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The relation between personal demands and symptoms of depression and the mediating role of burnout among veterinary master students

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Abstract

Many of the veterinary students feel exhausted and depressed (Kogan, McConnell & Schoenfeld-Tacher, 2005). Research from different parts of the world shows that the suicide rate among veterinarians is four times as high as in the general population (Batram, Yadegarfar & Baldwin, 2009). The aim of this study was to get a better understanding of the well-being of veterinary master students. This study focusses on the role of personal demands in relation to burnout and depression. Specifically, this research investigated the relation between personal demands and symptoms of depression and the mediating role of burnout. This study also investigated if the relation between personal demands and burnout differed between female and male veterinary master students. Four personal demands (perfectionism, awfulizing, need for control and neuroticism), two dimensions of burnout (emotional exhaustion and cynicism) and depression were measured with an online questionnaire ($N = 343$). Results showed that burnout was positively related to symptoms of depression. Almost all personal demands were positively related to burnout with the exception of perfectionism, and awfulizing was only related to emotional exhaustion but not to cynicism. Personal demands were also positively related to symptoms of depression, with the exception of perfectionism. Additionally, the positive relation between personal demands and symptoms of depression was partially mediated by burnout, with the exception of the relation between perfectionism and symptoms of depression: this relation was not mediated by cynicism. Finally, no gender differences were found in the relation between personal demands and burnout.

In conclusion, this study showed positive relations between personal demands, burnout and symptoms of depression and showed a mediating role of burnout.

Key words: personal demands, veterinary master students, mental well-being, burnout, symptoms of depression

Samenvatting

Veel diergeneeskunde studenten voelen zich uitgeput en depressief (Kogan, McConnell & Schoenfeld-Tacher, 2005). Onderzoeken uit verschillende werelddelen laten zien dat het aantal zelfmoorden onder dierenartsen vier keer zo hoog is als dat van de algehele populatie (Batram, Yadegarfar & Baldwin, 2009). Het doel van dit onderzoek was om een beter begrip te krijgen van het welzijn van diergeneeskunde studenten. Deze studie focust zich op de rol van persoonlijke eisen in relatie tot burn-out en depressie. Specifiek wordt onderzocht wat de

relatie is tussen persoonlijk eisen en depressieve symptomen en de mediërende rol van burn-out in deze relatie. Ook werd onderzocht of de relatie tussen persoonlijke eisen en burn-out verschilde tussen mannen en vrouwen. Vier persoonlijke eisen (perfectionisme, falen, behoefte aan controle en neuroticisme), twee dimensies van burn-out (emotionele uitputting en cynisme) en depressie werden gemeten door middel van een online vragenlijst ($N = 343$). De resultaten lieten zien dat burn-out positief gerelateerd was aan depressie. Bijna alle persoonlijke eisen waren positief gerelateerd aan burn-out, behalve perfectionisme, en falen was wel gerelateerd aan emotionele uitputting, maar niet aan cynisme. Persoonlijke eisen waren ook positief gerelateerd aan depressieve symptomen, behalve perfectionisme. Bovendien werd de relatie tussen persoonlijke eisen en depressieve symptomen gemedieerd door burn-out, met uitzondering van de relatie tussen perfectionisme en depressieve symptomen: deze relatie werd niet gemedieerd door cynisme. Er werden geen verschillen gevonden tussen mannen en vrouwen in de relatie tussen persoonlijke eisen en burn-out. Concluderend liet deze studie positieve relaties zien tussen persoonlijke eisen, burn-out en depressieve symptomen en daarnaast een mediërende rol van burn-out.

1. Introduction

1.1 Relevance of the study

Extensive research has been performed on mental well-being among members of medical occupational groups (Visser, Smets, Oort & de Haes, 2003; Prins, Hoekstra-Weebers, van de Wiel, Gazendam-Donofrio, Sprangers, Jaspers, & van der Heijden, 2007). This is mostly due to the fact that members of these groups report high symptoms of low mental well-being, for example stress and burnout. Originally burnout consists of three dimensions: emotional exhaustion, depersonalization and reduced personal accomplishment (Maslach & Jackson, 1986). This can manifest itself among individuals who perform ‘people work’ (Maslach & Jackson, 1986). Visser et al. (2003) found that 55% of the Dutch medical specialists reported high levels of stress and Prins et al. (2007) found that 13 % of the Dutch medical residents reported all the symptoms of burnout. Westerman, Teunissen, Fokkema, Van der Vleuten, Scherpbier, Siegert, & Scheele (2013) showed that in the medical profession especially the transition from study to work appears to be a challenge: 10 % of the new medical consultants met the criteria of burnout. These disturbing rates have not only been found among doctors, but also among veterinarians.

Research among veterinarians in the UK for example has shown that in this profession the suicide rate is four times as high as in the general population (Batram, Yadegarfar & Baldwin, 2009). This does not only hold true for the UK: similar estimates have been found in the USA, Australia and Norway. Batram et al. (2009) postulate a few underlying mechanisms related to this high suicide rate. These mechanisms consist of factors such as poor psychosocial working conditions, many work-related stressors and demanding characteristics of individuals who are entering the profession, such as perfectionism.

So there has been extensive research on mental well-being among doctors, both human and veterinarian. Also, much research on the well-being of medical students has already been performed. Well-being among these students appears to be low as well. A study among Dutch medical students showed that 11.6% of the bachelor students and 17.8% of the interns met the criteria of burnout (Conijn, Boersma & van Rhenen, 2015). As to the burnout rates of medical students, a similar rate can presumably be found among veterinary students. This can be attributed to the fact that the studies of medicine and veterinary medicine show many similarities, such as the time a complete study takes and the internships, during which the student has to perform clinical operations. Also in both areas of study the clinical treatment performed by the students, is related to the health of patients (whether they be animals or humans). This puts a great responsibility on the shoulders of the students. Furthermore, an

earlier study on non-academic stressors among veterinary students, demonstrated that these students were very insecure about their own performance and did not feel capable of meeting the expected standards of performance (Kogan, McConnell & Schoenfeld-Tacher, 2005). Many of the participants felt exhausted and depressed and they used poor coping strategies. In conclusion, the combination of insecurities, poor coping strategies and the great responsibility they have, might influence the students mental well-being. Therefore the general aim of this study is to examine the psychological well-being of veterinary students in the master phase of their studies and to identify factors that are associated with their psychological well-being, specifically burnout and symptoms of depression.

By doing so, the present study adds to current knowledge in a number of ways. First of all, the high burnout and depression rates of the veterinary occupational group are disturbing, especially since it is known that burnout can have negative effects on health problems such as depression, cardiovascular diseases and psychosomatic complaints (Melamed, Shirom, Toker, Berliner & Shapira, 2006). In-depth research into these relations will contribute to the existing knowledge. Secondly, the same argument applies to depression. Depression increases the risk of suicide (Batram et al.,2009) and it has been speculated that this risk may be stronger for the veterinary occupational group when compared to other occupational groups (Batram et al.,2009). The question is why? According to research of Gibb, Andover & Beach (2006), a positive attitude towards suicide (the extent to which suicide is an acceptable option under certain circumstances) has a positive association with suicidal thoughts. Moreover, it is possible that there is a positive association between the acceptance and familiarity with animal euthanasia on the one hand and a positive attitude towards suicide on the other (Batram et al.,2009). Also, the easy access to means of suicide can be seen as a factor related to suicide (Batram & Baldwin, 2010).

With the consequences of mental issues like burnout and depression in mind, it is important to investigate which factors are at the cause of the problems of burnout and depression. Much research regarding underlying work related factors has already been done, but there is little knowlegde about the relation between burnout and personal factors (Bakker & Demerouti, 2016). Therefore, the focus of this study will be on personal factors related to burnout and depression, the so-called *personal demands*. Barbier, Hansez, Chmiel, & Demerouti (2013) define personal demands as “the requirements that individuals set for their own performance and behavior that force them to invest effort in their work and are therefore associated with physical and psychological costs” (p.751).

It is the ultimate aim of the present study to investigate these personal demands among

veterinary students and their relation with burnout and symptoms of depression. Specifically, we consider it relevant to focus on the master phase because this is the first stage in the study in which the students fully function as a practicing student-doctor in daily veterinary practice. The work experience they acquire in this stage may be indicative for the work experience at the start of their careers. Should this research show that certain factors are associated with the risk of burnout, students may benefit from additional information and guidance from the university.

1.2 Depression

Of all the psychiatric disorders, depression is the most prevalent one (Gotlib & Hammen, 2008). According to estimates among Americans, about 20 % of the overall population will experience a clinical depressive episode in their life. Depression is a mood disorder and people suffering from depression report multiple symptoms such as daily feelings of gloominess, lack of interest, concentration problems, bad self-image and people are having thoughts about ending their life (Trimbos Instituut, 2013). Depression occurs in many different forms. Many people experience depressive feelings in their life, but this does not automatically mean that a person has a depressive disorder. This is an important distinction that has to be made. The depression disorder is associated with a lot of negative factors such as cardiac problems, poor physical health, high rates of smoking, lower workplace productivity, impairment of interpersonal relationships and suicide (Gotlib & Hammen, 2008). It affects a person across different life domains. Among veterinary students, levels of depressive symptoms are high and increase over the years (Siqueira Drake, Hafen, Rush & Reisbig, 2012). Therefore, finding possible factors that contribute to the development, onset and further course of this disorder is an important and urgent matter.

1.3 Burnout

As mentioned earlier, burnout is a multi-faceted work-related syndrome consisting of three dimensions. These dimensions can vary a little, depending on the questionnaire with which it is measured. In this study burnout is characterized by exhaustion (extreme psychological exhaustion and feelings of being empty or worn out) and distance (cynical and uninvolved attitude towards work) (Schaufeli, Leiter & Kalimo, 1995). A well-known model that can help to gain more insight into the correlates of burnout is the Job Demands-Resources model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001).

According to this model, there are two underlying processes in the development of

burnout: an energetic process and a motivational process. In the first process, exhaustion is a consequence of high job demands. Job demands can be defined as physical, social and organizational features of the job which require physiological and psychological effort (Demerouti et al., 2001). The model states that to maintain a high work performance, additional efforts are needed when there are high work demands. Working under these conditions requires extra energy, which brings physical and psychological costs such as exhaustion and irritation (Schaufeli & Taris, 2013). When a person cannot recover from this, a sustained activation can be a result, which in turn, leads to further physical and psychological exhaustion (Maslach, Schaufeli & Leiter, 2001).

The description of the second process explains how a lack of resources at the job can complicate coping with work demands, which negatively influences achieving the work goals. Job resources are physical, social and organizational job aspects and can be used to achieve work goals, to reduce job demands and to motivate personal growth and development (Demerouti et al., 2001). A lack of job resources such as low job control, can lead to mental detachment in the form of cynicism, the motivational component of burnout (Schaufeli & Taris, 2013). In sum, both processes explain burnout, but both from a different perspective: high job demands and lack of resources.

1.4 Relation between burnout and symptoms of depression

From a diagnostic and prevention perspective, the relation between burnout and depression is important. If the relation is a strong one, the diagnosis of one may be instrumental in the prevention of the other. However, within the medical occupational group, an early diagnosis might be hard. According to research by Sartorius (2007), there is a huge stigma when it comes to seeking medical help, especially among medical students (Dyrbye Eacker, Durning, Brazeau, Moutier, Massie & Shanafelt, 2015). The same holds true for veterinary students (Kogan et al., 2005). Moreover, the great number of commitments and busy schedules make it even harder for them to seek help during their studies. Nevertheless, seeking help is very important in order to prevent or reduce symptoms of burnout and depression.

Research indicates that there is a positive relation between burnout and symptoms of depression. According to a seven-year longitudinal study of Hakanen & Schaufeli (2012), burnout predicts depressive symptoms over time, but not vice versa. This indicates that work-related well-being predicts overall well-being of a person over the years. Ahola, Hakanen, Perhoniemi & Mutanen (2014) support the positive relation between burnout and depression.

Additionally, they speak of conceptual similarities between the two, because both symptoms refer to mood states and are highly correlated. Within the framework of these data it is expected that:

Hypothesis 1: Burnout is positively related to symptoms of depression among veterinary master students.

1.5 Personal demands

The JD-R model develops continuously and is still being expanded (Bakker & Demerouti, 2016). For example, a few years ago personal resources have been added to the model (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Personal resources can be defined as psychological aspects of the self, linked to someone's resilience and one's ability to influence one's environment successfully. Examples are emotional stability, extraversion and self-efficacy (Xanthopoulou et al., 2007). Presumably, in the counterbalance to these personal resources lie personal demands. It might be speculated that including personal demands into the JD-R model results in an improved insight into the origin of burnout (and other important well-being and organizational outcomes). As mentioned earlier, personal demands can be defined as the requirements that individuals set for their own performance and behaviour, which in turn force them to invest effort in their work and are therefore associated with physical and psychological costs (Barbier et al., 2013). As the focus of this study is on personal demands, we will continue with an explanation of which personal demands we distinguish in this study and why they are relevant for veterinary students.

1.6 Personal demands, burnout and depression

In this study a distinction is made between four personal demands: perfectionism, neuroticism, need for control and awfulizing. The personality profiles of medical and veterinary students seem to differ from other students (Batram & Baldwin, 2010). On top of that, certain personality traits seem to have negative associations with well-being. The importance of the four demands will be further explained in this section.

Perfectionism is a personality trait whereby someone sets excessively high standards for performance accompanied by an overcritical self-evaluation (Frost, Marten, Lahart & Rosenblate, 1990). It is considered important to include perfectionism in the present study because this trait is highly prevalent among veterinary students and is associated with the impairment of mental well-being (Batram & Baldwin, 2010). It increases the risk of more distress as a reaction to moral stressors, such as euthanasia in the veterinary practice (Crane,

Phillips & Karin, 2015). In turn, distress can cause emotional exhaustion which is a core component of burnout. Furthermore, perfectionism also increases suicidal behaviour among veterinarians (Platt, Hawton, Simkin & Mellanby, 2012), which can be a consequence of depression.

Neuroticism is the second personal demand discussed in this study. It refers to an impaired ability to adjust and to emotional instability (Costa & McCrae, 1992). It appears that students who choose to study in this field often experienced difficulties during their childhood and had other family dysfunctions (Batram & Baldwin, 2010). In turn, these heavy experiences during childhood are associated with neuroticism (Hodgins, Faucher, Zarc & Ellenbogen, 2002). This might indicate that the prevalence of neuroticism in this group is high compared to the general population. Moreover, research has shown that neuroticism is positively correlated with burnout and depression (Langelaan, Bakker, Van Doornen & Schaufeli, 2006; Roelofs, Huibers, Peeters & Arntz, 2008).

Experiencing difficulties to cope with insecurities, also referred to as the need for control in this study, seems to have a possible link with the health-impairment process. Bakker, Killmer, Siegrist, & Schaufeli, (2000) showed that a high need for control was positively related to burnout. Furthermore, Hafen, Reisbig, White and Rush (2006) discovered that unclear professor expectations (unclear what the student is required to do) are an important predictor for depression among veterinary students. So when students do not know what is expected from them, it increases the risk of depressive symptoms. The intolerance of uncertainty might be at the cause of this relation. So a possible explanation for the relation between need for control and depression is that because of the little tolerance for uncertainty, students might find it harder to cope with insecurities, which in its turn is related to depression. Insight in the way students cope with insecurities in their study might be beneficial for future interventions.

The last personal demand: awfulizing (overrating the consequences of failure)(van Wijhe, Peeters & Schaufeli, 2013), might be related to burnout and depression as well. Emotional and stressful situations such as death of animals, surgery and euthanasia are more rule than exception for veterinary students. These situations are sometimes accompanied by treatment failures and overrating of these failures provoke emotional reactions, which might influence suicide (Batram & Baldwin, 2010). These emotional reactions can also have a negative effect on mental health such as burnout (Maslach et al., 2001). Exploring this personal demand might therefore be relevant. Based on these possible connections between personal demands and burnout and depression it is expected that:

Hypothesis 2: There is a positive relation between personal demands and burnout.

Hypothesis 3: There is a positive relation between personal demands and symptoms of depression.

To conclude, based on the above mentioned literature we expect that there are positive relations between personal demands and mental well-being (burnout and depression) among veterinary students. It is also expected that burnout and depression are positively related. Furthermore, it is interesting to investigate if a possible relation between personal demands and depression might be mediated by burnout, since literature indicates that positive relations between these three constructs might exist. Therefore, it is expected that:

Hypothesis 4: The positive relation between personal demands and symptoms of depression, is mediated by burnout.

1.7 Gender differences

Finally, literature indicates that there might be differences regarding personality traits and emotional responses between male and female veterinary students. Women set unrealistic, high goals for themselves and experience extreme pressure to achieve, more than men (Kogan et al., 2015). Also, female students experience more empathy with animals and are more concerned about animal rights than men (Batram & Baldwin, 2010). Moreover, men and women differ in their emotional reactions to treatment failures or to (committing) euthanasia on animals. These reactions can influence the way in which women cope with emotional stressors and moral conflicts within the practice. When the ability of effective coping decreases or when they cannot recover from these emotional responses, chances of burnout increase. Hence the following hypothesis is formulated:

Hypothesis 5: The positive relation between personal demands and burnout will be moderated by gender, in the way that this relation will be stronger for female than for male veterinary students.

2. Methods

2.1 Procedure and participants

This study is part of a longitudinal research project that focuses on the well-being of veterinary master students. For this paper, data of last year's measurement have been used. That measurement took place in April/May 2016. Because it was the first year that the research was conducted, the researchers composed focus groups to identify relevant personal

demands. After this phase was completed, an online questionnaire survey was sent to the 649 veterinary students who were registered in a master program at the faculty of Veterinary Medicine at the University of Utrecht. After two weeks a reminder was sent and eventually 418 people filled in the survey. However, 75 were removed for analysis because they dropped out during the questionnaire or didn't fill it in completely. In short, 53% of all the registered veterinary master students responded in such a way that their response was suitable for analysis. Table 1 shows descriptive statistics of the sample.

Table 1

Descriptive statistics of the sample

Variable	<i>n</i>	%
<i>Participants</i>	343	100
<i>Gender</i>		
Male	68	19.8
Female	275	80.2
<i>Study year</i>		
First	101	29.4
Second	114	33.2
Third or fourth	121	35.3
<i>Master Track</i>		
Companion Animal Medicine	184	53.6
Farm Animal and Veterinary Public Health	109	31.8
Equine Medicine	50	14.6

2.2 The questionnaire

The questionnaire included a number of different constructs such as engagement, burnout, recovery experiences, various job demands and job resources, work-life balance, emotional demands, social support, physical and mental health and finally personal demands and resources. For this paper, only the following constructs were considered: personal demands, burnout and mental health. Concerning mental health, only depression was used for analysis. The reliability of all scales in the questionnaire were measured with a Cronbach's alpha.

To measure burnout, a Dutch translation of the Maslach Burnout Inventory-Student

survey has been used (MBI-SS; Schaufeli, Leiter, Maslach & Jackson, 1996). The version used in this study consists of nine items and measures two constructs of burnout: emotional exhaustion and cynicism. An example of an item of emotional exhaustion is: ‘because of my study I feel emotionally exhausted’. An example of an item that measures cynicism is: ‘I doubt the usefulness of my study’. Both constructs were measured on a 7-point Likert scale, ranging from 0 = never, to 6 = always. The reliability of the emotional exhaustion scale was $\alpha = .91$ and the cynicism scale had a reliability of $\alpha = .91$ also.

The construct mental health was measured with a Dutch translation of the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995b). It is a shortened version of the original DASS which consists of 42 items. The one that was used in this study consists of 21 items and measures depression, anxiety and stress. In the present study, we only use the depression scale which consist of 7 items. An example of an item that measures depression is: ‘I couldn’t seem to experience any positive feeling at all’. Items were measured on a 4-point Likert scale, ranging from 1 = totally not or never applicable, to 4 = definitely or mostly applicable. The reliability of this scale was $\alpha = .87$.

Personal demands were measured with the Work-related Irrational Beliefs Questionnaire (WIB-Q, van Wijhe et al., 2013). Items could be scored on a 5-point Likert scale, ranging from 1 = strongly disagree, to 5 = strongly agree. The personal demands that were taken into analysis were: perfectionism, awfulizing and need for control. These were measured with 5 items each. An example of an item of perfectionism is: ‘I must perform well at my work to feel good about myself’. The reliability of this scale was $\alpha = .87$. An example item of awfulizing is: ‘If I make a mistake, the consequences are terrible’, and the scale had a reliability of $\alpha = .87$. An example item for need for control is: ‘I cannot stand having any ambiguity in my work’. Here, the reliability was $\alpha = .83$.

Neuroticism (also considered as a personal demand in this study) was measured by a scale that contained three items, developed by Emmerik, Jawahar & Stone (2004). It was measured on a 7-point Likert scale, ranging from 1 = not applicable, to 7 = fully applicable. An example item is: ‘I am moodier than others’. The scale had a reliability of $\alpha = .85$.

2.3 Design and analysis

The study has a cross-sectional design. The research was conducted in 2016 and data of that year have been used for analysis. The program IBM SPSS Statistics version 24 was used to perform the analyses. Firstly, all variables in the study were correlated to test the multicollinearity. Furthermore multiple regression analysis, both mediation and moderation

analyses were used to test the hypotheses. In all analyses the two dimensions of burnout (emotional exhaustion and cynicism) were considered as separate variables.

To test the main effects between personal demands and respectively exhaustion, cynicism and depression, we used a multiple (hierarchical) regression where the control variables were entered in step one and the main effects in step two. In total three analyses were performed.

The test of the moderation was also performed with multiple (hierarchical) regression analysis. In step one, the control variables were entered. In step two, the main effects were added and in step three, the interaction effects were entered. Interaction terms were composed of gender multiplied by personal demands. This means that four interaction terms were created. The moderation analysis has been conducted twice. The first time with exhaustion as dependent variable and the second time with cynicism as dependent variable.

To perform the test of the mediations in SPSS, the fourth model of Hayes PROCESS macro was used (Hayes, 2013). The mediator variables (emotional exhaustion and cynicism) could be entered both at the same time and the independent variables (perfectionism, afwulzing, need for control and neuroticism) were entered separately. This means 4 mediation analyses have been performed.

2.4 Control variables

The variables study year and gender have been used as control variables. However, gender was not controlled for in the analysis between personal demands and burnout because it already functioned as a moderator. Although the exact relation between gender and burnout is ambiguous (Purvanova & Muros, 2010), we considered it relevant to include gender as a control variable because literature indicates that female and male veterinary students differ in personality traits as well as in their emotional responses (Kogan et al., 2015). For this reason gender has been taken into analyses to control for possible influences. Study year was used as control variable because there might be a difference in difficulties over the years and we wanted to get an understanding of the relationship between personal demands, burnout and depression regardless of the year of study.

3. Results

3.1 Descriptive statistics

Before testing the hypotheses with regression analyses, we looked at the relationships between all the variables in order to detect possible (multi)collinearity which could influence the regression and also to get a good understanding of the bivariate relations between the variables of interest. Table 2 shows the means (M), standard deviations (SD) and correlations of all the variables. Remarkable is the mean of depression ($M = 3.66$), which is lower than the standard deviation ($SD = 3.80$). Furthermore, the mean of cynicism is very low ($M = .118$, $SD = 1.24$), especially compared to exhaustion ($M = 3.21$, $SD = 1.35$). According to the official norms, the score on exhaustion can be seen as high and the score on cynicism can be seen as very low (Schaufeli & van Dierendonck, 2000). As the table shows, all variables are significantly, positively correlated, with the exception of the correlation between perfectionism and cynicism.

Table 2

Means, standard deviations and correlations between the investigated variables (N = 343)

	M	SD	1	2	3	4	5	6	7
1.Perfectionism	3.20	0.88							
2.Control	2.76	0.85	.43**						
3.Afwulzing	2.95	0.85	.56**	.56**					
4.Neuroticism	3.14	1.43	.16**	.33**	.35**				
5.Exhaustion	3.21	1.35	.28**	.46**	.44**	.45**			
6.Cynicism	1.18	1.24	.05	.28**	.15**	.38**	.49**		
7.Depression	3.66	3.80	.25**	.40**	.40**	.46*	.55**	.59**	

Note. ** $p < .01$, 2- tailed.

3.2 The relation between burnout and depression

In hypothesis 1 it was expected that high scores on exhaustion and cynicism would be related to high scores on symptoms of depression. As shown in table 3, exhaustion ($\beta = .38$, $p < .001$) and cynicism ($\beta = .40$, $p < .001$) proved to have a positive significant relation with depression. Therefore, hypothesis 1 is supported. The more symptoms of cynicism and exhaustion the students perceive, the more symptoms of depression they report.

Table 3

Hierarchical regression analysis of the two dimensions of burnout on depression, corrected for gender and study year (N = 343)

Variables	Model 1			Model 2		
	<i>B</i>	β	<i>se</i>	<i>B</i>	β	<i>se</i>
1. Study year 2 vs 1	.68	.08	.51	.54	.07	.39
Study year 3&4 vs 1	-.85	.11	.51	.25	.03	.40
Gender	-.54	-.06	.52	.63	.07	.41
2. Exhaustion				1.08	.38**	.14
Cynicism				1.22	.40**	.15
R^2	.01			.45		
ΔR^2	.01			.43		
<i>F</i>	1.27			54.11 **		

Note. Gender was coded as 1 = male and 0 = female. ** $p < .01$, 2- tailed.

3.3 The relation between personal demands and burnout

In hypothesis 2 it was expected that high scores on all four personal demands would be related to high scores on both exhaustion and cynicism. As shown in table 4, afwulizing ($\beta = .19, p < .001$), control, ($\beta = .21, p < .001$) and neuroticism ($\beta = .30, p < .001$) proved to have a significant relation with exhaustion. The only exception was the relation between perfectionism and exhaustion.

Table 4

Hierarchical regression analysis of the four personal demands on exhaustion, corrected for gender and study year (N = 343)

Variables	Model 1			Model 2		
	<i>B</i>	β	<i>se</i>	<i>B</i>	β	<i>se</i>
1. Study year 2 vs 1	-.25	-.09	.18	-.09	-.03	.15
Study year 3&4 vs 1	-.18	-.07	.17	-.19	-.07	.15
Gender	-.88	-.26**	.18	-.45	-.13**	.16
2. Perfectionism				.02	.01	.08
Afwulizing				.30	.19**	.10
Control				.38	.21**	.10
Neuroticism				.28	.30**	.05
R^2	.08			.36		

ΔR^2	.08	.28
F	9.48**	26.66**

Note. Gender was coded as 1 = male and 0 = female. ** $p < .01$, 2- tailed.

The same hierarchical regression analysis has been performed with cynicism as dependent variable. Table 5 shows the regression coefficients of the relation between personal demands and cynicism. As shown in table 5, control ($\beta = .25$, $p < .001$) and neuroticism ($\beta = .34$, $p < .001$) showed significant relations with cynicism, whereas perfectionism and awfulizing did not.

Table 5

Hierarchical regression analysis of the four personal demands on cynicism, corrected for gender and study year (N = 343)

Variables	Model 1			Model 2		
	B	β	se	B	β	se
1. Study year 2 vs 1	.34	.13*	.16	.47	.18**	.15
Study year 3& 4 vs 1	.66	.25**	.16	.66	.26**	.15
Gender	-.18	-.06	.17	.08	.02	.16
2. Perfectionism				-.15	-.11	.08
Afwulizing				-.05	-.03	.10
Control				.41	.25**	.10
Neuroticism				.30	.34**	.05
R^2	.05			.23		
ΔR^2	.05			.19		
F	5.52**			14.60**		

Note. Gender was coded as 1 = male and 0 = female. * $p < .05$; ** $p < .01$, 2- tailed.

3.4 The relation between personal demands and symptoms of depression

In hypothesis 3 it was expected that high scores on all four personal demands would be associated with more symptoms of depression. As shown in table 6, awfulizing ($\beta = .18$, $p < .001$), control ($\beta = .21$, $p < .001$) and neuroticism ($\beta = .35$, $p < .001$), proved to have a significant relation with symptoms of depression. Again, the relation between perfectionism and depression did not support the hypothesis.

Table 6

Hierarchical regression analysis of the four personal demands on depression, corrected for gender and study year (N = 343)

Variables	Model 1			Model 2		
	<i>B</i>	β	<i>se</i>	<i>B</i>	β	<i>se</i>
1. Study year 2 vs 1	.68	.08	.51	1.17	.15**	.43
Study year 3&4 vs 1	.85	.11	.51	.81	.10	.43
Gender	-.54	-.06	.52	.72	.08	.45
2. Perfectionism				.07	.02	.24
Afwulizing				.80	.18**	.27
Control				1.04	.21**	.29
Neuroticism				.93	.35**	.13
R^2		.01			.33	
ΔR^2		.01			.32	
<i>F</i>		1.27			23.12**	

*Note. Gender was coded as 1 = male and 0 = female. ** $p < .01$, 2-tailed.*

3.5 Burnout as a mediator in the relation between personal demands and symptoms of depression

In hypothesis 4 it was expected that high scores on personal demands would be related to high scores of symptoms of depression and that this relation was mediated by the two components of burnout: exhaustion and cynicism. Mediation effects are shown in table 7. The relation between personal demands and depression was mediated by exhaustion, there were positive indirect relations between depression and perfectionism (.35), awfulizing (.49), control (.67) and neuroticism (.36). The direct effects of personal demands on the outcome variable stayed significant, suggesting partial mediations.

The relation between personal demands and depression was mediated by cynicism for three out of four personal demands. Positive indirect effects were found between depression and awfulizing (.29), control (.57) and neuroticism (.36). The direct effects stayed significant, which indicates partial mediations. The relation between perfectionism and depression did not find significant results for the mediating role of cynicism. With the exception of this last one, hypothesis 5 is confirmed.

Table 7

Mediation effects of exhaustion(M) and cynicism(M) on the relation between personal demands(IV) and depression(DV)

IV	Mediator	DV	Total effect	Direct effect	Indirect (CI) effect	IV-M	M-DV
Perfectionism	Exhaustion	Depression	1.05**	.67**	.35**(.1696, .5570)	.37**	.94**
Awfulizing	Exhaustion	Depression	1.83**	1.06**	.49**(.2934, .7542)	.64**	.76**
Control	Exhaustion	Depression	2.12**	.89**	.67**(.4440, 1.0013)	.74**	.90**
Neuroticism	Exhaustion	Depression	1.26**	.54**	.36**(.2359, .5100)	.40**	.89**
Perfectionism	Cynicism	Depression	1.05**	.67**	.04 (-.1299, .2358)	.03	1.29**
Afwulizing	Cynicism	Depression	1.83**	1.06**	.29**(.0936, .5508)	.22**	1.28**
Control	Cynicism	Depression	2.12**	.89**	.57**(.3168, .8572)	.49**	1.16**
Neuroticism	Cynicism	Depression	1.26**	.54**	.36**(.2161, .5426)	.34**	1.08**

Note : Unstandardized results based on 1000 bootstraps. Corrected for study year and gender. 95% confidence interval (CI). ** $p < .01$

3.6 The relation between personal demands and burnout with gender as moderator

In hypothesis 5 it was expected that high scores on all four personal demands would be related to high scores on both exhaustion and cynicism and that this relation was stronger for women than for men. To test this hypothesis, a hierarchical regression analysis was conducted. However, no significant interaction effects were found between the four personal demands and exhaustion and cynicism, meaning hypothesis 5 could not be confirmed. What the analysis did show, was a significant main effect of the relation between gender and exhaustion, $\beta = -.14$, $t(331) = -2.77$, $p < .01$, which indicates that women reported more symptoms of exhaustion than men (women = 0, men = 1).

4. Discussion

4.1 Reflection on the results

The general aim of this study was to get a better understanding of the high burnout and depression rates among veterinary students. More specifically, we examined the relation between personal demands (perfectionism, awfulizing, need for control and neuroticism), burnout (emotional exhaustion and cynicism) and depression among veterinary master students of the University of Utrecht.

Burnout and depression

This study showed that both exhaustion and cynicism are positively related to depression. This is in line with previous research (Hakanen & Schaufeli, 2012; Ahola et al., 2014). Hakanen & Schaufeli (2012) for example, found a causal relationship between the two: in a seven-year longitudinal study among Finnish dentists they showed that burnout predicted depression over time and not the other way around. High correlations can implicate a certain connection between the two in the sense that the more symptoms of burnout individuals experience, the more symptoms of depression they report. However it can also indicate that there is an overlap between the two constructs (divergent validity). Ahola et al., (2014) conducted research to test the relation between burnout and depression. They found that people with burnout and depression both experienced a few of the same symptoms such as a lack of energy and reduced self-esteem, which refers to a conceptual similarity between the two. However, several studies have shown that burnout and depression are not the same and that they do not group together psychometrically. For example, Ahola et al., (2014) showed, that burnout only appears in the work context and that depression expresses itself in other domains as well. Furthermore, Bakker, Schaufeli, Demerouti, Janssen, Van Der Hulst & Brouwer (2000) showed that a lack of reciprocity in the personal context was associated with depression, but not with burnout, and that a lack of reciprocity at work was associated with symptoms of burnout and only indirectly with depression. Both studies indicate that they are related, but still different concepts and that work related well-being predicts overall well-being. Related to the results in this study, it means that the more burnout complaints veterinary master students experienced, the more symptoms of depression they reported.

Personal demands and burnout

The second aim of this study was to examine the relation between personal demands and burnout. Personal demands were described as the requirements that individuals set for their own performance and behavior that force them to invest effort in their work and are therefore associated with physical and psychological costs (Barbier et al., 2013). In the present study we distinguished the following personal demands: perfectionism, awfulizing, need for control and neuroticism. We expected that these demands were positively related to both dimensions of burnout (exhaustion and cynicism). This hypothesis was partly confirmed and will now be explained.

The need for control and neuroticism were positively related to both emotional exhaustion and cynicism. The positive relation between need for control and burnout can be

explained by the fact that people with a high need for control invest a lot of time in their work even when the gains are relatively low (Bakker et al., 2000). According to them, this might be due to the fact that these individuals have the tendency to underestimate demands and set goals that exceed their capabilities. The feeling of being in control may change into experiences of failure, which is related to burnout (Bakker et al., 2000). This works in a way that veterinary students might set high goals for themselves. Not being capable of achieving these goals makes them feel insecure about themselves, which is related to burnout.

The positive relation between neuroticism and burnout was also established. This is in line with previous research (Langelaan et al.,2006). Because neuroticism refers to an impaired ability to adjust to emotional instability (Costa & McCrae, 1992), it might increase the stress sensibility. This increased stress sensibility can make students perceive their study as more threatening, which in turn leads to negative emotions and increases the risk of burnout (Schneider, 2004).

Furthermore this study showed that afwulizing (overrating the consequences of failure) was positively related to emotional exhaustion but not to cynicism. This can be explained as follows: to prevent failure, the students might put extra effort into their work, which in turn, results in more motivation instead of becoming more distant and cynical (Taris, van Beek & Schaufeli, 2010). Motivation is a good thing, but the extra effort students might make to prevent failure, can also result in exhaustion which explains the positive relation with emotional exhaustion. On the other hand, becoming more motivated is inconsistent with cynicism. This explains the non-significant relation with cynicism.

Finally we did not find a significant positive relation between perfectionism and burnout (emotional exhaustion and cynicism). The explanation we used for the non-significant relation between afwulizing and cynicism can also hold true for the relation between perfectionism and cynicism. When perfectionist students cannot meet their own expectations, they will try to find another way to achieve their goals: instead of losing their trust and motivation, they will work even harder to perform. This means they become more involved instead of becoming distant and cynical (Taris et al., 2010). Since we use this argument again, a positive relation between perfectionism and emotional exhaustion would have been logical as well. However, there is an explanation for the non-significant relation: assuming that the students will become more motivated in order to achieve their goals, this increase of motivation will make them more enthusiastic and energetic instead of becoming exhausted, but only if the motivation is intrinsic (Nijhuis, van Beek, Taris & Schaufeli, 2012). This can suggest that preventing failure triggers the extrinsic motivation (resulting in

emotional exhaustion), while trying to meet their expectations triggers the intrinsic motivation (resulting in energy and enthusiasm and not in emotional exhaustion).

In conclusion, it can be argued that personal demands might be an important concept to incorporate in burnout theories, such as the JD-R model. Multiple things can be investigated, such as the relation between personal demands and personal resources or the relation between job demands and personal demands. Do personal demands influence the way students perceive job demands for example?

Personal demands and depression

The third aim of this study was to examine the relation between personal demands and depression. As mentioned earlier, research indicates that high personal demands may contribute to the health-impairment process. Therefore it was expected that high scores on personal demands were related to high scores of symptoms of depression. This relation was partly confirmed. Afwulizing, a high need for control and neuroticism were related to symptoms of depression among the master students. This is in line with previous research (Batram & Baldwin, 2010; Hafen et al., 2006; Roelofs et al., 2008). However, again, perfectionism did not show a relation with depression. This contradicts previous research where positive relations were found between perfectionism and depression (Batram & Baldwin, 2010; Platt et al., 2012). However, this non-significant relation can be due to a conceptual fact: Perfectionism consists of two central dimensions: Pure Personal Standards (PPS), whereby individuals set high personal standards for themselves and Maladaptive Evaluative Concerns (MEC), referring to the perceived pressure from others to achieve and negative self-evaluative processes related to, for example, making mistakes (Dibartolo, Li & Frost, 2008). According to them, PPS was not related to depression, but MEC was. Assuming that students scored high on questions related to PPS and low on questions related to MEC, we may have an explanation for the non-significant relation.

The mediating role of burnout

The fourth aim of the study was to investigate if the relation between personal demands and depression was mediated by burnout (emotional exhaustion and cynicism). It was expected that the relation between all personal demands and depression was mediated by the two dimensions of burnout. This hypothesis could almost entirely be confirmed. The relation between afwulizing, need for control and neuroticism on the one hand and depression on the other hand, was partially mediated by both emotional exhaustion and cynicism. The

relation between perfectionism and depression was mediated by emotional exhaustion. Only the relation between perfectionism and depression was not mediated by burnout. This is not unexpected since no relations were found between perfectionism and cynicism and perfectionism and depression.

The moderating effect of gender

The final aim of the present study was to examine if the relation between personal demands and burnout differed between men and women. It was expected that the positive relation between personal demands and burnout was moderated by gender in a way that this positive relation was stronger for female than for male veterinary students. We did find a difference between men and women regarding their burnout score: women scored higher than men on emotional exhaustion. However, the hypothesis that the relation between personal demands and burnout was stronger for women than for men could not be confirmed. An explanation for this can be that the gender differences we discussed (pressure to achieve and emotional reactions due to failures) are particularly related to perfectionism and *afwulizing*, which are exactly the two demands that could not be related to cynicism and only partly to emotional exhaustion (*afwulizing* was related to emotional exhaustion).

Furthermore, based on a study of Hodgins et al., (2002), we argued that the prevalence of neuroticism among medical students is high, indicating that there might not be extreme gender differences regarding to this personality trait because both men and women score high on this trait. However, neuroticism did have a positive relation with burnout, and since both men and women score high on this trait it makes sense that no gender differences were found in the relation between neuroticism and burnout. In short, gender differences could not be found because the personal demands in which men and women differ, are exactly the ones that did not have a relationship with burnout in the first place. Moreover, the demands that did appear to have a relationship with burnout, were not the demands men and women differed in.

4.2 Study limitations and future research

Despite the fact that this study has strengths such as the use of validated questionnaires, good scale reliabilities and a high response rate, the study also has its limitations. First of all, there are some methodological limitations. The study has a cross-sectional design, which means that conclusions about causality cannot be drawn. For conclusions about the predictive value of personal demands and burnout, longitudinal research has to be conducted. Furthermore, method biases such as collecting the data online

and through self-report might have influenced the answers and thus the results (Pouwer, van der Ploeg & Bramsen, 1998). Collecting data online is a risk because of the possible misinterpretations of the questions and the inability to offer help. Collecting data through self-report is also accompanied by risks because of the subjectivity of this method (Pouwer et al., 1998). Also, there is no information about the group of people who did not respond to the questionnaire. It is possible that the current sample represents a group of people for whom the study is relevant because they experience mental health complaints. A sample of this part of the population group, may have influenced the results (selection bias). For the future it may be helpful to conduct non-response research by, for example, asking a question in the mail about why the questionnaire was not filled in. Another important limitation is that the findings of this study cannot be generalized to the entire population. Therefore, it would be interesting to conduct this research in other occupational groups.

Another limitation concerns the measurement of perfectionism. As mentioned earlier, perfectionism has two dimensions, whereby one (MEC) is related to mental health problems and the other (PPS) is not. Despite the fact that the scale for measuring perfectionism that has been used in this study was already validated, there is no harm in further investigating questionnaires regarding perfectionism and in establishing the balance between the two dimensions.

Finally, we should have a better look at the definition of personal demands. In this study we used a definition of Babier et al., (2013) who refer to personal demands as the requirements that individuals set for their own performance and behavior that forces them to invest effort in their work. However, we also included personality traits such as neuroticism and perfectionism. Personality traits are assumed to be stable over time and in different situations (Matthews & Whiteman, 2003). This implicates that these demands are not only about the requirements that individuals set for their own performance, but also about requirements that are strongly internalized within the individual. The definition of personal demands should be more specific in the future.

4.3 Practical implications

The question that arises, based on the findings of this study, is what the mechanism is behind the relation between personal demands and mental health problems (burnout and depression) and what the direction of this relation is. To answer this question more research has to be done. The incorporation of personal demands in burnout theories might be very relevant. The question for now is how the university can facilitate the mental well-being of

the students based on the findings of this study. From a practical point of view it can be concluded that master students in veterinary medicine need to work in an environment in which their personal demands are triggered as little as possible.

Creating awareness about burnout and depression is still needed. Based on this study, the role of personal demands can be explained as well. This can be done by creating awareness about this topic by providing information at the beginning of the master stage. Furthermore, students who have a high need for control should be taught not to underestimate their demands, because feelings of control can change into feelings of failure (Bakker et al., 2000). The university can help students develop good coping strategies. This is important, because neurotic students are more sensitive to stress and this can make students perceive their study as more threatening (Schneider, 2004). Because neuroticism is assumed to be relatively stable over time and hard to change (Matthews & Whiteman, 2003), focusing on the consequences of this trait may be helpful. An option is to incorporate management of stress into the curriculum. It would be helpful if students were taught ways of dealing with ethical dilemmas and treatment failures because they can lead to highly emotional reactions. An appropriate training may help to reduce the degree of awfulizing.

Finally, because of the positive relation between burnout and depression, preventing further health-impairment is important. It is necessary to remove the taboo on seeking help. This can be achieved by peer support. The example of fellow students asking for help and then successfully pursuing their careers may help those who so far refused to seek help, by helping them to cope with the barriers raised by self-stigmatisation (Ochocka, Nelson, Janzen & Trainor, 2006). The University can do this by setting up support groups, where students can talk about their problems and experiences.

4.4 Conclusion

This study focused on personal demands, which is a relatively new concept. The general aim of the study was to get a better understanding of the role that these demands have in relation to the mental health of veterinary students. The study showed that almost all personal demands (perfectionism, awfulizing, need for control and neuroticism) were positively related to burnout and symptoms of depression. Additionally, the relation between personal demands and depression was partially mediated by burnout. This study shows that people with internalized high requirements have a greater risk of both burnout and symptoms of depression. Given these findings, the faculty of veterinary medicine should take action to

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help students cope with these demands and thereby contributing to the mental health of its students.

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Appendix A: Introduction and informed consent

Beste student, Het onderzoek waarvoor we je medewerking vragen, is onderdeel van een onderzoeksproject onder dierenartsen in transitie van opleiding naar werk. Het richt zich op het welzijn en het functioneren van studenten in de masterfase van de opleiding Diergeneeskunde. Dit onderzoek wordt uitgevoerd door de faculteit Diergeneeskunde in samenwerking met de faculteit Sociale Wetenschappen van de Universiteit Utrecht. Indien je deelneemt aan dit onderzoek wordt je een vragenlijst voorgelegd waarvan de invulling ongeveer 15 minuten in beslag neemt. De gegevens worden gecodeerd zodat ze anoniem kunnen worden opgeslagen. Mocht je de vragenlijst niet in één keer af kunnen maken, dan kan je het beantwoorden van de vragenlijst nog gedurende een week afronden. Je deelname aan dit onderzoek zal op geen enkele wijze je studievoortgang beïnvloeden. Lees daarom de onderstaande punten goed door en als je ermee akkoord gaat, bevestig dan het informed consent. Wat wordt er van jou verwacht? Aan alle deelnemers aan dit onderzoek wordt gevraagd de vragenlijst waarheidsgetrouw in te vullen. De vragen hebben betrekking op alle onderdelen van je studie dus zowel zelfstudie, colleges, werkgroepen als kliniekwerkzaamheden. Wat wordt er gedaan met dit onderzoek? De gegevens die voortkomen uit dit onderzoek zullen bijdragen aan optimalisering van de opleiding met het oog op studentwelzijn en voorbereiding op de overgang van opleiding naar werkveld. Wat gebeurt er met jouw gegevens? We zijn verplicht de onderzoeksgegevens minimaal 10 jaar te bewaren ingaande ná een publicatie (conform De Nederlandse Gedragscode Wetenschapsbeoefening van de VSNU en de richtlijnen van de Universiteit Utrecht). De data zullen na 20 jaar vernietigd worden. Als je deelneemt aan het onderzoek geef je hier automatisch toestemming voor.

Gegevens uit het vragenlijst onderzoek zullen gecodeerd worden opgeslagen in SPSS en zijn dus niet direct tot individuen herleidbaar.

Voor dit onderzoek is goedkeuring verkregen van de Ethische toetsingscommissie van de Nederlandse Vereniging voor Medisch Onderwijs (NVMO) onder het NERB dossier nummer 653. Wil je verder nog iets weten? Een uitgebreidere informatiebrief is te vinden in de mail die bij dit onderzoek hoort.

Voor vragen en toelichting kun je je melden bij Nicole Mastenbroek (tel. 030-2533958; email n.j.j.m.mastenbroek@uu.nl) of Veerle Brenninkmeijer (tel. 0302531632; email V.Brenninkmeijer@uu.nl).

We hopen je hiermee voldoende te hebben geïnformeerd. Alvast hartelijk bedankt voor je deelname aan het onderzoek!

Met vriendelijke groet,

Dr. Nicole Mastenbroek Leerstoel Kwaliteitsbevordering Diergeneeskundig Onderwijs, faculteit DGK, UU Het onderzoeksteam bestaat verder uit: Dr. Veerle Brenninkmeijer, Sociale, Gezondheids- & Organisationspsychologie, faculteit Sociale Wetenschappen, UU. Dr. Maria Peeters, Sociale, Gezondheids- en Organisationspsychologie, faculteit Sociale Wetenschappen, UU. Lizelot Zantboer en Femke Steendam, master studenten Sociale en Organisationspsychologie, faculteit Sociale Wetenschappen, UU.

Informed consent: Ik heb de informatie voor de deelnemer gelezen. Ik heb de mogelijkheid gekregen om aanvullende vragen te stellen. Mijn vragen zijn voldoende beantwoord. Ik heb genoeg tijd gekregen om te beslissen of ik deelneem aan het onderzoek. Ik weet dat meedoen

geheel vrijwillig is. Ik weet dat ik op ieder moment kan beslissen om toch niet mee te doen. Daarvoor hoef ik geen reden op te geven. Ik weet dat de onderzoekers de gecodeerde gegevens kunnen zien. De desbetreffende mensen staan vermeld in de informatiebrief. Ik geef toestemming om mijn gegevens te gebruiken, voor de doelen die in de informatiebrief staan vermeld. Ik geef toestemming om gegevens gecodeerd nog minimaal 10 jaar na afloop van dit onderzoek te bewaren voor nadere analyse

Ik ga akkoord (1)

Appendix B: The Questionnaire

Demographic Data

Allereerst zouden we wat achtergrondinformatie van je willen weten.

Wat is je geslacht?

- Man (1)
- Vrouw (2)

In welk academisch jaar ben je met deze master gestart?

- 2012-2013 (1)
- 2013-2014 (2)
- 2014-2015 (3)
- 2015-2016 (4)
- Anders (5)

Burnout

Q20 De volgende uitspraken hebben betrekking op hoe je je studie beleeft en hoe je je daarbij voelt. Vul bij iedere vraag steeds het antwoord in dat op jouw situatie van toepassing is.

	Nooit (1)	Een paar keer per jaar of minder (2)	Eens per maand of minder (3)	Een paar keer per maand (4)	Eens per week (5)	Een paar keer per week (6)	Elke dag (7)
Door mijn studie voel ik me emotioneel uitgeput. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik twijfel aan het nut van mijn studie. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Met mijn studie bezig zijn of naar colleges gaan levert bij mij spanningen op. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik voel mij "opgebrand" door het studeren. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik heb de interesse in mijn studie verloren. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Ik heb het enthousiasme in mijn studie verloren. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik voel mij uitgeput aan het eind van de dag op de universiteit/kliniek. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben moe als ik 's morgens opsta en mij weer een dag op de universiteit/kliniek te wachten staat. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben cynischer geworden met betrekking tot het nut van mijn studie. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Depression

De volgende vragen gaan over je welzijn. Geef voor ieder van de onderstaande uitspraken aan in hoeverre de uitspraak de afgelopen week voor jou van toepassing was door een antwoord te kiezen. Er zijn geen goede of foute antwoorden. Besteed niet te veel tijd aan iedere uitspraak, het gaat om je eerste indruk.

	Helemaal niet of nooit van toepassing (1)	Een beetje of soms van toepassing (2)	Behoorlijk of vaak van toepassing (3)	Zeer zeker of meestal van toepassing (4)
Ik was niet in staat om ook maar enig positief gevoel te ervaren. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik vond het moeilijk om het initiatief te nemen om iets te gaan doen. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik had het gevoel dat ik niets had om naar uit te kijken. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik voelde me somber en zwaarmoedig. (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik was niet in staat om over ook maar iets enthousiast te worden. (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik had het gevoel dat ik als persoon niet veel voorstel. (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik had het gevoel dat mijn leven geen zin had. (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Perfectionism

Q28 Onderstaande vragen gaan over de wijze waarop je over bepaalde dingen denkt en hoe je bepaalde dingen ervaart ten aanzien van je studie. Geef aan in hoeverre je het met de beweringen eens bent. Dit doe je door het best passende antwoord te kiezen.

	Helemaal mee oneens (1)	Mee oneens (2)	Neutraal (3)	Mee eens (4)	Helemaal mee eens (5)
Om me waardevol te voelen, moet ik erg goed zijn in de studie die ik doe. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik moet goed presteren tijdens mijn studie om tevreden te zijn met mezelf. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik moet van mijzelf mijn studie perfect doen. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik moet de beste zijn in mijn studie. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik mag van mezelf geen fouten maken in mijn studie. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Awfulizing

Als ik iets fout doe binnen mijn studie heeft dat rampzalige gevolgen. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Als ik mijn studie gerelateerde werk niet op tijd afkrijg, is dat een ramp. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Het is vreselijk als ik niet goed functioneer binnen mijn studie. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Het is verschrikkelijk als dingen mislopen binnen mijn studie. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Het is vreselijk om een studie gerelateerde afspraak te vergeten. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Need for control

Ik kan het niet uitstaan wanneer ik in mijn studie onzekerheden tegenkom. (11)	○	○	○	○	○
Ik kan alleen goed met studiesituaties omgaan wanneer ze voorspelbaar zijn. (12)	○	○	○	○	○
Ik kan goed met onverwachte gebeurtenissen omgaan in mijn studie. (13)	○	○	○	○	○
Ik kan er slecht tegen risico's te moeten nemen binnen mijn studie. (14)	○	○	○	○	○
Ik kan niet tegen onzekerheden in mijn studie. (15)	○	○	○	○	○

Neuroticism

De volgende vragen hebben betrekking op je persoonlijke voorkeuren. Wil je het antwoord kiezen dat het beste omschrijft hoe je je over het algemeen voelt of je gedraagt?

	Niet van toepassing 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Helemaal van toepassing 7 (7)
Ik ben humeuriger dan anderen (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mijn stemmingen gaan erg op en neer (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben prikkelbaarder dan anderen (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

