wheelchair. Workload may be considered one such barrier to student success and well-being.

Universities have a responsibility under the Equality Act 2010 to afford disabled students the same opportunities as non-disabled students by making "reasonable adjustments" to accommodate the individual needs of disabled students. An awareness

around students' individual needs is therefore crucial, and the individual should be the central point in any decisions made about meeting those needs (Smith, 2021).

4.3.4.1 Learning Disabilities

When time is already scarce, it is not always possible for those with learning difficulties to work at the high pace of academic learning demanded by the Oxford MChem course structure (short intense terms, high contact time, high volume of content).

“The workload is too high for most students to have a reasonable work-life balance and the system of having short, intense terms followed by a longer break leads to exhaustion and exacerbates this. As deadlines are therefore tight and missing them can lead to a person getting behind quickly, it also disproportionately affects students with learning difficulties (like myself) who take longer than most students to complete tutorial work and absorb information. If the scope of the course was reduced, I think it would have a positive impact on my mental health.”

~ Female, 3rd year

“It has regularly made me feel overwhelmed [...] During Hilary of 2nd year I was seriously considering leaving as I saw no way to carry on. The course was still geared to a pre pandemic level and, as a dyslexic, I was struggling to keep pace with the online learning [...] This has taken almost a year to reverse and I am only just starting to feel more like myself again.

~ Male, 3rd year

When students feel overloaded, they abandon deep learning strategies and resort to surface-level learning. They are not as capable of efficient learning as their peers who are experiencing an “adequate load” (Karjalainen et al., 2008). Students with a learning disability are more likely to feel overloaded as learning tasks may take longer for them than they do for neurotypical students. This might be due to a higher cognitive load associated with learning tasks for learning-disabled students, which requires of them an increased mental capacity to process information effectively. The pace of the Oxford chemistry degree could therefore put learning-disabled students at a particular disadvantage since the pace of learning is difficult to maintain even for non-disabled students.

4.3.4.2 Exacerbation of mental illness

Many students reported a worsening of pre-existing health conditions during their degree, which led to greater instances of mental illness. Sometimes this was due to having to take time off (which led to falling behind academically) or feeling like there was not enough time to seek help.

“Whenever I had to take time off for sickness, missing lectures and/or one tute would put me behind to the extent where i was working 6am-10pm days to try and catch up, as the degree is so intense from a workload/ content perspective. These long days of studying would then make me ill again and so it felt like an endless cycle. This caused me to feel hopeless and overwhelmed on multiple occasions, and over time have caused me to dread studying at all”

~ Female, 1st year

“I would say that even though I have had a very difficult ride with my mental health, it cannot all be blamed on the degree. I do think though that the high pressure and stress of a degree that is so difficult and demands so much from its students definitely stopped me from getting the help I needed initially and made my mental health much worse, though there is no way to know if these issues would have been just as bad on another degree or at another university.”

~ Female, 3rd year

“Wouldn't say that studying chemistry is the 'cause' of any of my mental health problems, but trying to balance the intense demands of the degree alongside my mental health issues has definitely caused them to worsen at times. [...] Delaying increasing my dosage of a SSRI because of fear of side effects interfering with my ability to study for exams many weeks in advance (despite the advice of a GP that it would be fine, because the workload was so great I was terrified that literally any extra obstacle would surely result in me failing) - this of course in turn led to my mental health being worse than it had to be in the run up to exams, leading to big spirals etc”

~ Female, 3rd year

Mental illness has deep effects for student success at university, not only through its direct influence on SWB, but also in the way it limits cognitive capacity. Smallwood et al. (2009) found that those with negative mood exhibited greater mind-wandering, and also tended to dwell on their own failures. Mental illness is linked to reduced cognitive

capacity, which increases the risk of cognitive overload. This has implications for executive functioning and achievement outcomes.

“In my current year I had some major health anxiety issues relating which were caused by a bad diet/ not enough water etc. I would assume the worst case scenario if I had even small symptoms- this [affected] my work and made me feel guilty. I reached out to my college counsellor and this really helped.”

~ Male, 3rd year

“I felt uncomfortable with the workload at the start of my degree, and the situation deteriorated in my second year when we had to switch to online due to the pandemic. I had to suspend in the middle of my third year due to my mental health condition as I found myself having no initiative to start doing anything at all, though I am feeling much better after I returned from my suspension now.”

~ Female, 3rd year

The physical manifestations of poor MH among students were stark. Among the reported somatic symptoms were panic attacks, sleep problems and vomiting. Students reported exacerbation of these symptoms at university, whether from academic stress or from personal factors.

“The workload of the degree is excessive and has made my [pre-existing] anxiety exponentially worse. I have been so overwhelmed so much of the time, I am physically sick at least once a week, primarily during term [time] due to the degree. Since starting university, I have been diagnosed with social anxiety disorder, general anxiety disorder, panic disorder and depression, and have had to start taking anxiety and depression medication, as well as stomach protection due to the excessive vomiting. The way in which tutors interact with me have often made me feel stupid and worthless exacerbating the problem”

~ Female, 2nd year

“I hadn’t ever experienced panic attacks before coming to oxford but in [Michaelmas] of first year I had my first one the night before a thermodynamics deadline. From then on, I continued to experience them more and more as prelims came closer. They were purely based on academic stress alone, whether it be feeling unprepared for a tutorial or the very real fear of failing prelims. In second year the anxiety has got better but I think it may have just been replaced with a sort of numbness towards my degree due the massive increase in workload which leaves very little room for enthusiasm. The tutors and department don’t seem to understand this at all which makes it a lot more difficult to get help.”

~ Male, 2nd year

“My mental health was absolutely fine, and within 2 terms at Oxford I was self harming from the sheer pressure and stress.”

~ Female, 1st year

“Firstly, I have never felt that my experience of studying chemistry has impacted my mental health positively. Throughout my degree I have felt constantly overwhelmed and overworked. At the start of my first year, in particular, I was having constant breathing problems which were stress induced. I felt as though I could not come to grips with the amount that was asked of me, which is what caused these problems. I once passed out in the shower when my deadlines were particularly pressing.”

~ Male, 3rd year

There is a debilitating character to the physical symptoms students face due to their MH struggles: poor MH leading to poor physical health outcomes reduces students’ capacity to perform learning tasks and meet workload demands. Meanwhile, when student well-being is prioritised above the completion of academic work, academic outcomes may also improve.

“Since receiving therapy and medication, I have realised that meeting every deadline is not necessarily always the best thing for me. By taking that pressure off, I have managed to start bringing the quality of my work back up.”

~ Male, 3rd year

4.4 Conclusion

The qualitative results in this Chapter should be read in the context of the quantitative data in Chapter 3. The Chapter 3 sample seems to have poor MH outcomes, and the work in this chapter might be seen as an exploration of those specific experiences on the Oxford MChem. In general, these students describe how they struggle to meet the high expectations they encounter at Oxford. When the expectations exceed their capacity, students describe negative experiences.

In some ways, studying for the MChem degree is necessarily in tension with student MH, and this follows the notion of there being multiple dimensions of well-being. Core to the concept of eudaimonia is self-realisation (Huta & Waterman, 2014). Striving

to meet one's full potential falls in Ryff's model of PWB (personal growth). However, in the process of striving to achieve, other dimensions may fluctuate. Students may experience low autonomy if they rely on external motivators such as tutors' expectations of them. They might have low self-acceptance if they wish to be somehow different than they currently are, or low environmental mastery if they feel like they are not managing their everyday affairs well.

Many students reported low MH, particularly feelings of overwhelm. Reasons for this included the high workload of their degree, low capability beliefs, perceived lack of support, and pre-existing conditions and disabilities. When students feel that the expectations on them (whether externally- or self-imposed) outweigh their physical and mental capacity to carry out normal daily activities, students report experiences ranging from specific internal mental states (such as 'dread for exams') to deliberate behaviours (such as 'pulling all nighters') involuntary physical reactions (such as being 'physically sick').

It is interesting to consider whether the Oxford MChem workload is, in some sense, disabling. The expectations of the course routinely exceed the capacities of students studying chemistry; this is a structural issue. Is there some way we could think about students' daily challenges like we think about the structural issue of wheelchair access to buildings? The merit of a social analysis is that it focuses the conversation on constructive steps which policy-makers and teaching staff could take to reduce barriers to learning and help students flourish on the course.

The results of Chapters 3 and 4 therefore provide a stimulus to reflect on ways that these students could be better supported in their studies. This will be the focus of Chapter 5.

Chapter 5: Conclusion & Recommendations

5.1 Summary of Findings

The results from the Depression Anxiety Stress Scale – 21 Items (DASS-21) showed that there was a high incidence of mental illness among the 102 students who participated in the survey, relative to comparable populations. First year students, females and non-binary/other participants tended to demonstrate higher degrees of mental illness than other groups.

The qualitative data gathered in the free text responses revealed that these students perceive studying chemistry to interact with their mental health (MH). Mechanisms for this included: students' attitudes to their workload; lack of time for things other than studying; the relationships between students and tutors; and pre-existing conditions such as mental illness and disability.

This study will be subject to some response bias – perhaps most likely attracting students with particularly strong views – and was distributed in the wake of the massive 2020-21 disruption of the COVID-19 pandemic, which is likely to have negatively affected students' MH and well-being. Nevertheless, the experiences of these students are important to reflect on and respond to.

5.2 Conclusion

The poor MH outcomes of respondents can be explored using Ryff's six-dimensional model of psychological well-being (PWB) to analyse the free text comments. Overall, chemistry student well-being suffers when the expectations placed on students outweigh their capacity to meet those expectations.

The University of Oxford (2019) has committed to improving student MH and well-being. In light of this project's focus and findings, it is possible to make recommendations which could advance the University's commitment in the context of the MChem degree.

5.3 Recommendations

5.3.1 Centre Students' Voices

Students understand their own lived experience better than anyone else. They are therefore uniquely positioned to comment on matters concerning their well-being, their needs and what they wish to gain from pursuing a chemistry degree at Oxford. *The department should therefore centre students' voices in future decisions about the MChem curriculum, assessment structure and teaching strategy.* Not only does this increase students' autonomy, but it also enables students to feel their voices are being heard and respected. This in turn increases feelings of belonging, which is linked to reduced rates of student attrition.

From the quantitative data collected in this study, groups experiencing particularly high levels of mental illness include first year students, students identifying as female, non-binary or other genders, and disabled students. *Chemistry tutors and the department should consider opening a dialogue with students from these groups to determine how they might best be supported going forward.*

5.3.2 Reduce the Scope of the Core MChem Material

Many participants expressed that the high workload of the MChem degree negatively impacted their MH.

"The incredibly large workload associated with the MChem degree, which feels much higher than the vast majority of other degrees (except perhaps

medicine) has [led] to me becoming depressed which I believe is a direct consequence of the stress of my degree. In particular, as a first year being set questions on 3rd year organic mechanisms has been extremely time consuming and the workload seems to vary wildly between colleges and tutors with very little standardisation across the department. As a department, it seems to be widely accepted that undergraduate chemists should be doing a lot more hours of study than the 40 recommended on the university website, and this is reflected in the high suspension and drop out rates.”

~ Female, 1st year

Students need to have a clear understanding of exactly what is expected of them by tutors and by the department, in order to prevent overload and burnout. *The department should therefore review the current expectations expressed by the curriculum, and consider whether such a high volume of course content is compatible with existing university policy.*

5.3.3 Reshape the Student-Staff Relationship

The university has committed to providing more training for staff who support students with MH difficulties (University of Oxford, 2019). Tutors and teaching laboratory supervisors may be the only academic staff with whom students are in regular contact over the whole course. This means that even though supporting students with MH difficulties may not be part of their formal role, tutors and laboratory demonstrators are well-placed to facilitate a supportive learning environment.

“At least some of this could be helped if there was more consistency from the department/tutors - currently, there are still some who make comments suggesting that they don't 'believe' in mental health problems, or who clearly have no idea how to react when faced with them (e.g. someone having a panic attack in a tute, someone unable to come because they are too depressed to leave their room).”

~ Female, 3rd year

The way tutors interact with students is key to student's emotional and psychological well-being. Tutors should receive training on how to cultivate healthy working relationships with their students, including how to communicate the expectations they

have of their students. This might include ‘mental health first aid’ training, which teaches people how to offer initial support (e.g. in the case of someone developing a MH problem, experiencing a worsening of an existing condition, or in a MH crisis) until appropriate professional support is received.

5.1.1 Further Research

This study was limited by time and scope. The sample size of 102 students was capable of piloting this survey in the MChem context, but did not exhaustively sample the student population (reaching approximately 14% of around 728 students [University of Oxford, 2020]). Nevertheless, both the quantitative and the qualitative findings suggest that further studies would be valuable. Specific avenues of study which seem important are:

- A repeat of the DASS-21 survey, with a higher participation rate;
- A deeper qualitative exploration of demographic groups with poor MH outcomes (e.g. first-year students, female students, gender minority students);
- Developing anticipatory strategies for the prevention of mental illness and the promotion of factors of positive MH in university students;
- Qualitative research into students’ perceptions of what restricts their capacity for meaningful learning.

Though the qualitative data has been dissected analytically in Chapter 4, this gave limited scope to convey the sense of sadness threaded through many of the responses. Sitting alongside the academic need for further study of student well-being is an urgent moral case for reviewing and changing the undergraduate degree.

“I hope that future undergrads do not go through the same experience that I, and other people I know who have studied chemistry at oxford, have been through. I hope that there is systematic change such that people can learn and love their subject instead of going through the degree, terrified that you are not going to be able to continue to manage and cope.”

~ Female, 4th year

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Appendix

Short-Form Depression Anxiety Stress Scale – 21 Items

Please read each statement and select a number 0, 1, 2 or 3 which indicated how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement. ['0 – Did not apply to me at all'; '1 – Applied to me to some degree, or some of the time'; '2 – Applied to me to a considerable degree or a good part of time'; '3 – Applied to me very much or most of the time']

- 1 I found it hard to wind down
- 2 I was aware of dryness of my mouth
- 3 I couldn't seem to experience any positive feeling at all
- 4 I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)
- 5 I found it difficult to work up the initiative to do things
- 6 I tended to over-react to situations
- 7 I experienced trembling (e.g. in the hands)
- 8 I felt that I was using a lot of nervous energy
- 9 I was worried about situations in which I might panic and make a fool of myself
- 10 I felt that I had nothing to look forward to
- 11 I found myself getting agitated
- 12 I found it difficult to relax
- 13 I felt down-hearted and blue
- 14 I was intolerant of anything that kept me from getting on with what I was doing
- 15 I felt I was close to panic
- 16 I was unable to become enthusiastic about anything
- 17 I felt I wasn't worth much as a person
- 18 I felt that I was rather touchy
- 19 I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)
- 20 I felt scared without any good reason
- 21 I felt that life was meaningless

Survey Follow-Up Page with Mental Health and Well-Being Resources

Thank you for taking part in this research study. This page is intended for anyone who indicated on their questionnaires that they may be feeling rather worried or in a low mood. Of course, our moods can change from day to day. However, for some people their mood may remain low for some time. If this applies to you, I would like to point out that there are several sources of advice or help which are free and readily available to you, which may prove useful. Specifically, these include:

- 1. YOUR GENERAL PRACTITIONER**
- 2. YOUR COLLEGE NURSE**
- 3. WELFARE RESOURCES BY COLLEGE**

College welfare information pages are listed below. You can always contact your welfare officer, welfare reps, college counsellor, junior deans, peer supporters, chaplain, GP or nurse.

[Balliol College](#) | [Brasenose College](#) | [Christ Church](#) | [Corpus Christi College](#)

[Exeter College](#) | [Hertford College](#) | [Jesus College](#) | [Keble College](#)

[Lady Margaret Hall](#) | [Lincoln College](#) | [Magdalen College](#) | [Merton College](#)

[New College](#) | [Oriel College](#) | [Pembroke College](#) | [Somerville College](#)

[St Anne's College](#) | [St Catherine's College](#) | [St Edmund Hall](#) | [St Hilda's College](#)

[St Hugh's College](#) | [St John's College](#) | [St Peter's College](#) | [The Queen's College](#)

[Trinity College](#) | [University College](#) | [Wadham College](#) | [Worcester College](#)

- 4. UNIVERSITY WELFARE INFORMATION**

Information about university welfare services and activities can be found at <https://www.ox.ac.uk/coronavirus/students/welfare/>

- 5. UNIVERSITY COUNSELLING SERVICE**

Website: <https://www.ox.ac.uk/students/welfare/counselling?wssl=1>

You can contact them to make an appointment:

Tel: 01865 270300

Email: counselling@admin.ox.ac.uk

The Counselling Service is not an emergency service. They will see you as soon as possible, but they cannot provide instant access to a mental health professional. Please refer to other resources in this document for when you need instant or out-of-hours support

- 6. NHS**

Dial 999 if your life, or the life of someone you know, is in immediate risk.

Dial 111 if you need medical help quickly, but it's not an immediate risk, or if it is out-of-hours for your GP surgery.

7. HELPLINES

a. THE SAMARITANS

Independent listening service – always available 24/7.

Tel: 116 123

Email: jo@samaritans.org

b. NIGHTLINE

Whatever's on your mind, they are here to listen. Independent listening, support and information service run for and by students, offering instant messaging and telephone support.

Lines are open 8pm - 8am every night, Monday to Sunday, from 0th week to 9th week.

Tel: 01865 270 270

Website: <https://oxford.nightline.ac.uk/>

c. NHS MENTAL HEALTH HELPLINE

Open 24/7 for people in Oxfordshire who need mental health care when their situation is not life-threatening.

Tel: 0800 783 0119

Tel: 01865 904 997

d. SAFE HAVEN

Oxford Safe Haven offers short-term additional support out-of-hours for people in Oxfordshire who are experiencing a mental health crisis including suicidal thoughts. Telephone and face-to-face support are available.

Open Friday-Monday from 6-10pm.

Tel: 01865 903 037

Email: oxonsafehaven@oxfordhealth.nhs.uk

8. OTHER SERVICES

a. TALKINGSPACE PLUS

TalkingSpace Plus is a free, confidential NHS service available to anyone over the age of 18, registered with a GP in Oxfordshire. Aimed at people experiencing common conditions including stress, anxiety and depression. Telephone, online and face-to-face support is available.

Open Monday-Friday 8am-5pm. [Self-referral](#) or GP referral.

Tel: 01865 901 222

b. TOGETHERALL

Togetherall provides space to connect with other students through online forums, advice and structured self-learning courses. If you are a registered user, you can also talk online to a mental health professional using the 'message a wall guide' feature.

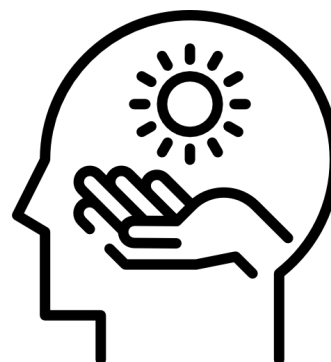
The service is available to all students 24/7, 365 days a year. To join, register under "I'm from a university or college" with your Oxford email address.

Website: <https://togetherall.com/en-gb/>

Recruitment Flyer

VOLUNTEERS NEEDED FOR MENTAL HEALTH RESEARCH

Mental health issues are becoming increasingly prevalent within higher education institutions. This study aims to determine the prevalence of stress, anxiety, and depression among undergraduate Oxford MChem students, and to investigate the experiences of students who exhibit symptoms of poor mental health.



We are looking for chemistry undergraduate volunteers, years 1-4, to participate in a survey. You are invited to complete the online survey using the QR code below. It should take around 15 minutes.



If you would like more information, please email Dr Michael O'Neill at Michael.oneill@chem.ox.ac.uk.

There is no obligation to take part.

Thank you!