

Social, behavioural and work-related predictors of affective symptoms in psychology  
undergraduate university students

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## ABSTRACT

The mental health of undergraduate students is an area of increasing concern worldwide. Two conditions that have been seen to be of importance in students' quality of life are Depression and Apathy. The objective of this study was to investigate the contribution of health behaviours, perceived social support, perceived work load, and age as predictors of depressive and apathy symptoms among university students. An additional aim was to investigate the relationship between depression and apathy in this sample. The Beck Depression Inventory-II (BDI-II), Apathy Evaluation Scale (AES), Health Behaviour Scale, Perceived Workload Scale, and Perceived Social Support Scale were completed anonymously in a web-based survey by 272 male and female undergraduate Psychology students from the University of Cape Town. Out of the total sample, 24.2% scored above the cut-off for clinical Depression, as indicated by the BDI-II, and 55.8% scored above the cut-off for high Apathy, as measured by the AES. Stepwise regression analyses revealed that health behaviors, perceived social support, perceived workload, and age were significant predictors of Depression, whereas only perceived social support and health behaviors were significant predictors of Apathy. There was also a positive significant relationship between Depression and Apathy. The high prevalence of depressive and apathy symptoms among undergraduate students is cause for concern. These results underscore a need to address mental health problems among undergraduate students. Further investigation of the similarities and differences between predictors of depressive and apathy symptoms is necessary to more clearly understand the relationship between Depression and Apathy, as it has implications for the prevention of the conditions and treatment of those experiencing these symptoms.

*Keywords:* depression, apathy, health behaviours, perceived work load, perceived social support

## Introduction

The mental health of undergraduate students is an area of increasing concern worldwide (Bayram & Bilgel, 2008; Gloria, Castellanos, Kanagui-Minoz, & Rico, 2012). Two conditions that have been seen to be of importance in students' quality of life are Depression and Apathy. Depression has been reported as the sixth rated health barrier to academic performance and fourth rated health concern for undergraduate students (American College of Health Association, 2008). Undergraduate students are vulnerable to numerous novel stressors during the interim phase of beginning a new life as university students. As Wong, Cheung, Chan, Ma, and Tang (2006) point out, although admission to university may be a positive experience for a student, it can also be demanding for some undergraduate students.

Apathy is another condition that requires attention. Apathy, which is characterised by diminished motivation, is frequently an important symptom of Depression (Itaaga, Mugagga, & Kaahwa, 2013). Like Depression, it also appears in several clinical disorders such as Alzheimer's disease, frontotemporal dementia, Parkinson disease and Huntington's disease (Levy et al., 1997), and can also present as a psychological response to major life stressors (Kant, Duffy, & Pivovarnik, 1998). However, Apathy can also occur on its own. Much research has focused on Depression and the factors contributing to it, but research investigating Apathy has been lacking. Furthermore, the presence of Apathy alongside clinical conditions such as Depression can complicate both the assessment and treatment of Depression (Andrewes, 2004; Marin, Biedrzycki, & Firinciogullari, 1991). It is therefore imperative that more specific research clarifying the similarities and differences or relationship between Depression and Apathy be conducted.

The student population provides us with an opportunity to investigate depressive and apathy symptoms, as high levels of Depression have been found in this population (e.g., Itaaga et al., 2013; Roh, Jeon, Han, Bong-Jin, 2010). Furthermore, this is a time in an individual's life when major life changes happen. Since apathy symptoms can present as a response to major life stressors (e.g., Kant et al., 1998), it is plausible to argue that the level of Apathy could be higher in a population experiencing life changes (i.e., such as the student population).

Several variables linked to student life have been seen to associate with Depression. These variables include perceived workload, perceived social support, and health behaviours (Edwards, 2004). This research project explores the association between these variables and depressive and apathy symptoms in undergraduate Psychology students. The goal of this

study is to be able to more clearly understand the factors contributing to depressive and apathy symptoms in this population, as well as to look at the relationship between Depression and Apathy in this sample. This in turn has implications for more effective prevention, intervention and treatment of these conditions.

### **Depression as a Disorder**

Depression is a major neuropsychiatric disorder common in the general population and in some cases is often associated with life-threatening behaviours such as suicidal attempts (Eisenberg, Gollust, Golberstein, & Hefner, 2007). It is defined as a mood disorder in the text revision of the fourth edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-V-TR; American Psychiatric Association (APA), 2000), characterised by feelings of sadness, loss of interest in activities, feelings of worthlessness, diminished ability to think or concentrate and suicidal ideation (see Appendix A). Furthermore, Depression varies in severity from minor, short-term incidents of melancholy to serious insistent major depression. Professionals use the concept “clinical depression” to define the serious type of depression also recognised as major depressive disorder.

For a person to meet the criteria for clinical depression one must have five or more symptoms over a period of two weeks. At least one of the symptoms must be either a depressed mood or loss of excitement. Clinical Depression indications typically improve with emotional counselling, antidepressant medicines or a combination of the two. The severity of Depression may differ among university students. Most commonly found among university students is clinical Depression (Swanholm, Vosvick, & Chng, 2009).

**The prevalence of Depression in university students.** Numerous studies have looked at Depression in university students. A recent review of 24 studies by Ibrahim, Kelly, Adams, and Glazebrook (2012) reports that approximately 30.6% of university students meet the criteria for clinical Depression. This prevalence is considered higher than levels commonly found in the general population. For instance, Gonzalez, Berry, Mcknighty-Eily, Strine, and Edwards (2010) reported that the prevalence of Depression in the United States ranged from 6% to 12%. Furthermore, in a cross-national survey of the prevalence of Depression conducted in ten countries in North America and Asia, Ibrahim et al. (2012) found a prevalence of 9.8%.

**Factors contributing to Depression.** According to Bayram and Bilgel (2008), the prevalence of Depression among university students can be explained in part by developmental processes and life changes occurring in this phase of their lives. In other

words, the pressures within the process of ‘growing up’ and shifting from a high school environment to a university environment contributes to the prevalence of depression in students (Eisenberg, Gollust, Golberstein, & Hefner, 2007). University students also encounter psychological and social changes in trying to solve problems independently, usually away from family (Bayram & Bilgel, 2008).

The most common factors found to be associated with Depression among undergraduate students are sex, student year of study, age, and the socio economic status of student (Mancevska, Bonzinovska, Tecce, Pluncevik-Gligoroska, & Sivevska-Smilevska, 2008; Roberts, Carol, Kim, & Houchell, 2010; Roh et al., 2010; Schwenk, Davis, & Wimsatt, 2010). For example, female students have higher levels of Depression when compared to male students (e.g., Roh et al., 2010). One possible explanation for this sex difference is that it may be in the females’ genetic nature to develop Depression, which may be linked to the variation of hormone levels in female students. Furthermore, Roh and colleagues found that women worry about various issues and invest in relationships more than men do, suggesting a psychological basis for this sex difference. Alternatively, they suggest a social cultural basis for this difference, whereby they explain that women are more likely to seek out a diagnosis for Depression than men are.

Schwenk, Davis, and Wimsatt (2010) reported that many university students experience the first indications of Depression during their first college years when they are usually younger as compared to third year students. The occurrence of Depression amongst younger university students is likely a result of greater personal responsibility such as, for example, making independent choices and decisions. Pittman and Richmond (2008), for example, explain that although the ability and opportunity to make decisions may seem exciting for the student at first (i.e., once they enter university), these new responsibilities may become overwhelming for the undergraduate student. Furthermore, several additional responsibilities are placed on the student such as balancing study time, social activities, relationships, and finances. This additional responsibility may be experienced as difficult to manage by some students.

In addition to this, students who reported financial problems were at higher risk of developing Depression, when compared to students who had better family financial support (Mancevska et al., 2008). Mancevska et al. (2008) reported that those students who were more vulnerable to Depression were the ones who were supporting themselves financially. It may be that the extreme distress about debt and financial needs makes the student more vulnerable to Depression. Furthermore, Mancevka and colleagues found that it was difficult

for undergraduate students to maintain jobs that can sustain their needs whilst maintaining good grades. This in turn resulted in students feeling stressed and miserable, again making them more vulnerable to Depression.

In one web-based survey using the Depression, Anxiety and Stress Scale (DASS) to assess levels of depressive symptoms, anxiety and stress in Hong Kong undergraduate students studying in the USA (Wong et al., 2006), it was found that there was a difference in Depression scores between these Hong Kong students and USA students. The Hong Kong students had significantly higher levels of Depression compared to their USA counterparts. One explanation proposed by the researchers was that students in the USA continued to live at home with their parents while studying, whereas those from Hong Kong moved away from home and as a result felt lonely and lacked social support.

Similarly, a web-based survey employed the Depression, Anxiety and Stress Scale (DASS) in a sample of Turkish students (Bayram & Bilgel, 2008). In this study, students who were content with their academic performances had lower Depression, anxiety and stress scores. Similar results were also obtained in on a study in an Australian University in which Depression was measured using the Zung Self Rating Depression Scale (Bitsika, Sharpley, & Bell, 2009). This study also showed that the presence of Depression was associated with lower academic performance.

Another web-based survey among United Kingdom universities conducted by Dodd, Al-Nakeeb, Nevill, and Forshaw (2010) found that unhealthy behaviours such as lack of exercise, low intake of fruits and vegetables, smoking and binge-drinking among university students were associated with Depression as well as other mental health problems. Despite the research giving evidence of the consequences to unhealthy behaviours, the majority of university students still participate in these behaviours that could increase the possibility of them experiencing mental health problems.

Additionally, a survey conducted by Kauser (2010) among Pakistan university students investigated perceived workload, coping strategies and depression among these students, and found that university students perceive their academic life and workload as demanding and challenging. This is because of pressure to perform placed on them by their parents and others, as well as the students' own personal expectations to succeed in their studies. It was also reported that perceived workload among students was also a result of a challenging university curriculum, which in turn may have caused students to perceive their workload as overwhelming.

## **Apathy as a Disorder**

For the most part, Apathy is viewed as part of another disorder such as Depression. Although Apathy has traditionally been associated with Depression, it is itself a distinct disorder (Holthoff et al., 2005; Levy et al., 1998). Apathy is defined as the decrease of unprompted and purposive actions, resulting in people becoming less involved in usual endeavours (Marin, 1991). Apathy is a neuropsychiatric syndrome that alters three domains of an individual's life, namely behavioural, cognitive and affective domains. In the behavioural domain, apathy can be described and seen in an absence of determination, which results in a reliance on other individuals to undertake action. The individual's cognitive ability is affected by a lack of attention to new involvements. Finally, in the affective/psychological domain, Apathy expresses itself in the lack of response to life experiences and the absence of interest in one's difficulties (Holthoff et al., 2005).

**The prevalence of Apathy in university students.** Research on Apathy is still in its infancy, and there is not much reported on Apathy in a student population or the general population. The absence of literature on Apathy in these populations is surprising, given its close association with Depression, which is very prevalent in both the student and the general population. Moreover, the main symptoms of Apathy include a lack of concern, enthusiasm or interest for life events. This has important implications for student sufferers' academic performance.

A cross cultural study on student Apathy was conducted by Bjornsen, Scepansky, and Suzuki (2007). They assessed levels of apathy among USA college students using the Male Apathy Inventory (MAI) for male students and the Female Apathy Inventory (FAI) for female students (Munekata, 1997). Bjornsen and colleagues found that Apathy was by and large related to diffidence and Depression in undergraduate students. Furthermore, Apathy was also found to be negatively correlated with warmness, confidence, action, optimism, proficiency, organisation attainment, determination and self-control.

With regards to sex differences, Apathy scores of the male participants were also negatively correlated with seeking friendships and pleasure, while females' scores were associated with frankness, but not with activities, planning, unselfishness and reflection (Bjornsen et al., 2007). Furthermore, both males and females' Apathy scores were correlated positively with several traits (e.g., nervousness, resentment, aggression, spontaneity, susceptibility, and diffidence), and correlated negatively with confidence and conformity. The results also indicated that there is difference between Apathy and Depression. Apathy has an emotional impact on every facet of a student's life and perhaps restricts students from

attaining their potential in their studies in general. These results also suggest that Apathy in undergraduate students might effectively be addressed by looking at these traits.

**Factors contributing to Apathy.** Since Apathy has generally been viewed as part of Depression, not much research has focussed on the factors contributing to Apathy. As a result, the factors that contribute to Apathy are not found in literature. Instead of speaking about factors, certain characteristics of apathetic individuals have been proposed by Uchida (2010). These factors include behaviours such as students avoiding to compete with other students as a result of their fear of failing, regardless of their potential to succeed. Secondly, Apathetic students seem to have obsessive compulsive character traits, which results in these individuals continuously focussing on intrusive thoughts or behaviours. This results in much loss of time and prevents them from finishing their university assignments, for example. Furthermore, Uchida discusses that apathetic students often remove themselves from academic responsibilities by taking part in other activities they may find interesting. Lastly, Apathy in students is associated with identity conflict in the students who experience it.

### **Perceived Workload, Social Support and Health Behaviours and their Relationship to Depression and Apathy**

In addition to the contributors discussed above, previous research suggests that perceived work load, social support, and health behaviours are good predictors of the likelihood of Depression in university students (Kausar, 2010). Undergraduate students perceive academic life as stressful and report emotional and cognitive reactions to these stressors. Academic demands that include grade completion and time management result in students perceiving their workloads as unbearable. It has been shown that students evaluate university life as uncontrollable whenever they experience a lower ability to cope with their workload and find university workloads challenging thereby contributing to the decline of their mental health (Kausar, 2010).

Social support among students is a complex construct that includes diverse concepts such as the extent of the social network, the provision of tangible support and the perception of the adequacy of social support (Canty-Mitchel & Zimet, 2000). Social support can come from the family, peers and friends, and can be critical resources for university students as they navigate the challenges of university life (Edwards, 2004). Furthermore, lack of social support may result in students feeling vulnerable to the pressures of university life.

Both Depressive and Apathy symptoms have been shown to be positively correlated to unhealthy eating, unhealthy weight control behaviours and substance abuse (Fulkerson,



Sherwood, Perry, Neumark-Sztainer, & Story 2004). Furthermore, these symptoms are negatively associated with health supporting actions such as exercising, eating healthy food and getting medical check-up.

### **Specific Aims and Hypothesis**

Despite the longstanding recognition of Apathy among college students and its association with Depression, researchers have devoted little attention to the disorder in the general population (Roh et al., 2010). Therefore, there is need for more research on apathy in undergraduate students and the general population (Holthoff et al., 2005). Apathy is often assumed to be part of depression but many clinical studies have shown that it is independent of depression (Andrewes, 2004). Therefore, there is a gap in differentiating Apathy from Depression in university students, or better understanding the association between the two conditions.

In light of the prevalence of Depression (i.e., high prevalence) and Apathy (i.e., absence of this statistic) in college students and the risks it pose if these are not diagnosed early or treated effectively, it is imperative that research be increased for both intervention and treatment studies on depression and apathy. This study thus aimed to investigate the association between health behaviours, perceived social support and work load as predictors of Depression and Apathy among university students. An additional aim was to investigate the relationship between Depression and Apathy in this sample. Several predictors were included in the study in order to investigate possible predictors of the levels of Depression and Apathy. The influence of demographic variables such as sex and age were investigated as literature has linked these variables in particular to Depression. These demographic variables were important to investigate in order to investigate whether they have an effect on depression and apathy in undergraduate students.

The following hypotheses were made:

1. The prevalence rates of Depression and Apathy will differ in this sample. Although I expect to find a correlation between depressive and apathy symptoms, I also expect to find students who meet the cut-off for Depression without Apathy and students who meet the cut-off for Apathy without Depression.
2. Health behaviors, perceived social support and perceived workload will have differing effects on depression and apathy. I expect that health behaviours, social support and workload will predict Depression, such that better health behaviors, higher perceived

social support and lower perceived workload will lead to fewer depressive symptoms. The same will not be seen for Apathy. As these two conditions are different, I expect some overlap in predictors but not all. This is more exploratory.

3. I expect to see that gender and age has an influence on these conditions.

## METHOD

### Research Design and Setting

This study is cross-sectional and correlational in design. It aimed to investigate the relationship between health behaviours, perceived work load, and perceived social support as predictors of outcomes of Depressive and Apathy symptoms among undergraduate university students.

Data were collected from University of Cape Town Psychology undergraduate students. A web-based survey was used for data collection. Students were invited to complete the uploaded questionnaires by means of an email sent out to all undergraduate students.

### Participants

Two-hundred and seventy two Psychology undergraduate students (40 male, 232 female) from the University of Cape Town participated in this study. Aside from 6 participants, all participants were between 18 years and 25 years old. Participants of all ethnic groups were included in the sample (Asian 20.5 %, Coloured 20.5%, White 53.5%, Black 16.8%, Indian 4.8% and other races 2.6%). Students were recruited from undergraduate Psychology courses, and participated in exchange for course credit. The first students to complete the online questionnaire within a period of 5 days were included in the study. Incomplete datasets (i.e., from participants who did not complete all questionnaires in the survey) were excluded.

### Measures

The web-based survey included several questionnaires. Examples of questionnaires are presented in the Appendix.

**Demographic questionnaire.** Participants completed a basic demographic questionnaire which included questions relating, amongst others variables, to age, ethnicity, year of study and sex (see Appendix B).

**The Beck Depression Inventory II (BDI-II).** The BDI-II (Beck, Steer, & Brown, 1996) is a valid and reliable scale for measuring Depression. The frequently used 21-item

self-report measure is used by answering questions regarding the severity of depressive symptoms experienced during the past two weeks on a 4 point likert-type scale (see Appendix C). The 21 questions are each scored on a scale value of 0 (associated with an absence of symptom) to 3 (associated with symptom). A higher score indicates the seriousness of Depression. A BDI-II score of 14 and above is the clinical cut-off for Depression.

The BDI-II has demonstrated a positive correlation with other depression scales. For instance, it is positively correlated with the Hamilton Depression Rating Scale ( $r = .71$ ), showing good agreement. The scale has also shown to have a high one week test-retest reliability ( $r = .93$ ), suggesting that it was not overly sensitive to daily variation in mood. The test also has high internal consistency of  $\alpha = .91$  (Beck, Steer, Ball, & Ranieri, 1996; Storch, Roberti, & Roth, 2004).

**The Apathy Evaluation Scale (AES).** The AES was developed by Marin, Biedrzycki, and Firinciogullari (1991) to assess apathy symptoms resulting from brain-related pathology. The AES is an 18 item scale measuring deficits in goal-directed behaviours, thoughts and emotions (Marin et al., 1993; see Appendix D). Each item (e.g., “Getting things started on my own is important to me/I am interested in having new experiences”) is rated on a scale of 4 (Not at all) to 1 (A lot). The scale has been widely used for research and has shown good psychometric properties in terms of reliability and validity (Marin et al., 1991). The AES cut off of 38 determines whether a person is apathetic or not.

**The Health Behaviours Score (HBS).** The HBS was developed by Vickers, Conway, and Hervig (1990) to assess four health measurements of behaviours in the general population. The four categories of health behaviour are protective health behaviours, accident control, risk-taking behaviours and substance risk behaviours. It is a 40 item scale (see Appendix E), each item (e.g., “I exercise to stay health/I keep emergency numbers near the phone”) is rated on a scale of 5 (Disagree strongly) to 1 (Agree strongly). Some items (e.g., “I do not drink alcohol/I carefully obey traffic rules so I won’t have accidents”) have a reverse score and are rated on a scale 5 (Agree strongly) to 1 (Disagree strongly). A higher health behaviour score indicates a healthy lifestyle. The health behaviours cut off of 130 determines whether a person has healthy behaviours or not (Vickers et al., 1990). Furthermore, the scale has been widely used for research and has shown psychometric properties of reliability and validity.

**The Perceived Social Support Scale (PSS).** The Perceived Social Support Scale, developed by Edwards (2004) is a multidimensional scale of perceived support from family

and friends. It is a 12-item scale (see Appendix F), each item (e.g., “My family really tries to help me/I can talk about my problems with my friends”) is rated 1 (Very strongly disagree) and 7 (Very strongly Agree) and the total is the sum of all 12 items, with a possible range for the total is 7-84. The algorithm for PSS is rated as low acuity 12-48, moderate acuity, 49-68, and high acuity 69-84. The PSS scale has shown psychometric properties of reliability and validity (Edwards, 2004).

**The Perceived Mental Workload Scale (PMWS).** The Perceived Mental Workload Scale (see Appendix G) is a valid and reliable scale that measures perceived mental workload (Kausar, 2010; Rubio, Diaz, Martin, & Puente, 2004). The scale is divided into three sections, namely time load, mental effort load, and psychological stress load. The 9 questions are each scored on a scale 0 (absence of perceived mental workload) to 3 (presence of perceived mental workload). Each item (e.g., “Often has spare time. Interruptions or overlap among activities occur infrequently/Extensive mental effort and concentration required”) is rated on a scale of 3 (Not at all) to 1 (A lot). A higher score indicates the seriousness of perceived mental workload. The perceived mental workload cut off of 7 determines whether a person has perceived mental workload or not.

## **Procedure**

The study followed the ethical guidelines stipulated in the UCT Codes for Research, and ethical approval for this study was provided by the Research Ethics Committee of the University of Cape Town, Department of Psychology prior to commencement of data collection. Data were collected from undergraduate students through a web based survey. Questionnaires were accessed via the undergraduate students’ research participation project (SRPP) website.

Participants completed a consent form online and were given details of the purpose of the research before questionnaires were completed (see Appendix H). The informed consent included information about the participants’ right to refuse participation in the study and to withdraw from the research if they at any point chose to do so. Any risks and discomforts related to the study were provided. An incentive of one SRRP point (course credit) was assigned to students who gave their consent and completed the whole questionnaire.

Students completed the Demographics questionnaire first, followed by the Beck Depression Inventory II, the Apathy Evaluation Scale, the Health Behaviours Scale, the Perceived Social Support Scale, and finally the Perceived Mental Workload Scale. At the end of the survey, participants were thanked for their participation. They were given contact

numbers of University of Cape Town, Students Wellness Clinic should they feel the need to talk to someone or consult with someone about their feelings after having completed the survey. The completion of the questionnaires took approximately 25-30 minutes. These questionnaires were completed during the period of 22 July to 25 July for students to complete at the time convenient to them.

### **Data Analysis**

Each student was assigned a Depression, Apathy, health behaviour score, perceived social support score, and perceived workload score based on the total score of responses per scale. This coding allowed a description of the sample to be given. Scores of each of these five classes of variables were coded as continuous variables so as to allow a linear regression to be conducted in order to assess the relationship between the effects of these variables on depression and apathy in undergraduate students.

Data was analysed using the SPSS statistical software package (version 21). A significance threshold of .05 was used. Detailed descriptive statistics were performed first in order to describe the sample more accurately (e.g., in terms of demographic variables), and the participants' scores on the various predictor variables and the two outcome variables.

The student's Depression and Apathy scores were used to describe the sample. To assess hypothesis 1, that the prevalence of Depression and Apathy will differ in my sample, proportions of the sample that scored above the cut-offs for the Beck Depression Inventory and Apathy Scale were calculated. Bivariate correlation analysis was used to investigate whether Depression and Apathy were significantly correlated.

To assess hypothesis two, two separate regression analyses were used. Two stepwise regression analyses were employed. The first stepwise regression used Depression as the outcome variable, and health behaviours, perceived social support, perceived workload, age and sex as potential predictor variables. The second multiple regression followed the same form but Apathy was used as the outcome variable. Age and sex were included as potential predictors as these variables have been found to predict Depression in previous studies (Mancevska et al., 2008).

## RESULTS

### Descriptive Statistics

The final sample consisted of 272 undergraduate psychology students attending the University of Cape Town (age range 18-25 years;  $M=19.93$ ,  $SD=2.21$ ). One participant was identified as an outlier, and her data was therefore excluded from analyses. It was assumed that all participants were fluent in English (the medium of the questionnaires), as entrance into UCT requires that participants pass an English language proficiency test. Sample characteristics and scores on all measures and are presented in Table 1.

Table 1  
*Sample Characteristics and Scores on All Measures*

Characteristic/Measure	( $n = 272$ )
Age range (years)	18-25
Age	19.93 (2.21)
Sex	
Male: Female	40: 232
Ethnicity	
Asian: Coloured: White: Black: Indian:	
Other	5: 56: 146: 45: 13: 7
BDI-II total	9.64 (7.97)
AES total	37.41 (6.04)
HBS total	119.32 (14.13)
PSS total	68.09 (11.49)
PMWL total	6.18 (1.21)

*Note.* BDI-II = Beck Depression Inventory; AES = Apathy Evaluation Scale; HBS = Health Behaviour Scale; PMWL = Perceived Mental Workload. Means presented with standard deviations in parentheses.

**Age.** Although there is a broad age range, the majority of participants were between the ages of 18 and 25 years. Only 6 students were outside this bracket. Using the SRPP course credit system meant that participants could not be restricted by age. However, with

such a small proportion of the participants falling outside the target age range, it was not necessary to exclude any students.

**Sex.** The sample consisted of 40 men and 232 women. The reason why there were more females than males is because the majority of undergraduate Psychology students are female. As depression is known to be more prevalent in females (Mancevska et al., 2008), including sex as a potential predictor in my regression analyses is important.

**Ethnicity.** I did not limit participation to any ethnic group. The majority of participants were Coloured, White and Black (together 90.8%). The percentages for each group were as follows: Asian=1.8%, Coloured=20.6%, White=53.7%, Black=16.5%, Indian=4.8%, and other=2.5%.

### **Hypothesis 1: The Prevalence of Depression and Apathy in university students**

From Table 1 it can be seen that the average score on the BDI-II was 9.64 ( $SD=7.97$ ). This is well below the cut-off of 14. A total of 24.2% of the sample scored 14 and/or above on the BDI-II. The average score on the AES was 37.41 ( $SD=37.41$ ). This is well below the cut-off of 38. A total of 55.8% of the sample scored 38 and/or above on the AES.

Correlation analysis revealed a significant positive correlation between Depression and Apathy,  $r=.43$ ,  $p<.001$ .

### **Hypothesis 2: Health Behaviours, Social Support and Mental Workload will have Differing Effects on Depression and Apathy**

**Predictors of Depression.** A stepwise regression analysis was conducted to evaluate how social, behavioural and work-related predictors of affective symptoms predicted Depression in Psychology undergraduate students. Perceived work-load, perceived social support, health behaviours and age were included as potential predictors of Depression. As can be seen in the intercorrelations (Table 2), potential predictors aside from age and sex had significant zero-order correlations with the outcome variable of Depression, suggesting that these variables may be significant predictors of Depression. There were also several significant correlations between predictors to be aware of, and Tolerance statistics was examined to be sure that there is no problem with multicollinearity.

Table 2

*Intercorrelations Between Potential Predictor Variables and Depression*

	BDI-II	PWL	PSS	HBS	Age	Sex
BDI-II	-	.33**	-.30**	-.19**	-.05	.03
PWL		-	-.03	.09	.17**	-.14*
PSS			-	.35**	-.08	-.22**
HBS				-	.07	.04
Age					-	.16
Sex						-

*Note.* BDI-II = Beck Depression Inventory; PMWL = Perceived Mental Workload, PSS = Perceived Social Support, HBS = Health Behaviour Score.

\* $p < .05$ . \*\*  $p < .001$ .

Stepwise regression yielded a significant result,  $F(4, 267) = 18.99, p < .001$  (see Table 3). Four variables were identified as significant predictors of Depression (all  $p < .001$ ). These four predictors explained 22 % of the variance in Depression scores,  $R^2 = .22$ .

Table 3

*Coefficients Table for Stepwise Model for Depression (4 Predictors)*

Model	Coefficients			<i>t</i>	<i>p</i>	<i>Partial correlations</i>	Tolerance
	B	<i>SE</i>	Beta				
Constant	24.32	5.64		4.31	<.001		
TOTAL_PWL	2.32	.36	.35	6.38	<.001	.36	.96
TOTAL_PSS	-.18	.04	-.25	-4.37	<.001	-.26	.86
Age	-.44	.20	-.12	-2.23	.026	-.14	.96
TOTAL_HBS	-.07	.03	-.12	-2.08	.038	-.13	.86

*Note.* PWL = Perceived Mental Workload, PSS = Perceived Social Support, HBS = Health Behaviours Score. Dependent variable: Depression

From the model summary table (Table 4), it can be seen that perceived work load explains the most variance on its own (10.8%). When perceived social support is added into the model, this explains a further 8.3% of the variance in Depression. Age and health behaviour scores also contribute significantly to this model by explaining a further 1.7% and 1.3 %, respectively.



respectively. In this model, perceived work load was positively correlated with Depression and seem to have the greatest influence on Depression,  $\beta=.329$ , whereas perceived social support, age, and health behaviour score were negatively correlated with Depression. The regression equation for this model is: Depression = 24.32 + 2.32\*PWL - 0.17\*PSS - 0.44\*Age - .07\*HBS.

Table 4

*Model Summary Table: Depression as Outcome Variable*

Model	R	R <sup>2</sup>	SEE	Change statistics				
				rR <sup>2</sup>	rF	df1	df2	sig.rF
1 <sup>a</sup>	.33	.108	7.54	.108	32.83	1	270	<.001
2 <sup>b</sup>	.44	.192	7.19	.083	27.76	1	269	<.001
3 <sup>c</sup>	.46	.209	7.13	.017	5.78	1	268	.017
4 <sup>d</sup>	.47	.221	7.86	.013	4.33	1	267	.038

<sup>a</sup> Predictor: Total perceived mental workload

<sup>b</sup> Predictors: Total perceived mental workload, Total perceived social support

<sup>c</sup> Predictors: Total perceived mental workload, Total perceived social support, Age

<sup>d</sup> Predictors: Total perceived mental workload, Total perceived social support, Age, Health behaviour score

**Predictors of Apathy.** A stepwise regression analysis was conducted to evaluate how social, behavioural and work-related predictors of affective symptoms predicted Apathy in Psychology undergraduate students. Perceived workload, perceived social support, health behaviours and age were included as potential predictors of Apathy. As can be seen in the intercorrelations (Table 5), only potential predictors Perceived Social Support and Health Behaviours Score had significant zero-order correlations with the outcome variable of Apathy, suggesting that these variables may predict Apathy. Again, some significant correlations can be seen between potential predictors; Tolerance statistics suggest that there is no problem with multicollinearity.

Table 5

*Intercorrelations Between Potential Predictor Variables and Apathy*

	AES	PMWL	PSS	HBS	Age	Sex
AES	-	.02	-.44**	-.42**	-.07	.05
PMWL		-	-.03	.09	.17**	-.14*
PSS			-	.35**	-.08	-.22**
HBS				-	.07	.04
Age					-	.16
Sex						-

*Note.* AES = Apathy Evaluation Scale; PMWL = Perceived Mental Workload; PSS = Perceived Social Support; HBS = Health Behaviour Score.

\* $p < .05$ . \*\*  $p < .001$ .

Stepwise regression yielded a significant result,  $F(1, 269) = 28.43, p < .001$  (see Table 6).

Two variables were identified as significant predictors of Apathy (both  $p < .001$ ). These two predictors explained 27.7% of the variance in Apathy scores,  $R^2 = .277$ .

Table 6

*Coefficients Table for Stepwise Model for Apathy (2 Predictors)*

Model	Coefficients				<i>p</i>	<i>Partial correlations</i>	Tolerance
	B	<i>SE</i>	Beta	<i>t</i>			
Constant	64.61	2.85		22.67	<.001		
TOTAL_PSS	-.18	.03	-.34	-6.05	<.001	-.35	.87
TOTAL_HBS	-.13	.02	-.30	-5.33	<.001	-.31	.87

*Note.* PSS = Perceived Social Support, HBS = Health Behaviours Score.

Dependent variable: Apathy.

From the model summary table (Table 7), it can be seen that perceived social support explains the most variance on its own (20%). When health behaviours are added into the model, this explains a further 7.7% of the variance in Apathy scores. In this model, perceived social support was negatively correlated with Apathy and has the greatest influence on Apathy,  $\beta = .34$ , and health behaviour score was negatively correlated with Apathy,  $\beta = .30$ . The regression equation for this model is:  $\text{Apathy} = 53.23 - .18 * \text{PSS} - .13 * \text{HBS}$ .

Table 7

*Model Summary Table: Apathy as Outcome Variable*

Model	<i>R</i>	<i>R</i> <sup>2</sup>	<i>SEE</i>	Change statistics				
				<i>rR</i> <sup>2</sup>	<i>rF</i>	<i>df1</i>	<i>df2</i>	<i>sig.rF</i>
1 <sup>a</sup>	.44	.20	7.54	.20	65.44	1	270	<.001
2 <sup>b</sup>	.52	.27	7.19	.077	28.43	1	269	<.001

<sup>a</sup> Predictor: Total perceived social support

<sup>b</sup> Predictors: Total perceived social support, Total Health behaviour score

## DISCUSSION

This study investigated the contribution of health behaviours, perceived social support, and work load as predictors of Depression and Apathy symptoms among undergraduate university students. The effect of age and sex was also considered. Results revealed that perceived work load, perceived social support, age, and health behaviours significantly predicted Depression in undergraduate Psychology students, whereas only perceived social support and health behaviours significantly predicted apathy symptoms. A second goal was to investigate the relationship between Depression and Apathy in this sample. The study also demonstrated a positive significant relationship between Depression and Apathy. Furthermore, Apathy was twice as common as Depression in this sample. Individual findings, and their linkages to the current literature, will be discussed in the following sections. This discussion concludes with a look at the limitations of this research, and recommendations are made for future research.

### **The Prevalence of Depression and Apathy in University Students**

In terms of prevalence of Depression and Apathy in university students, a significant proportion of the sample met the criteria for Depression, as measured by the Beck Depression Inventory II, and a significant proportion met the criteria for Apathy, as measured by the Apathy Evaluation Scale. Overall, nearly a quarter (24.2%) and more than half (55.8%) of this sample met the criteria for Depression and Apathy, respectively. The finding regarding depression is congruent with prevalence rates as found by Ibrahim et al. (2012) i.e., 30.6%.

These results showed that Apathy is largely more prevalent in undergraduate students as compared to Depression. It makes intuitive sense that more reported feeling demotivated and less goal-oriented than other student who reported more feelings of sadness and

diminished ability to concentrate. One possible explanation may be that Depression symptoms can be recognised and treated whereas, Apathy symptoms are not known and therefore, there are no systematic treatment options for apathy. Experts have a more clear idea of how to identify and treat Depression than they do Apathy. This may also explain why apathy is often a neglected area in student wellness.

There is a positive significant correlation between depressive and apathy symptoms, which is in keeping with literature (Levy et al., 1997). We do expect to see a correlation with these, as the literature acknowledges that they often co-exist, that Apathy for a long time was viewed as part of Depression. However, together the large prevalence difference in our sample in conjunction with this significant relationship that: If the majority of those who met the criteria for Depression also met the criteria for Apathy, then our sample will be left with at least 30% of the sample who meet the criteria for Apathy without Depression. This is a big proportion of the sample, and indicates a need for Apathy to be better understood so that it can be prevented and treated more effectively.

### **Health Behaviours, Social Support and Mental Workload will have Differing Effects on Depression and Apathy**

In our sample, undergraduate students were chosen because it is believed that Depression and Apathy are highest during adolescence and early adulthood, and that the onset of depression is most likely to occur during this time (Holthoff et al., 2005). It is also a time when students are experiencing life changes and numerous stressors. Thus, participants between the ages of 18 and 25 years are more likely to experience depressive and apathetic symptoms.

Furthermore, the new responsibilities and independence that undergraduates acquire when they enter university may result in the students failing to practice healthy behaviours.

**Predictors of Depression.** In the current sample, perceived work load, perceived social support, age and health behaviours were significantly associated with Depression. This is mostly consistent with research that indicates that undergraduate students experience emotional and cognitive reactions to stressors they encounter as they adjust into adulthood and university life (Kaiser, 2010.). Research also provides evidence that these are predictors of Depression (Canty-Mitchel & Zimet, 2000; Edwards, 2004; Fulkerson et al., 2004).

A possible explanation is that undergraduate students have pressure to perform academically and as a result they may overstate their social support and work load. The perceived work load of students in predicting depression was inconsistent with research done

by (Kauser, 2010) that indicate that undergraduate students perceive their work load as too much. This results in the undergraduate student becoming vulnerable to depression.

**Age and Sex.** The age of students in predicting Depression was consistent with research done by Schwenk and colleagues (2010) that indicates that the younger undergraduate students view the need to balance their academic studies, social events, relations and financial responsibilities as overwhelming. This results in the undergraduate students becoming vulnerable to depression. The current finding of lack of relationship between sex and Depression is incongruent with other studies in this area linking the sex of an undergraduate student to the subsequent development of depression in women (Roh et al., 2010). This finding might have been influenced by the amount of males and females who took part in this study, which I will address in my limitations section.

**Predictors of Apathy.** In terms of Apathy outcomes, perceived social support, and health behaviours were significantly associated with Apathy. Based on the assumption that apathetic undergraduate students experience a progressive decline in their capacity to be assertive, competent and ambitious there is need for intervention (Bjornsen et al., 2007). The current finding therefore suggests that the social, behavioural and work-related affective symptoms of undergraduate students are underestimated. The literature review also suggests that there is little research done on undergraduate apathy. This makes it difficult to treat apathy because its causes are not fully known.

This is consistent with research that indicates that undergraduate students experience lack of motivation and determination in daily life (Uchida, 2010). A possible explanation is that undergraduate students avoid competitive situations such as academic responsibilities as they view these students fear failing and boring tasks. This may result in these students feeling apathetic to do anything at all. The lack of enthusiasm to different aspects of life in undergraduate students may result in diminished academic potential and excitement for new responsibilities and independence that entail undergraduate studies.

### **Similarities and Differences between Depression and Apathy**

As can be seen, several predictors, namely perceived work load, perceived social support, age and health behaviours predicted Depression and Apathy. This is in line with what Kauser (2010) and Fulkerson et al. (2004) suggested in their studies. Two predictors (perceived work load and age), however, did not predict Apathy but did predict Depression. This supports the argument that Depression and Apathy are distinct conditions (Holthoff et al., 2005) and should be viewed as two separate conditions because findings suggest that there are

differences in what predicts Apathy or Depression. Although, Apathy can be seen as a symptom of Depression, and has been to date, there is ample evidence that it should be viewed as a separate diagnosis.

Very little research has been done on Apathy in the undergraduate student population, and this research suggests that there are significant differences between what adds to depression and apathy. Results imply that apathy can exist on its own and is not necessarily a part of depression and needs to be addressed as something separate from depression. More research is necessary in order to understanding the differences between Depression and Apathy. Results also suggest that Depression and Apathy should be investigated as two distinct mental health disorders.

### **Limitations**

One limitation of web surveys is one could argue that the sample may be biased. This, however, if we refer to the SRPP system that was used in this research, all students required these points, so it is perhaps less likely that students really look at what the questionnaire was about. One could also argue that depressed and apathetic individuals may not have the motivation and energy to start or finish a questionnaire and we acknowledge this. Furthermore, web surveys of affective behaviours may lead to students not being truthful with their desirable responses.

This study is further limited by its generalizability of findings, because this study was conducted using a convenience sample of psychology undergraduates for the ease of access using the SRPP system. In future there is need to gain a more representative view across faculties of University of Cape Town. Furthermore, this sample consisted predominantly of women, ideally we would want to look at males too and see if there is anything different or any interaction between predictors and sex. This study also overlooked socio-cultural and economic factors that may increase the risk of Depression and Apathy in undergraduate students. Additionally, age was not really a limitation in our sample, it was picked for a reason. However, it would be interesting to expand on this age range, as there are many other times in life that one may experience stressful/life-changing events.

One further limitation is that this study used only one measure for Depression and one measure for Apathy. The outcome of Depression and Apathy may have been different if two measures or more measures were used for each outcome. Furthermore, these measures were self-report measures, and self-report measures are known to be less reliable. More objective measures or an increase in the number of measures of Depression and Apathy would have

been ideal. This sample cannot therefore be considered as representative of the broader population of individuals experiencing depressive and apathy symptoms.

### **Implications for Prevention and Treatment/intervention**

Despite some limitations, this study has yielded important findings that may have implications for future research in Depression and Apathy prevention programmes in students. The current data suggest cognitive, emotional and behavioural stressors represent a prevalent and pervasive problem for Depression and Apathy in undergraduate students. Furthermore, depressive and apathetic symptoms such as loss of pleasure, interest and energy are predictors of mental health in students. These findings suggest that an increased recognition of affective symptoms in student is vital for the optimal development of prevention programs targeting lack of psychological well-being of undergraduate students. Important to note is that the differences in predictors suggest that what might be useful to treat Depression might not be useful to treat Apathy.

### **Directions for Future Research**

Future studies should focus on clearly outlining the differences between what adds to Depression and Apathy. Results imply that more research is necessary to more clearly understand/gain more understanding of the differences between these two ‘conditions’, and also suggest that they should be investigated separately. Another methodological issue that needs to be addressed is that population-based sampling strategies are necessary in order to achieve larger samples, both male and female, that are more reflective of undergraduate populations. Furthermore, future studies should consider socio-cultural aspects of Depression and Apathy among undergraduate students. Resiliency factors should also be considered in order to determine the factors that protect depressive and apathetic symptoms from developing negative mental health outcomes in students. Moreover, despite the importance of sex in predicting depression in the present study, this form of sex related studies has been relatively neglected in research by focusing on cognitive, emotional and behavioural aspects of depression.

### **Conclusion: Significance of the Study**

The overall significance of this study is that the knowledge of researchers will increase about the prevalence and variables related of Depression and Apathy in university students. This new knowledge will assist university authorities to formulate strategies that can deal with

students' psychological health targeting of perceived social support and health behaviours that are evident in both depressed and apathetic undergraduate students. As a result the chances of students' ability to deal with life pressures, and finish their university studies will increase. Furthermore, it is hoped that this study will provide a foundation for a similar studies on a larger scale, and broaden the screening, prevention and intervention of undergraduates' mental health.



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## Appendix A

### DSM-IV TR Criteria for Major Depressive Episode

Must have a total of 5 symptoms for at least 2 weeks.

One of the symptoms must be depressed mood or loss of interest.

1. Depressed mood.
2. Markedly diminished loss of interest or pleasure in all or almost all activities.
3. Significant (>5% body weight) weight loss or gain, or increase or decrease in appetite.
4. Insomnia or hypersomnia.
5. Psychomotor agitation or retardation.
6. Fatigue or loss of energy.
7. Feelings of worthlessness or inappropriate guilt.
8. Diminished concentration or indecisiveness.
9. Recurrent thoughts of death or suicide.

\* The two-question screen:

Over the past months have you been bothered by:

1. Little interest or pleasure in doing things?
2. Feeling down, depressed or hopeless?

\*\*Subtypes

- Major depression disorder with psychotic features
- Seasonal affective disorder
- Melancholic
- Catatonic
- Postpartum

## Appendix B

### Demographic Questionnaire

---

Age: .....

Sex : Male: ..... Female: .....

Race:

Asian .....

Coloured .....

White .....

Black .....

Indian .....

Other -----

## Appendix C

### The Beck Depression Inventory II

# BDI-II

Date:

Name:..... Marital Status:.....Age.....Sex.....

Occupation:..... Education:.....

**Instructions:** The questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and pick out the **one statement** in each group that best describes the way you have been feeling during the **past 2 weeks including today**. Circle the number besides the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

**1. Sadness**

- 0 I do not feel sad
- 1 I feel sad much of the time
- 2 I am sad all the time.
- 3 I am so sad or unhappy that I can't stand it

**2. Pessimism**

- 0 I am not discouraged about my future.
- 1 I feel more discouraged about my future than I used to be
- 2 I do not expect things to work out for me.
- 3 I feel my future is hopeless and will only get worse.

**3. Past Failure**

- 0 I do not feel like a failure
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person

**4. Loss of Pleasure**

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

**10. Crying**

- 0 I don't cry any more than I used to
- 1 I cry more than I used to.
- 2 I cry over every little thing
- 3 I feel like crying, but I can't.

**5. Guilty Feelings**

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done.
- 2 I feel quite guilty most of the time
- 3 I feel guilty all the time.

**6. Punishment Feelings**

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished
- 3 I feel I am being punished.

**7. Self Dislike**

- 0 I feel the same about myself as ever
- 1 I have lost confidence in myself
- 2 I am disappointed in myself
- 3 I dislike myself

**8. Self-Criticism**

- 0 I don't criticize or blame myself more than usual
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults
- 3 I blame myself for everything bad that happens

**9. Suicidal Thoughts or wishes**

- 0 I don't have any thoughts of killing myself
- 1 I have thought of killing myself, but I would not carry them out.
- 2 I would like to kill myself
- 3 I would kill myself if I had the chance

**17. Changes in sleeping Pattern**

<p><b>11. Agitation</b></p> <p>0 I am no more restless or wound up than usual</p> <p>1 I feel more restless or would up than usual</p> <p>2 I am so restless or agitated that it's hard to stay still</p> <p>3 I am so restless or agitated that I have to keep moving or doing something.</p> <p><b>12. Loss of interest</b></p> <p>0 I have not lost interest in other people or activities.</p> <p>1 I am less interested in other people or things than before</p> <p>2 I have lost most of my interest in other people of things</p> <p>3 It's hard to get interested in anything.</p> <p><b>13. Indecisiveness</b></p> <p>0 I make decisions about as well as ever</p> <p>1 I find it more difficult to make decisions than usual</p> <p>2 I have much greater difficulty in making decisions than I used to</p> <p>3 I have trouble making any decisions.</p> <p><b>14. Worthlessness</b></p> <p>0 I do not feel I am worthless</p> <p>1 I don't consider myself as worthwhile and useful as I used to be.</p> <p>2 I feel more worthless as compared to other people</p> <p>3 I feel utterly worthless</p> <p><b>15. Loss of Energy</b></p> <p>0 I have as much energy as ever</p> <p>1 I have less energy than I used to have</p> <p>2 I don't have enough energy to do very much</p> <p>3 I don't have enough energy to do anything</p> <p><b>16. Irritability</b></p> <p>0 I am no more irritable than usual</p> <p>1 I am more irritable than usual</p> <p>2 I am much more irritable than usual</p> <p>3 I am irritable all the time.</p>	<p><u>0 I have not experienced any change in my sleeping pattern</u></p> <p>1a I sleep somewhat more than usual</p> <p><u>1b I sleep somewhat less than usual</u></p> <p>2a I sleep a lot more than usual</p> <p><u>2b I sleep a lot less than usual</u></p> <p>3a I sleep most of the day</p> <p>3b I wake up 1-2hours early and can't get back to sleep.</p> <p><b>18. Changes in Appetite</b></p> <p><u>0 I have not experienced any changes in my appetite</u></p> <p>1a My appetite is somewhat less than usual</p> <p><u>1b My appetite is somewhat greater than usual</u></p> <p>2a My appetite is much less than before</p> <p><u>2b My appetite is much greater than usual</u></p> <p>3a I have no appetite at all</p> <p>3b I crave food all the time.</p> <p><b>19. Concentration Difficulty</b></p> <p>0 I can concentrate as well as ever</p> <p>1 I can't concentrate as well as usual</p> <p>2 It's hard to keep my mind on anything for very long</p> <p>3 I find I can't concentrate on anything</p> <p><b>20 Tiredness or Fatigue</b></p> <p>0 I am no more tired or fatigued than usual</p> <p>1 I get more tired or fatigued more easily than usual</p> <p>2 I am too tired or fatigued to do a lot of the things I used to do.</p> <p>3 I am too tired or fatigued to do most of the things I used to do.</p> <p><b>21. Loss of Interest in Sex</b></p> <p>0 I have not noticed any recent change in my interest in sex</p> <p>1 I am less interested in sex than I used to be</p> <p>2 I am much less interested in sex now</p> <p>3 I have lost interest in sex completely</p>
--	---

Subtotal Page 2..... Subtotal Page 1..... Total Score.....

## Appendix D

### The Apathy Evaluation Scale

#### Apathy Evaluation Scale (Self-rated)

Name:..... Date:...../...../.....

For each statement, circle the answer that best describes your thoughts, feelings, and activity in the past 4 weeks.

1. I am interested in things.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
2. I get things done during the day.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
3. Getting things started on my own is important to me.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
4. I am interested in having new experiences.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
5. I am interested in learning new things.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
6. I put little effort into anything.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
7. I approach life with intensity.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
8. Seeing a job through to the end is important to me.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
9. I spend time doing things that interest me.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
10. Someone has to tell me what to do each day.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
11. I am less concerned about my problems than I should be.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
12. I have friends.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT
13. Getting together with friends is important to me.  
NOT AT ALL                      SLIGHTLY                      SOMEWHAT                      A LOT



- |     |  |            |          |          |       |
|-----|--|------------|----------|----------|-------|
| 14. | When something good happens, I get excited.            | NOT AT ALL | SLIGHTLY | SOMEWHAT | A LOT |
| 15. | I have an accurate understanding of my problems.       | NOT AT ALL | SLIGHTLY | SOMEWHAT | A LOT |
| 16. | Getting things done during the day is important to me. | NOT AT ALL | SLIGHTLY | SOMEWHAT | A LOT |
| 17. | I have initiative.                                     | NOT AT ALL | SLIGHTLY | SOMEWHAT | A LOT |
| 18. | I have motivation.                                     | NOT AT ALL | SLIGHTLY | SOMEWHAT | A LOT |

## Appendix E

### The Health Behaviours Scale

#### Health Behaviours Scale

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##### *Preventative Health Behaviours*

##### *Wellness Maintenance and Enhancement*

1. I exercise to stay healthy.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
  
2. I gather information on things that affect my health by watching television and reading books, newspapers, or magazine articles.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
  
3. I see a doctor for regular checkups.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
  
4. I see a dentist for regular checkups.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
  
5. I discuss health with friends, neighbors, and relatives.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
  
6. I limit my intake of foods like coffee, sugar, fats, etc.  
Disagree Strongly  
Disagree Mildly  
Neutral

Agree Mildly  
Agree Strongly

7. I use dental floss regularly.

Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly

8. I watch my weight.

Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly

9. I take vitamins.

Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly

10. I take health food supplements (e.g., protein additives, wheat germ, bran, lecithin).

Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly

*Accident Control*

11. I keep emergency numbers near the phone.

Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly

12. I destroy old or unused medicines.

Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly

13. I have a first aid kit in my home.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

14. I check the condition of electrical appliances, the car, etc., to avoid accidents.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

15. I fix broken things around my home right away.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

16. I learn first aid techniques.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

*Risk Taking Behaviour*

*Traffic Risk*

17. I cross busy streets in the middle of the block.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

18. I take more chances doing things than the average person.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

19. I speed while driving.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

20. I take chances when crossing the street.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

21. I carefully obey traffic rules so I won't have accidents. (reverse scored)

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

22. I cross the street against the stop light.

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

23. I engage in activities or hobbies where accidents are possible (e.g., motorcycle riding, skiing, using power tools, sky or skin diving, hang gliding, etc.).

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

*Substance Risk*

24. I do not drink alcohol. (reverse score)

- Disagree Strongly
- Disagree Mildly
- Neutral
- Agree Mildly
- Agree Strongly

25. I don't take chemical substances which might injure my health (e.g., food additives, drugs, stimulants). (reverse scored)

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

26. I don't smoke. (reverse scored)

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

27. I avoid areas with pollution. (reverse scored)

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

*Additional Items*

28. I eat a balanced diet.

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

29. I get enough sleep.

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

30. I choose my spare time activities to help me relax.

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

31. I pray or live by principles of religion.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
32. I avoid getting chilled.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
33. I watch for possible signs of major health problems (e.g., cancer, hypertension, heart disease).  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
34. I avoid high crime areas.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
35. I stay away from places where I might be exposed to germs.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly
36. I avoid over-the-counter medicines.  
Disagree Strongly  
Disagree Mildly  
Neutral  
Agree Mildly  
Agree Strongly

37. I wear a seat belt when in a car.

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

38. I brush my teeth regularly.

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

39. I get shots to prevent illness.

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly

40. I drive after drinking.

Disagree Strongly

Disagree Mildly

Neutral

Agree Mildly

Agree Strongly



## Appendix F

### The Perceived Social Support Scale

#### Perceived Social Support Assessment

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#### SOCIAL SUPPORT ASSESSMENT

Instructions: We are interested in how you feel about the following statements. Read the statement carefully. Indicate how you feel about each statement.

<b>Very Strongly Disagree</b>	<b>Strongly Disagree</b>	<b>Mildly Disagree</b>	<b>Neutral</b>	<b>Mildly Agree</b>	<b>Strongly Agree</b>	<b>Very Strongly Agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1.	There is a special person who is around when I am in need.					1 2 3 4 5 6 7
2.	There is a special person with whom I can share my joys and sorrows.					1 2 3 4 5 6 7
3.	My family really tries to help me.					1 2 3 4 5 6 7
4.	I get the emotional help and support I need from my family.					1 2 3 4 5 6 7
5.	I have a special person who is a real source of comfort to me.					1 2 3 4 5 6 7
6.	My friends really try to heal me.					1 2 3 4 5 6 7
7.	I can count on my friends when things go wrong.					1 2 3 4 5 6 7
8.	I can talk about my problems with my family.					1 2 3 4 5 6 7
9.	I have friends with whom I can share my joys and sorrows.					1 2 3 4 5 6 7
10.	There is a special person in my life that cares about my feelings.					1 2 3 4 5 6 7
11.	My family is willing to help me make decisions.					1 2 3 4 5 6 7
12.	I can talk about my problems with my friends.					1 2 3 4 5 6 7

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## Appendix G

### The Perceived Mental Workload Scale

Please circle 1 item in each section

#### 1. Time Load

- A. Often have spare time. Interruption or overlap among activities occurs infrequently or not at all.
- B. Occasionally have spare time. Interruptions or overlap among activities occur infrequently.
- C. Almost never have spare time. Interruptions or overlap among activities are very frequent, or occur all the time.

#### 2. Mental Effort Load

- A. Very little conscious mental effort or concentration required. Activity is almost automatic, requiring little or no attention.
- B. Moderate conscious mental effort or concentration required. Complexity of activity is moderately high due to uncertainty, unpredictability, or unfamiliarity. Considerate attention required.
- C. Extensive mental effort and concentration are necessary. Very complex activity requiring total attention.

#### 3. Psychological Stress Load

- A. Little confusion, risk frustration, or anxiety exists and can be easily accommodated.
- B. Moderate stress due to confusion, frustration or anxiety noticeably adds to work load. Significant compensation is required to maintain adequate performance.
- C. High to very intense stress due to confusion, frustration or anxiety. High extreme determination and self-control required.

## Appendix H

### Study Information and Informed Consent Form (Online)

**Participant Consent Form  
University of Cape Town  
Psychology Department  
Online Survey**

Dear student

You are being invited to participate in a research study being conducted by researchers from the University of Cape Town. The purpose of this study is to investigate psychological effects of perceived work load, perceived social support and health behaviours in undergraduate students. This study forms part of an Honours degree being undertaken in the Department of Psychology, University of Cape Town, by Delightfull Gwanyanya, who is being supervised by Dr Progress Njomboro and Co-supervised by Lea-Ann Pileggi.

**Study Procedures:** If you agree to be part of this study, you will be asked to complete five questionnaires. This will probably take 25-30 minutes of your time.

**Possible Risks:** There are some questions of a personal nature that may make you feel uncomfortable, or cause some discomfort. If you feel that you would like to consult with someone about these feelings, please contact the primary researcher Dr Progress Njomboro or contact the Student Wellness Centre, telephone number: 021 650 1017. You are welcome to skip questions or stop at any time, but you will only get your SRPP points if you complete the whole questionnaire. All information is kept strictly private and confidential.

**Possible Benefits:** If you choose to take part in this study, you will be awarded 1 SRPP point, which will help you to fulfil your DP (Duly Performed) requirement for the semester. Although there are no other direct benefits to you, we hope that information gained from this study will help us investigate other factors that cause depression and apathy in university students.

**Alternatives:** You may choose not to participate in this study, and to participate in another study in order to fulfil your SRPP requirement.

**Voluntary Participation:** Participation in this study is completely voluntary. If you decide to participate, you are free to change your mind and stop taking part at any time without any effect on your relationship with the Department of Psychology, University of Cape Town, or any staff member in this Department or at the University.

**Confidentiality:** Information about you obtained for this study will be kept strictly confidential. Once collected, the information will be transferred to a Microsoft Excel spreadsheet and then onto a program for statistical data analysis. Both spreadsheets will be kept in a password-protected folder on the primary researcher's computer, which is also password protected. The information obtained will not become a part of your academic record in any way, nor will it be made available to anyone else.

**Reporting of the research results and disclosure of information:** The results of this research will be reported in an Honours dissertation, written by Delightful Gwanyanya. Every step will be taken to ensure your confidentiality in the reporting of these results.

**Questions and information relating to results:**

Any study-related questions, problems or emergencies should be directed to the individuals listed below. If you would like to be informed of the research results, in terms of your individual results or the results as a whole, please contact Dr Progress Njomboro on the contact details below:

Dr Progress Njomboro e-mail address: [Progress.Njomboro@uct.ac.za](mailto:Progress.Njomboro@uct.ac.za)

Delightful Gwanyanya (available 24 hours, 7 days a week) e-mail: [GWNDEL001@myuct.ac.za](mailto:GWNDEL001@myuct.ac.za)

Cell no: 0784370901.

Lee-Ann Pileggi (UCT) 021-650-3417.

Rosalind Adams (Psychology secretary), (UCT) 021-650-3417,

email: [Rosalind.adams@uct.ac.za](mailto:Rosalind.adams@uct.ac.za)

Questions about your rights as a study participant, comments or complaints about the study also may be presented to the Research Ethics Committee, Department of Psychology, University of Cape Town, Rondebosch 7701, or by telephone to 021 650 4608, or by email to [johann.louw@uct.ac.za](mailto:johann.louw@uct.ac.za)

### **Consent**

I have read the above and am satisfied with my understanding of the study, its possible benefits, risks and alternatives. My questions about the study have been answered. I hereby voluntarily consent to participation in the research study as described.

1. I give my informed consent to participate in this research  
(Participant will be required to answer “yes” here before they continue to answer the questions)