How perfectionism makes you sad

Bachelor project in Cognitive Science

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This exam assignment was written in close collaboration between authors. Initials has been noted next to each headline to indicate the author responsible for the section to comply with exam regulations.

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Abstract

This paper explores the relationship between perfectionism and mental well-being. Perfectionism is investigated within the framework of Hewitt and Flett's (H&F's) theory of multidimensional perfectionism and is measured using H&F's multidimensional perfectionism scale (HF-MPS) (Hewitt & Flett, 1991a, 1991b). H&F has theorised that three dimensions of perfectionism exist, namely self-oriented, other-oriented, and socially prescribed perfectionism. Self-oriented and socially prescribed perfectionism has been repeatedly shown to correlate negatively with mental illness (Cox et al., 2002; Fry & Debats, 2009; Hewitt & Flett, 1991a; Smith et al., 2016). Despite the link between perfectionism and mental illnesses, the relationship between perfectionism and mental well-being is yet to be investigated. This study seeks to fill this gap by examining whether individuals who score highly on the HF-MPS also exhibit poor mental well-being. In this paper, mental well-being is measured with the Warwick Edinburg Mental Well-Being Scale (WEMWBS) (Tennant et al., 2007) and is understood within the framework of the Dual Continuum Model (Keyes, 2002). Results indicate that self-oriented and socially prescribed perfectionism correlate negatively with mental well-being. This result is discussed in the context of the decreasing mental well-being observed in the youth in Denmark as well as many other western countries. The negative effects of perfectionism on mental health and potential interventions to address the issue are discussed.

Introduction (KNV)

In 2020 the book *Utilstrækkelig* by Christian Hjortkjær was published, and it became a popular read across generations in Denmark. It addressed a problem which is frequently debated in the Danish media: namely the decline of mental well-being amongst Danish youth.

The main claim in *Utilstrækkelig* is that young Danes have become increasingly focused on realizing the ideal life or achieving *perfection.* Yet to Hjortskjær, true perfection is unattainable, and he believes that striving towards it will result in unbearable pressure, inevitable disappointment, and chronic feelings of inadequacy. To Hjortskjær, it is the feeling of inadequacy that is the motor of today's decline in mental well-being amongst the Danish youth.

However, it is not a new idea that striving for perfection can be problematic and Hjortskjær is not the first to point to the potential pervasiveness of *perfectionism*. Perfectionism has been lurking in the scientific literature since the 50's and it has been widely researched since the 90's. Following the influential theories of Hewitt and Flett (H&F) (1991a) and of Frost et al. (1990) it has become popular

to treat perfectionism as a multidimensional trait and both H&F and Frost have developed scales to make quantifiable measures of it possible. Applying these scales, many researchers have found correlations between perfectionism and various mental illnesses such as e.g., anxiety, depression, anorexia, stress, etc. (e.g., Besser et al., 2008; Cox et al., 2002; Enns et al., 2005; Fry & Debats, 2009; Hewitt et al., 2003; Hewitt & Flett, 1991a; O'Connor et al., 2004; Smith et al., 2016, 2022). However, to our knowledge no one have investigated the link between perfectionism and mental well-being.

Within the field of mental health, it is a popular notion that mental health should be treated as more than merely the presence or absence of mental illness. One popular theory is the Dual Continuum Model (Keyes, 2002), which perceives mental illness and mental well-being as two independent but correlated dimensions. In this framework, *mental illness* is defined as symptoms of mental illnesses or actual diagnoses, whereas *mental well-being* is e.g., satisfaction with life, happiness, loneliness, and other aspects of individual psychology related to the emotions and functioning of individuals.

Given the correlation between mental well-being and mental illness (e.g., Santini et al., 2022), as well as the association between mental well-being and longevity (e.g., Chida & Steptoe, 2008), and that it is cheaper for societies to have mentally healthy citizens (Santini et al., 2021), we perceive it of high relevance to investigate the link between mental well-being and perfectionism. Additionally, if perfectionistic tendencies truly are increasing in Denmark (as per Hjortkjær's suggestion) it is relevant to investigate and shed light on the possible consequences of such a cultural trend.

This study will investigate the correlation between perfectionism and mental well-being. We will apply the theory of H&F and use their Multidimensional Perfectionism Scale (HF-MPS) to measure perfectionism and we will measure mental well-being with the Warwick Edinburg Mental Well-Being Scale (WEMWBS).

Following the theory of H&F and their idea of the three dimensions of perfectionism, we hypothesize that: there is a negative correlation between mental well-being and each dimension of perfectionism.

Perfectionism

Hewitt and Flett's theory of perfectionism (AEH)

In 1991 H&F published their first theoretic account of perfectionism (Hewitt & Flett, 1991a). Their conceptualization of perfectionism was grounded in the theoretical and clinical accounts of e.g. Adler (Adler et al., 2006), Horney (Horney, 1991), Hamachek (Hamachek, 1978), etc. When developing

their theory, H&F applied insights from attachment theory (Bowlby, 1988) and the idea that personality traits must be considered both on an interpersonal and intrapersonal level (e.g., Paulhus & Martin, 1987). On this ground, H&F theorized that the trait of perfectionism has three dimensions, namely, *self-oriented perfectionism* (requiring perfection of the self), *other-oriented perfectionism* (requiring perfection of others), and *socially prescribed perfectionism* (the belief that others require perfection of the self) (Hewitt & Flett, 1991a). These three dimension are considered independent and unique and various degrees of all three dimensions can be present in an individual at the same time (Hewitt et al., 2017). To measure these dimension H&F developed the multidimensional perfectionism scale (HF-MPS). The HF-MPS has a total of 45 questions which are answered on a 7-point Likert type scale and each dimension of perfection is represented by 15 questions each. Since the publication of the theory there has been done research to document the reliability, validity, and clinical utility of the three dimensions of perfectionism and the HF-MPS (Flett & Hewitt, 2014; Hewitt et al., 2017), and the theory and the scale has been widely applied in research on perfectionism.

Self-oriented perfectionism (KNV)

The first of the three dimensions in H&F's conceptualization of perfectionism is self-oriented perfectionism. Self-oriented perfectionism involves self-directed perfectionistic behaviours such as setting excessively high standards for oneself and stringently evaluating and censoring one's behaviour (Hewitt & Flett, 1991a). Central to self-oriented perfectionism is a salient motivational component that reflects the desire to attain perfection as well as striving to avoid failures at all costs (Flett & Hewitt, 2002; Hewitt et al., 2017; Hewitt & Flett, 1991a). This motivation can manifest itself as a preoccupation with avoiding situations that can generate imperfections rather than directing behaviours toward attaining perfection, thus keeping highly perfectionistic individuals from trying out new things (Flett & Hewitt, 2002). Furthermore, self-oriented perfectionistic behaviour involves the expectation that perfection is not only possible, but necessary and expected of the self. As to why people develop high degrees of self-oriented perfectionism Hewitt and Flett says:

"We have found that the great importance of being perfect is typically a reflection of an ego-involved state and a degree of self-focused awareness, in keeping with the notion that perfection is a defensive response to feelings of inferiority or feelings of not mattering to other people" (Hewitt et al., 2017, p. 36)

Another element of self-oriented perfectionism is that it tends to generalize across life-domains (Flett & Hewitt, 2002). Accordingly, perfectionists do not just want to behave perfectly, but they also want

the perfect relationship, job, children, life, etc. This generalized need for perfection also includes emotional perfection, i.e., avoiding and controlling strong negative emotions because these signal to the self (and others) that the individual is not capable of generating positive outcomes and/or experiences (Flett & Hewitt, 2002). However, because perfection can never be truly achieved, a striving for absolute perfection will create discrepancies, ego-involving stressors, and feelings of shame (Hewitt et al., 2017).

Many studies have been conducted to investigate correlations between mental illness and self-oriented perfectionism. For example, research among college students and young people have found high levels of self-oriented perfectionism to be associated with e.g., clinical depression, anorexia, and stress (e.g., Besser et al., 2008; Cox et al., 2002; Enns et al., 2005; Fry & Debats, 2009; Hewitt & Flett, 1991a; Smith et al., 2016).

Other-oriented perfectionism (AEH)

The second dimension of H&F's account of perfectionism is other-oriented perfectionism (Hewitt & Flett, 1991a). This dimension relates to the individual's expectation of other people and is a distinct dimension because it is directed outwards and manifests itself in interpersonal behaviour. Thus, whereas self-oriented perfectionism induces high expectations of the self, other-oriented perfectionism engenders perfectionistic expectations of others. Other-oriented perfectionism is typically directed towards significant others or people known to the perfectionist, but the objects can also include strangers or people in general (Hewitt et al., 2017). Other-oriented perfectionists set excessively high standards for others and critically evaluate them based on their levels of perfection and achievement (Hewitt & Flett, 1991a).

Originally it was hypothesized that other-oriented perfectionism would lead to other-directed blame, lack of trust, and feelings of hostility towards others as well as cynicism and loneliness (Hewitt & Flett, 1991a). This is somewhat supported by Hill's (1997) finding that high levels of other-oriented perfectionism negatively correlate with agreeableness, trust, and altruism, as well as with Stoeber's (2014) finding that other-oriented perfectionism positively correlates with antagonism, callousness, and deceit. Other studies report that other-oriented perfectionism is associated with difficulties in romantic relationships such as increased marital distress and decreased sexual satisfaction (Habke et al., 1999; Hewitt et al., 1995; Lafontaine et al., 2021) and some studies have found that other-oriented perfectionism correlates with narcissism and high self-evaluation (Juwono et al., 2022; Stoeber, 2015, 2018).

Socially prescribed perfectionism (KNV)

The third and last dimension of perfectionism is socially prescribed perfectionism (Hewitt & Flett, 1991a). This dimension is related to the individual's perceived need to accommodate expectations of others, that being either specific others or generalized others. Socially prescribed perfectionism entails people's belief that others have set unattainable and perfectionistic standards for them, evaluate them harshly, and exert pressure on them to be perfect (Hewitt & Flett, 1991a). Though socially prescribed perfectionists may behave similarly to self-oriented perfectionists, the former's motivation for perfection stem from interpersonal sources. Although interpersonal needs are relevant for all dimensions of perfectionism they are especially salient for socially prescribed perfectionists (Hewitt et al., 2017).

In their original theorization of perfectionism, H&F (1991a) hypothesized that people scoring high in socially prescribed perfectionism would suffer a variety of negative consequences such as e.g., anger, anxiety, and/or depression. It was also suggested that they would fear negative evaluations and hence give importance to attaining attention but avoiding the disapproval of others (Hewitt & Flett, 1991a). It has since been reported that socially prescribed perfectionism is the dimension of perfectionism which is most broadly associated with chronicity of distress and psychopathology (e.g., anxiety, depression, and suicide ideation) (Hewitt et al., 2003; O'Connor et al., 2004; Smith et al., 2022).

The Multidimensional Perfectionism Scale (AEH)

Alongside their theory of perfectionism, H&F developed the Multidimensional Perfectionism Scale (HF-MPS). The HF-MPS is a 45-item questionnaire that measures H&F's three dimensions of perfectionism. Each item in the scale pertains to a single dimension with 15 items per dimension. An example of an item relating to self-oriented perfectionism from the HF-MPS could be: *"I never aim for perfection in my work."* Participants indicate how well each item describe them on a scale from 1 (strongly disagree) to 7 (strongly agree). The level of perfection for each dimension is derived by summing all the answers relating to each unique dimension (Hewitt et al., 1991). Thus, the minimum value a participant can score in each dimension is 15 and the maximum is 105.

Development (KNV)

The HF-MPS was published alongside a validation of the scale through 5 separate studies (Hewitt et al., 1991) as well as another study published the same year which validated the scale in a psychiatric sample (Hewitt & Flett, 1991b). Initially 122 potential items were developed for the scale by 4

university students. These items were derived from statements from other theoreticians' case descriptions and theoretical discussions of perfectionism. The statements which were considered to reflect H&F's three dimensions of perfectionism were extracted and made into items, which could be agreed or disagreed with (Hewitt & Flett, 1991b). Half of the 122 items were reversed to have negative valence.

Subsequently, 156 psychology students (52 men and 104 women), mean age 21 years, filled out the 122 item questionnaire alongside the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) which H&F used the to control for social desirability. Items for the finalized version of the HF-MPS were only selected if they correlated less than 0.25 with social desirability. Furthermore, the final 45 items were chosen on the criteria that they had a mean score of between 2.5 and 5.5. Finally, the final items chosen had a >.40 correlation with their respective subscale (dimension) and a <.25 correlation with other subscales (other dimensions) (Hewitt & Flett, 1991a, p.458). This resulted in the current version of the HF-MPS which has 15 items relating to each dimension. The HF-MPS is attached in the appendix.

Validation (AEH)

To validate the HF-MPS, H&F conducted a series of studies. In a factor analysis on HF-MPS data from 1,106 university students (399 men and 707 women), H&F found that three factors explained 36% of the variance. These factors were almost perfectly represented by 15 questions from each dimension (Hewitt et al., 1991).

Furthermore, to establish a relation between self-ratings and observer-ratings, 25 students in another study had a significant other fill out the questionnaire. The significant other was given instructions to fill out the HF-MPS as they believed the student would fill it out. Significant correlations were found between the significant other's and students' results (Hewitt et al., 1991).

A similar study was done in a psychiatric sample of 263 psychiatric patients (121 men and 142 women). However, instead of having a significant other fill out the HF-MPS, clinicians were provided with detailed descriptions of each of the dimensions and asked to rate their patients on an 11-point scale in each dimension. Again, significant correlations were found between the clinician and the patients' results. No gender differences were found in either of the studies except for other-oriented perfectionism in the psychiatric sample.

Construct validity was measured by finding the correlations between the HF-MPS and 15 other scales which measure a variety of personality traits and mental diagnoses. See table 1 for a summary of the

validation checks as well as sample size and type. The full details of the validation studies can be found in H&F original study (1991a).

Finally, test-retest validation investigated the temporal stability of the HF-MPS. Here, 34 students (gender and mean age unknown) completed the HF-MPS three months apart. H&F report: "The test-retest reliabilities were .88 for self-oriented perfectionism, .85 for other-oriented perfectionism, and .75 for socially prescribed perfectionism." (Hewitt & Flett, 1991a).

As the HF-MPS is widely applied within research on perfectionism, it is surprising that only a few studies have attempted to validate the HF-MPS since H&F published it in the 1990's.

In 2002, Cox et al. evaluated the HF-MPS with confirmatory factor analyses on data from 412 adult clinical outpatients and 288 students. As the result was a poor fit to a three-factor model, Cox et al. proposed a revised model with five items from each of the subscales and reported an adequate fit across the two samples (Cox et al., 2002). H&F note that "… findings suggest that briefer subscales can be created for the HF-MPS." (Flett & Hewitt, 2015, p.604) However, in the research for this paper, it has not been possible to acquire any papers by H&F that attempt to improve their scale. Potential implications of this will be discussed later in the paper.

The HF-MPS is widely used as is evident in recent studies (e.g., Curran & Hill, 2019; Lafontaine et al., 2021; Smith et al., 2022).

Table 1
Validation checks for HF-MPS documented in Hewitt & Flett (1991a)

Psychometric property	Statistical test	Sample size	Sample type
Social desirability			
Marlow-Crowne	Correlation	156	Student
Factor analysis			
	PCA	1106	Student
	Scree test	1106	Student
	PCA	263	Psychiatric patients
	Scree test	263	Psychiatric patients
Observer ratings			
	Correlation	25 (25)	Student (Students significant other)
	Correlation	42 (3)	Psychiatric patients (Patients doctor)
Construct validation			
Attitudes Toward Self	Correlation	104	Students
Self- and Other-Blame	Correlation	104	Students
The Authoritarianism Scale	Correlation	45	Female students
The General Population dominance scale	Correlation	45	Female students
Fear of Negative Evaluation	Correlation	104	Students
Irrational Beliefs Test	Correlation	104	Students
Locus of Control Scale	Correlation	104	Students
Academic standards	Correlation	104	Students
The Narcissistic Personality Inventory	Correlation	93	Student
Symptom Checklist 90-Revised	Correlation	104	Students
Multidimensional Anger Inventory	Correlation	91	Students
Problem Situation Questionnaire	Correlation	91	Students
Burns Perfectionism Scale	Correlation	91	Students
Other-Deception Questionnaire	Correlation	91	Students
MCMI	Correlation	77	Psychiatric patients
Test-retest reliability			
	Correlation	34	Students

Frost's and Hewitt and Fletts' theory of perfectionism. (KNV)

Although we are applying H&F's framework of perfectionism in this paper, one must also mention Frosts' work on perfectionism as his theory is just as used as H&F's. Building upon the ideas of Pacht (1984), Horney (1991), and others, Frost defined perfectionism as setting excessively high standards of performance for oneself accompanied by overly critical self-evaluation (Frost et al., 1990). Frost also thought of perfectionism as a multidimensional phenomenon and put forth a six-dimensional scale of the same name as H&F's scale, namely the Multidimensional Perfectionism Scale (F-MPS). The dimensions in his conceptualization were: *Concern over Mistakes (CM)* (self-directed negative reactions when one makes mistakes), *Personal Standards (PS)* (setting unattainable standards for oneself), *Parental Expectations (PE)* (concern about parents' expectations), *Parental Criticism (PC)* (how criticised one has been by parents when performing less than perfect), *Doubting of Actions (DC)* (people's belief about their ability to accomplish tasks), and *Organization (O)* (how organized an individual is). The summation of all six dimensions was hypothesized to reveal an individual's total perfectionism score. However, it has since been argued that the F-MPS is subject to overextraction and that it actually only has four underlying dimensions (instead of six) and that it should be changed accordingly (Stöber, 1998) - though this is yet to become universally practiced.

Results reveal that self-oriented perfectionism is strongly related to CM and PS, socially prescribed perfectionism seems to relate to all the dimensions of the F-MPS except O, and other-oriented perfectionism relates to CM and PS (though much less than self-oriented perfectionism) (Enns & Cox, 1999; Flett et al., 1995; Frost et al., 1993; Hewitt et al., 1991). Various comparisons have been conducted to investigate overlap between the F-MPS and the HF-MPS.

In the field of perfectionism, it often happens that researchers are less than rigorous in their appliance of one specific theory. This means that studies applying one theory of perfectionism might references studies which apply other theories of perfectionism to support their claims within another framework (e.g., Bieling et al., 2004; Smith et al., 2022; Stricker et al., 2019). However, perhaps it is due to the large overlap between Frost et al.'s and H&F's theories and their respective scales that many researchers create a patchwork of Frost's and H&F's theories (as well as other theories of perfectionism (e.g., Stoeber & Otto, 2006)) when they dive into investigations of perfectionism.

Healthy and/or unhealthy perfectionism (AEH)

Since perfectionism was introduced into the world of academic research there has been a dispute about whether perfectionism can be either *healthy* or *unhealthy*, or whether it is *unhealthy* per

definition. This debate can be traced back to the early work on perfectionism of Hamachek (Hamachek, 1978). Hamachek argued that so-called *normal perfectionist* set realistic standards for themselves, derive satisfaction from scrupulous labour, and can adjust their self-requirements of perfection in certain situations. *Neurotic perfectionists* on the other hand demand unattainable levels of performance from themselves, experience their efforts as unsatisfying, and are rigid in their demand of perfection from the self. When Pacht (Pacht, 1984) kick-started the research of perfectionism with his APA DPCA[1] paper, he commented on this idea, stating that he preferred not to use the label 'normal perfectionist', as he believed that: "the insidious nature of perfectionism leads me to use the label only when describing a kind of psychopathology" (Pacht, 1984, p.387). To Pacht, describing a person as a perfectionist only made sense if the person lived up to the rigid definition of perfectionism (i.e., striving for *perfection*) and accordingly suffered from this trait psychologically. H&F adopted this point of view and has been strong adversaries to the notion that such a thing as a healthy perfectionist exists (Flett & Hewitt, 2002).

These two views of perfectionism (being either healthy/unhealthy or unhealthy per definition) have been present in the field ever since Pacht (see e.g., Adkins & Parker, 1996; Blankstein & Dunkley, 2002; Greenspon, 2000; Hewitt et al., 2017; Hill et al., 2004; Rhéaume et al., 2000; Terry-Short et al., 1995). It is also noteworthy, as noticed by Stoeber & Otto (2006), that the debate is quite opaque because researchers use a variety of labels to investigate healthy/unhealthy perfectionism such as for example *active* and *passive* perfectionism (Adkins & Parker, 1996), *adaptive* and *maladaptive* perfectionism (Frost et al., 1993), and *conscientious* and *self-evaluating* perfectionism (Hill et al., 2004), etc.. Furthermore, the debate is also lively due to several conflicting results about perfectionistic individuals' positive and/or negative characteristics (Stoeber & Otto, 2006).

As exemplified by this section and the former, the field of perfectionism is yet to be collected under a single banner. Many theories and conceptualizations of perfectionism exist, and it is difficult to find studies which work solely within only one theory's framework.

Perfectionism and gender (KNV)

Though gender's influence on perfectionism was barely touched upon in H&F's initial theorization of perfectionism, researchers have since investigated gender-differences in women and men's manifestation of perfectionism. Not much research has studied gender differences within H&F's framework. Gender differences are however investigated within other theories of perfectionism. For

[1] American Psychological Association Distinguished Professional Contribution Award

example Haase et al. (2013) found that female college students had higher levels of perfection in regards to university and appearance, whereas male students scored similarly across all categories investigated. These results are similar to those of Damian et al. (2017) who found that women show higher levels of perfectionism in ambition, academic achievement, and academic efficacy than men. Gnilka and Novakovic (2017) however found that for male university students, but not female, career self-efficacy mediated the relationships between perfectionism and the perception of career barriers. Furthermore Stricker et al. (2019) found that self-oriented perfectionism was more related to self-criticism in women than in men, and that socially prescribed perfectionism was related to maladjustment and stress in women and to socially distant characteristics in men.

In their original paper from 1991, H&F (1991a) did not find any gender differences in their measures of the HF-MPS besides a significant difference in other-oriented perfectionism between men and women, which was replicated in subsequent studies (Flett et al., 1998; Hewitt & Flett, 1991b). However, a recent meta-analysis suggests that men and women do not actually differ on mean levels of multidimensional perfectionism (Smith et al., 2019).

Development in tendencies of multidimensional perfectionism (AEH)

In 2019 Curran and Hill published a meta-analysis of birth cohort differences for perfectionism. They collected a sample of 164 studies from USA, Canada, and England conducted between 1989 and 2016, in which college students had completed the HF-MPS (Curran & Hill, 2019). Curran and Hill's study was motivated by an interest in how different time periods shape cultural phenomena. They hypothesized that developments in neoliberalism, the rise of meritocracy, and increasingly controlling parental practices could amount to substantial changes within individuals and produce developments in perfectionism.

Curran and Hill found that all three dimensions of perfectionism had increased linearly since 1989. Mean scores of self-oriented perfectionism had increased by 10% since 1989, mean scores of other-oriented perfectionism by 16%, and mean scores of socially prescribed perfectionism by 32%. It is noteworthy that the largest increase is seen in socially prescribed perfectionism, as high scores in this dimension is much associated with psychopathology. Hence, it is tempting to allude to a correlation between the increase of mental illnesses seen in the western world among the younger generations (Twenge, 2000; Twenge et al., 2004, 2019) and the rise in socially prescribed perfectionism. As noted by Curran and Hill:

" Rising socially prescribed perfectionism dovetails with observations of rising externality of control, anxiety, and neurosis among young people, in addition to a rising sense of social disconnection" (Curran & Hill, 2019, p.30).

Mental health (KNV)

According to the World Health Organization (WHO) mental health is "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO, 2004).

WHO's definition is part of a larger movement of leaving the conceptualization that mental health is merely a state of absence of mental illness. Agreeing on a definition of what constitutes mental health has however proved difficult. Some scholars suggest that mental health should be viewed holistically, including everything from physical health to emotional vitality (e.g., Hunter et al., 2013) and others that it should represent a dynamic state of internal equilibrium enabling individuals to flourish in society (Galderisi et al., 2015). Another very popular conception is that mental health should incorporate the presence of psychological resources, encompassing both hedonic (subjective well-being) and eudemonic (psychological functioning) aspects (Biswas-Diener et al., 2004; Ryan & Deci, 2001). Traditionally these two concepts were treated separately and some researches espoused only a hedonic perspective (e.g., Kahneman, 1999) and others only a eudemonic (e.g., Ryff, 1989). However, researchers such as Keyes (2002) and Seligman (2013) has been key players in promoting a combination of the two in the research of mental health.

Given these different definitions and understandings of mental health, it can be difficult to identify what researchers are really talking about when they refer to *mental health*. Different authors subscribe to different definitions, and 'mental health' is often used as an umbrella term which can cover everything from severe mental illness to positive mental well-being. 'Mental health' is often used to refer to mental illnesses, and researchers use expressions such as *mental health problem* and/or *mental health crisis* to allude to mental illnesses (Faculty of Public Health England, 2016; Richter et al., 2019). Others use 'mental health' about the aspects of mental health which are specifically *not* related to mental illnesses (Greenspoon & Saklofske, 2001; Headey et al., 1993; Keyes, 2002). Lastly, some researchers combine these two ways of usage and use the term mental health to describe mental illness as well as other aspects of mental health (e.g., Evans et al., 2018). Though researchers often subscribe to one of the latter mentioned usages of 'mental health', clear definitions are rarely explicitly provided

in articles, and it is often the job of the reader to disentangle what 'mental health' means in a given paper.

To avoid ambiguity in this paper, we will be careful in our usage of the term *mental health*. Henceforth, we will use the term *mental illness* if we refer to mental disorders such as anxiety, depression, obsessive compulsive disorder etc. We will use the term *mental well-being* when we are *not* referring to mental illness, but to other aspects of mental health. This means that measures such as satisfaction with life, positive well-being, self-worth, loneliness, happiness, etc. will be referred to as measures of *mental well-being* henceforth.

Mental health as a continuum (AEH)

A popular idea within the field of mental illness and mental well-being is the Dual Continuum Model (DCM) (Keyes, 2002; Keyes et al., 2010; Keyes, 2014), in which mental well-being and mental illness are seen as two separated but correlated dimensions. This model is built upon the idea that mental well-being is captured in a combination of eudemonic and hedonic factors (Keyes, 2002; Seligman, 2013) and that mental illness is symptoms of mental disorders or diagnoses. The model consists of two dimensions, representing mental illness and mental well-being, which are each represented by a continuum where one end represents the absence of mental well-being/illness and the other end the presence of mental well-being/illness (see figure 1). In figure 1, the highlighted yellow area represents a proposed spread of a population between the two dimensions – i.e., most often, a person will fall within the yellow area.

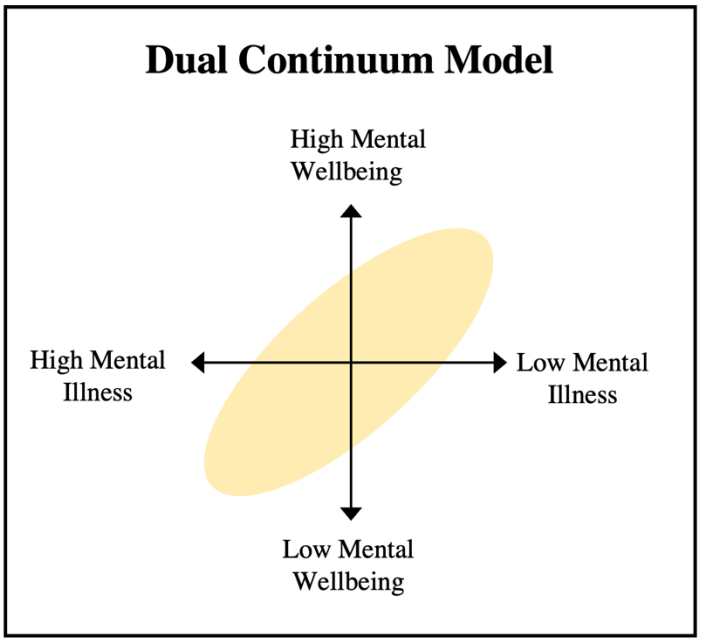

Figure 1 - The dual continuum model

Multiple investigations have been made to validate the DCM. For example, Keyes (2005) conducted a study to investigate correlations between mental illness and mental well-being. In this investigation, measures of mental illness and mental well-being were subjected to factor analysis to assess the independence of the two dimensions. Participants' level of mental illness was determined using the Diagnostic and Statistical Manual of Mental disorders (American Psychiatric Association, 1987) and level of mental well-being was determined using Ryff's (1989) scale of psychological well-being as well as Keyes's (1998) scale of social wellbeing. It was reported that the latent factors of mental illness and mental well-being correlates around -50, meaning that only 25% of their variance is shared (Keyes, 2005).

According to Keyes (2014), the findings of e.g., Greenspoon and Saklofske (2001), Headey et al. (1993), and Huppert and Whittington (2003) also support the DCM. These researchers have applied a wide variety of scales to provide quantified measures of mental well-being including e.g., the Satisfaction With Life scale (Diener et al., 1985), the General Health Questionnaire (Goldberg, 1978), and the Assessment of Interpersonal Relations (Bracken, 1993). Their measure of mental illness was conducted using e.g., Beck Depression Inventory (Beck et al., 1961), the State Anxiety scale (Spielberger, 1979), and the Behaviour Assessment System for Children (Kamphaus et al., 2007).

Researchers also report that gains in mental well-being predicts declines in mental illness and that losses in mental well-being predicts increases in mental illness (Keyes et al., 2010; Schotanus-Dijkstra et al., 2016). These results are similar to those of Santini et al. (2022), who found that higher levels of mental well-being are protective against onset or recurrence of common mental disorders. Findings such as these and reports that mental well-being has a favourable effect on physical health and longevity (e.g., Chida & Steptoe, 2008; Pressman & Cohen, 2005) emphasize the significance of promoting mental well-being amongst the general population.

Mental well-being and mental illness in Denmark (KNV)

In 2020, Rockwool Fonden published the report *Danskernes Mentale Sundhed*, which showed that mental well-being was in decline in Denmark (Andersen et al., 2020). The researchers analysed multiple data sets concerning the mental well-being and mental illnesses of children, adolescents, and adults. Their data consisted of multiple large data sets collected by various Danish organizations such as Det Nationale Forsknings- og Analysecenter for Velfærd (VIVE), Sundhedsministeriet, and det Nationale Forskningscenter for Arbejdsmiljø (NFA).

In a large part of Andersen et al.'s analysis they investigated data collected by Sundhedsministeriet in their recurrent investigation called 'Den Nationale Sundhedsprofil' (DNS). Andersen et al. analysed the DNS's data of mental well-being which was collected in 2010, 2013 and 2017. In DNS, mental well-being is measured with the mental scale *MCS-12* from the general health questionnaire *SF-12*. It was reported that the number of people scoring low in mental well-being had significantly increased across both genders and all ages between 2010 and 2017.

In 2021 a new national survey from DNS was made with the SF-12 in Denmark, and though the official report is yet to be published the results can be found online (DNS, 2021). Here it can be observed that total percentage of people reporting low mental well-being has increased from 10% to 17.4% between 2010 and 2021. The increase is especially prevalent amongst the 16 to 24-year-olds, who shows an increase from 12% to 27.8% in low mental well-being between 2010 and 2021.

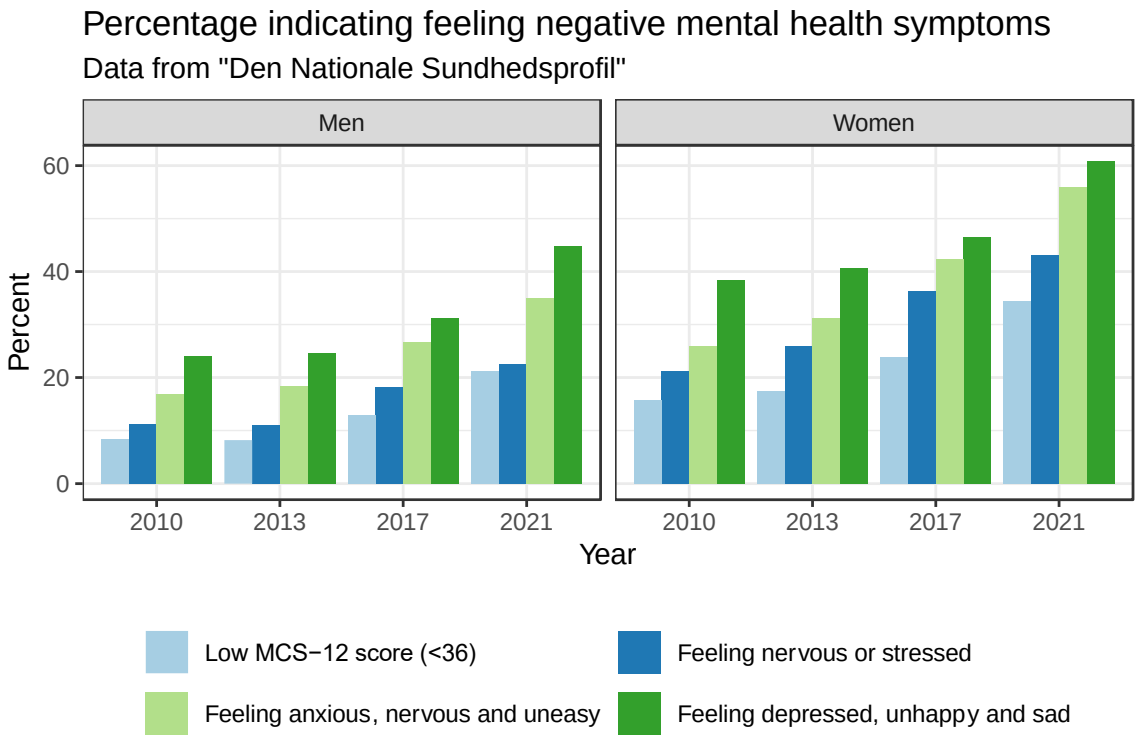

Figure 2 - Visualisation of selected DNS parameters. See appendix for details on measurements.

The mental well-being among children have also been an area of concern in Denmark. In September 2022, the Danish organization Børns Vilkår published a report which stated that 30% of girls and 13% of boys feel they have a low quality of life (Børns Vilkår, 2022). These numbers are similar to those reported by Vidensråd for Forebyggelser (Jeppesen et al., 2020) and VIVE (Boserup et al., 2018) who reported that a large minority of children have low mental well-being. It has furthermore

been documented that Danish' children (especially girls) become increasingly dissatisfied with their lives and that their mental well-being declines as they progress through the school years (Andersen et al., 2020; Børns Vilkår, 2022; Jeppesen et al., 2020). It has also been noted that this trend seems to have become worse since monitoring started in 2009 and there has been reported a significant drop in the number of children who state that they have a high quality of life (Andersen et al., 2020; Børns Vilkår, 2022).

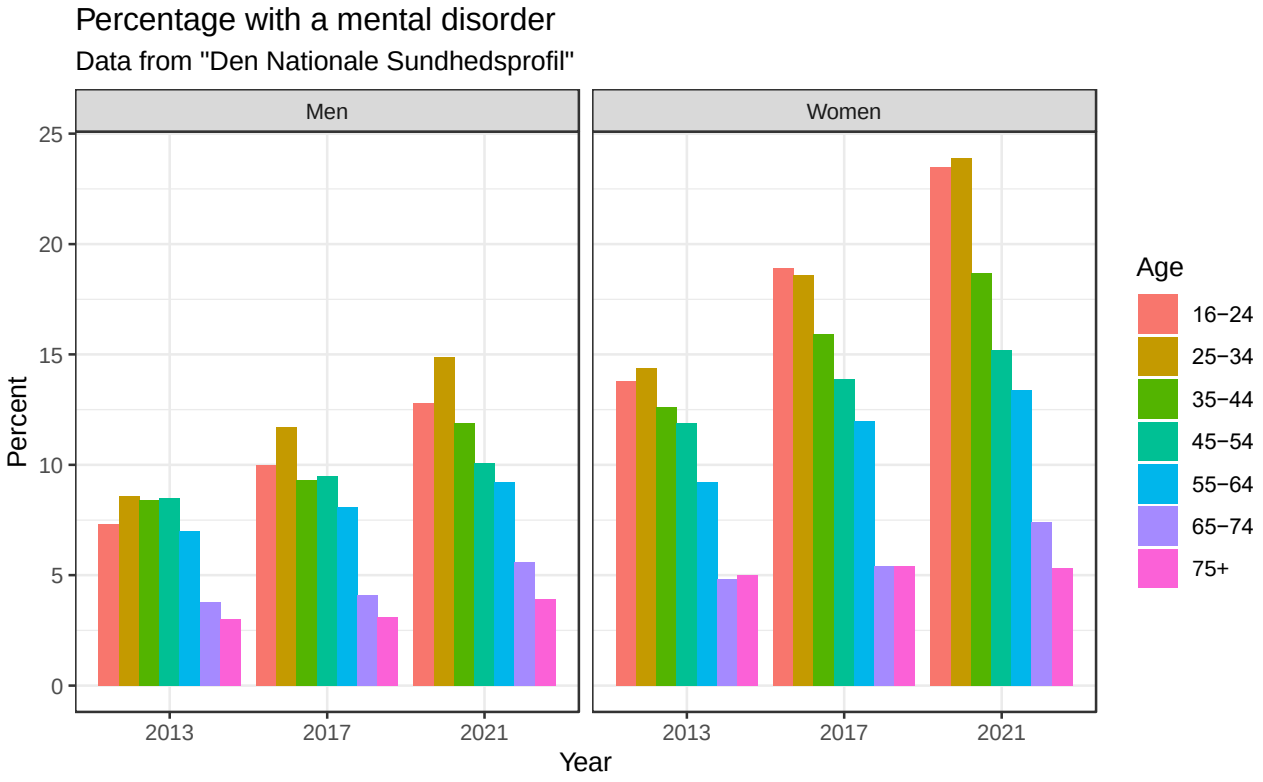

Figure 3 – Percentage of participants indicating that they currently have a mental disorder or are still experiencing the effect of one. See appendix for details on measurements.

That mental well-being is in decline in Denmark have been reported by multiple studies, but if one turns to look at mental illness the picture is a bit more ambiguous. The report by Andersen et al. (2020) also analysed data collected by NFA who have collected data on the work environment and the mental well-being and mental illnesses of the Danes since 2012. In Andersen et al.'s report it is shown that the percentage of Danes with symptoms of anxiety have increased amongst the 16-34-year-olds since 2014, but that they have been stable for the older generations. Andersen et al. also report that the average score on the Major Depression Inventory (MDI) increased from 8.3 to 9.0 between 2014 and 2018. Also, the MDI score increased primarily among the 16-34-year-olds whereas the MDI score is almost constant for the older generations.

Why we observe this increase in mental illness and mental well-being for the younger generations is however still an unanswered question. Andersen et al. (2020) hypothesize that there could be two possible reasons: either the increased measuring and focus on mental illness and mental well-being could have inflated the results, or that the general mental well-being really is getting worse.

WEMWBS (AEH)

Multiple scales have been developed to quantify and measure individuals' mental well-being. However, given the on-going discussion of what mental well-being constitutes, many of these scales have gradually been accompanied or replaced by newer scales. This has led to a variety of competing scales which all measure different aspects of mental well-being.

While several scales measure mental illness, such as the Major Depression Index which is used to diagnose depression (Bech et al., 2001), only a handful, and relatively new, scales measure mental well-being as it is defined by Keyes (Keyes, 2002) and Seligman (Seligman, 2013). One of these is the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS). This scale was developed in 2007 to measure wellbeing as it pertains to "…both hedonic and eudemonic aspects of mental health including positive affect (feelings of optimism, cheerfulness, relaxation), satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, competence and autonomy)." (Tennant et al., 2007, p.3).

The WEMWBS consists of 14 positively worded items such as: "*I've been feeling close to other people*", which participants are asked to answer on a 5 step Likert-type scale. Participant are asked how often they experience each given item, from "none of the time" (0) to "all of the time" (5). The total level of well-being is found by summing the score of all items. Thus, individuals can achieve a minimum score of 14 and a maximum score of 70. Within this framework it is believed that high scores equal high mental well-being. The WEMWBS is attached in the appendix.

Development (KNV)

The original foundation for the WEMWBS was another scale measuring mental well-being, namely the Affectometer 2 (Kammann & Flett, 1983). The items of the Affectometer 2 were evaluated by 56 people divided into 9 focus groups diverse in age, sex, and socio-economic status, who were instructed to discuss the scale in relation to mental well-being. These conversations were taped and transcribed, and content analysis was subsequently used to identify items for discussion in an expert panel. This expert panel consisted of 8 individuals with backgrounds in psychiatry, psychology,

public health, social science, and health promotion who all had an expertise in mental health. The panel identified items for retention and rewording from Affectometer 2 and agreed on the wording of new items resulting in the WEMWBS.

Validation (AEH)

WEMWBS was validated across several measures: Content validity, Construct validity, Internal consistency, Criterion validity, Reliability and Social desirability bias and concluded to have good face validity (Tennant et al., 2007). These tests were carried out in two samples: initial scale testing of a student sample, and a second sample from two representative Scottish population surveys, where the WEMWBS was administered along with a number of other questionnaires. The table below shows what tests were conducted, on which sample, and the size of the sample.

Psychometric property	Statistical test	Student sample (number)	Population sample (number)
Content validity	Responder bias: Chi-square tests	-	2075
	Missing and popular responses	348	2075
	Floor/ceiling effects (individual items)	348	1749
Construct validity	Confirmatory Factor Analysis	348	1749
Internal consistency	Cronbach's α 's	348	1749
	Item-total score correlations	348	1749
Criterion validity	Floor and ceiling effects (total score)	348	1749
	Demographic differences in scores: Wilcoxon rank sum tests/Kruskal-Wallis tests/Jonckheere's test	-	1749
	Correlations with other scales: Spearman's rank correlation coefficient	72 (EQ-5D VAS) 63 (PANAS- PA/NA) 63 (SPWB) 71 (SDHS) 79 (WHO-5) 79 (SWLS) 77 (GLS) 67 (EIS)	1233 (GHQ-12)
	Jonckheere's test	-	1233(GHQ-12)
Reliability	Intra-class correlation coefficients	124	-
Social desirability bias	Spearman's rank correlation coefficient	116	-

Table 2 - Summary of psychometric tests carried out on two samples. Source: Tennant et al., 2007.

The scale used to control for social desirability bias was the Balanced Inventory of Desirable Responding (Paulhus, 1991) which has been called the “current gold standard” of social desirability bias testing. ((Lambert et al., 2016), p. 80). WEMWBS correlates less than the Affectometer 2 with social desirability bias.

The scale has since been validated in multiple populations (e.g. Clarke et al., 2011; Taggart et al., 2013; Bass et al., 2016) and translated to over 30 languages (Sidbury, 2023). In Denmark the scale

has been translated and validated (Koushede et al., 2019), and it is used in research in multiple fields such as psychology and economics (e.g., Santini et al., 2021, 2022). Furthermore, the scale is recommended by experts from University of Southern Denmark and the Danish National Institute of Public Health (Santini & Koushede, 2022; I. Sørensen et al., 2017).

SWEMWBS (KNV)

A short form of WEMWBS which consists of 7 of the original 14 items has also been made. This scale has a greater emphasis on psychological functioning than the emotional aspects of mental well-being. This scale is called the Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS) and is also widely used.

SWEMWBS was developed in 2009 after the team that developed the WEMWBS tested the instrument within the Rasch framework (Rasch, 1993) (Stewart-Brown et al., 2009). 7 items were dropped from the original scale as they showed significant differential item functioning between genders, meaning that individuals were more likely to answer the same as other members of their gender than the opposite. While the SWEMWBS lives up to the strict criteria of the Rasch framework, the WEMWBS does not. However, the SWEMWBS presents a more limited view of mental well-being as most items reflect psychological and eudemonic wellbeing, and only a few cover hedonic wellbeing or affect (Stewart-Brown et al., 2009).

Even though the SWEMWBS has some advantages, we believe that WEMWBS is more appropriate for this paper as the aim of this paper is to investigate how perfectionism affects mental well-being in a broad sense, not just what pertains to psychological and eudemonic wellbeing.

Methods

Investigation (AEH)

While several studies on perfectionism have been conducted in the English-speaking world, to our knowledge have no studies on perfectionism ever been done in Denmark. Furthermore, to our knowledge, no studies have investigated the correlation between perfectionism and mental well-being. As the decline in mental well-being is especially prevalent in the youth in Denmark, we have limited our investigation to Danish 18 to 30-year-olds.

The hypothesis investigated in this paper is:

H1: Increased levels of perfectionism for each dimension in the H&F framework have a negative correlation with mental well-being.

H1: Well-being ~ Self Oriented Perfectionism + Other Oriented Perfectionism + Socially Prescribed Perfectionism

Levels of perfectionism are measured using the HF-MPS and levels of well-being are measured using the WEMWBS.

Translation of HF-MPS and of WEMWBS (KNV)

As no Danish translations of the HF-MPS exist, we translated the 45 items of the scale ourselves. We deemed it necessary to translate the HF-MPS because, though many Danes would probably have been able to comprehend the original English HF-MPS we deemed it important that no one were excluded on account of poor English skills.

To ensure a robust translation, we followed the guidelines of Sousa & Rojjanasrirat to the extent possible within the limitations of a bachelor project (Sousa & Rojjanasrirat, 2011). The translation process was as follows:

Both authors independently translated all 45 items on the HF-MPS to Danish. The two translations were compared and items with identical translation were deemed appropriate. Items for which there were disagreements in the translations were discussed and finalized in cooperation. Then, a bachelor student of Scandinavian Language and Literature from Aarhus University provided critique and valuable inputs to the translations, which were modified accordingly. Unfortunately, we were not able to procure two bicultural translators and therefore this criterion could not be met. Furthermore, the statistical testing of the translation required within the framework of Sousa & Rojjanasrirat was deemed beyond the scope of this paper and could not be met either. However, to a large extent it was possible to follow the process provided by Sousa & Rojjanasrirat.

A Danish translation of the WEMWBS already existed and is used in this paper. This translation has been made by Koushede et al. (Koushede et al., 2019), who performed a series of standard psychometric tests to validate their translation. The translation was concluded to be an appropriate instrument for measuring well-being in Denmark and its usage has been recommend by Statens Institut for Folkesundhed (Santini & Koushede, 2022). We have procured the translation from the

website warwick.ac.uk where all available translations of the WEMWBS can be found (Sidbury, 2023).

Data Collection (AEH)

Basic demographic information, i.e., gender, age, occupation, as well as answers of the HF-MPS and the WEMWBS questionnaires was collected for each participant. This was done with the tool "Google questionnaire" (Google, 2023). The questionnaire was distributed through the authors' personal Facebook profiles. We encouraged our Facebook-friends to 'share' the questionnaire trough their profiles to reach potential participants beyond our own Facebook network. Furthermore, we also contacted our old high schools and folk high schools (højskoler) to further distribute the questionnaire, however no formal replies were received from these and whether the questionnaire was shared amongst students at these institutions is unknown.

A total of 174 people filled out the questionnaire. 46 participants were removed from the study as they did not fall within the 18-to-30-year age range. 2 participants were removed as they stated their gender as nonbinary. The final dataset consisted of 126 individuals, 84 were women (66%), 98 were students (77%) and the mean age of the sample was 23 (SD 2.4).

Analysis (KNV)

Following the protocol of Tennant et al. (2007) the answers of WEMWBS were coded to a scale of 1-5 and summed to find the total well-being score of each participant. To allow the sample to be compared to a wider range of studies, the SWEMWBS score was also calculated by using the sum of the relevant subset of items that make up the SWEMWBS. To find the metric score of SWEMWBS the conversion chart provided by Stewart-Brown et al. was used. (Stewart-Brown et al., 2009).

The protocol of H&F was used to find the results for each participant on the HF-MPS (1991b). Thus, questions 2, 3, 4, 8, 9, 10, 12, 19, 21, 24, 30, 34, 36, 37, 38, 43, 44, 45 were reversed to have negative valence, coding answers of "1" as "7", "2" as "6" and so forth. Then answers concerning each of the dimensions were summed to find the level of self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism for each participant.

Analysis was conducted in R (R Core Team, 2010) and figures were produced using the package ggplot2 (Wickham et al., 2019) with the package RColorBrewer (Brewer, 2022). The *lm* function from the stats package of R was used to run the following model testing H1:

Wellbeing ~ Self Oriented Perfectionism + Other Oriented Perfectionism + Socially Prescribed Perfectionism

The residuals were symmetrically distributed and were concluded to be normally distributed through a visual inspection of a qq-plot.

Results (AEH)

Table 3

Age, well-being, and perfectionism scores for participants

	Men		Women		Total	
	M	**(SD)**	**M**	**(SD)**	**M**	**(SD)**
Age	22.64	(2.41)	23.01	(2.41)	22.89	(2.4)
WEMWBS	50.74	(5.79)	45.93	(7.08)	47.53	(7.03)
SWEMWBS	23.2	(2.6)	21.22	(2.79)	21.88	(2.87)
Self-oriented	59.33	(15.17)	66.62	(16.46)	64.19	(16.35)
Other-oriented	46.1	(11.84)	42.3	(10.17)	43.56	(10.86)
Socially prescribed	43.31	(14.63)	48.25	(15.22)	46.6	(15.15)

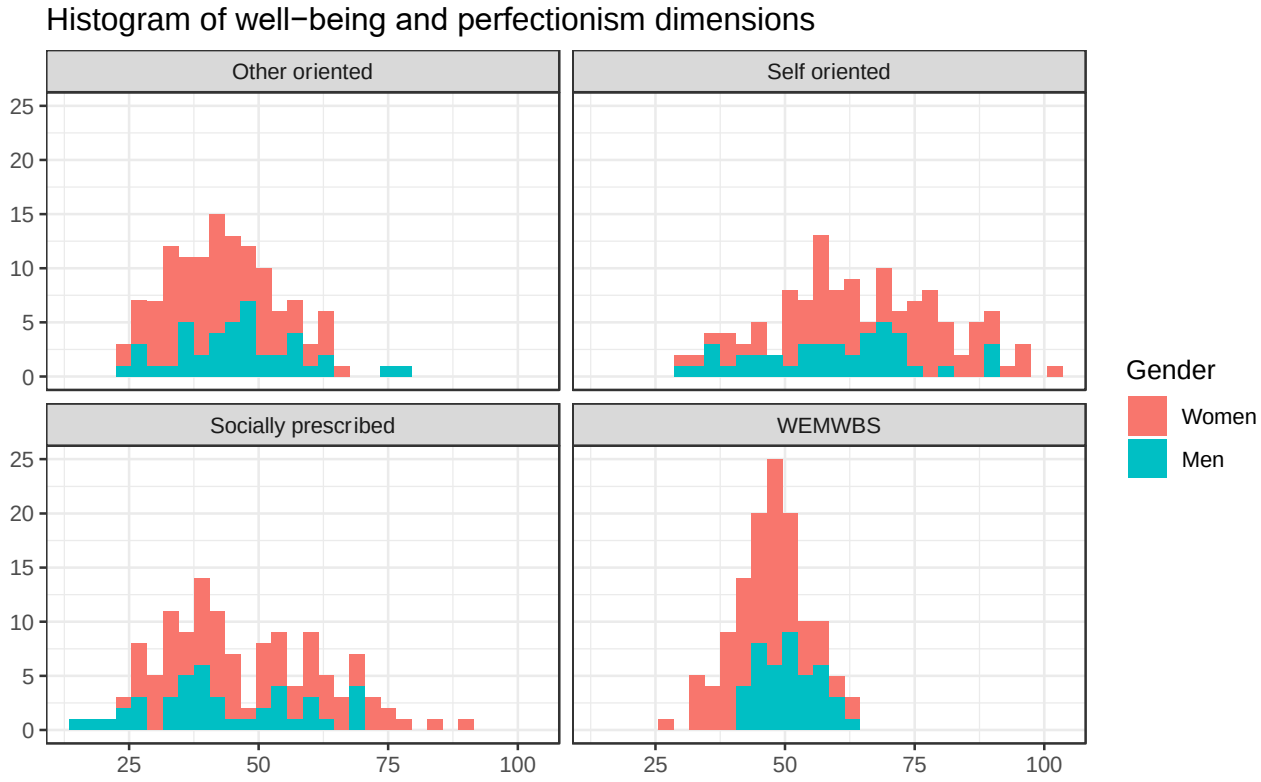

Figure 4 - Histogram of relevant variables

Multiple regression analysis was used to test whether the three dimensions of perfectionism significantly predicted WEMWBS scores. The results of the regression indicated the three predictors significantly explained 33% of the variance (adjusted R^2) ($F(3,122) = 21.4$, $p < .0001$). Self-oriented perfectionism ($\beta = -0.13$, $p < .01$), and socially prescribed perfectionism ($\beta = -0.17$, $p < .001$) had a negative effect on WEMWBS scores, whereas other-oriented perfectionism ($\beta = 0.16$, $p < .01$) had a positive effect on WEMWBS scores.

Table 4

Output from H1 stats::lm() model in R

	β estimate	SE	t	p	
(Intercept)	56.73551	2.63163	21.559	< 2e-16	***
Self-oriented perfectionism	-0.13059	0.04085	-3.197	.001770	**
Socially prescribed perfectionism	-0.17026	0.04348	-3.916	.000149	***
Other-oriented perfectionism	0.16330	0.04949	3.300	.001270	**

Exploratory analysis (KNV)

We've chosen to include a post-hoc exploratory analysis to investigate whether unexpected patterns in our data might emerge when leaving the strict confines of our theories. This could provide valuable insight into the robustness of the theories presented in this paper. The H1 is compared to three other models that might be better at predicting mental well-being than H1. The models used for model comparison are as follows:

M1: Wellbeing ~ gender

M2: Wellbeing ~ Self Oriented P. + Other Oriented P. + Socially Prescribed P. + gender

M3: Wellbeing ~ Self Oriented P. * gender + Other Oriented P. * gender + Socially Prescribed P.* gender + gender

Table 5

Output from H1 stats::anova() comparison in R

M1: **Wellbeing ~ Gender**

H1: **Wellbeing ~ Self Oriented P. + Other Oriented P. + Socially Prescribed P.**

M2: **Wellbeing ~ Self Oriented P. + Other Oriented P. + Socially Prescribed P. + gender**

M3: **Wellbeing ~ Self Oriented P. * gender + Other Oriented P. * gender + Socially Prescribed P.* gender + gender**

model	Res.Df	RSS	Df	Sum of Sq	F	Pr(>F)	
M1	124	5535.7					
H1	122	4051.2	2	1484.50	22.7910	4.272e-09	***
M2	121	3872.3	1	178.86	5.4920	0.02078	*
M3	118	3843.0	3	29.35	0.3004	0.82503	

This result indicates that the model that best fits the data is model 2, which is identical to H1, with gender as an added predictor. The results of the regression indicated the four predictors significantly explained 35% of the variance (adjusted R^2) ($F(4,121) = 18.05$, $p < .0001$). Self-oriented perfectionism ($\beta = -0.11$, $p < .01$) and socially prescribed perfectionism ($\beta = -0.17$, $p < .001$) had a negative effect on WEMWBS scores, whereas other-oriented perfectionism ($\beta = 0.13$, $p < .01$) and male gender ($\beta = 2.7$, $p < .02$) had a positive effect on WEMWBS scores.

Marginal effects (AEH)

As it was somewhat surprising that other oriented perfectionism correlated positively with wellbeing and the plotting of the dimension looked curious, we decided to investigate the marginal effects:

M4: well-being ~ self oriented perfectionism + socially prescribed perfectionism

M5: residuals of M4 ~ other oriented perfectionism

The results of M5 are similar to the effects of other oriented in H1, significantly predicting the residuals $F(1,124) = 10.1$, $p < 0.01$ with an estimated beta-value of 0.15.

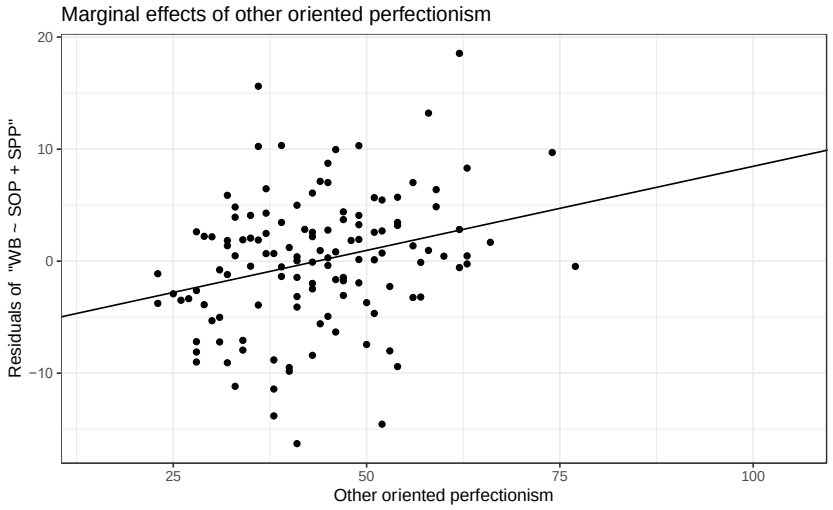

Figure 5 - Marginal effects

Discussion

Summary of results (KNV)

The investigation which has been conducted have looked at the correlation between mental well-being and H&F's three dimensions of perfectionism within a Danish sample of 126 18 to 30-year-olds. The analysis showed a significant, negative correlation between socially prescribed perfectionism and mental well-being, as well a significant, negative correlation between self-oriented perfectionism and mental well-being. The analysis also showed a significant positive correlation between other-oriented perfectionism and mental well-being. Thus, our hypothesis is partly confirmed as self-oriented perfectionism and socially prescribed perfectionism has a negative correlation with mental well-being.

The two negative correlations are unsurprising and aligns with existing literature. Regarding other-oriented perfectionism, studies investigating this dimension has only found effects on e.g., narcissism, distrust, and marital distress, but to our knowledge none has investigated how the dimension might impact mental well-being or mental illnesses. Thus, while we hypothesised that other-oriented perfectionism would have a negative correlation with mental well-being, the positive correlation is not in obvious conflict with existing literature as the interplay between other-oriented perfectionism and well-being has not been investigated. However, as the visualisations of the other oriented dimension looked curious, we produced a plot to investigate the marginal effects of the model. The

plot can be seen in the section above and shows how other oriented perfectionism predicts the residuals of well-being predicted by self-oriented and socially prescribed perfectionism.

Most studies investigating mental health and perfectionism have focussed on the negative consequences of self-oriented and socially prescribed perfectionism and find that the latter has the greatest effect on mental health. While the positive correlation between other-oriented perfectionism and mental well-being is interesting and warrants further research, we have deemed it irrelevant to attempt to explain and discuss it further to accommodate the limitations of this paper. Thus, when we later discuss our results in the face of literature and theory we will focus on self-oriented and socially prescribed perfectionism. Furthermore, when we discuss the mental well-being in Denmark and the implications of our result, we will use the term *perfectionism* to refer to self-oriented and socially prescribed perfectionism and their negative correlation with mental well-being.

Limitations

Sample (AEH)

While we deem 126 participants as a satisfyingly large sample for an investigation such as this one, the representativeness of our sample is debatable. It is problematic that the sample consisted of 34% men and 77% students, as this is not very representative of Danes in the age rage 18-30. This issue of representativeness could very well be due to the limitations of our Facebook networks, as they in themselves are not representative of the investigated population. Though attempts were made to accommodate this problem by sharing the questionnaire with schools and encouraging Facebook-friends to share it on their own personal ‘wall’, we cannot assess whether or how this influenced the final sample. However, given that such a large percentage of the sample consists of students, we suspect that the questionnaire did not make it far off our own shores. Furthermore, the method of recruiting might have biased the sample in ways we cannot assess. As an example, it could be possible that certain groups would be more likely to voluntarily fill out a questionnaire about perfectionism and mental well-being, whereas other groups would be less likely. This could perhaps occur if people find such a questionnaire especially relevant and interesting and thus bias them to participate in the study. Though this is speculation, we believe that our procedure of participant recruitment makes it difficult to generalise our results to the intended population.

Sample compared to studies using SWEMWBS (KNV)

While the representativeness of our sample is already questionable, we deem it further relevant to investigate whether the well-being of our sample is similar to the well-being of the target population as reported in other articles and reports. This is however not straight-forward as many investigations of mental well-being conducted in Denmark investigate different age groups and use other scales such as for example the MCS-12. It is however possible to make a comparison to Danish articles which apply SWEMWBS as it is a shortened version of the WEMWBS.

As mentioned earlier the SWEMWBS-score can be derived from participants' WEMWBS answers which allows us to compare our samples' well-being to that found in similar research. This sort of derivation from WEMWBS to SWEMWBS is observed in other studies such as e.g., Koushede et al. (2019).

Relevant investigations conducted in Denmark include those of Koushede et al. (2019) who observed a mean SWEMWBS of 25.8 in the age range 16 – 25 in 2016 as well as Thygesen et al. (2021) who measured a mean SWEMWBS of 23.4 in the age range 15 – 44. The SWEMWBS-score of our sample reveal that the mean score falls 3.9 points below Koushede et al.'s sample (2019) and 1.5 points below Thygesen et al.'s (2021) sample. Whether these differences are substantial is difficult to assess, however, even though the compared samples have different intervals of age, it is interesting that our sample falls below the well-being reported in both articles.

In Santini et al.'s study (2022), the researchers converted their SWEMWBS scores into three categories by using the cut points of Stewart-Brown et al. (2015). Participants were divided into groups of low, moderate, or high mental well-being. It was reported that 18% with had a low score, 61.5% a moderate and 20.5% a high score. Applying the Stewart-Brown cut points on our sample, the results show 28% have a low score, 69% have a moderate score, and 3% have a high score. However, in the report by Santini et al. all age groups were pooled together, and the comparison should thus be considered with caution.

While it is unfortunate that none of the studies here mentioned have the same age group as that of our sample, it could seem that our sample might be sadder on average than the target population.

A collection of the well-being results which we have compared our study to can be found in table 6 below.

Table 6

Comparison of SWEMBS scores between the current study and other Danish studies

Source	Date	Age range	SWEMWBS	
Metric SWEMWBS scores				
This study	2022	18 – 30	21.9	
Koushede et al., 2019	2016	16 – 25	25.8	
Thygesen et al., 2021	2020	15 – 44	23.4	
SWEMWBS scores split by cut points				
This study	2022	18 – 30		
			28%	*Low*
			69%	*Moderate*
			3%	*High*
Santini et al., 2022	2019	15 +		
			18%	*Low*
			61.5%	*Moderate*
			20.5%	*High*

Sample compared to depression trends in Denmark

To further investigate the representativeness of our sample regarding mental well-being we have looked at the depression trends as reported by the DNS in 2021. In the age range 16-34, 21% of women and 15% of men answered that they were currently depressed (DNS, 2021). As reported by Bianco (2012), low scores in the WEMWBS scale are highly correlated with depression and Bianco accordingly reported that a WEMWBS score of 41-44 is indicative of possible/mild depression and a score of <41 is indicative of probable clinical depression. In our sample, 8 (19%) of men and 35 (40%) of women had a score of 44 or under. A score under 41 was seen in 0 men and 19 (22%) women. This further illuminate the potential lack of representativeness of our samples' mental well-being. Though this comparison should also be interpreted with caution it adds weight to the problem that our sample consists of extraordinarily sad individuals, in which especially the women seem sad.

To sum up: there are too many students and women in our sample, and we suspect their well-being is not representative of the target population. This could potentially have skewed the result in ways we cannot assess. With the limitations presented here, we cannot generalise our findings to the intended

population. However, the results are a useful pointer as to how perfectionism may negatively effect individuals. Furthermore, the paradigm of this paper can easily be repurposed with a larger more representative sample, which could solidify the results.

Comparing the quality of WEMWBS and HF-MPS

Development (AEH)

When evaluating the results of this study, we have found it important to consider the potential pitfalls of the instruments which we have used to gather our data. As they are methodical tools to confirm or reject theories of how our world function, it is vital that they are robust, precise, and measure what is intended. During our work with and immersion into WEMWBS and HF-MPS it has become apparent to us how differently researchers can approach such measuring instruments. We therefore deem it relevant to evaluate and compare said scales and discuss the potential problems of these tools.

The basis of the development for WEMWBS and HF-MPS were somewhat similar as the items for each scale were developed from pre-existing literature on the subject matter. As mentioned earlier, the initial items for the WEMWBS were developed by instructing 56 individuals, who were divided into focus groups, to discuss the subject matter and subsequently having eight experts discuss the transcripts from the focus-groups' discussions (Tennant et al., 2007). On the other hand, the initial 122 items for the HF-MPS were developed by four university students who were instructed to extract potential items from theoretical texts. While the laborious approach used to develop WEMWBS is not statistically tested for benefits, it seems like a more robust method. A greater number of diverse individuals provide a broader perspective on the subject, and possibly a broader representation of the subject matter. Using an expert team instead of students further adds another level of refinement to the process. From here, the development and validation of the scales diverge further and differ greatly in how legible the process is described.

Despite exhaustive research and thorough reading of H&F's articles, several steps in the development of the HF-MPS continue to elude us. Particularly, the reasoning (and indeed logic) behind several choices were not documented in any articles by H&F that we could procure. To start, the reason to reverse half of the initial items in the HF-MPS might be an attempt to deflect acquiescence, affirmation, or agreement bias, but we cannot know, as it is not stated anywhere. Furthermore, as it was half of the *initial* 122 items that were reversed, the final scale is ill-balanced. HF-MPS has 4/15 reversed items pertaining to self-oriented perfectionism, 9/15 items reversed for other oriented

perfectionism and 5/15 items reversed for items related to the socially prescribed perfectionism. It is known that valence of items in questionnaires can affect the response and negatively worded items can in particular have an effect on response on some individuals (DiStefano & Motl, 2006). This potentially makes the inclusion of negatively worded items problematic, as unintended effects can misinform the interpretation of results. Oppositely, the WEMWBS consists of positive-worded items only, which negates any possible effect of negatively worded items.

Additionally, H&F's reason for excluding items with a mean score that didn't fall between 2.5 and 5.5 has not been stated anywhere. It could be assumed that H&F sought to avoid a floor/ceiling effect, but we cannot know for sure. It is furthermore expressed that this exclusion criterium was the reason that the initial 122 items were filtered into the finalized 45 items for the scale with *exactly* 15 questions for each dimension. Our assessment of the literature regarding the development of the HF-MPS reveals that the frequent use of ambiguous language and vague methodology in the papers paint an uncertain picture of the scale's reliability.

Validation (KNV)

In the validation checks, it becomes further apparent that the two scales were developed 20 years apart. Except for self-other reliability, the methods applied to validate the HF-MPS are all applied to WEMWBS as well. Furthermore, WEMWBS is validated through several additional procedures, as is evident in table 2. The validation process for WEMWBS is thorough and transparent, which effectively eliminate any confusion regarding the statistical analyses performed and the rationale behind them. Furthermore, where H&F largely use homogenous student samples for their validation checks, WEMWBS is validated by utilising large representative samples, which improves the quality of the validation.

Furthermore, only 2 years after the publication of WEMWBS the revised short version, SWEMWBS was introduced. SWEMWBS was made to accommodate WEMWBS shortcomings and provide a shorter and statistically stronger scale, albeit with some sacrifice to the nuances of mental well-being. Additionally, the (S)WEMWBS scales are freely acquired through a website which contains user-guides, translations of the scales, relevant literature, and other helpful materials (Sidbury, 2023).

While H&F have developed other scales measuring varieties of perfectionism, they have made no attempt to better their original scale which is still widely used. Several papers (eg. Soares et al., 2016; ; Cox et al., 2002) have proposed shorter and revised versions of the HF-MPS, but H&F have made no attempts to accommodate the proposals and note that: "As these short forms do not have clinical

or other normative information available, we advise that the entire 45-item version of the scale be used" (Hewitt et al., 2017, p. 205). Furthermore, while the HF-MPS has an official user guide from 2004, the guide can only be procured through a 111 USD purchase (Multi Health Systems, 2023).

In summary, H&F's validation check are lacking when compared to modern scales such as the WEMWBS. It is forgivable to have applied poor validation checks 30 years ago, but it is unfortunate that no attempts have been made to update or revalidate the HF-MPS since its initial development in 1991.

Another potential issue with using the HF-MPS is that the scale was translated, which may alter the instrument in unexpected ways. Additionally, the scale was originally created in Canada in 1991, and there may be cultural differences between them and Danes in 2022.

Despite these points of criticism, it is still relevant to use the HF-MPS in this study. The issues pointed out are often found in similar popular psychological instruments. Thus, we have chosen to follow the consensus in the field as researchers routinely use the HF-MPS in their studies, despite the points of criticism presented here. So, even though the HF-MPS is an imperfect tool, we deem it still a valid instrument to equip in this paper.

Our critique of the HF-MPS should be read as a call out for revalidation and re-evaluation of the HF-MPS, so that researchers may use it with better confidence in the future.

Model comparison (AEH)

While one should always be aware of overfitting when leaving the realm of hypothesis testing to embark on exploratory analysis, we have deemed it relevant for this paper. The focus of our exploratory analysis is to test the relative strength of other possible models when gender is included as a predictor. Although H&F's research and theory suggest that gender should not impact the dimensions of perfectionism, mental well-being is often observed to correlate with gender. Therefore, it is valid to examine our data further by considering gender in our models.

To aid in understanding the models, we visualized them in 2D plots. Note that these plots serve to provide a general understanding of the relationship between perfectionism dimensions and mental well-being and may not accurately depict the model's internal processes. See table 5 in methods-section for the results of the model comparisons. The parameter-estimates of each model are available in the appendix.

To our knowledge, most research on wellbeing in Danish populations points to a difference in mental well-being between genders, with females having lower average well-being than males (e.g Andersen et al., 2020). Therefore, we believe it appropriate to begin our model-comparisons with a simple model incorporating this knowledge as our starting point:

M1: Wellbeing ~ gender

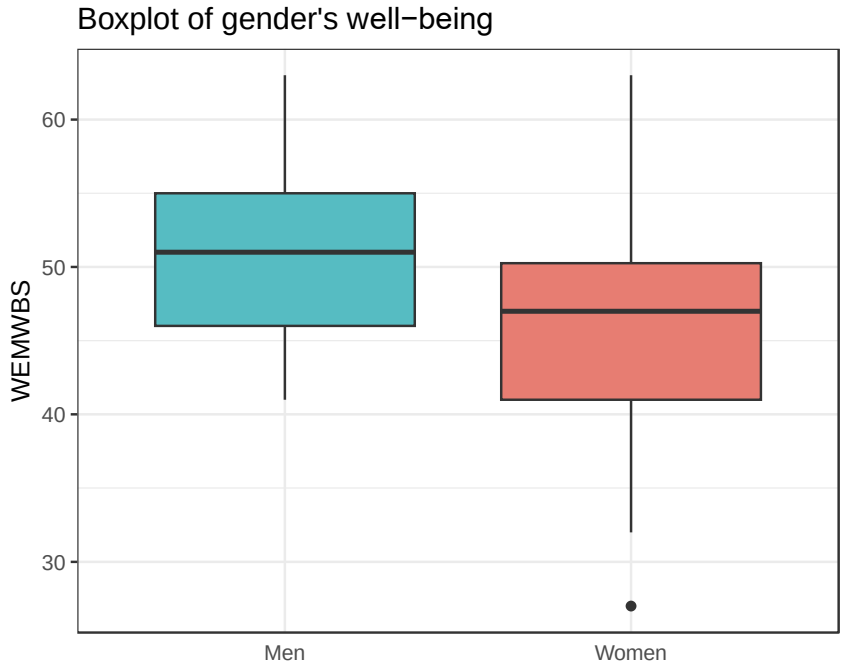

Figure 6 – Genders' mental well-being

With this model, we're able to see how well gender alone can predict wellbeing. In most research men and women have different levels of mental well-being and degrees of depression, so it is reasonable to expect that M1 can predict wellbeing to some degree. None the less, this simple model should not predict wellbeing better than the following models in which the dimensions of perfectionism are included. In line with H&F's theory, the model fit should be better when gender is replaced by the perfectionism dimensions as in the H1 model:

H1: Wellbeing ~ Self Oriented P. + Other Oriented P. + Socially Prescribed P.

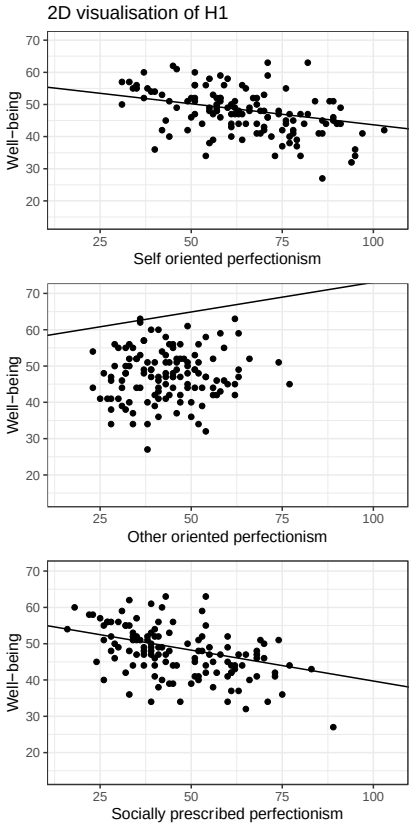

Figure 7 - 2D visualisation of H1 model

The H1-model is significantly better at predicting the data when compared to M1. However, when adding gender to H1 we find the best fitting model:

M2: Wellbeing ~ Self Oriented P. + Other Oriented P. + Socially Prescribed P. + gender

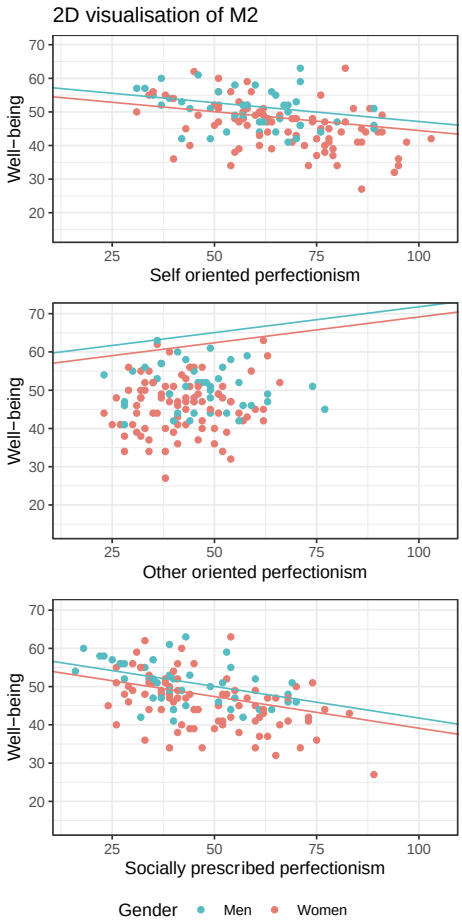

Figure 8 - 2D visualisation of M2

M2 implies that the difference in wellbeing in gender is independent of perfectionism, as can be seen by the parallel lines in figure 8. That M2 is the best model, is in line with H&F's theory as it indicates that perfectionism affects men and women in the same manner.

However, one could suspect that perfectionism and gender interacted in some way, and including this interaction to all dimensions of perfectionism produces the following model:

M3: Wellbeing ~ Self Oriented P. * gender + Other Oriented P. * gender + Socially Prescribed P.* gender + gender

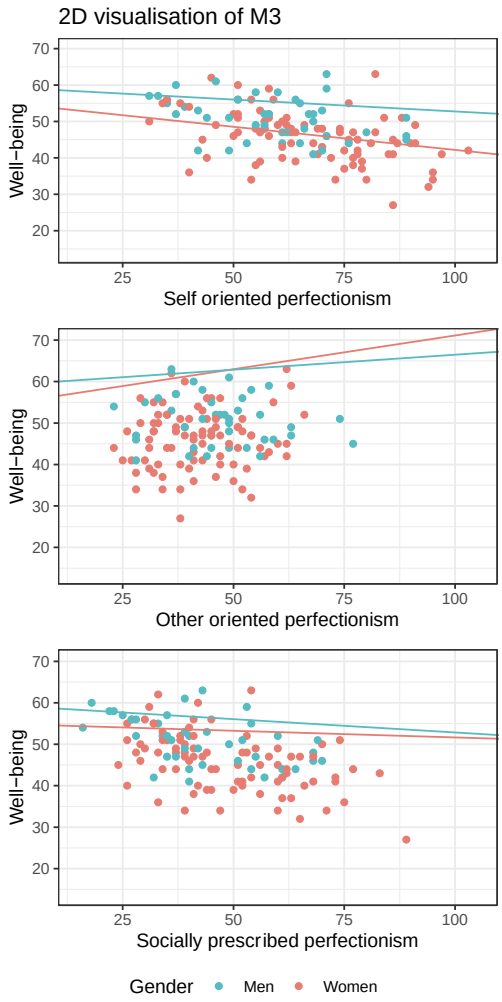

Figure 9 - 2D visualisation of M3

Model 3 assumes that the genders are affected differently by perfectionism. As mentioned in the 'perfectionism and gender' section of this paper, no interaction has been found between gender and perfectionism within H&F's framework, but in the broader field of perfectionism, it has been reported that perfectionism sometimes influence genders differently. Thus, we deemed it relevant to include this model in the exploratory analysis. This could point to whether H&F's findings on gender persists, or whether a model with interaction between gender and the dimensions proves to be a better fit to our data.

However, in line with H&F's theory, our model comparisons reveal that M3 is not a significantly better fit to the data than M2.

To sum up our simple exploratory analysis: Adding gender as an additional predictor improves H1 whereas adding interactions between gender and perfectionism does not improve H1.

This suggests that H&F's perfectionism is independent of gender. The reason for the difference in the intercept, found when adding gender to H1, and the general difference in mental well-being between genders, is beyond the scope of this paper. To conclude, the result of our small exploratory analysis is in line with H&F's theory.

General discussion

Our results in the face of theory and literature (KNV)

Though the representativeness of our sample and thus our results can be questioned, our findings align with existing literature. We have attempted to broaden the understanding of how perfectionism affects individuals as our results are preliminary proof that increased perfectionism correlates with decreased general mental well-being, and not solely with mental illnesses. The link between mental illness and perfectionism has been thoroughly investigated, but to our knowledge no one has investigated whether high perfectionism is associated with general mental well-being. Though the ecological validity of our study can be questioned, we believe that the results of our investigation provide an additional layer to the understanding of the pervasiveness of perfectionism.

Though H&F are against the notion that perfectionism can be *healthy*, our data and results could be interpreted as an indication of a more nuanced picture. If one looks at the spread of data e.g., on figure 7, it can be observed that a considerable number of participants report high levels of perfectionism as well as having high levels of mental well-being. In a strict H&F-framework it would have been expected that *all* people with a very high score in self-oriented and socially prescribed perfectionism would report low mental well-being – though that is not the case in our data. Our research could thus be interpreted in favour of the notion that perfectionism can be *either* healthy *or* unhealthy and would support the ideas of e.g., Stoeber & Otto (2006), and of Frost (1990).

Global tendencies in mental well-being and mental illness (AEH)

Though the focus of it this paper is on perfectionism and well-being amongst the Danish youth it is interesting that trends of decline in mental well-being like those seen in Denmark are reported in many other western countries.

In New Zealand it has been reported that the mental well-being amongst the 13 to 17-year-olds decreased between 2007 and 2012 (Fleming et al., 2014). Self-reported good mental well-being decreased significantly from 78.5% to 76.2% between 2007 and 2012, and the percentage of adolescents with symptoms of depression increased from 10.6% to 12.8% in the same period.

In Sweden, the report *Folkhälsens utvikling Årsrapport 2019* (Folkhälsomyndigheten, 2019) shows that there was a small increase in self-reported low mental well-being between 2006 and 2018 across all ages and genders. However, amongst the 16 to 29-year-olds the increase is considerable – especially among young women.

In the U.S., the National Survey of Drug Use and Health (Bose, 2017) made a nationally representative survey of adolescents and adults' mental well-being and illnesses. While weak or insignificant increases were reported for adults aged 26 and over, suicide rates, psychological distress, and depression increased amongst adolescents and young adults. Twenge et al. (2019) evaluated the data and reported that increases in mental illness and decreases in well-being were primarily explained by birth cohort, and went on to hypothesize that the rise of electronic communication, digital media, and sleep deprivation could be important factors. Trends in mental well-being and mental illness similar to the ones mentioned above have been reported for a multitude of countries in the western world (e.g., Australia (Goldney et al., 2010), Canada (Comeau et al., 2019), Finland (Markkula et al., 2015), etc.).

It seems that a sad tendency is on the rise among the adolescents and young adults of the western world and while Twenge et al. (2019) points to technology as part of the origin of this development, Curran & Hill (2019) points to perfectionism. Though the ecological validity of our study is limited, our results add weight to the idea that perfectionism could play a role in the decline in mental well-being.

Though it is difficult to determine, it is tempting to suggest that the rise of poor mental well-being and increases of mental illness in much of the western world might have a global common cause. According to H&F's theory, individuals become perfectionistic as a reaction to inferiority-complexes and feelings of not mattering to other people and striving for perfection is an attempt to compensate for these feelings. H&F subscribe to the idea that these feelings of inferiority could be sparked by the bombardment of cultural images picturing the ideal life (Hewitt et al., 2017). An obvious target could thus be the increased usage of smartphones and social media in the western world. Some researchers have found correlations between social media usage and perfectionism though it is not a thoroughly studied area (e.g., Harren et al., 2021; Padoa et al., 2018). A common critique of social media is that it portrays 'perfect' but 'unreal' images of users' lives. An Instagram post might communicate pictures from a friend's *perfect* party, portray someone's *perfect* avocado-toast or be the selfie of a friend's *perfect* buttocks. Images of perfection can be found everywhere on social media and could

very well be translated to a 'bombardment of images of the ideal life'. Furthermore social media usage might correlate with decreased mental well-being, though there are a myriad of conflicting results on the topic, and the picture of the correlation remains unclear still (e.g., Berryman et al., 2018; Braghieri et al., 2022; O'Keeffe et al., 2011).

It would be unwise to jump to the conclusion that social media is the culprit but attempting to identify the causes of the mental health crisis amongst the youth is critical for societies and individuals suffering from poor mental health. This becomes increasingly important as poor mental health can have grave negative consequences on individual's lives and be of cost to society as a whole (Chida & Steptoe, 2008; Santini et al., 2021).

Qualitative observations of Perfection and Mental health in Denmark (KNV)

A striking part of the 2022-report from Børns Vilkår is that many of the children interviewed in the report talk about problems relating to perfection. They state that they feel sad because of their lack of perfect bodies, perfect moods, perfect grades, etc.. The researchers point to this trend being especially prevalent amongst the girls, who put high emphasis on perfect appearance. A similar trend was noticed in the 2020-report from Børns Vilkår, in which 10% of the interviewed children reported "not feeling good enough or perfect enough." It was also reported that a large minority of children experience pressure from schools' cultures of perfection and performance (Børns Vilkår, 2020). A similar trend was noticed in an article by Sørensen & Nielsen (2015) who interviewed 33 15 to 24-year-olds. They found that many of the interviewees referred to the pressure of perfection as having an enormous effect on their choices in life and their mental well-being. They also noticed that many of the young people referred to 'perfection' as being 'normal'. Sørensen & Nielsen coined this *the perfect normality*, which refers to the phenomenon that some young people have an experience of being imperfect in a world in which they perceive everyone else as perfect. A similar theme is seen in Hjortkjær's book *Utilstrækkelig* (2020). As a højskole-teacher[2], Hjortskjær reports meeting more and more students who perceive the *ideal life* as the only life worth pursuing. His diagnosis of Danish society is that the individualistic idea of 'ever-increasing-performance-optimization' has created a culture in which people are encouraged to always pursue perfection – a task doomed for failure in his, as well as H&F's, perspective.

[2] https://en.wikipedia.org/wiki/Folk_high_school

Some of these perspectives are quite similar to the idea of *maximization* and *satisficing* (Parker et al., 2007; Schwartz et al., 2002). Within this framework, individuals either pursue to *satisfy* their needs by attaining the 'good enough' result or attempt to *maximize* their needs by trying to attain the 'best possible' result. The argument within this framework is that too much choice is not necessarily a service to the mental well-being of humans as we are (falsely) led to believe that *the perfect* result is out there somewhere. Striving for maximization is, just as striving for perfection, a task which will end in dissatisfaction. That there also is a positive correlation between maximization and self-oriented perfectionism (Schwartz et al., 2002) further highlights the interplay of these two psychological phenomena. The importance of making *the right choice* and its influence on mental wellbeing is also pointed out by Sørensen & Nielsen (2015) who note that many interviewees find the dizzying number of possibilities in life paralysing.

Implications of findings (AEH)

It is has been documented that mental well-being correlates with longevity (Chida & Steptoe, 2008) as well as with low mental illness (Santini et al., 2022). It is also shown that it is cheaper for society to have a population with high mental well-being (Santini et al., 2021) and it thus seems sensible that societies should promote good mental well-being amongst its citizens. Furthermore, if perfectionism truly correlates with mental well-being it could be considered sensible to promote non-perfectionistic values in societies to improve general mental well-being.

As previously discussed, perfectionistic tendencies in Danish culture are being addressed from many angles by many researchers and critics. While some aspects of this tendency may be seen as natural cultural developments, some critics argue that certain laws have contributed to the rise in perfectionism.

One of the policies that has been especially criticised is the change in the Danish grading system from 2006. Between 1963 and 2006 the '13-scale' was used in Denmark, which was changed in 2006 to the '7-point scale'. The change to the 7-point scale was implemented for several reasons, one being that teachers should be able to evaluate students equally across subjects and follow the same guidelines nationally. The grades on the 7-point scale were created to represent how well students lived up to subject requirements, i.e., a grade of 12 represents that the student fulfils all requirements of a subject and 7 represents that the student fulfil some but not all requirements of a subject etc. (Karakterkommisionen, 2004). This aspect has been criticised in a recent report by Danmarks Evaluerings Institut (EVA) (EVA, 2019) who critique the meaningfulness of evaluating students'

skills solely based upon their *lack* of knowledge. They found that many teachers grade by using 12 as a starting point and then precede to deduct grades based upon the number of mistakes students make. EVA posits that many students have understood this system of grading and have become very focused on not making mistakes rather than acquiring new knowledge and develop their skill. After EVA's report was published, Danish politicians talked about changing the grading scale into one in which students were not evaluated on the basis of mistakes and they explicitly stated that part of their focus was to inhibit a perfectionistic culture (Christensen & Jensen, 2019). However, this change is yet to be seen.

Other Danish policies have however been changed in the past years, with the explicit goal of fighting perfectionism. In 2009 the "grading-bonus"-law was implemented, making it possible for high-school students to multiply their grade average by 1.08 if they started university within two years after finishing high school. This law was created to give students more incentive to proceed through the educational system faster. However, this law was also heavily criticised for encouraging performance culture and was removed in 2020 with explicit motivation of "fighting a culture of perfectionism" (Uddannelses- og Forskningsministeriet, 2020a). A similar story can be told for the "education-ceiling"-law passed in 2017, which disallowed students to enrol in a new bachelors-degree if they had already finished another bachelor. This law was also removed in 2020 to: "fight students fear of making the wrong choice of education" (Uddannelses- og Forskningsministeriet, 2020b). Seeing that it is primarily young people who suffer from decreased mental well-being, we believe that changing elements of the educational system is a reasonable place to start improving mental well-being and fight perfectionism.

Perfectionistic culture is most probably cultivated by numerous underlying factors which can neither be directly assessed or changed, but some things we can change. Perhaps the rise in perfectionism can be halted by critically reviewing the cultural implications of new laws and critically assessing existing laws that might encourage perfectionism. Presumably, no politicians draft laws with the direct agenda of cultivating perfectionism but given that it is being more and more recognized as a negative trend, we believe that the perfectionistic culture should be taken into consideration by lawmakers.

Conclusion

This study confirmed the hypothesis that perfectionism as measured by the HF-MPS significantly affects mental wellbeing as measured with the WEMWBS. The findings that self-oriented and socially prescribed perfectionism correlates negatively with mental well-being, provide further weight to the notion that increases in perfectionistic culture might account for some of the negative developments in mental wellbeing observed in Denmark. We believe it is an important finding that perfectionism correlates with decreased mental well-being and not solely with increased mental illness. Despite of a relatively small sample size, the results of this study support this conclusion. To solidify these results, further research with more robust methods and a larger and more population-representative sample is called for.

Literature

GitHub for the current paper, containing the full dataset, workflow of cleaning process, analysis, and visualizations is available at:

https://github.com/AddiH/bachelor_public

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Dictionary

H&F	Hewitt and Flett
HF-MPS	Hewitt & Flett Multidimensional Perfectionism Scale
F-MPS	Frost Multidimensional Perfectionism Scale
DCM	Dual Continuum Model
DNS	Den Nationale Sundhedsprofil

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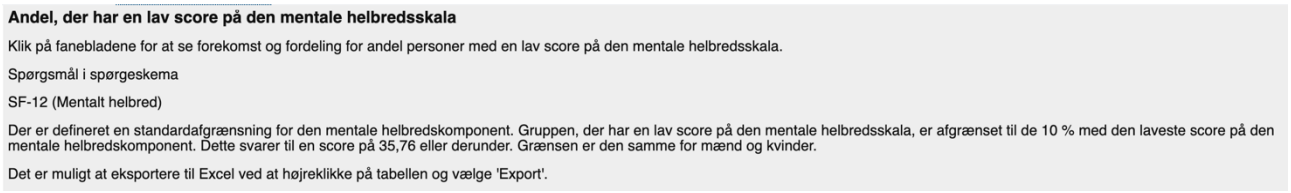
Appendix

Den Nationale Sundhedhedsprofil

This paper utilizes DNS data, accessible at danskernessundhed.dk. The measures utilized are listed below, accompanied by explanations of their methodology.

Low MCS-12 scores



Andel, der har en lav score på den mentale helbredsskala

Klik på fanebladene for at se forekomst og fordeling for andel personer med en lav score på den mentale helbredsskala.

Spørgsmål i spørgeskema

SF-12 (Mentalt helbred)

Der er defineret en standardafgrænsning for den mentale helbredskomponent. Gruppen, der har en lav score på den mentale helbredsskala, er afgrænset til de 10 % med den laveste score på den mentale helbredskomponent. Dette svarer til en score på 35,76 eller derunder. Grænsen er den samme for mænd og kvinder.

Det er muligt at eksportere til Excel ved at højreklikke på tabellen og vælge 'Export'.

Feeling nervous or stressed

Andel der ofte føler sig nervøs eller stresset

Klik på fanebladene for at se forekomst og fordeling for personer der ofte føler sig nervøs eller stresset.

Spørgsmål i spørgeskema

Spørgsmålene drejer sig om din oplevelse af belastende eller stressende situationer inden for den seneste måned: Hvor ofte har du følt dig nervøs eller stresset?

•Aldrig
•Næsten aldrig
•En gang imellem
•**Ofte**
•**Meget ofte**

Feeling anxious, nervous, and uneasy

Andel med ængstelse, nervøsitet, uro og angst

Klik på fanebladene for at se forekomst og fordeling for andelen der har været generet af ængstelse, nervøsitet, uro og angst inden for de seneste 14 dage.

Spørgsmål i spørgeskema

Har du inden for de seneste 14 dage været generet af nogle af de her nævnte former for smerter og ubehag? Var du meget eller lidt generet af det?

Ængstelse, nervøsitet, uro og angst

•**Ja, meget generet**
•**Ja, lidt generet**
•Nej

Det er muligt at eksportere til Excel ved at højreklikke på tabellen og vælge 'Export'.

Feeling depressed, unhappy, and sad

Andel med nedtrykthed

Klik på fanebladene for at se forekomst og fordeling for andelen der har været generet af nedtrykthed, været deprimeret eller ulykkelig inden for de seneste 14 dage.

Spørgsmål i spørgeskema

Har du inden for de seneste 14 dage været generet af nogle af de her nævnte former for smerter og ubehag? Var du meget eller lidt generet af det?

Nedtrykthed, deprimeret, ulykkelig

•**Ja, meget generet**
•**Ja, lidt generet**
•Nej

Det er muligt at eksportere til Excel ved at højreklikke på tabellen og vælge 'Export'.

Depression

Andel der har depression

Klik på fanebladene for at se forekomst og fordeling for andelen der har depression.

Spørgsmål i spørgeskema

For hver af de følgende sygdomme og helbredsproblemer bedes du angive, om du har den nu eller har haft den tidligere. Hvis du har haft den tidligere, bedes du angive, om du har eftervirkninger.

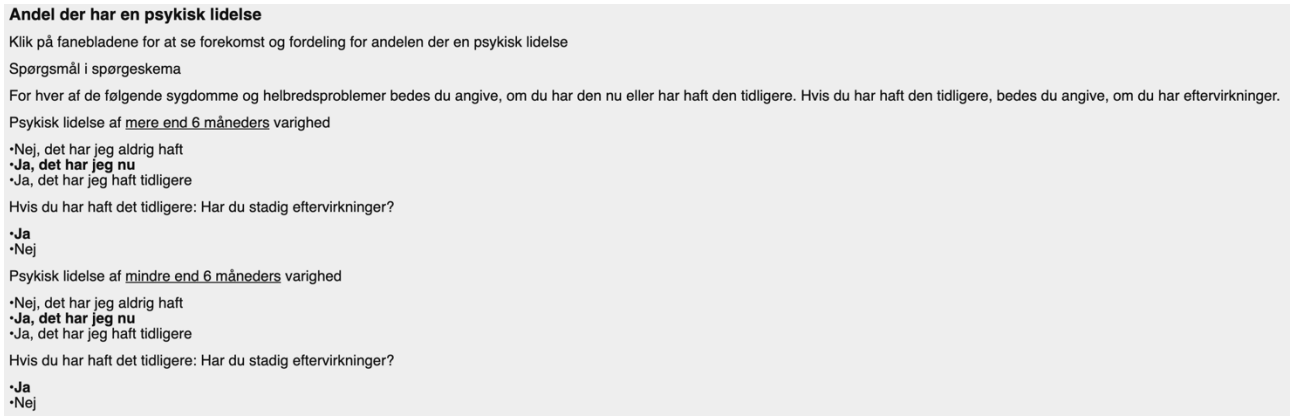
Depression

•Nej, det har jeg aldrig haft
•**Ja, det har jeg nu**
•Ja, det har jeg haft tidligere

Hvis du har haft det tidligere: Har du stadig eftervirkninger?

•**Ja**
•Nej

Mental illness



Andel der har en psykisk lidelse

Klik på fanebladene for at se forekomst og fordeling for andelen der en psykisk lidelse

Spørgsmål i spørgeskema

For hver af de følgende sygdomme og helbredsproblemer bedes du angive, om du har den nu eller har haft den tidligere. Hvis du har haft den tidligere, bedes du angive, om du har eftervirkninger.

Psykisk lidelse af mere end 6 måneders varighed

•Nej, det har jeg aldrig haft
•Ja, det har jeg nu
•Ja, det har jeg haft tidligere

Hvis du har haft det tidligere: Har du stadig eftervirkninger?

•Ja
•Nej

Psykisk lidelse af mindre end 6 måneders varighed

•Nej, det har jeg aldrig haft
•Ja, det har jeg nu
•Ja, det har jeg haft tidligere

Hvis du har haft det tidligere: Har du stadig eftervirkninger?

•Ja
•Nej

Questionnaires

WEMWBS

The 14 questions on the WEMWBS are listed below. The 7 questions that make up the SWEMWBS are written in bold.

a) Jeg har følt mig optimistisk i forhold til fremtiden

b) Jeg har følt mig nyttig

c) Jeg har følt mig afslappet

d) Jeg har været interesseret i andre mennesker

e) Jeg har haft overskud af energi

f) Jeg har klaret problemer godt

g) Jeg har tænkt klart

h) Jeg har haft det godt med mig selv

i) Jeg har følt mig tæt på andre mennesker

j) Jeg har følt mig selvsikker

k) Jeg har været i stand til at danne min egen mening om ting

l) Jeg har følt mig elsket

m) Jeg har været interesseret i nye ting

n) Jeg har følt mig fornøjet

Svarkategorier: 'På intet tidspunkt' [1], 'Sjældent' [2], 'Noget af tiden' [3], 'Ofte' [4], 'Hele tiden' [5].

Perfectionism scale

	Hewitt and Flett's multidimensional scale	**Translated scale**
1	When I am working on something, I cannot relax until it is perfect	Når jeg arbejder på noget, kan jeg ikke slappe af, før det er perfekt
2	I am not likely to criticize someone for giving up too easily	For det meste kritiserer jeg ikke andre for at give op for hurtigt
3	It is not important that the people I am close to are successful	Det er ikke vigtigt for mig, at de mennesker, jeg er tæt på, er succesfulde
4	I seldom criticize my friends for accepting second best	Jeg kritiserer sjældent mine venner for at acceptere det næstbedste
5	I find it difficult to meet others' expectations of me	Jeg synes, det er svært at leve op til andres forventninger til mig
6	One of my goals is to be perfect in everything I do	Et af mine mål er at være perfekt i alt, hvad jeg laver
7	Everything that others do must be of top-notch quality	Alt, som andre foretager sig, skal være af højeste kvalitet
8	I never aim for perfection in my work	Jeg stræber aldrig efter perfektion i mit arbejde
9	Those around me readily accept that I can make mistakes too	Folk omkring mig har nemt ved at acceptere at jeg også kan begå fejl
10	It doesn't matter when someone close to me does not do their absolute best	Jeg er ligeglad med, når folk omkring mig ikke gør deres absolut bedste
11	The better I do, the better I am expected to do	Når jeg klarer mig godt, forventer andre mere af mig
12	I seldom feel the need to be perfect	Det er sjældent, at jeg føler et behov for at være perfekt
13	Anything I do that is less than excellent will be seen as poor work by those around me	Hvis jeg foretager mig noget som er mindre end perfekt, vil det blive set som et dårligt stykke arbejde af dem omkring mig

14	I strive to be as perfect as I can be	Jeg stræber efter at være så perfekt, som jeg kan være
15	It is very important that I am perfect in everything I attempt	Det er vigtigt for mig, at jeg er perfekt når jeg kaster mig ud i noget nyt
16	I have high expectations for the people who are important to me	Jeg har høje forventninger til folk, som er vigtige for mig
17	I strive to be the best at everything I do	Jeg stræber efter at være den bedste i alt hvad jeg foretager mig
18	The people around me expect me to succeed at everything I do	Folk omkring mig forventer at jeg er succesfuld i alt hvad jeg foretager mig
19	I do not have very high expectations for those around me	Jeg har ikke meget høje forventninger til folk omkring mig
20	I demand nothing less than perfection from myself	Jeg kræver intet mindre end perfektion af mig selv
21	Others will like me even if I don't excel at everything	Andre vil godt kunne lide mig, selvom jeg ikke er fantastisk til alting
22	I can't be bothered with people who won't strive to better themselves	Jeg gider ikke mennesker, som ikke stræber efter at forbedre sig selv
23	It makes me uneasy to see an error in my work	Jeg bryder mig ikke om at se fejl i mit arbejde
24	I do not expect a lot from my friends	Jeg forventer ikke særlig meget af mine venner
25	Success means that I work even harder to please others	Succes betyder, at jeg arbejder endnu hårdere for at tilfredsstille andre
26	If I ask someone to do something, I expect it to be done flawlessly	Hvis jeg beder nogen om at gøre noget, forventer jeg, at det bliver gjort fejlfrit
27	I cannot stand to see people close to me make mistakes	Jeg kan ikke udstå at se folk tæt på mig begå fejl
28	I am perfectionistic in setting my goals	Jeg er perfektionistisk, når jeg sætter mål for mig selv
29	The people who matter to me should never let me down	Folk, som betyder noget for mig, bør aldrig skuffe mig

30	Others think I am okay, even when I do not succeed	Andre synes, at jeg er okay, selv hvis jeg fejler
31	I feel that people are too demanding of me	Jeg føler, at andre forventer for meget af mig
32	I must work to my full potential at all times	Jeg skal altid udnytte mit fulde potentiale, når jeg arbejder
33	Although they may not show it, other people get very upset with me when I slip up	Selvom de ikke viser det, bliver andre folk meget skuffede over mig, når jeg fejler
34	I do not have to be the best at whatever I am doing	Jeg behøver ikke at være den bedste til alt, jeg foretager mig
35	My family expects me to be perfect	Min familie forventer, at jeg er perfekt
36	I do not have very high goals for myself	Jeg har ikke særlig høje mål for mig selv
37	My parents rarely expected me to excel in all aspects of my life	Mine forældre forventer sjældent, at jeg udmærker mig i alle aspekter af livet
38	I respect people who are average	Jeg respekterer mennesker, som er gennemsnitlige
39	People expect nothing less than perfection from me	Andre forventer intet mindre end perfektion fra mig
40	I set very high standards for myself	Jeg har meget høje standarder for mig selv
41	People expect more from me than I am capable of giving	Andre forventer mere af mig, end jeg er i stand til at give
42	I must always be successful at school or work	Jeg skal altid være succesfuld i skolen eller på arbejde
43	It does not matter to me when a close friend does not try their hardest	Jeg bekymrer mig ikke om, at en tæt ven ikke gør deres ypperste
44	People around me think I am still competent even if I make a mistake	Folk omkring mig synes stadig, at jeg er kompetent, selvom jeg begår fejl
45	I seldom expect others to excel at whatever they do	Det er sjældent, at jeg forventer, at andre klarer sig fantastisk i hvad end de gør

Model parameters

H1

```
Call:
lm(formula = wb ~ self_oriented + other_oriented + socially_prescribed,
    data = df)

Residuals:
     Min       1Q   Median       3Q      Max
-16.5883  -3.2212   0.3931   3.3110  16.9791

Coefficients:
                  Estimate Std. Error t value Pr(>|t|)
(Intercept)       56.73551    2.63163  21.559  < 2e-16 ***
self_oriented     -0.13059    0.04085  -3.197 0.001770 **
other_oriented     0.16330    0.04949   3.300 0.001270 **
socially_prescribed -0.17026    0.04348  -3.916 0.000149 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 5.763 on 122 degrees of freedom
Multiple R-squared:  0.3448,    Adjusted R-squared:  0.3287
F-statistic:  21.4 on 3 and 122 DF,  p-value: 3.318e-11
```

M1

```
Call:
lm(formula = wb ~ gender, data = df)

Residuals:
     Min       1Q   Median       3Q      Max
-18.9286  -4.9286   0.6667   4.2619  17.0714

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   45.929      0.729  63.001  < 2e-16 ***
genderMand     4.809      1.263   3.809 0.000218 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 6.682 on 124 degrees of freedom
Multiple R-squared:  0.1047,    Adjusted R-squared:  0.09753
F-statistic: 14.51 on 1 and 124 DF,  p-value: 0.0002184
```

M2

```
Call:
lm(formula = wb ~ self_oriented + other_oriented + socially_prescribed +
    gender, data = df)

Residuals:
     Min       1Q   Median       3Q      Max
-15.2546  -3.2700   0.2353   3.1485  17.0879

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)         55.66121    2.62315  21.219  < 2e-16 ***
self_oriented       -0.11194    0.04087  -2.739 0.007102 **
other_oriented       0.13480    0.05006   2.693 0.008088 **
socially_prescribed -0.16533    0.04273  -3.869 0.000178 ***
genderMand           2.66523    1.12738   2.364 0.019666 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 5.657 on 121 degrees of freedom
Multiple R-squared:  0.3738,    Adjusted R-squared:  0.353
F-statistic: 18.05 on 4 and 121 DF,  p-value: 1.192e-11
```

M3

```
Call:
lm(formula = wb ~ self_oriented * gender + socially_prescribed *
    gender + other_oriented * gender + gender, data = df)

Residuals:
     Min       1Q   Median       3Q      Max
-15.4178  -3.4388   0.5568   2.9219  16.6983

Coefficients:
                                Estimate Std. Error t value Pr(>|t|)
(Intercept)                     54.85551    3.39668  16.150  < 2e-16 ***
self_oriented                   -0.12701    0.04953  -2.565  0.01159 *
genderMand                       4.40890    5.30841   0.831  0.40791
socially_prescribed             -0.15208    0.05323  -2.857  0.00506 **
other_oriented                   0.16247    0.06295   2.581  0.01108 *
self_oriented:genderMand         0.06160    0.09255   0.666  0.50697
genderMand:socially_prescribed -0.03215    0.09119  -0.353  0.72507
genderMand:other_oriented      -0.09015    0.11126  -0.810  0.41941
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 5.707 on 118 degrees of freedom
Multiple R-squared:  0.3785,    Adjusted R-squared:  0.3416
F-statistic: 10.27 on 7 and 118 DF,  p-value: 5.314e-10
```