Unmet need for mental healthcare among men in Sweden

Gendered pathways to care

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Abstract

Aim: Depression and anxiety disorders have a lifetime prevalence of about 10% among men in high-income countries but many do not seek and receive the care that they need. The aim of this thesis was to explore gendered pathways to care focusing on unmet need for mental healthcare among men in Sweden at three steps: 1) not perceiving a need for mental healthcare despite symptoms indicating a clinical need for care, 2) refraining from seeking mental healthcare when perceiving a need for it, 3) perceiving care as insufficient when seeking it.
Methods: Unmet need for mental healthcare, at any time in life, was investigated using cross-sectional and longitudinal questionnaire data from population-based samples (n=3987, n=1240, n=1563). Thoughts on sick leave for depression were investigated using a vignette study in a self-recruited sample (n=3147). Bivariate and multivariable regression analyses were conducted to investigate group differences.
Results: Men were more likely than women to 1) not perceive a need for mental healthcare despite symptoms indicating a clinical need for care, 2) refrain from seeking care, and 3) perceive the care as insufficient. Those with secondary education were more likely than those with university education to refrain from seeking care. Men who had refrained from seeking care, or perceived the care as insufficient, had poorer mental well-being than men who had not, but the difference did not persist after one year. Men with low mental health literacy were most likely to not perceive a need for mental healthcare, and refrain from seeking care, followed by both men with high mental health literacy and women with low mental health literacy. Least likely were women with high mental health literacy (reference). The vignette study showed that men were more likely than women to think that sick leave for a person with symptoms of depression was not reasonable, and the gender difference was partly explained by more stigmatizing attitudes towards depression among men.
Conclusion: The results indicate that men have a higher risk of unmet need for mental healthcare at multiple steps on the pathway to care. Men with low mental health literacy and secondary education seem particularly vulnerable. This indicates that pathways to mental healthcare are gendered, i.e., impacted by gendered structures related to masculinities, and that some groups of men face greater barriers at these pathways. The healthcare system should review how its design and communication can contribute to mitigate these gendered inequalities. There is especially a need for outreach strategies considering that not perceiving a need for mental healthcare seems to be a major barrier.

Keywords: Unmet need, Barriers to care, Mental health services, Common mental disorder, Depression, Mental health literacy, Stigma, Gender, Masculinity

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Sammanfattning på svenska

Bakgrund: Många män i Sverige har någon gång i livet depression och ångestsjukdom, men möter barriärer till hälso- och sjukvården. Dessa kan uppstå på tre olika steg: 1) man upplever inte behov av vård trots symtom, 2) man söker inte trots upplevt behov, och 3) tycker inte att man fått den vård man behöver när man sökt. Det saknas dock forskning som undersöker om män i högre grad möter barriärer än kvinnor på alla dessa tre steg och om det är skillnader mellan grupper av män.
Metod: Enkätdata från befolkningsbaserade urval av vuxna i Sverige användes. Tre tvärsnittsstudier undersökte skillnader mellan män och kvinnor och inom grupperna män och kvinnor år 2008, 2019, och 2014 (n=3987, n=1563, n=3147). En longitudinell studie undersökte skillnader mellan män, år 2008 och 2009 (n=1240). Barriärer till vård mättes genom självrapporterade enkätdata om upplevt behov någon gång i livet, vårdsökande, och om man fått den vård man behövde när man sökt. Åsikter om sjukskrivning vid depression mättes genom en vinjett som beskrev en person med symtom på depression, följt av en fråga om huruvida personen borde bli sjukskriven.
Resultat: Män hade högre sannolikhet än kvinnor att möta barriärer på flera steg på vägen till vård. Män upplevde i lägre grad behov av vård trots symtom som tydde på depression eller ångestsjukdom. Detta gällde speciellt män med låg psykisk hälsolitteracitet. Män sökte också i lägre grad vård trots upplevt behov. Detta gällde speciellt män med gymnasieutbildning jämfört med universitetsutbildning, och män med låg psykisk hälsolitteracitet. Män tyckte också i lägre grad att de fått den vård de behövde när de sökt vård, jämfört med kvinnor. De män som inte sökt vård, eller tyckte att de inte fått den vård de behövde, hade sämre psykiskt välbefinnande jämfört med männen som sökt, och fått den vård de behövde. Skillnaden kvarstod dock inte efter ett år. Män var också mer skeptiska till sjukskrivning för en person med symtom på depression, vilket delvis förklarades av att män hade högre nivåer av stigmatiserande attityder gentemot depression än kvinnor.
Slutsatser: Resultatet visar en genomgående könsskillnad där män i högre grad än kvinnor möter barriärer på alla tre steg, men också skillnader mellan grupper av män. Män med gymnasieutbildning och män med låg psykisk hälsolitteracitet verkar särskilt sårbara. Hälso- och sjukvården bör utreda hur vården kan bidra till att minska dessa ojämlikheter. Att många inte upplever behov av vård, trots att de har symtom, indikerar att vården bör arbeta uppsökande och förtroendeskapande. Det behövs också kunskap om hur barriärer till vård samverkar med maskulinitetsnormer, hos individen, i hälso- och sjukvården, och i samhället i stort.

List of papers

This thesis is based on the following studies, referred to in the text by their Roman numerals.

I. Olsson S.*, Hensing G., Burström B., & Löve J.
Unmet need for mental healthcare in a population sample in Sweden: a cross-sectional study of inequalities based on gender, education, and country of birth. Community Mental Health Journal. 2020:1-12.

II. Olsson S.*, Burström B., Hensing G., & Löve J.
Poorer mental well-being and prior unmet need for mental healthcare: a longitudinal population-based study on men in Sweden. Archives of Public Health. 2021; 79 (1):1-13.

III. Blom S., Lindh F., Lundin A., Burström B., Hensing G., & Löve J.
The role of gender and low mental health literacy for unmet need for mental healthcare: a cross-sectional population-based study in Sweden. *Manuscript*.

IV. Hensing G., Blom S., Björkman I., Bertilsson M., Martinsson J., Wängnerud L., & Löve J.
Differences in how women and men in a Swedish general population sample think about sick leave: a cross-sectional vignette study. *Manuscript*.

*Later known as Blom S.

Content

Abbreviations

B	Beta coefficient
CI	Confidence interval
DSS	The Depression Stigma Scale
GHQ-12	The 12-item version of the General Health Questionnaire
HAP	The Health Assets Project
MAKS	The Mental Health Knowledge Schedule
MHL	Mental health literacy
OR	Odds ratio
T1	Time 1, year 2008
T2	Time 2, year 2009
WHO-10	The World Health Organization (Ten) Mental Well-being Index

Definitions in short

Unmet need for mental healthcare	In this thesis, unmet need for mental healthcare was defined as not receiving the care one needs, either from a clinical perspective based on having symptoms indicating a clinical need for mental healthcare, or based on individuals' perceptions of their need for mental healthcare.
Mental healthcare	Mental healthcare refers to healthcare for mental disorders and mental health problems, both within the tax-funded and privately funded primary- and specialized healthcare in Sweden.

1 Introduction

1.1 Short background

Common mental disorders as depression and anxiety disorders are estimated to have a lifetime prevalence of around 10% among adult men of working-age globally (Steel et al., 2014). These disorders are often longstanding and recurrent with a negative impact on individuals' function, productivity, and mental well-being (Craske and Stein, 2016; Malhi and Mann, 2018; Whiteford et al., 2013).

Evidence shows that treatment as psychotherapy and pharmacotherapy is effective, even for those with mild to moderate conditions (Craske and Stein, 2016; Malhi and Mann, 2018). Yet, a large proportion does not seek mental healthcare, even in a country like Sweden with a universal healthcare system providing primary- and specialized mental healthcare at low patient fees (Burström, 2019; Wallerblad et al., 2012).

Not seeking mental healthcare despite symptoms of a common mental disorder is more common among men than women in Sweden and other high-income countries (Alonso et al., 2004a; Mackenzie et al., 2012; Wallerblad et al., 2012). A suggested explanation for men's reluctance to seek mental healthcare is masculinity norms that encourage men to be self-reliant, strong, and not show weakness (Möller-Leimkühler, 2003; Seidler et al., 2016). It has been suggested that masculinity norms encourage men to deal with depression and anxiety disorders in ways that could be harmful to themselves and others (Courtenay, 2000; Rutz and Rihmer, 2007). For example, masculinity norms have been found to discourage mental healthcare-seeking and reinforce maladaptive coping strategies such as denial of symptoms, social withdrawal, excessive work or exercise, risk-taking behaviours including reckless driving, and substance abuse including alcohol abuse (Seidler et al., 2016).

However, barriers may occur on many steps on the pathway to met need for mental healthcare (Forsell, 2006; Goldberg and Huxley, 2012). Ideally, those with symptoms of a depression or anxiety disorder perceive a need for care, seek it, and then receive the care that they need. However, barriers can occur at all these steps, leading to differences in unmet need for mental healthcare between population groups.

Considering the evidence of men's lower mental healthcare seeking, and the suggested negative impact of masculinity norms on men's management of depression and anxiety disorders (Alonso et al., 2004a; Mackenzie et al., 2012; Seidler et al., 2016; Wallerblad et al., 2012), there are strong reasons to believe that all steps on the pathway to mental healthcare are gendered, i.e., impacted by masculinity norms that produce barriers to care for men (Seidler et al., 2016). This is problematic considering the high prevalence of depression and anxiety disorders among men (Steel et al., 2014), and the benefit of receiving treatment (Craske and Stein, 2016; Malhi and Mann, 2018). However, research from the relatively gender-equal Sweden that investigates the entire pathway to met need for mental healthcare is lacking. There is especially a need for more knowledge about differences between men and women at the separate steps on the pathway to care, and the possible mechanisms involved. There is also a need for research on differences among groups of men, as these are often as important as differences between men and women (Hankivsky, 2012; Seidler et al., 2016).

The aim of this thesis was to explore gendered pathways to care focusing on unmet need for mental healthcare among men in Sweden at three steps: 1) not perceiving a need for mental healthcare despite symptoms indicating a clinical need for care, 2) refraining from seeking mental healthcare when perceiving a need for it, 3) perceiving care as insufficient when seeking mental healthcare.

1.2 Common mental disorders

1.2.1 Epidemiology

Common mental disorders as depression and anxiety disorders contribute to a significant part of the disease burden globally, including in European countries (Whiteford et al., 2013). These disorders are often longstanding, recurrent, and disabling with an onset in adolescence or early adulthood (Craske and Stein, 2016; Malhi and Mann, 2018). Symptoms overlap and include lowered mood, lack of energy, feelings of worthlessness or guilt, increased or decreased sleep, inability to concentrate, panic attacks, and marked fear and anxiety (Craske and Stein, 2016; Malhi and Mann, 2018).

Around 50% of those with depression have a comorbid anxiety disorder and vice versa (Johansson et al., 2013). In addition, depression is often comorbid with physical diseases as arthritis, asthma, diabetes, and cardiovascular disease, and can worsen outcomes of these disorders (Almas et al., 2015; Moussavi et al., 2007; Van der Kooy et al., 2007).

Mental disorders are associated with a range of detrimental outcomes e.g., long-term sick leave (Försäkringskassan, 2020; Lidwall et al., 2018), lower income and poorer educational performance (Linder et al., 2020), labour market marginalisation, and premature death (Löve et al., 2016), e.g., in suicide (Ferrari et al., 2013).

1.2.2 Social inequalities

Common mental disorders and their consequences are unequally distributed based on social position (Lund et al., 2018). A social position is individuals' and groups' position within large social structures that impact access to power and resources, e.g., based on gender, education, and country of birth (Braveman, 2010; Skeggs, 1997).

Depression and anxiety disorder have a higher prevalence among those with lower education, those unemployed, and among some groups of migrants (Fryers et al., 2005; Gilliver et al., 2013). Men are estimated to have a lower prevalence of depression and anxiety disorders compared to women worldwide (Bromet et al., 2011; Steel et al., 2014; Van de Velde et al., 2010). A global meta-analysis of multiple studies estimated that 7% of men of working-age had a mood disorder (e.g., depression) and 10% had an anxiety disorder at any time in life, compared to 14%, and 18% of women (Steel et al., 2014). However, it is suggested that the prevalence among men is underestimated as men may underreport symptoms (Angst et al., 2002), and have more atypical symptoms as irritability and substance abuse which may go undetected (Möller-Leimkühler et al., 2007; Rutz et al., 1997; Seidler et al., 2016). This is indicated by the higher life time prevalence of substance-abuse disorders among men (17% versus 5%) (Steel et al., 2014), and men's higher risk of suicide compared to women (Crump et al., 2014).

1.3 Mental healthcare

1.3.1 The Swedish mental healthcare system

The Swedish Health and Medical Services Act defines healthcare as measures to prevent, diagnose and treat disorders and injuries (Socialdepartementet, 2017). Healthcare in Sweden is universal and publicly funded by taxes, and patient fees are subsidized to minimize financial barriers (Agerholm et al., 2013; Burström, 2019).

The tax-funded mental healthcare in Sweden is provided by primary healthcare, and by specialized psychiatric outpatient and inpatient healthcare

services (Statens Offentliga Utredningar, 2021). Primary healthcare is the first-line psychiatry where the majority of those seeking tax-funded mental healthcare are handled (Socialstyrelsen, 2021). Although the majority of healthcare services are public providers, there has been a large increase in tax-funded private providers (Burström, 2019). Mental healthcare is also provided outside the tax-funded system, by student- and occupational healthcare, and non-subsidized private psychologists and psychotherapists (Statens Offentliga Utredningar, 2021).

The main principle in Swedish healthcare policy is equity and prioritisation according to need (Burström, 2019). The goal for healthcare is good health and healthcare on equal terms for the entire population (Socialdepartementet, 2017). Prioritization should be based on two ethical principles (Sveriges Riksdag, 1996). Firstly, healthcare should be given with respect for all humans' equal value, and not discriminate based on e.g., economic, or social circumstances. Secondly, those with the greatest need for healthcare should be prioritised. This represents two axes of equity: equal access for those with equal need, i.e., horizontal equity, and more resources directed towards those with greater need, i.e., vertical equity (Culyer and Wagstaff, 1993). In addition, the gender-equality policy in Sweden states that women and men "must have the same conditions for good health and be offered care and social services on equal terms" (Government offices of Sweden, 2019, p. 4).

1.3.2 Treatment guidelines in Sweden

There is consistent international evidence of the benefit of receiving treatment for depression and anxiety disorders, even for those with milder conditions (Craske and Stein, 2016; Malhi and Mann, 2018). Evidence-based treatment includes psychotherapy and pharmacotherapy or a combination of both (Craske and Stein, 2016; Malhi and Mann, 2018).

In Sweden, The National Board of Health and Welfare has developed national treatment guidelines for depression and anxiety disorders based on evidence and clinical experience (Socialstyrelsen, 2021). Those seeking care with symptoms of depression and anxiety disorders should get early access to a primary assessment of healthcare-need, and be actively followed up. Those fulfilling criteria for a diagnosis should be assessed for risk for suicide, and be offered evidence based-treatment. The goal for treatment is recovery including full function in everyday life, and to reduce the risk for relapse (Socialstyrelsen, 2021). The recommended treatment differs between diagnoses and severity of symptoms but the most common recommendation is psychotherapy (mainly cognitive behavioral therapy) and antidepressants

(Socialstyrelsen, 2021). Treatment should be initiated at an early stage to avoid worsening of symptoms, and avoidable in-patient care and sick leave. For example, even those with mild symptoms of depression should be offered psychotherapy due to the risk of deterioration of symptoms (Socialstyrelsen, 2021).

1.4 Unmet need for mental healthcare

1.4.1 Definitions of need and unmet need

Need and unmet need for mental healthcare are difficult to define and measure (Andrews and Henderson, 2000). Need for mental healthcare can be defined using clinicians' assessment of need, or based on individuals' perceptions of their need (Rabinowitz et al., 1999).

In psychiatric epidemiology, clinical need for mental healthcare is often operationalized as having symptoms corresponding to a mental disorder (Bebbington et al., 1997; Sareen et al., 2013), with unmet need for mental healthcare being defined as not receiving the care one needs from a clinical perspective (Andrews and Henderson, 2000). Based on the Swedish treatment guidelines for depression and anxiety disorders, clinical need for mental healthcare is not necessarily equal to the need for treatment only, as the first priority is a primary assessment of patients' healthcare need, and active follow-up of symptom development (Socialstyrelsen, 2021).

Need and unmet need for mental healthcare can also be defined using individuals' perceptions, as individuals may know best if they need mental healthcare or not, and if they received the care that they needed (Allin et al., 2010). In this thesis, unmet need for mental healthcare was defined as not receiving the care one needs, either from a clinical perspective based on having symptoms indicating a clinical need for mental healthcare, or based on individuals' perceptions of their need for mental healthcare.

1.4.2 Unmet need on the pathway to care

Unmet need for mental healthcare can occur on multiple steps on the pathway to met need for mental healthcare. This is illustrated in a conceptual model, inspired by research by Goldberg and Huxley (Goldberg and Huxley, 2012) (Figure 1). Ideally, those who have a clinical need for mental healthcare, e.g., have symptoms corresponding to a mental disorder, perceive a need for care, seek it, and then receive the care that they need (Forsell, 2006; Goldberg and Huxley, 2012). However, barriers can occur at multiple steps on this

pathway, leading to unmet need for mental healthcare. Studies from high-income countries show that many do not perceive a need for mental healthcare despite a clinical need for it (Step 1), refrain from seeking it when perceiving a need (Step 2), or do not perceive that they receive the care that they need when seeking it (Step 3) (Codony et al., 2009; Dezetter et al., 2015; Forsell, 2006; Mojtabai, 2009; Mojtabai et al., 2002; Prins et al., 2008).

However, the likelihood to pass the steps on the pathway to met need for mental healthcare is not randomly distributed in populations. Studies from high-income countries indicate inequalities based on social positions relating to access to power and resources such as gender, education, and country of birth (Alonso et al., 2004a; Codony et al., 2009; Kirmayer et al., 2007; Mackenzie et al., 2012; Mojtabai and Olfson, 2006). Inequalities in unmet need for mental healthcare is problematic since it may lead to more severe conditions and consequences among some groups. Interesting is that men seem to be more likely to have unmet need for mental healthcare than women (Alonso et al., 2004a; Mackenzie et al., 2012), despite men's higher access to political and economic power and resources (Courtenay, 2000). However, there is a lack of research on gender differences in unmet need for mental healthcare at multiple steps on the pathway to care in Sweden and the potential differences among groups of men. Below is a summary of research from high-income countries on unmet need at these three steps.

Not perceiving a need for mental healthcare

Not perceiving a need for mental healthcare despite symptoms corresponding to a disorder has been highlighted as a major barrier to mental healthcare (Codony et al., 2009). A systematic review found that 16-51% of those with symptoms corresponding to a depression and anxiety disorder did not perceive a need for mental healthcare in high-income countries (Prins et al., 2008). As expected, perceiving a need is more common among those with more severe mental health conditions, but even many with severe mental health conditions do not perceive a need (Andrade et al., 2014; Codony et al., 2009). A study found that 52% of those having severe symptoms in the past 12 months did not perceive a need for professional treatment, compared to 69% of those with a mild condition (Andrade et al., 2014).

Perceiving a need for mental healthcare is the main predictor for mental healthcare-seeking (Codony et al., 2009). It requires recognising symptoms of a probable disorder or a mental health condition and assessing that mental healthcare is needed (Villatoro et al., 2018). The discrepancy between perceived need and clinical need for mental healthcare can be explained by barriers related to e.g., mental health literacy, stigmatizing attitudes, and

gendered norms (Courtenay, 2000; Mojtabai et al., 2002; Villatoro et al., 2018). Men have been found to be more likely to not perceive a need for mental healthcare, even when having symptoms corresponding to a mental disorder, compared to women (Andrade et al., 2014; Codony et al., 2009; Villatoro et al., 2018). A study also found lower perceived need among those with lower education, and variations based on ethnicity in a US population-based sample (Villatoro et al., 2018).

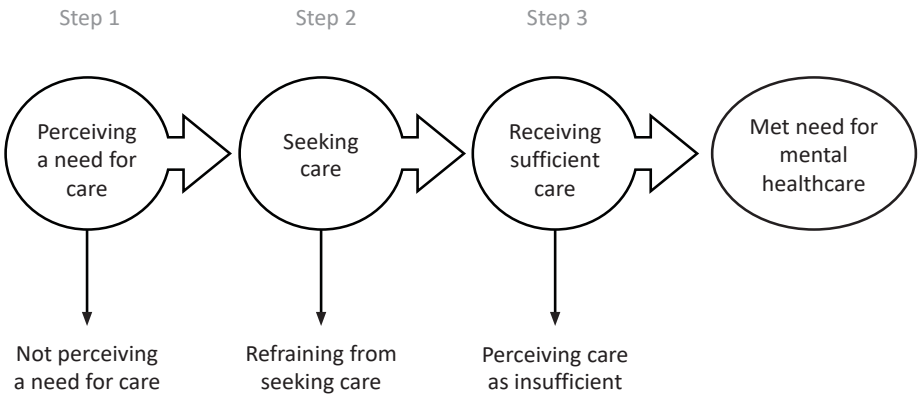

Figure 1. Conceptual model of the pathway to met need for mental healthcare. Unmet need can occur at Steps 1-3.

Refraining from seeking mental healthcare

Among those perceiving a need for mental healthcare, many refrain from seeking it (Forsell, 2006; Mojtabai et al., 2002). In a US population-based sample 41% refrained from seeking mental healthcare among those who perceived a need for mental healthcare and met criteria for a mood-, anxiety- or substance disorder (Mojtabai et al., 2002). In a population-based sample in Sweden, 66% did not request care among those who perceived a need for mental healthcare and had a mental health problem for which treatment was available (Forsell, 2006).

Common reasons for refraining from seeking mental healthcare is a preference for self-management, pessimism of the effectiveness of treatment, low perceived need for treatment, not knowing where to seek care, and stigma (Fassaert et al., 2009; Mojtabai et al., 2011; Prins et al., 2011).

There are inconsistent results regarding the association between refraining from seeking mental healthcare and social position. A US study found no differences based on gender, education, or ethnicity (Mojtabai et al., 2002), but a Swedish study found that men, and persons with lower education, more often refrained from seeking mental healthcare (Forsell, 2006). Another Swedish study found that women, those with a non-Swedish origin, and those with low education, were more likely to refrain from seeking healthcare in general, but did not investigate mental healthcare-seeking specifically (Westin et al., 2004). When investigating mental healthcare-seeking regardless of individuals' perceived need, findings from high-income countries show that men, those with lower education, some groups of immigrants and ethnic minorities, and younger and older adults are less likely to seek mental healthcare (Alonso et al., 2004a; Codony et al., 2009; Kirmayer et al., 2007; Mackenzie et al., 2012; Mojtabai and Olfson, 2006).

There are inconsistent results regarding the role of psychopathology for refraining from seeking mental healthcare once need is perceived. A study found that refraining from seeking was more common among those with less disabling conditions, but another study found no association to the severity of symptoms (Codony et al., 2009; Mojtabai et al., 2002).

Perceiving the care as insufficient

Among those seeking mental healthcare, many do not receive the care that they need (Forsell, 2006; Mojtabai, 2009; Thornicroft et al., 2017). This can be assessed using clinical indicators, as receiving evidence-based treatment in a sufficient amount (Forsell, 2006; Thornicroft et al., 2017) or using individuals' perceptions (Allin et al., 2010). This thesis focuses on individuals' perceptions. However, there is strong evidence for an association between individuals' perceptions and clinical quality of healthcare within a wide range of healthcare setting (Doyle et al., 2013), although studies from mental healthcare settings are lacking. Low patient satisfaction has been found to be associated with multiple indicators of low healthcare quality, including low treatment adherence, and low patient safety (Doyle et al., 2013).

Among those seeking mental healthcare, studies from North America found that 35-40% perceived they received insufficient care (Dezetter et al., 2015; Mojtabai, 2009). Perceiving the healthcare as insufficient has been found to be associated with lower age, higher education, and poorer mental health, but not with gender (Blenkiron and Hammill, 2003; Bui et al., 2005; Lee et al., 2008; Mojtabai, 2009). However, differences based on social positions as gender have not been investigated in population-based samples in Sweden.

1.5 Barriers on the pathway to care

The reasons for unmet need for mental healthcare on steps on the pathway to care may be manifold. In this thesis, a wide range of barriers are investigated, but the focus lay on barriers related to mental health literacy and stigma. The results are discussed using a framework on the social construction of gender, focusing on masculinity norms.

1.5.1 Mental health literacy

Mental health literacy has been defined by Jorm as "knowledge and beliefs about mental disorders that aid their recognition, management and prevention" (Jorm et al., 1997, p. 182). The concept includes the ability to recognise different mental disorders and types of distress, knowledge and beliefs about self-help and professional help, and attitudes that facilitate appropriate recognition and help-seeking (Jorm, 2000). The core of mental health literacy is mental health knowledge, although some researchers have broadened the concept to include other factors as stigma (Spiker and Hammer, 2019).

The concept mental health literacy was developed to draw attention to the neglect of mental disorders within health literacy research, and the concept derives from the concept health literacy (Jorm, 2019). Health literacy has been defined as a "people's knowledge, motivation, and competencies to access, understand, appraise, and apply health information in order to make judgements and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course." (Sørensen et al., 2012, p. 3). Health literacy should not be understood only as an individual skill but as a reflection of the societal context, e.g., the ability of the media and government agencies to provide appropriate information (Kindig et al., 2004; Palumbo, 2016), and as a reflection of masculinity and femininity norms around how men and women should act regarding their health (Peerson and Saunders, 2009).

Cross-sectional studies have found that lower mental health literacy was associated with lower intended and actual mental healthcare-seeking (Rüsch et al., 2011; Waldmann et al., 2020). A longitudinal study found that lower mental health literacy was associated with lower subsequent use of psychotherapy and pharmacotherapy (Bonabi et al., 2016). However, research on the association between mental health literacy and perceived need for mental healthcare when having own symptoms of a common mental disorder is lacking.

There are differences in mental health literacy between population groups. A consistent finding is lower mental health literacy among those with lower education (Furnham and Swami, 2018). It has also been suggested that migrant groups have poorer mental health literacy than non-migrants (Furnham and Swami, 2018). Men have been found to have lower mental health literacy than women (Furnham and Swami, 2018). Men adhering to traditional masculinity norms, and men working in male-dominated occupations have been found to have lower general health literacy, but research on mental health literacy specifically is lacking (Milner et al., 2019; Milner et al., 2020).

1.5.2 Stigma

Stigma towards persons with mental disorders is stated to be a problem for public health and social justice worldwide (Corrigan et al., 2005). It includes stereotypes and negative beliefs such as "depression is a sign of personal weakness", and discrimination, such as not wanting to employ a person with a history of depression (Griffiths et al., 2008, p. 4). It has been suggested that stigma is an essential part of the mental health literacy concept, and research has found that stigmatizing attitudes towards depression are associated with lower mental health literacy (Griffiths et al., 2008; Kutcher et al., 2016; Wang et al., 2007). A widely used definition is that "stigma exists when elements of labeling, stereotyping, separation, status loss, and discrimination occur together in a power situation that allows them" (Link and Phelan, 2001, p. 377). Stigma can roughly be divided into three types: 1) *personal stigma* includes individuals' personal attitudes, 2) *perceived stigma* includes beliefs about the negative attitudes of others, 3) and *self-stigma* includes individuals internalized stigma of their illness (Griffiths et al., 2008).

Internalized self-stigma, and perceived stigma about the negative attitudes of others, have been found to be associated with a lower willingness to seek counselling in a study on a sample of students in the US (Vogel et al., 2007). Personal stigma, measured as more negative attitudes towards a fictive person with a mental illness, has been found to be associated with more negative attitudes towards help-seeking and lower help-seeking intentions for personal and emotional problems in a US vignette study (Kosyluk et al., 2021). Personal stigma, measured as more stigmatizing attitudes towards others with depression, has been found to be associated with a lower likelihood to recommend sick leave for a fictive person with symptoms of depression in a Swedish vignette study (Bertilsson et al., 2021).

Persons with lower education, those with more conservative ideology, those with lower mental health literacy, and men, have been found to have more stigmatizing attitudes towards depression, (Griffiths et al., 2008; Löve et al., 2019; Peluso and Blay, 2009; Wang et al., 2007).

1.5.3 Gendered norms and institutions

The departure of this thesis was the understanding of the pathway to care as gendered, i.e., that the likelihood to meet barriers on this pathway is related to norms of how to be and act as a man or a woman.

Gender can be understood as the social construction of roles and relations based on the dichotomisation of men versus women, and masculinity versus femininity (Connell, 2009; Möller-Leimkühler, 2002). Gender roles and relations are upheld by social norms (Courtenay, 2000), which has been defined as "shared perceptions about others than exists within social groups" (Lilleston et al., 2017, p. 122). Masculinity norms are social norms that define what is typical and desirable characteristics and behaviours for men compared to women (Möller-Leimkühler, 2003). However, the entire society has been described as gendered, from individuals' identities and behaviours, to the practices of large social institutions, as the state, the labour market, and the healthcare system (Connell, 2005, 2012). For example, the healthcare system is gendered with a female-dominated work force and occupations within nursing traditionally being seen as more feminine than occupations within medicine (Connell, 2012). Gendered norms and gendered institutions influence individuals' perception and behaviours, e.g., regarding health, but individuals are also actively part of reproducing and changing gendered norms and institutions, by their behaviours (Connell, 2009).

Dominant masculinity has been defined as the currently accepted justification of men's domination over women and other men (Connell, 2005). However, not all men are equally privileged by these dominant masculinity norms (Connell, 2005). Hankivsky has highlighted the heterogeneity among men, as masculinity intersects with other power structures based on e.g., class and ethnicity, referred to as intersectionality (Hankivsky, 2012). Some groups of men are more disadvantaged due to less access to power and resources, e.g., those with lower education, non-Western migrants (Connell, 2005), and working-class men (Coston and Kimmel, 2012). Connell has highlighted that multiple forms of masculinities exist and that the masculinities among disadvantaged groups of men are subordinated to the dominant form of masculinity (Connell, 2005). In addition, Courtenay has argued that the same

norms and behaviours that ensure men's authority over women and other men also threaten men's health (Courtenay, 2000).

It has been suggested that dominant masculinity norms in the Western world encourage men to be self-reliant, decisive, and competitive, and discourage characteristics that are culturally connected to being feminine e.g., being weak, vulnerable, emotional, and in need of help (Connell, 2005; Courtenay, 2000; Markstedt et al., 2020). Qualitative studies have described how these masculinity norms stand in opposition to having symptoms of depression, as depression is culturally connected to femininity (Seidler et al., 2016). In addition, Courtenay has argued that health-promoting behaviours, including healthcare-seeking for both somatic and mental health problems, are socially constructed as feminine, and have to be avoided to assert masculinity (Courtenay, 2000). The social construction of masculinities has been proposed to be one of the explanations of men's reluctance to seek mental healthcare (Addis and Mahalik, 2003; Courtenay, 2000; Seidler et al., 2016) and men's use of maladaptive and avoidant coping strategies e.g., hiding and denying symptoms of depression and anxiety, withdrawing socially, working or exercising excessively, using risk-taking behaviours, and getting into substance abuse including alcohol (Seidler et al., 2016). Masculinity norms have also been proposed to be one of the explanations for men's higher suicide rates compared to women (Möller-Leimkühler, 2003), in line with empirical data showing that adherence to traditional masculinity norms is associated with suicidality among men (Coleman, 2015; Pirkis et al., 2017). In addition, it has been suggested that masculinity norms do not only hinder men's mental healthcare-seeking but also affect care-seeking men's perceptions about the received care, and interfere with treatment uptake (Seidler et al., 2016).

1.6 Rationale

Considering the suggested negative impact of masculinity norms on men's management of depression and anxiety disorders (Möller-Leimkühler, 2003; Seidler et al., 2016), there are strong reasons to believe that all steps on the pathway to met need for mental healthcare are gendered, i.e., impacted by gendered norms and gendered institutions (Seidler et al., 2016). Especially men in more disadvantaged social positions, as those with lower education, and migrants, may face greater barriers on this pathway, as indicated by previous research (Forsell, 2006; Kirmayer et al., 2007; Villatoro et al., 2018; Wallerblad et al., 2012). However, there is a lack of research from Sweden that investigates unmet need for mental healthcare on the entire pathway to

care with a focus on differences between men and women, differences among men, and the potential mechanisms involved, e.g., mental health literacy, and stigmatizing attitudes towards depression. Such research is important considering that access to healthcare in Sweden should be equal, and not depend on individuals' and groups' social positions, as gender, education level, or country of birth (Government offices of Sweden, 2019; Socialdepartementet, 2017).

2 Aim

The aim of this thesis was to explore gendered pathways to care focusing on unmet need for mental healthcare among men in Sweden at three steps: 1) not perceiving a need for mental healthcare despite symptoms indicating a clinical need for care, 2) refraining from seeking mental healthcare when perceiving a need for it, 3) perceiving care as insufficient when seeking mental healthcare. How the papers relate to these steps is illustrated in Figure 2.

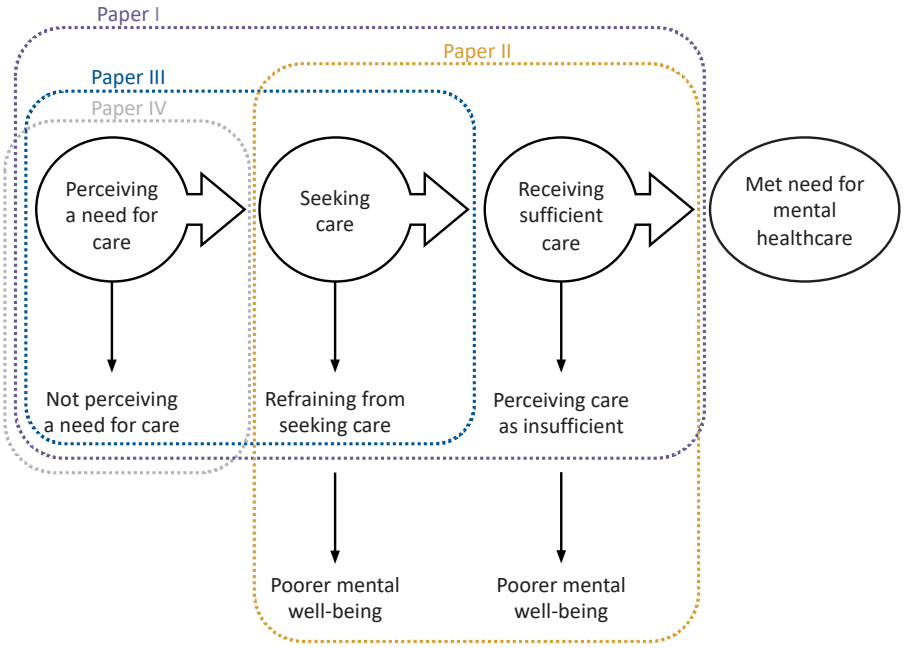

Figure 2. Illustration of how the papers relate to unmet need for mental healthcare at three steps on the pathway to care.

Specifically, the thesis investigated:

Paper 1: How gender, education level, and country of birth, were associated with 1) perceiving a need for mental healthcare, 2) refraining from seeking mental healthcare, and 3) perceiving care as insufficient (Step 1-3).

Paper II: If men who had prior unmet need for mental healthcare had poorer mental well-being than those that had not, with a focus on having refrained from seeking mental healthcare (Step 2), and having perceived the care as insufficient when seeking it (Step 3).

Paper III: The role of combinations of gender and mental health literacy for not perceiving a need for mental healthcare despite symptoms indicating a clinical need for mental healthcare (Step 1), and refraining from seeking mental healthcare (Step 2).

Paper IV: How men and women differed in thoughts on sick leave for a fictive case with symptoms of depression and to what extent the differences were explained by stigmatizing attitudes towards depression (relates to Step 1).

3 Methods

3.1 Overview of papers

This thesis consists of four epidemiological studies based on three different general population-based samples in Sweden. Table 1 gives an overview of the design of the studies (Table 1). Paper I and II are based on the Health Assets Project (HAP) using the same general population-based sample and baseline questionnaire. However, Paper I is cross-sectional, including both men and women, and Paper II is longitudinal, including men only. Paper III and IV are based on different population-based samples and are cross-sectional.

Table 1. Overview of papers

Paper	I	II	III	IV
Design	Cross-sectional	Longitudinal	Cross-sectional	Cross-sectional
Study population	General population sample, ages 19-64, n=3987.	General population sample of men, ages 19-64, n=1240.	General population sample, ages 18-84, n=1563.	General population sample, ages 15-77, n=3147.
Region	Västra Götaland	Västra Götaland	Stockholm	Västra Götaland
Data	Baseline questionnaire and register data, year 2008.	Baseline and follow-up questionnaire and register data, year 2008 and 2009.	Questionnaire data, year 2019.	Questionnaire data including a case vignette, year 2014.
Gender approach	Gender differences.	Differences among men.	Gender differences, and differences among men and women.	Gender differences.
Overall aim	Differences based on gender, education, and country of birth in perceived need, refraining from seeking care, and perceiving the care as insufficient.	If men who had previously refrained from seeking care, or perceived the care as insufficient had poorer mental well-being at baseline and follow-up.	The role of combinations of gender and mental health literacy in relation to not perceiving a need for mental healthcare, and refraining from seeking care.	Gender differences in thoughts on sick leave for a fictive case with symptoms of depression.

3.2 Design and participants

3.2.1 The Health Assets Project

Paper I and II are based on data from HAP, which is an epidemiological cohort study based on data from two questionnaires collected in 2008 and 2009, connected to register data. The target population was the general population, aged 19-64 years, in Västra Götaland Region, Sweden. The region has both urban and rural areas and includes 17% of the Swedish population.

The general population sample in HAP was drawn out by Statistics Sweden and invited to participate (n=7984) (Knapstad et al., 2016). The invited sample received a postal questionnaire between 15 April and 30 June 2008, followed by two reminders (Hensing et al., 2011). The questionnaire comprised of questions on current mental and physical health, and sociodemographic factors. The questionnaire also included questions on 1) perceived need for mental healthcare, 2) mental healthcare-seeking, and 3) and perceived sufficiency of the mental healthcare. These questions referred to experiences at any time in life. The questionnaire also included an invitation letter including information about the study, that the questionnaire data would be linked to official registry data on sociodemographic factors, and that withdrawal from the study was possible at any time (Hensing et al., 2011; Knapstad et al., 2016).

Of the invited sample 50% participated (n=4027). The lowest participation rates were found among men, those born outside Nordic countries, those with the lowest incomes, those in the youngest age groups, and those who were unmarried (Knapstad et al., 2016).

Those who had participated in 2008, hereafter referred to as Time 1 (T1), also received a follow-up questionnaire in 2009, Time 2 (T2). The follow-up questionnaire comprised of questions on physical and mental health. The questionnaire was sent between 21 September and 12 December 2009, 14 to 20 months after the T1 questionnaire, and was followed by two reminders. Of those who participated at T1, 79% participated also at T2 (n=3186).

3.2.2 Paper I

Paper I is a cross-sectional study based on the HAP questionnaire and register data from the general population sample in 2008. Paper I investigated differences in gender, education, and country of birth in 1) perceived need for mental healthcare, 2) mental healthcare-seeking, and 3) perceived sufficiency

of the mental healthcare, at any time in life. In addition to asking about these experiences, the questionnaire asked about physical and mental health and sociodemographic factors. The questionnaire data were linked to register data on age, gender, and country of birth.

Of the respondents, 40 were excluded due to missing data on perceived need for mental healthcare and mental healthcare-seeking. Therefore, the final study sample comprised of 3987 men and women, aged 19-64 years.

3.2.3 Paper II

Paper II is a longitudinal study based on the HAP questionnaire and register data from T1 and T2. Paper II was designed based on the results from Paper I with the aim to investigate if men who had refrained from seeking mental healthcare or perceived the care as insufficient at any time in life had poorer mental well-being at T1 and T2 compared to those who had not. Therefore, Paper II included the men from the general population-based sample only, and only those men that had participated at both T1 and T2.

Of those who were registered as men by Statistics Sweden, 44% participated at T1 (n=1793). Of those, 77% participated also at T2 (n=1283). Participants who had missing data on mental healthcare-seeking (n=11), or mental well-being at T1 and/or T2 (n=131) were excluded. Therefore, the final study sample comprised 1240 men, aged 19-64.

3.2.4 Paper III

Paper III is a cross-sectional study based on a questionnaire in a general population sample in Stockholm County, Sweden. The study investigated combinations of gender and mental health literacy in relation to not perceiving a need for mental healthcare, and refraining from seeking care.

The questionnaire consisted of questions on mental health, mental health literacy, and sociodemographic factors. In addition, it included the same questions on perceived need for mental healthcare and mental healthcare-seeking that were previously used in the HAP, Paper I and II.

The data collection was conducted by the Centre for Epidemiology and Community Medicine, Region Stockholm. Stockholm county has both urban and rural areas and included 23% of the Swedish population in 2018 (Statistics Sweden, 2018). The Swedish tax authorities extracted a sample of 5000 persons in Stockholm County, aged 16-84 years, based on the national population register. Younger persons were oversampled, due to the expected

lower response rate among this group (Bergman et al., 2010). Of the sample of 5000 persons, 1000 persons were sampled in the age of 16-29. An invitation to participate and a questionnaire were sent by mail in May 2019, followed by two reminders. It was possible to participate either through mail or through a web page. In the sample of 5000, 4866 persons received the invitation as some mails were returned due to invalid addresses. Of those, 38% participated (n=1863). Non-participants were more likely to be men, younger, and be born outside Nordic countries. As the study focused on adults, those under the age of 18 were excluded (n=104). In addition, those who reported gender "other", and those with missing data on age, exposures, or outcomes were excluded. Thereby, the final study sample consisted of 1563 men and women.

3.2.5 Paper IV

Paper IV is a cross-sectional vignette study based on a panel of Swedish citizens. To measure gender differences in thoughts on sick leave for depression a written case vignette was developed based on findings from previous qualitative studies (Bertilsson et al., 2015; Bertilsson et al., 2013). The case vignette described a fictive person with symptoms of mild to moderate depression and the person's work tasks, followed by a question on participants' thoughts on sick leave. The vignette was included in an online survey consisting also of questions on sociodemographic-, health-, and political characteristics. The survey and an invitation to participate were sent to a self-recruited sample of the general population, aged 15 years or older, i.e., the Swedish Citizen Panel (n=4840). The Swedish Citizen Panel is run by the Laboratory of Opinions Research at the University of Gothenburg. The panel receives online surveys every quarter on various topics (Martinsson et al., 2014). For this study, the survey was sent by e-mail between November 27 and December 21, 2014, followed by two reminders.

Of the invited sample 67% participated (n=3246). Participants had higher education and were older than non-participants (Martinsson et al., 2014). For this study, 99 participants were excluded: Those who had missing data on gender or had reported gender other (n=62), those who did not respond to the question about sick-leave thoughts (n=13), and those with random technical error in the data collection process (n=24). The final study sample consisted of 3147 men and women.

3.3 Measures

This section describes the measures used in each paper, including an overview of the measures (Table 2). More detailed descriptions can be found in Paper I-IV. The Swedish translations of the main measures is included in the Appendix.

Table 2. Overview of measures

Paper	I	II	III	IV
Exposures	Gender, education, country of birth.	Refraining from seeking mental healthcare, perceiving the care as insufficient.	Gender combined with mental health literacy.	Gender of the participants, gender of the person in the vignette
Outcomes	Perceiving a need for mental healthcare, refraining from seeking, perceiving the care as insufficient.	Poorer mental well-being at two time points: Time 1 (2008) Time 1 (2009).	Not perceiving a need for mental healthcare, refraining from seeking care.	Thoughts on sick leave for a person with symptoms of depression, described in a vignette.
Covariates	Poor mental well-being, age, education, gender, country of birth, persistent illness.	Age, education, country of birth, persistent illness.	Poor mental health, age, education, country of birth.	Stigmatizing attitudes, political ideology, self-rated health, own sickness absence, age, education.

3.3.1 Paper I-III: Exposures and outcomes

Perceived need, refraining from seeking care, and perceiving the care as insufficient

Paper I-III all investigated unmet need for mental healthcare at different steps on the pathway to care. These studies used the same measures based on a very similar set of questions (see Appendix). However, the measures were used differently for each study to investigate different aspects of unmet need. They were used as exposures in Paper II, and as outcomes in Paper I and III (Table 2).

In the questionnaires, the respondents were asked “Have you at *any time* felt so mentally unwell that you felt the need to seek care?” with three response alternatives: “Yes”, “Yes, but did not seek”, and “No”. Those who replied “No” were defined as not having perceived a need (i.e., non-need-perceivers). Those who replied “Yes” or “Yes, but did not seek” were defined as having perceived a need (i.e., need-perceivers). Among need-perceivers, those who replied “Yes” were defined as having sought care (i.e., care-seekers), and those who replied “yes, but did not seek” were defined as having refrained from seeking care (i.e., non-care-seekers, Table 3).

Non-care-seekers were also asked “Why did you not seek care?” with ten response alternatives (Table 3). Respondents could choose one or more alternative. For Paper I, the response alternatives were merged into six categories: awaiting recovery, negative perceptions about the healthcare, ignorance, stigma, structural barriers, and other reasons.

In Paper I, and II, care-seekers were also asked where they had sought care with six response alternatives (primary care, psychiatric outpatient care, private physician, private psychologist or psychotherapist, emergency unit, or other). In addition, care-seekers were asked “Do you think you received the care that you needed?” with two response alternatives: ”Yes” or ”No”. Those who replied ”Yes” were defined as *sufficient-care-perceivers* and those who replied ”No” were defined as *insufficient care-perceivers* (Table 3).

Table 3. The questions on perceived need for mental healthcare, mental healthcare-seeking, and perceived sufficiency of the care, using in Paper I-III.

<table>
<tr><td colspan="3">“Have you at any time felt so mentally unwell that you felt the need to seek care?”</td></tr>
<tr><td colspan="2">“Yes”, or “Yes, but did not seek”
= Need-perceivers</td><td>“No”
= Non-need-perceivers</td></tr>
<tr><td colspan="2">“Yes”
= Care-seekers</td><td rowspan="3">“Yes, but did not seek”
= Non-care-seekers
“Why did you not seek care?”[2]</td></tr>
<tr><td colspan="2">“Do you think you received the care that you needed?”[1]</td></tr>
<tr><td>“Yes”
= Sufficient care-perceivers</td><td>“No”
= Insufficient care-perceivers</td></tr>
</table>

[1] Follow-up question included in Paper I and II.

[2] The response alternatives: ”I did not believe that care would help”, ”I was afraid of being enrolled against my will”, ”I did not know where to turn for help”, ”I felt ashamed because I felt ill”, ”I was afraid someone would see me when I sought care”, ”It was too expensive”, ”The healthcare provider was closed”, ”There was no transportation so I could get to the caregiver”, “It was too far to travel”, ”Other reason”.

Gender, country of birth, and education: Exposures Paper I
Gender (man, woman) and country of birth (dichotomized into Nordic versus non-Nordic countries) were extracted from register data from Statistics Sweden. Level of completed education was based on questionnaire data and was categorized into primary education or less, secondary education, and university education.

Mental well-being: Outcome Paper II
Mental well-being was measured at T1 and T2 using the WHO (Ten) Mental Well-being Index (WHO-10). WHO-10 measures mental well-being in the previous week using ten items on depression, anxiety, energy, and positive mental well-being (Bech et al., 1996). The items have four response alternatives ranging from ”never” (0) to ”all the time” (3). The total score is 0-30 with a lower score indicating poorer mental well-being. The mean score at T1 and T2, respectively, was used as the outcome measure. WHO-10 is suitable for comparisons of mental well-being between population groups, for example, to estimate the effect of receiving care (Topp et al., 2015). Previous research has found that poorer mental well-being, based on WHO-10, corresponds to depression, clinical need for care, and suicidality (Hansson, 2009; Hansson et al., 2007; Topp et al., 2015). Therefore, a lower score on WHO-10 was used to indicate a higher likelihood for clinical need for mental healthcare in Paper II. The Swedish version of WHO-10, used in Paper I and II, has shown good reliability and validity (Löve et al., 2013).

Gender and mental health literacy: Exposures Paper III
Four exposure groups were constructed to investigate combinations of gender and mental health literacy: men with low mental health literacy, men with high mental health literacy, women with low mental health literacy, and women with high mental health literacy.

Gender was self-reported (man, woman). Mental health literacy was measured using the Mental Health Knowledge Schedule (MAKS) (Evans-Lacko et al., 2010). MAKS was developed to capture the multidimensional construct of mental health literacy by measuring stigma-related mental health knowledge (Evans-Lacko et al., 2010). MAKS has shown excellent content validity and fair reliability (Wei et al., 2016). The first six items on MAKS were used, which cover knowledge about care-seeking, treatment, the possibility for recovery, and employment for people with mental health problems. The items are followed by an ordinal scale with six response alternatives, ranging from “strongly agree” (1) to “strongly disagree” (5), The response alternative “Don’t know” was coded as neutral (3). The total score was calculated (6-30) with a higher score indicating lower mental health

literacy. The total score was dichotomised into low versus high mental health literacy using the 3rd quartile.

3.3.2 Paper I-III: Covariates

More detailed rationales for the choice of covariates are described in each paper. The main principle was that factors that were empirically or theoretically connected to the exposures and the outcomes were included as covariates.

Persistent illness: Paper I and II
Persistent illness was measured by asking if the participant had any persistent disease, illness, or disability, followed by a list of alternatives. Those choosing "mental illness" were considered to have persistent mental illness, and those choosing one or more physical illnesses categories were considered to have persistent physical illness.

Mental well-being: Paper I
Mental well-being using WHO-10 (Bech et al., 1996) was used as a covariate in Paper I, and is previously described (see section 3.3.1). Mental well-being was included as a covariate to rule out the possibility that group differences in perceived need for mental healthcare, and perceiving the care as insufficient, were explained by poorer mental well-being in one of the groups, as poor mental well-being is related to not perceiving a need for mental healthcare, and perceiving the care as insufficient (Codony et al., 2009; Morgado et al., 1991; Wyshak and Barsky, 1995). Two cut-offs were used to indicate low mental well-being: ≤8 and ≤12, previously found to correspond to depression based on the Schedules for Clinical Assessment in Neuropsychiatry, and the Major Depression Inventory, respectively (Hansson, 2009; Hansson et al., 2007). Low mental well-being, based on these cut-offs, was used to indicate a clinical need for mental healthcare in Paper I.

Sociodemographic factors: Paper I-III
Table 2 describes which sociodemographic variables were used in the respective papers (Table 2). Age was based on register data for Paper I and II, and questionnaire data for Paper III. Age was categorised into 19–30, 31–50, and 51–64 years. Paper III included an additional category: 65-84 years. For Paper III, level of completed education was based on questionnaire data with five response alternatives categorised into primary or less, secondary, and university. For Paper I and II, gender, education, and country of birth were categorised as described above (see section 3.3.1)

Current mental health: Paper III
Current mental health was used as a covariate in Paper III, as good mental health is related to not perceiving a need for mental healthcare (Codony et al., 2009). Current mental health was measured using the Swedish 12-item version of the General Health Questionnaire (GHQ-12) (Diderichsen and Janlert, 1992; Goldberg et al., 1997). The 12 items cover psychological function and distress in the previous week. Items are followed by four response alternatives ranging from e.g., "not at all" to "more than usual". The total score was calculated using standard GHQ score (0-0-1-1), with a higher score indicating poorer mental health on a scale from 0-12. A cut-off ≥3 was used to indicate current poor mental health, as done previously (Svensson et al., 2013). This cut-off has been found to indicate depression, anxiety, or adjustment disorder (Lundin et al., 2017), and was used to indicate a clinical need for mental healthcare in Paper III.

3.3.3 Paper IV: Exposures and outcomes

Exposures: Paper IV
Gender of the participants was measured using self-reported questionnaire data on gender with three response alternatives: woman, man, other (those responding "other" were excluded, n=15).

Gender of the vignette was measured by the gender of the person mentioned in the vignette, as indicated by a male or female first name (Peter/Monica).

Outcome: Paper IV
The participants received a vignette describing a person with symptoms of mild to moderate depression and the person's work tasks (Figure 3). Using random distribution, half of the participants received a vignette with a male first name (Peter), and the other half received a vignette with a female first name (Monica). After reading the vignette, the participants were asked "In your opinion, is it reasonable that Peter/Monica get sick-listed for a couple of weeks?", followed by four response alternatives (absolutely not, probably not, yes absolutely, yes probably). The response alternatives were dichotomized into "not reasonable" versus "reasonable".

Vignette with a male or female name
Peter/Monica is 40 years old, in his/her work he/she meets a lot of people but he/she also has a lot of computer work. When he/she sees the doctor he/she describes low mood and lack of energy. In your opinion, is it reasonable that Peter/Monica get sick-listed for a couple of weeks?

Figure 3. Vignette used in Paper IV.

3.3.4 Paper IV: Covariates

Stigmatizing attitudes towards depression

Stigmatizing attitudes towards depression were measured using a subscale of the Depression Stigma Scale (DSS), the personal stigma scale (Griffiths et al., 2008). The sub-scale measures personal attitudes towards depression using nine statements, e.g., "Depression is a sign of personal weakness". Participants responded to the items using five response alternatives on a Likert-scale, ranging from strongly agree (5) to strongly disagree (1). The total score for all items was calculated, with a higher score indicating greater personal stigma (9-45 points). The original scale in English was translated to Swedish by the research group. The personal stigma scale has previously been shown to have acceptable internal consistency, test-retest reliability, and validity (Boerema et al., 2016; Griffiths et al., 2004).

Political ideology

Political ideology was measured with an index developed to capture left to right-wing ideology in Swedish setting. The index included four statements, followed by a five-point Likert scale ranging from totally agree (4) to totally disagree (0). The respondents were asked what they thought about these propositions: 1) "Sweden should receive fewer refugees", 2) "The tax levels should be lower", 3) "The taxes on CO_2 for petrol should be raised", and 4) "There should be a decrease of societal income inequalities". The total score for the index was calculated with statement 3 and 4 being reversely coded. A higher score indicates more right-wing ideology (0-16 points).

Self-rated health, and own sickness absence

Self-rated health was measured by asking participants "How do you rate your general health?" with five response alternatives categorized into good, neither good nor bad, and bad. Own sickness absence in the last 12 months was measured with six response alternatives categorized into no sickness absence, 1–7 days, 8 days- 12 months.

Age and education

Age was categorized into 15-30, 31-45, 46-60, and 61+ years. Level of completed education was based on nine response alternatives and categorized into primary or less, upper secondary, post-secondary (not university), university, and doctoral degree.

3.4 Analyses

3.4.1 Overview of analyses

For all studies, the characteristics of the study samples were described using frequencies and percentages. Differences between groups were presented using Chi^2- test or proportional differences with 95% confidence intervals (95% CI). The alpha level, i.e., the a priori criterion for falsely rejecting the null hypothesis, was set to $p<.05$.

The main variables of interest in all studies were binary, i.e., perceived need for mental healthcare (Paper I and III), mental healthcare-seeking (Paper I-III), perceived sufficiency of the care (Paper I-II), and thoughts on sick leave for symptoms of depression (Paper IV). Therefore, logistic regression analyses were used in Paper I, III, and IV, as it is suitable for binary outcomes (Fidell and Tabachnick, 2014). The logistic regression analyses were presented as odds ratios (OR) with 95 % CI. In Paper II, linear regression analysis was used, as the outcome variable mental well-being score was continuous. The linear regression analysis was presented as unstandardized beta coefficients (B) with 95% CI.

In all papers, missing data were handled using available case- analysis (Lodder, 2013). All statistical analyses were performed using SPSS version 27, and Microsoft Excel version 16.48. The exception was the proportional differences with 95% CI which were calculated using the Vassarstats website (Vassarstats: Website for Statistical Computation). The statistical analyses are described in brief for each study below. Further details can be found in Papers I-IV.

3.4.2 Paper I

To investigate if men, those with lower education, and those born outside Nordic countries were less likely to 1) perceive a need for mental healthcare, and more likely to 2) refrain from seeking mental healthcare and 3) perceive the care as insufficient, logistic regression analyses were performed for all three outcomes. Firstly, bivariate logistic regression analyses were conducted for the three exposures separately in relation to the three outcomes. Secondly, multivariable logistic regression analyses were conducted. These were adjusted for gender, education, country of birth, and age. The analyses of perceiving a need for mental healthcare, and perceiving the care as insufficient, were also adjusted for low mental well-being, using both cut-off ≤8 and ≤12 on WHO-10.

3.4.3 Paper II

To investigate if men who had refrained from seeking mental healthcare at any time in life, or sought care but perceived it as insufficient, had poorer mental well-being than men who had sought care, or perceived the care as sufficient, linear regression analyses were conducted. The outcome was the group differences in mean mental well-being score, presented as unstandardised B with 95% CI. A lower B-value represents a lower mean mental well-being score on the WHO-10 scale from 0-30.

The analyses were conducted at each time point separately, T1 and T2. Firstly, bivariate analyses were conducted. Secondly, multivariable analyses were conducted adjusting for education, country of birth, age, and persistent physical illness and persistent mental illness.

In addition, sensitivity analyses were conducted to investigate if the exclusion of participants with missing data on WHO-10 at T1 or T2 (n=131) had affected the main results. Therefore, the above mentioned-analyses were conducted on a larger sample that including also the participants with the missing data (n=1371).

3.4.4 Paper III

The analyses in Paper III were conducted on a weighted sample to represent the gender and age distribution in the general population in Stockholm County. This was conducted as those 18-29 had been oversampled, and as there were differences in study participation based on gender and age. The weight variable was calculated by dividing the proportion of a certain gender and age category in the general population with the corresponding proportion in the sample (Gelman and Carlin, 2000). For example, the proportion of men aged 25 years (9%) were divided with the corresponding proportion in the sample (4%), resulting in the weight value for this group (0.09/0.04=2.3). The main analyses were then conducted on the weighted sample.

To investigate if men with low mental health literacy, men with high mental health literacy, and women with low mental health literacy were more likely to not perceive a need for mental healthcare, and more likely to refrain from seeking care, compared to women with high mental health literacy (reference), the sample was stratified into these four groups. The categorisation into low versus high mental health literacy was conducted by calculating the 3rd quartile based on the total score on MAKS item 1-6. Group comparisons were then conducted using bivariate and multivariable logistic regression analyses. In multivariable analyses, the likelihood to not perceive

a need for mental healthcare was adjusted for age, education, and current mental health. The likelihood to refrain from seeking mental healthcare was adjusted for age and education.

Sensitivity analyses were then carried out to investigate if the main results persisted when changing the cut-off for low mental health literacy to the median instead of the 3rd quartile.

3.4.5 Paper IV

To investigate gender differences in thoughts on sick leave for a fictive person with symptoms of depression, bivariate and multivariable logistic regression analyses were conducted. The multivariable analyses were conducted in three steps: 1) adjusting for age and education 2), adding self-rated health and own sickness absence, and 3), adding stigmatizing attitudes towards depression. Political ideology had no statistical association with thoughts on sick leave and was excluded from the multivariable analyses.

Bivariate logistic regression was also used to investigate if those who received a vignette with a male name were more likely to think sick leave was not reasonable than those who received a vignette with a female name. As the distribution of vignettes with a male/female name was randomized, these analyses were not adjusted for covariates.

As the outcome variable on thoughts on sick leave had been dichotomised for analytical purposes, a sensitivity analysis was conducted using the original four response alternatives (absolutely not, probably not, yes absolutely, yes probably). This was conducted using ordinal logistic regression analysis.

3.5 Ethical considerations

Ethical approval was provided for all studies included in this thesis. The Regional Ethical Review Board at University of Gothenburg approved Paper I, II, and IV (reference numbers 039-08, and 189-14). The National Ethical Review Board approved Paper III (reference number 2019-00522).

The studies were conducted in accordance with the Declaration of Helsinki on Ethical Principles of Medical Research Involving Human Subjects (World Medical Association). The principle of autonomy was ensured by informing about the studies' aims and the right to withdraw at any time, obtaining informed consent from all individuals participating, and keeping participants' information confidential. The principle of beneficence was ensured as

participation in the studies was assessed to be connected to minimal risk for harm or discomfort for individuals, although the direct benefit of participating was small.

4 Results

This section describes the main results from each study. Detailed results can be found in Paper I-IV.

4.1 Paper I

Perceiving a need for mental healthcare
In the total sample of 1775 men and 2212 women, 26% of the men had perceived a need for mental healthcare at any time, compared to 44% of the women (Paper 1, Table 1). Stratified analyses showed that in the subsample with current low mental well-being (≤12 on WHO-10, n=693) 40% of the men had not perceived a need, compared to 25% of the women (data not shown).

Logistic regression analyses showed that men were less likely to perceive a need for mental healthcare, even when adjusting for current low mental well-being and sociodemographic variables (Table 4). There were no statistically significant associations between education or country of birth and perceiving a need in adjusted analyses (Table 4).

Refraining from seeking mental healthcare
Among those who had perceived a need for mental healthcare, 36% of the men had refrained from seeking care, compared to 26% of the women (Paper 1, Table 2). There were also differences based on education: 36% of those with secondary education had refrained from seeking compared to 25% of those with primary education, and 24% of those with university education (Paper 1, Table 2). Logistic regression analyses showed that men and persons with secondary education were more likely to refrain from seeking mental healthcare than women, and persons with university education, also when adjusting for sociodemographic variables (Table 4). Sensitivity analyses including men only showed that men with secondary education were more likely to refrain from seeking mental healthcare than men with university education using bivariate logistic regression (OR 1.86, 95% CI 1.20-2.90). There was no statistically significant association between primary education (versus university), or country of birth and refraining from seeking mental healthcare (Table 4).

The most common reasons for refraining from seeking mental healthcare among both men and women were awaiting recovery (59%), followed by negative perceptions about the mental healthcare (34%), not knowing where

to turn for help (29%), and stigma (23%) (Paper 1, Table 4,). Men more often had refrained from seeking due to negative perceptions about the mental healthcare than women (40% compared to 30%, Paper I, Table 4).

Perceiving the care as insufficient

Among those who sought care, 29% of the men perceived that they had received insufficient care, compared to 23% of the women (Paper 1, Table 2). Logistic regression analyses showed that men were more likely to perceive the care as insufficient, also when adjusting for sociodemographic variables (Table 4). However, the association was not statistically significant when also adjusting for current low mental well-being using the higher cut-off (≤12 on WHO-10, Table 4), but it was statistically significant when using the lower cut-off (≤8, OR 1.46, 95% CI 1.04 to 2.03, data not shown). In addition, descriptive analyses indicated a difference based on country of birth: 33% of those born outside Nordic countries perceived the care as insufficient, compared to 24% of those born in a Nordic country (p=<0.05, Paper 1, Table 2). However, the difference based on country of birth was not statistically significant in adjusted logistic regression analyses (Table 4).

Table 4. Associations between social positions and perceiving a need for mental healthcare, refraining from seeking mental healthcare, and perceiving the mental healthcare as insufficient, at any time in life. Odds ratios (OR) with 95% confidence intervals (95% CI).

		Perceived a need among the total sample		Refrained from seeking among need-perceivers		Perceived care as insufficient among care-seekers	
Total		n = 1426/3987		n = 417/1426		n = 242/976	
		OR	95% CI	OR	95% CI	OR	95% CI
Gender							
Men vs. women	Crude	0.44	0.38-0.50	1.58	1.25-2.01	1.39	1.02-1.90
	Adj.[1]	0.44	0.38-0.50	1.61	1.26-2.06	1.40	1.02-1.92
	Adj.[2]	0.45	0.39-0.52	-		1.38	0.99-1.92
Education							
Primary or less vs. university	Crude	0.86	0.72-1.04	1.02	0.72-1.44	0.93	0.62-1.40
	Adj.[3]	0.97	0.80-1.18	1.09	0.76-1.55	1.00	0.65-1.51
	Adj.[4]	0.86	0.69-1.07	-		0.95	0.61-1.47
Secondary vs. university	Crude	0.83	0.72-0.96	1.75	1.35-2.26	0.92	0.67-1.27
	Adj.[3]	0.88	0.76-1.02	1.56	1.20-2.03	0.82	0.59-1.15
	Adj.[4]	0.87	0.74-1.03	-		0.79	0.56-1.12
Country of birth							
Non-Nordic vs. Nordic	Crude	1.25	1.01-1.55	1.24	0.87-1.77	1.57	1.00-2.46
	Adj.[5]	1.31	1.05-1.64	1.23	0.85-1.79	1.53	0.96-2.42
	Adj.[6]	1.07	0.82-1.39	-		1.40	0.85-2.33

[1] Adjusted for education, country of birth, and age category
[2] + low mental well-being (≤12)
[3] Adjusted for gender, country of birth, and age category
[4] + low mental well-being (≤12)
[5] Adjusted for gender, education, and age category
[6] + low mental well-being (≤12)

4.2 Paper II

In the sample of 1240 men, the mean mental well-being score was 18.9 at both T1 (year 2008) and T2 (year 2009) on the scale from 0-30 p (WHO-10).

Refraining from seeking mental healthcare

The men who had refrained from seeking mental healthcare, despite perceiving a need for it, had lower mean mental well-being scores than the men who had sought care at T1 (mean 14.3 versus 16.0, p=0.02), but not at T2 (15.7 versus 15.8, p=0.84). The results from the linear regression analyses went in the same direction: The men who had refrained from seeking mental healthcare had 2.49 points lower mean mental well-being scores at T1 also when adjusting for sociodemographic factors and persistent mental- and physical illness (B =-2.49, 95% CI -3.86 to -1.12, Figure 4). However, there was no statistically significant difference in mental well-being between the groups at T2 (B=-1.11, 95% CI -2.59 to 0.38. Figure 4).

Perceiving the care as insufficient

The men who had sought mental healthcare but perceived the care as insufficient had lower mean mental well-being scores than the men who sought care but perceived it as sufficient at T1 (mean 14.2 versus 16.6, p=0.02) but not at T2 (15.0 versus 16.1, p=0.38). The results from the linear regression analyses went in the same direction: The men who had perceived the care as insufficient had about two points lower mean mental well-being score at T1, although the difference was not statistically significant in the fully adjusted model (B=-1.70, 95% CI -3.53 to 0.14, Figure 4). However, the difference at T1 was statistically significant in the sensitivity analysis including those that had missing data on WHO-10 (B=-1.91, 95% CI -3.71 to -0.10, Paper II, Additional file 4). There was no statistically significant difference in mental well-being between the groups at T2 (B=-0.52, 95% CI -2.54 to 1.50, Figure 4).

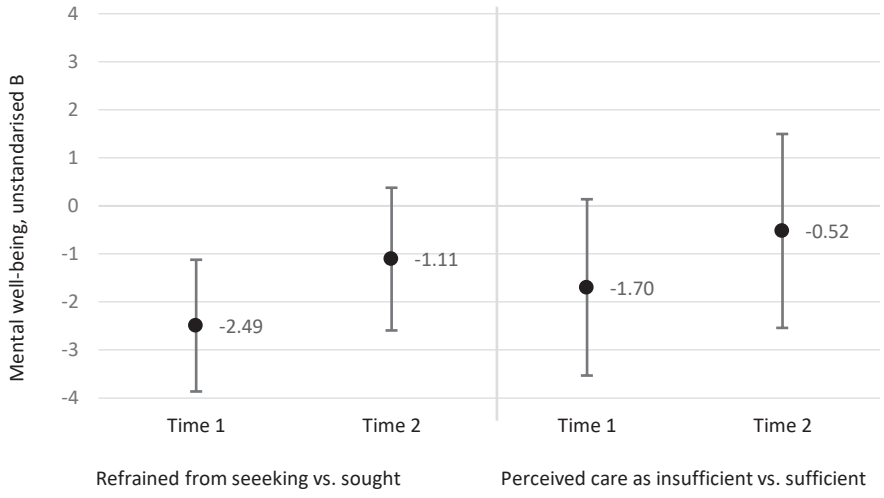

Figure 4. Differences in mental well-being among men: Men who had refrained from seeking versus sought mental healthcare, or sought care but perceived it as insufficient versus sufficient. Unstandardised B with 95% CI based on fully adjusted linear regression analyses with a negative value representing lower mental well-being. Revised version of the original figure presented in Paper II.

4.3 Paper III

In the weighted sample of men and women (n=1563) women more often had current poor mental health compared to men (29% versus 22% $p<0.05$).

Mental health literacy
In the sample, 27% of the men were defined as having low mental health literacy (≥16 on MAKS using the 3rd quartile), compared to 18% of the women ($p\leq0.05$, Paper III, Table 2). The sample was stratified into four groups based on mental health literacy: men with low mental health literacy (n=209), men with high mental health literacy (n=573), women with low mental health literacy (n=137), and women with high mental health literacy (reference, n=644).

Not perceiving a need for mental healthcare
In the sample, 62% of the men had not perceived a need for mental healthcare at any time compared to 45% of the women (38% versus 55% had perceived a need, Paper III, Table 2). As shown in Table 5, not perceiving a need for

mental healthcare was most common among men with low mental health literacy (76%), and least common among women with high mental health literacy (42%). Placed in the middle compared to the above-mentioned groups were men with high mental health literacy and women with low mental health literacy were: 57% versus 59% had not perceived a need. The results went in the same direction when including only those that currently had poor mental health (Table 5).

Logistic regression analyses showed that men with low mental health literacy were most likely to not perceive a need for mental healthcare (OR 5.3, 95% CI 3.6 to 7.7), and women with high mental health literacy were least likely (reference, OR=1), also when adjusting for current mental health and sociodemographic factors (Paper III, Table 4). Placed in the middle compared to the above-mentioned groups were men with high mental health literacy (OR 1.9, 95% CI 1.5 to 2.4) and women with low mental health literacy (OR 1.9, 95% CI 1.2 to 2.9).

Refraining from seeking mental healthcare

Among those that had perceived a need for mental healthcare, 31% of the men had refrained from seeking care, compared to 22% of the women (Paper III, Table 2). As shown in Table 5, refraining from seeking mental healthcare was most common among men with low mental health literacy (46%), and least common among women with high mental health literacy (20%). Placed in the middle compared to the above-mentioned groups were men with high mental health literacy and women with low mental health literacy: 28% versus 37% had refrained from seeking mental healthcare (Table 5).

Logistic regression analyses showed that men with low mental health literacy were most likely to refrain from seeking mental healthcare (OR 3.3, 95% CI 1.7 to 6.4), and women with high mental health literacy were least likely (reference, OR=1, Paper III, Table 4), also when adjusting for sociodemographic factors. Placed in the middle compared to the above-mentioned groups were men with high mental health literacy (OR 1.5, 95% CI 1.0 to 2.2) and women with low mental health literacy (OR 2.1, 95% CI 1.1 to 3.9, Paper III, Table 4).

Table 5. Not perceiving a need for mental healthcare, or refraining from seeking mental healthcare at any time in life, by gender combined with mental health literacy. Weighted frequencies (n) and proportions (%).

Gender combined with mental health literacy (MHL)	Total	Not perceived a need for care[1] n=834		Not perceived a need, among those with current poor mental health[2] (n=120)		Refrained from seeking care[3] n=189	
	n	n	%	(n)	(%)	n	%
Men, low MHL	209	159	76	(30)	(65)	23	46
Men, high MHL	573	327	57	(35)	(29)	70	28
Women, low MHL	137	81	59	(13)	(36)	21	37
Women, high MHL	644	267	42	(42)	(22)	75	20

[1] Among the total sample, n=1563

[2] Based on the subsample with current poor mental health, n=391 (≥3 on GHQ-12)

[3] Among those who had perceived a need for care at any time in life, n=729.

4.4 Paper IV

Stigmatizing attitudes towards depression

In the sample of men and women (n=3147) men more often had stigmatizing attitudes towards depression compared to women (mean score 17 versus 14 on DSS, $p \leq 0.05$, Paper IV, Table 1). There were gender differences in stigmatizing attitudes towards depression for each statement included, with men more often agreeing to the statements compared to women (Table 6).

Thoughts about sick leave for depression

A higher proportion of men than women thought that sick leave was not reasonable for the fictive person with symptoms of depression (56% compared to 47%), and the difference between men and women was statistically significant (proportional difference 9%, 95% CI 6-13%, Paper IV, Table 2). Thoughts about sick leave did not differ based on the gender of the fictive person (Peter versus Monica, Paper IV, Table 2).

The results from the logistic regression analyses went in the same direction (Paper IV, Table 3). Men were more likely to think that sick leave was not reasonable compared to women, also when adjusting for sociodemographic variables and health variables (OR 1.45, 95% CI 1.25 to 1.67). However, the gender difference decreased when also adjusting for stigmatizing attitudes towards depression (OR 1.24, 95% CI 1.06 to 1.44).

There was no statistically significant association between gender of the fictive person and thoughts about sick leave (crude OR 1.03, 95% CI 0.90 to 1.19).

Table 6. Stigmatizing attitudes towards depression, by gender of the participants. Frequencies (n), proportions (%) and proportional differences (%) with 95 % confidence intervals (95% CI).

	Gender of the participants				Men versus women
	Men n=1627[1]		Women n=1467[1]		Proportional differences
Agreed to statement[2]:	n	%[3]	n	%[3]	% (95% CI)
1. People with depression could snap out of it if they wanted	210	12.9	111	7.6	5.3 (3.2 to 7.5)
2. Depression is a sign of personal weakness	71	4.4	29	2.0	2.4 (1.2 to 3.6)
3. Depression is not a real medical illness	149	9.2	85	5.8	3.4 (1.5 to 5.2)
4. People with depression are dangerous	91	5.6	39	2.7	2.9 (1.5 to 4.4)
5. It is best to avoid people with depression so you don't become depressed yourself	42	2.6	22	1.5	1.1 (0.1 to 2.1)
6. People with depression are unpredictable	232	14.3	116	7.9	6.4 (4.2 to 8.5)
7. If I had depression I would not tell anyone	232	14.3	135	9.2	5.1 (2.8 to 7.3)
8. I would not employ someone if I knew they had been depressed	325	20.0	144	9.8	10.2 (7.7 to 12.6)
9. I would not vote for a politician if I knew they had been depressed	198	12.2	96	6.5	5.6 (3.6 to 7.7)

[1] Participants with valid data on all items on DSS.
[2] Dichotomisation based on the Likert scale. Reported that they "Strongly agree" (5) or "agree" (4) to the statement, versus "neither agree or disagree" (3), "disagree" (2), or "strongly disagree" (1).
[c] Proportions by column.

5 Discussion

5.1 Summary of main results

The aim of this thesis was to explore gendered pathways to care focusing on unmet need for mental healthcare among men in Sweden at three steps. Below is a summary of the main results in relation to the steps: 1) not perceiving a need for mental healthcare despite symptoms indicating a clinical need for care, 2) refraining from seeking mental healthcare when perceiving a need for it, 3) perceiving care as insufficient when seeking mental healthcare (Figure 5).

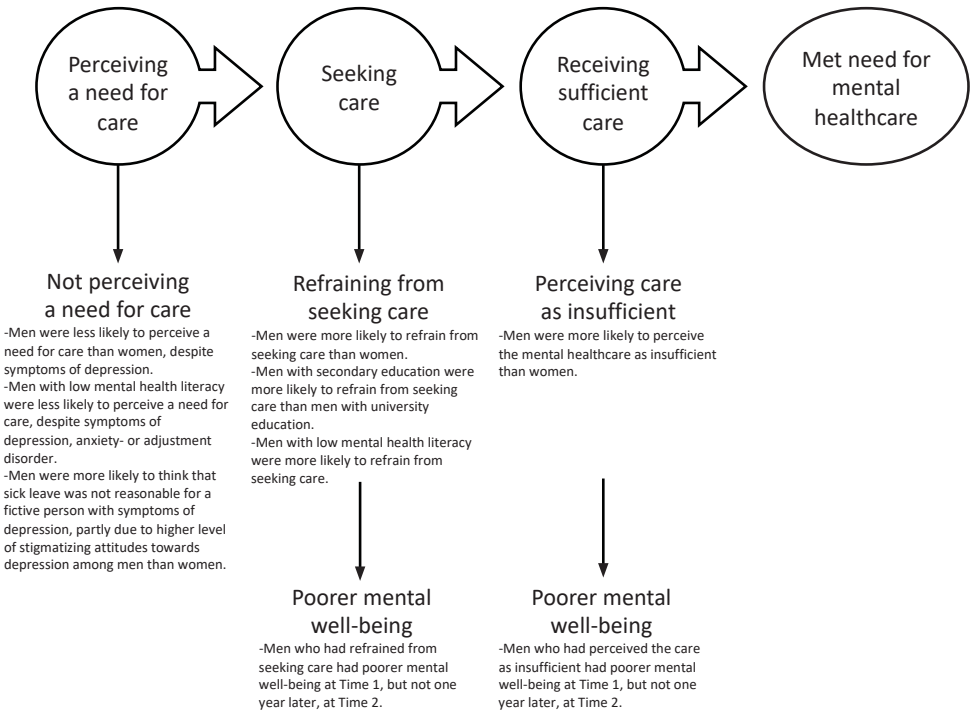

Figure 5. Summary of how the thesis' main results relate to unmet need for mental healthcare on three steps on the pathway to care.

5.1.1 Not perceiving a need for care

Men were less likely to perceive a need for mental healthcare, even when controlling for current poor mental well-being, compared to women (Paper I). However, there were differences among men (Paper III). Men with low mental health literacy were least likely to perceive a need, even when controlling for current poor mental health. They were followed by men with high mental health literacy and women with low mental health literacy, which had a similar likelihood. Women with high mental health literacy were most likely to perceive a need (Paper III). The vignette study found that men were more likely than women to think that sick leave for a fictive person with symptoms of depression was not reasonable (Paper IV). This was partly explained by a higher level of stigmatizing attitudes towards depression among men.

5.1.2 Refraining from seeking care

Among those who had perceived a need for mental healthcare, men were more likely to refrain from seeking care than women (Paper I). Men more often refrained from seeking mental healthcare due to believing that the care would not help (Paper I). Among men, those with secondary education were more likely to refrain from seeking than those with university education (Paper I). In addition, men with low mental health literacy were most likely to refrain from seeking care, whereas men with high mental health literacy had a similar likelihood of refraining from seeking mental healthcare as women with low mental health literacy. Women with high mental health literacy were least likely to refrain from seeking mental healthcare (Paper III). Men who had previously refrained from seeking care had poorer mental well-being than men who sought care, although the difference was not observed after one year (Paper II).

5.1.3 Perceiving the care as insufficient

Among those who sought mental healthcare, men were more likely to perceive that the care was insufficient compared to women (Paper I). Men who had previously perceived the care as insufficient had poorer mental well-being than men who had perceived it as sufficient, although the difference was not observed after one year (Paper II).

5.2 Gendered pathways to care

5.2.1 Not perceiving a need for care

Men were less likely to perceive a need for mental healthcare, even when controlling for poor mental well-being (Paper I), in line with previous research from high-income countries (Codony et al., 2009; Mojtabai et al., 2002), although there are very few previous population-based studies from Sweden (Forsell, 2006). A strength is the ability to control for symptoms indicating a clinical need for mental healthcare, using cut-offs on WHO-10, previously found to correspond to current depression (Hansson, 2009; Hansson et al., 2007).

A possible explanation for the gender differences in perceived need for mental healthcare is lower mental health literacy among men. Men were found to have lower mental health literacy than women (Paper III), in line with previous research from Sweden using the same measure, MAKS (Hansson et al., 2016). Paper III adds to research by showing an association between low mental health literacy and not perceiving a need, also when controlling for symptoms corresponding to depression, anxiety, or adjustment disorder (Lundin et al., 2017). Previous research has found an association between low mental health literacy, using MAKS, and low intention to seek mental healthcare, but have not controlled for psychopathology (Rüsch et al., 2011).

An advantage of the stratified approach used in Paper III is that the results reveal heterogeneity in perceived need for mental healthcare among men and women, based on mental health literacy. Men with low mental health literacy were least likely to perceive a need for mental healthcare, followed by both men with high mental health literacy and women with low mental health literacy. Women with high mental health literacy were most likely to perceive a need for mental healthcare. This indicates that men with low mental health literacy are especially unlikely to perceive a need for mental healthcare, despite a clinical need for it. This could be related to masculinity norms, considering that an Australian study found that men adhering to traditional masculinity norms had lower health literacy (Milner et al., 2019). Adherence to traditional masculinity norms has previously been found to be associated with maladaptive and harmful coping strategies among men with depression (Seidler et al., 2016). However, there are different forms of masculinities among men, and not all forms may be harmful to men's mental health (Seidler et al., 2016). Possibly, men with high mental health literacy are more likely to adhere to health-promoting forms of masculinities and are therefore more likely to perceive a need for care.

The results from Paper III suggests that low mental health literacy may act as a mediator and a moderator for the relationship between male gender and not perceiving a need: 1) male gender is associated with low mental health literacy, 2) low mental health literacy is associated with not perceiving a need for mental healthcare, and 3) men with low mental health literacy are especially unlikely to perceive a need for mental healthcare. This suggest that low mental health literacy may strengthen or partially or fully mediate the relationship between male gender and not perceiving a need. In line with this, a review study found indications for that health literacy act as a mediator for the relationship between low socioeconomic position and poor health outcomes (Stormacq et al., 2019), but did not investigate mental health literacy specifically. Paper III adds to research by highlighting the role of mental health literacy for men's (and women's) perceived need for mental healthcare and raises questions of the impact of masculinities. Milner has proposed that some aspects of health literacy may stand in opposition to masculinity norms but did not investigate mental health literacy specifically (Milner et al., 2019). To deepen the understanding of the results from Paper III, future studies should investigate mental health literacy, and its relation to different forms of masculinities in the relatively gender-equal Sweden.

It should be noted that the gender difference in perceived need, observed in Paper III, was not completely explained by differences in mental health literacy. Men with high mental health literacy were still less likely to perceive a need compared to women with high mental health literacy. This could be due to men being more likely to live and work in settings dominated by masculinity norms. Men often work in male-dominated workplaces (Statistics Sweden, 2020), and an Australian study found that the more male-dominated the workplace, the lower the health literacy was (Milner et al., 2020). A Swedish study found that male managers had more negative attitudes towards employees with depression than female managers (Mangerini et al., 2020). Possibly, attitudes and masculinity norms reproduced in workplaces and social networks impact individual men's perceived need for mental healthcare.

It is also possible that the gender difference in perceived need could be explained by men having a better possibility to continue working and functioning despite symptoms of depression, at least men in more privileged positions. Women in Sweden are more likely to work occupations within the public sector with healthcare, social work, and education, and have more unpaid work caring for children and the elderly, than men (Björk, 2017; Statistics Sweden, 2020). This work burden may be challenging to handle with symptoms of a depression or anxiety disorder. For example, a qualitative focus group study found that interpersonal relations were a

struggle for persons with depression (Bertilsson et al., 2013). Men are more likely to work with technology and manufacturing within the private sector, have less unpaid work, and have higher incomes (Statistics Sweden, 2020). These time and financial resources, combined with lower work demands regarding interpersonal relations, may enable men to continue to work and function despite depression symptoms, leading to lower perceived need for care. This is in line with the theory that privileged groups have more flexible resources as money, power, and prestige, that they can use to reduce detrimental consequences of illness (Mackenbach, 2012).

Men's lower perceived need for mental healthcare could also be partly explained by men's more negative opinions of sick leave for depression, found in Paper IV, as sick leave is a potential outcome of mental healthcare-seeking. The gender difference in opinions on sick leave was partly explained by more stigmatizing attitudes towards persons with depression among men. It should be noted that the measure on stigmatizing attitudes (DSS) covers aspects related to mental health literacy, e.g., "depression is not a real medical illness" (Griffiths et al., 2008). This underlines that stigma and mental health literacy are closely related, as previously suggested (Kutcher et al., 2016). This is in line with research showing that stigmatizing attitudes towards depression are higher among those with lower depression literacy (Griffiths et al., 2008; Wang et al., 2007). Thereof, the finding of higher stigmatizing attitudes towards depression among men (Paper IV) could be interpreted in combination with the finding of lower mental health literacy among men than women (Paper III). Possibly, men's lower mental health literacy may hinder recognition of the depression symptoms described in the vignette in Paper IV, which could partly explain men's more negative opinions of sick leave for depression. For example, a previous population-based study in Sweden found that men were less likely to correctly identify depression symptoms described in a vignette than women (Dahlberg et al., 2008).

Stigma and mental health literacy may interact with masculinity norms. For example, separating depression from "real" illnesses may enable separating depressed persons from what is normal and desirable (Link and Phelan, 2001), i.e., masculinity, as femininity is traditionally subordinated in relation to masculinity (Connell, 2005). The suggested cultural connection between depression and femininity (Addis and Mahalik, 2003), and the lower status of psychiatric disorder in relation to somatic disorders (Stuart, 2006), may allow positioning depression as a "fake" disorder in relation to somatic disorders. Also, sick leave, in general, may be connected to femininity. Patton and Johns found that women's sick leave was described in media as more legitimate than men's based on women's roles double roles as workers and

family caregivers (Patton and Johns, 2007). Masculinity norms with the ideal of the male-breadwinner may function as a way to make men work hard (Connell, 2005), which can be understood as the opposite of being on sick leave. Possibly, such gender norms can lead to more negative opinions of sick leave among men, especially for traditionally non-masculine disorders like depression.

5.2.2 Refraining from seeking care

Men were less likely to seek mental healthcare (Paper I), which is a consistent finding in population-based studies (Alonso et al., 2004a; Mackenzie et al., 2012; Rabinowitz et al., 1999; Wallerblad et al., 2012). However, the most common approach is to investigate gender differences in healthcare-seeking among all those with symptoms corresponding to a mental disorder (Alonso et al., 2004a; Mackenzie et al., 2012; Wallerblad et al., 2012), but few investigate mental healthcare-seeking only among those who perceived a need (Rabinowitz et al., 1999). The advantage of investigating care-seeking in this group is that perceiving a need for care is acknowledged as a separate step on the pathway to care. Therefore, the relatively small gender difference in refraining from seeking mental healthcare (36% versus 26%, Paper I) could be interpreted in relation to the finding that men were also more likely to not perceive a need for mental healthcare despite controlling for symptoms indicating a clinical need for care.

The most common reason for refraining from seeking mental healthcare for both men and women was believing that the problem would resolve by itself, (Paper I), in line with previous studies that found that the most common reason for refraining from seeking was a preference for self-management (Fassaert et al., 2009; Mojtabai et al., 2011; Prins et al., 2011). The second most common reason was negative perceptions about mental healthcare (Paper I), in line with previous research (Mojtabai et al., 2011; Prins et al., 2011). However, Paper I add to research by indicating that such negative perceptions about mental healthcare are more common among men than women. The belief that the problem would resolve by itself, and that care would not help, could reflect a low perceived need for mental healthcare, even among need-perceivers. This may be due to low clinical need for mental healthcare, as the severity of symptoms is the strongest determinant for perceived need (Codony et al., 2009). Previous longitudinal studies found that among participants with depression, anxiety, and substance-use disorders, around 50% of those that had not received treatment remitted (Sareen et al., 2013; Wang et al., 2017). However, low perceived need could also be explained by low mental health literacy. For example, men's more

negative perceptions about mental healthcare could be due to men being more sceptical to psychotherapy and medication, as indicated by men's lower mental health literacy, shown in Paper III.

Those with secondary education were more likely to refrain from seeking mental healthcare than those with university education, also when stratifying the result including only men (Paper I). Potentially, this could be due to lower mental health literacy among those with lower education (Furnham and Swami, 2018), as previous studies found that those with lower mental health literacy are less likely to seek mental healthcare (Bonabi et al., 2016; Waldmann et al., 2020). It could also be due to limitations in the design of the healthcare system, with the primary healthcare being better adapted for privileged groups with high demand for care, as previously indicated by Swedish studies (Burström, 2009; Burström et al., 2017). Such deficiencies could explain why the third most common reason for refraining from seeking was not knowing where to turn for help (Paper I). It is also possible that masculinity norms that discourage mental healthcare-seeking are more common among men with lower education. For example, Coston and Coston and Kimmel have argued that working class-men often have tough manual work that requires physical endurance and tolerance of discomfort, which reinforce masculinity norms of being strong and stoic (Coston and Kimmel, 2012). Middle-class men may have more possibilities to live up to dominant masculinity norms, or dismiss them, without risking their health, as suggested by Courtenay (Courtenay, 2000).

In line with previous research, low mental health literacy was found to be associated with a higher likelihood to refrain from seeking mental healthcare in Paper III (Bonabi et al., 2016; Waldmann et al., 2020). However, Paper III is the first study that found this in a population-based sample in Sweden. Men with low mental health literacy were most likely to refrain from seeking mental healthcare, but also women with low mental health literacy had a higher likelihood to refrain from seeking compared to women with high mental health literacy (Paper III). It should be noted that the MAKS items used to measure mental health literacy were similar to the most common reasons for refraining from seeking mental healthcare reported in Paper I, i.e., believing that the problem would resolve by itself, not believing that the care would help, and not knowing where to turn for help. Combined, the findings from Paper I and III highlight the potential role of low mental health literacy as a barrier to seeking mental healthcare. Also, the findings indicate that men are more likely to face mental health literacy barriers: Men with low mental health literacy were most likely to refrain from seeking mental healthcare (Paper III), men more often had low mental health literacy than women

(Paper III), and men more often refrained from seeking due to believing that the care would help (Paper I).

Need for healthcare has previously been defined as a combination of ill health and the benefit of healthcare (Culyer and Wagstaff, 1993). It is possible that for some groups of men, as those with lower education and/or lower mental health literacy, the perceived cost of seeking mental healthcare is higher than the perceived benefit. This could be due to low trust in the effectiveness of treatment, stigmatizing attitudes towards depression, and masculinity norms that discourage mental healthcare-seeking. It is also possible that the actual benefit of seeking mental healthcare is lower among some groups of men, due to potential gender bias within the healthcare system, and the mental healthcare being better adapted for those with higher education and less scepticism to treatment. However, this needs to be investigated in future research.

Men who previously had refrained from seeking mental healthcare had poorer mental well-being than men who had sought mental healthcare, which adds to research by providing epidemiological data supporting the suggestion that refraining from seeking mental healthcare is detrimental for men's health (Courtenay, 2003; Möller-Leimkühler, 2003; O'brien et al., 2005; Rutz and Rihmer, 2007; White et al., 2011). For example, lower mental well-being scores have previously been found to be associated with depression (Hansson, 2009; Hansson et al., 2007), and suicidal ideation and intent (Awata et al., 2007; Sisask et al., 2008; Topp et al., 2015). Although the difference in mental well-being between non-care-seeking and care-seeking men was small and non-persistent, the poorer mental well-being among non-care-seeking men indicates that a substantial part of this group had an unmet clinical need for mental healthcare. Therefore, their reluctance to seek mental healthcare should not be interpreted as a sign of a lower clinical need for care. This is supported by the finding that non-care-seeking men still had poorer mental well-being at the follow-up than the total population-based sample of men (15.7 vs. 18.9 on WHO-10), indicating that they could have benefitted from treatment (Sareen et al., 2013; Wang et al., 2017). The result is in line with previous studies that showed that when having perceived a need for mental healthcare, nature or severity of psychopathology did not determine mental healthcare-seeking (Codony et al., 2009; Mojtabai et al., 2002). This highlights that the healthcare services cannot assume that those with a clinical need for mental healthcare automatically will demand care. This seems to be especially true for men, in particular men with low mental health literacy and secondary education, as indicated by the higher likelihood to refrain from seeking mental healthcare in these groups (Paper I, and III).

This is worrying, considering the higher suicide rates among men in Sweden, in particular those with lower education and lower incomes (Crump et al., 2014). The treatment guidelines for depression and anxiety disorders in Sweden state that untreated depression increases the risk for suicide, and that the healthcare should be easily accessible to prevent suicide (Socialstyrelsen, 2021). However, considering that many do not seek mental healthcare, suicide prevention, and initiatives to increase trust in mental healthcare, should be conducted also outside the healthcare system.

5.2.3 Perceiving care as insufficient

The result from Paper I showed that men were more likely to perceive that the care was insufficient compared to women. However, this result should be cautiously generalised as the gender difference was small (29% versus 23%), the OR confidence interval was wide, and the difference was not statistically significant when adjusting for the higher cut-off for poor mental well-being. It should be noted that these groups of men already had passed steps 1 and 2, i.e., perceived a need and sought care. Gendered barriers may be more prominent at these earlier steps, as indicated by the results. However, it is somewhat surprising that the gender difference was not larger, as previous studies concluded that masculinity norms impact the entire pathway to care, including men's uptake, adherence, and satisfaction with treatment (Seidler et al., 2016; Seidler et al., 2019). However, the conclusions from these studies are mainly based on qualitative studies, whereas a survey study on psychiatric patients found no gender difference in patients' satisfaction with the mental healthcare (Blenkiron and Hammill, 2003). Paper I is one of the few studies that investigated gender differences in perceived sufficiency of mental healthcare using population-based survey data in Sweden.

A possible explanation for men's slightly lower perceived sufficiency of mental healthcare could be lower mental health literacy among men (Furnham and Swami, 2018; Hansson et al., 2016), considering the observed role of mental health literacy at steps 1 and 2 (Paper III). Being sceptical to treatment as psychotherapy and medication may lead to dissatisfaction with the received mental healthcare, considering that psychotherapy and medication are the main treatments available for depression and anxiety disorders in Sweden (Socialstyrelsen, 2021). It is also possible that men receive poorer quality of mental healthcare than women from a clinical perspective. Research from Nordic countries and the US found that men with mental diagnoses as depression were more likely than women to be underdiagnosed, undertreated with antidepressants, and to receive insufficient follow-up during sick leave (Bertakis et al., 2001; Rutz et al., 1995; Sundbom

et al., 2017; Øyeflaten et al., 2020). This indicates a gender bias within mental healthcare that disfavours men, but more research is needed. However, gender bias that disfavours women has been described in other settings. For example, a systematic review described gender bias within the healthcare for chronic pain where men's pain was described as the norm, and women's pain was taken less seriously (Samulowitz et al., 2018).

The result from Paper I indicated a tendency towards lower perceived sufficiency of mental healthcare among persons born outside Nordic countries, although the result was not statistically significant. This could be due to low statistical power, but also plausible heterogeneity among persons with migrant backgrounds (Mulinari et al., 2015). The use of broad categorisation as natives versus migrants in Public Health research in Sweden has been questioned, considering the large heterogeneity within these groups (Mulinari et al., 2015). Future studies should investigate differences in unmet need for mental healthcare based on more relevant categories, e.g., socioeconomic position. This is underlined by results from Swedish register studies that showed that patients with lower socioeconomic positions received poorer quality of treatment for somatic disorders as cardiac arrest (Agerström et al., 2021), and cancer (Cancerfonden, 2018). However, research on socioeconomic differences in the quality of treatment for depression and anxiety disorders in Sweden is lacking.

In Paper II it was investigated if men who previously perceived the care as insufficient when seeking it had poorer mental well-being than those who had not. Insufficient care-perceivers had poorer mental well-being at the first time point, but not at the one-year follow-up. The poorer mental well-being at baseline could represent negative health consequences, in line with research showing that perceived insufficiency of the healthcare is associated with poor clinical quality of care (Doyle et al., 2013). However, the result could also be biased as those with poorer mental well-being may overreport receiving insufficient care due to their lowered mood (Alonso et al., 2004b; Morgado et al., 1991). Future studies should combine data on individuals' perceptions of insufficient care with data on clinical indicators of insufficient care, e.g., not receiving adequate care based on evidence-based guidelines. In addition, there is a need for studies on why care-seekers think that the care is insufficient, and the potential role of mental health literacy and masculinity norms.

5.3 Mechanisms behind the gendered pathways

The results from this thesis showed consistent gender differences in unmet need for mental healthcare in Sweden with men being more likely to face barriers at all three steps on the pathway to care. This indicates that pathways to mental healthcare are gendered, i.e., impacted by social structures as gendered norms and gendered institutions. Although the exploration of potential mechanisms behind these gendered pathways is beyond the scope of this thesis, the results give some indications of some potential mechanisms at play: mental health literacy and stigmatizing attitudes towards depression. Mental health literacy and stigmatizing attitudes can both be understood as individual factors as well as structural factors, where individuals' perceptions, attitudes, knowledge, and capacities are intertwined with gendered norms and institutions. Therefore, mental health literacy and stigmatizing attitudes towards depression can be understood as gendered phenomena that impact pathways to met need for mental healthcare (Figure 6).

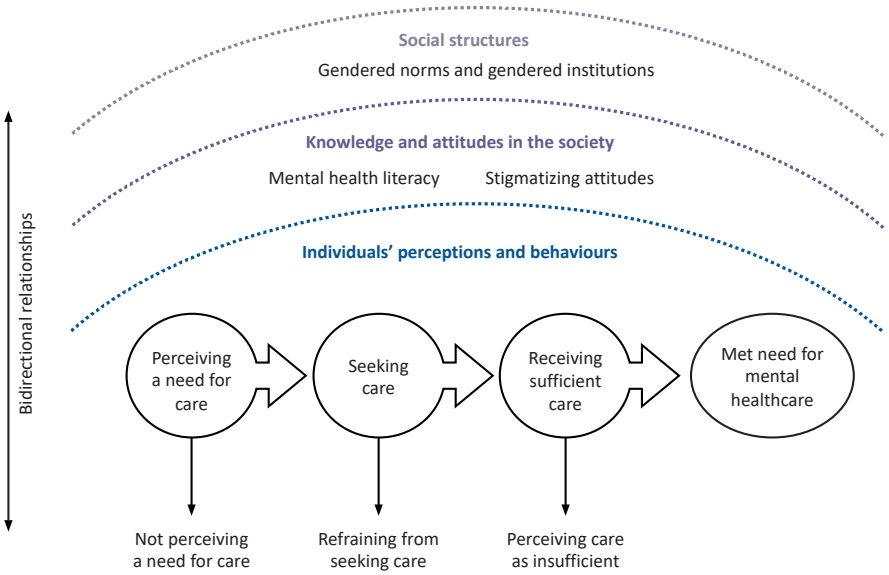

Figure 6. Illustration of the suggested relationships between gendered norms and institutions, mental health literacy and stigmatizing attitudes towards depression, and unmet need for mental healthcare, leading to gendered pathways to care.

Connell has described how the entire society can be seen as gendered, both individuals' perceptions and behaviours (e.g., healthcare-seeking), knowledge and attitudes, but also social institutions as the healthcare system,

the labour market, and the education system (Connell, 2005, 2012). Fuchs argue, based on Gidden's theory, that social structures both constrain and enable individuals' actions but at the same time are a result of individuals' actions (Fuchs, 2003). Therefore, individuals can act in line or against social structures as gendered norms and are thereby actively reproducing or changing them, according to Connell (Connell, 2005). For example, the results of this thesis show that many men sought mental healthcare (64% of those who had perceived a need for it, Paper I), which challenges the stereotype of men as non-care-seeking (Seidler et al., 2016). However, the possibility to act against dominant gender norms may differ based on men's multiple social positions, e.g., based on education level. The suggested relationships between gendered norms and institutions, knowledge and attitudes, and individuals' perceptions and behaviours on the pathway to care are illustrated in Figure 6. The potential role of mental health literacy and stigmatizing attitudes are discussed below.

Mental health literacy can be understood as a factor related to the social construction of masculinities and femininities (Peerson and Saunders, 2009). Although previous research has highlighted that health literacy should not be seen only as an individual skill (Kindig et al., 2004; Palumbo, 2016), the gendered nature of health literacy has received little attention in research (Peerson and Saunders, 2009). The relation between mental health literacy and gendered norms and institutions may be multifaceted. For example, a previous study showed a relation between adherence to masculinity norms and lower health literacy among men on an individual level (Milner et al., 2019). However, there may also be more indirect relations between gendered institutions and mental health literacy, e.g., through the education system, the labour market, and the healthcare system. For example, men in Sweden have lower education level compared to women (Statistics Sweden, 2020), which could contribute to the lower mental health literacy among men on average, and among specific groups of men, considering the relationship between lower education level and lower mental health literacy (Hansson et al., 2016).

Differences in knowledge and education may lead to different gendered pathways to care among men, as indicated by the higher likelihood of unmet need among men with low mental health literacy and secondary education (compared to university education, Paper I, and III). Skeggs has stated that access to knowledge is an essential feature of the reproduction of social inequalities based on class (Skeggs, 1997). As the core of mental health literacy is knowledge (Spiker and Hammer, 2019), mental health literacy can be understood as a mechanism that creates social inequalities in unmet need among men, based on education level. In line with this, Jorm has described that mental health literacy is a resource that gives individuals possibilities to

act to promote their mental health (Jorm, 2012). Some groups of men may have lower possibilities to promote their mental health, due to lower access to the resource mental health literacy, not only based on their social position as men but also based on intersecting social positions relating to education and class. Lower access to the resource mental health literacy may interact with masculinity norms that facilitate some actions, such as refraining from seeking care, and constrain others, such as seeking it. Such masculinity norms may be more prominent among men in more disadvantaged life circumstances, as men in tough manual labour, and men with lower education and lower incomes (Coston and Kimmel, 2012). This result from this thesis suggests that men's multiple social positions intersect (Hankivsky, 2012), and influence the likelihood of unmet need for mental healthcare.

Just as mental health literacy, stigmatizing attitudes towards depression (and other mental disorders) can also be understood as a factor related to the social construction of masculinities and femininities (Mahalik and Di Bianca, 2021). Stigma has been described as a mechanism that reproduces social inequalities by keeping stigmatized groups down, or away (Hatzenbuehler et al., 2013). The stigmatization of disorders traditionally connected to femininity (Addis and Mahalik, 2003), could be a way to subordinate those with these disorders, which may hinder mental healthcare-seeking. In line with this, stigma was one of the most common reasons for refraining from seeking mental healthcare (Paper I), as found previously (Forsell, 2006; Vogel et al., 2007). Stigma may also impact individuals' opinions of others with depression, as indicated by the results from Paper III. Dominant masculinity norms picturing men as strong, healthy, and not in need of healthcare or sick leave may legitimize men's power overall, but may at the same time be harmful to men with stigmatized disorders (Courtenay, 2000; Möller-Leimkühler, 2003). Courtenay has described how refusing to take sick leave from work can be a way for men to demonstrate masculinity, but may also be harmful to men's mental and physical health (Courtenay, 2000). A previous study found that internalized masculinity norms were associated with self-stigma, which in turn discouraged mental healthcare-seeking among men with depression (Mahalik and Di Bianca, 2021). It is important to have in mind that masculinity norms that may harm some men's mental health, e.g., by stigmatizing depression, at the same time may establish men's power over women and other men, as argued by Courtenay (Courtenay, 2000). For example, dominant masculinity norms encouraging behaviours as acting out or repressing emotions instead of seeking mental healthcare for depression reinforce the stereotype of men as the stronger sex (Courtenay, 2000). Masculinity norms picturing men with depression as "feminine" subordinate depressed men in relation to healthy men that are not in need of healthcare, i.e., more "masculine" and powerful men (Courtenay, 2000).

These masculinity norms may be especially harmful for men in more disadvantaged social positions as they have a higher risk for detrimental consequences of masculinity norms, e.g., substance-abuse disorders and suicide (Möller-Leimkühler, 2003). Therefore, men with depression and anxiety disorders, especially those in more disadvantaged social positions, may pay a high price for the reproduction of men's power over women and other men, as indicated by the thesis' results.

In sum, low mental health literacy and stigmatizing attitudes towards depression can be understood as factors that enhance barriers on the pathway to mental healthcare. Due to their suggested connection to gendered norms and institutions, they may create more barriers for men than women, and especially for some groups of men, as men with less access to power and resources. Therefore, the pathways to met need for mental healthcare can be understood as gendered. However, both mental health literacy and stigmatizing attitudes are modifiable factors (Peerson and Saunders, 2009; Stormacq et al., 2019), possibly easier to target by interventions than the main causes of gendered and social inequalities, e.g., power hierarchies upheld by masculinity norms. Interventions improving mental health literacy and reducing stigmatizing attitudes towards depression in the wider society have the potential to by time change and replace masculinity norms that are detrimental to men's mental health with more health-promoting norms.

5.4 Methodological considerations

5.4.1 Measuring unmet need

Unmet need for mental healthcare is a complex phenomenon that cannot be fully captured using questionnaire data. However, an advantage of this thesis is the use of three indicators covering different aspects of unmet need. The three indicators are discussed below.

Not perceiving a need for mental healthcare
Not having perceived a need for mental healthcare, despite controlling for current poor mental health, can be seen as unmet need from a clinical perspective (Allin et al., 2010). It is based on the assumption that those with symptoms corresponding to a diagnosis have a clinical need for mental healthcare (Andrews and Henderson, 2000). The cut-offs used for current poor mental well-being (on WHO-10, Paper I), and current poor mental health (on GHQ-12, Paper III) are previously found to correspond to symptoms of a common mental disorder (Hansson, 2009; Hansson et al., 2007; Lundin et al., 2017). The main advantage of this approach is that

groups that face more barriers to mental healthcare, as low mental health literacy, may not perceive a need for care. However, there are also some disadvantages. Firstly, even those with symptoms corresponding to a diagnosis may not have a clinical need for care (Bebbington et al., 1997; Wang et al., 2017). Many may have transient distress, not in need of treatment, and be aware of this (Wang et al., 2017). In addition, the scales used (WHO-10 and GHQ-12) are not explicitly aimed for measuring clinical need for mental healthcare or even psychiatric diagnoses. Therefore, they do not capture important aspects of clinical need such as persistence of symptoms, the benefit of treatment, etc (Bebbington et al., 1997). To better capture discrepancies between perceived need and clinical need, future studies should consider using assessment by clinicians.

Secondly, the indicators of clinical need for mental healthcare referred to the previous weeks, whereas the question on perceived need referred to "any time in life". It would have been more logical to measure both aspects of need within the same time frame. However, ideally, current clinical need should translate into reporting a lifetime perceived need for mental healthcare (Burström, 2009).

Refraining from seeking mental healthcare

Refraining from seeking mental healthcare, despite perceiving a need for it, is a subjective indicator of unmet need, based on individuals' assessment of their need (Allin et al., 2010). The advantage of this indicator is that individuals may know best if they need care or not (Allin et al., 2010). In line with this, research has found that those with the greatest clinical need are more likely to perceive a need and seek mental healthcare (Codony et al., 2009). Therefore, it is a disadvantage that it was not possible to adjust for clinical need for mental healthcare at this step. This was not conducted as a prior decision to refrain from seeking mental healthcare (at any time in life) may be based on prior mental health status (years ago) and we only had data on current mental health. Controlling for self-reported persistent mental illness, for which data was available, was not an alternative as seeking care is often a prerequisite for receiving a diagnosis. However, it should be noted that a previous studies found no association between seeking care and severity of symptoms once need was perceived (Mojtabai et al., 2002). This indicates that controlling for clinical need for mental healthcare is more important at Step 1 (not perceiving a need) than at Step 2 (refraining from seeking).

Perceiving care as insufficient

Perceiving that the care is insufficient when having sought care is also a

subjective measure of unmet need for mental healthcare, based on individuals' assessment of their need (Allin et al., 2010). An important factor to consider is that perceived insufficiency is not equal to clinical insufficiency of the mental healthcare (Allin et al., 2010). Sufficient care from a clinical standpoint is often defined as receiving adequate evidence-based treatment in a sufficient amount (Forsell, 2006; Thornicroft et al., 2017). Individuals may not fully be able to assess the adequacy and sufficiency of the care they receive (Allin et al., 2010), due to scepticism to treatment, unrealistic expectations, etc (Mojtabai et al., 2002; Seidler et al., 2016). Individuals may also perceive the care as insufficient due to general pessimism related to low mood (Alonso et al., 2004b; Morgado et al., 1991) although this was controlled for in the relevant analyses (Paper I).

Even if perceived insufficiency is not equal to clinical insufficiency of mental healthcare, it can still be used as an indicator of unmet need for mental healthcare. Those defined as insufficient care-perceivers reported that they did not receive the care that they needed, which clearly shows that they had a self-reported unmet need. In addition, consistent findings have shown that low patient satisfaction is associated with poor quality of healthcare, also using clinical indicators (Doyle et al., 2013). Therefore, it has been argued that patient satisfaction is an important measure of quality of healthcare (Doyle et al., 2013).

5.4.2 Measuring gender

Gender was measured in this thesis using register- or self-reported data categorised into men/women. However, Paper III and IV were based on self-reported data that included a third response alternative on gender: "other". As only a very small number of participants reported this alternative, this group could not be included in statistical analyses. Consequently, they were excluded from the study samples. However, considering the poorer mental health among gender minorities as non-binary persons (Jones et al., 2019) and the limited amount of research on gender minorities' mental health (Bränström and van der Star, 2013), future research should be designed to include this group, e.g., by using larger population-based samples or by using targeted surveys.

It should also be noted that the observed differences between men and women in this thesis were relatively small, e.g., concerning unmet need, and sick-leave opinions. Although even small differences may have large implications on a population level, the differences within the groups of men and women may be just as large, as indicated by the result from Paper III. The thesis' main focus on differences between men and women may

therefore be too simplistic and risks reproducing gender stereotypes (Seidler et al., 2016), although attempts were made to account for intersecting social positions as education. Future research should strive towards a more intersectional approach e.g., by using larger population-based samples enabling sub-group analyses, or by using qualitative methodology that could better capture the complexity of intersecting social positions. In addition, to highlight the fluid nature of gender, there is a need for epidemiological research that is not based on fixed gender categories, but measures gender using, e.g., measures on adherence to masculinity norms. The incentive is that dominant masculinity norms in the society may create barriers to mental healthcare also among women and non-binary persons, due to the higher status of traditionally masculine traits, such as self-reliance, over traditionally feminine traits, such as help-seeking and vulnerability (Courtenay, 2000). Therefore, future epidemiological research should investigate the relationship between adherence to different forms of masculinity norms and unmet need for mental healthcare among all, regardless of self-reported gender.

5.4.3 Selection bias

Selection bias occurs when there is a skewed selection of study participants that affects the study's results, e.g., if participants differ from non-participants regarding the main variables investigated in the study (Thelle, 2015). Paper I-III are based on random population-based samples that should represent the target population. The main problem with selection bias here lies in differences in study participation between groups. In particular, whether participants differ from non-participants regarding the main variables studied, i.e., unmet need for mental healthcare.

One could assume that persons that are sceptical to participate in research studies are also more sceptical to seeking healthcare than study participants, due to general scepticism towards societal institutions. This could lead to an underestimation of the true prevalence of unmet need for mental healthcare. In line with this, Agerholm et al. found that survey participants were more likely to have made an outpatient visit to the doctor than non-participants, but the study did not investigate mental healthcare-seeking specifically (Agerholm et al., 2016). Internal analyses of those lost to follow-up in Paper II point in another direction: There were no differences in mental healthcare-seeking and perceived sufficiency of the care between those lost to follow-up and participants at T2 (Paper II).

As this thesis focuses on differences between groups, e.g., between men and women, and among men, the main problem with selection bias is if participants in one group were not representative of the non-participants in

the same group. It is well known that men are less likely to participate in research studies than women (Galea and Tracy, 2007), in line with the non-participation analyses conducted for the data used in Paper I and II (Knapstad et al., 2016), and the non-participation analysis conducted for Paper III. However, this is only problematic if male non-participants differ regarding key variables compared to male participants. This is possible, as Agerholm et al. found that male non-participants had lower healthcare utilization than male survey participants (Agerholm et al., 2016). If this is true also in the studies included in this thesis, unmet need for mental healthcare among men may have been underestimated.

Paper IV differs from the other studies as it is based on a self-selected sample in an online panel. The sample has a higher education level, and older age, compared to the general population (Martinsson et al., 2014), and the expected gender difference in political ideology was not observed (Naurin and Öhberg, 2019). Possibly, men and women who participated in this study were more similar in attitudes and opinions than men and women in the general population. Therefore, the gender difference in sick-leave opinions and stigmatizing attitudes may have been underestimated.

In sum, although previous research has not found much evidence for extensive bias due to non-participation in epidemiological studies (Galea and Tracy, 2007), it is possible that the gender differences found in this thesis are slightly underestimated, rather than overestimated.

6 Conclusion

The main finding of this thesis was that men in Sweden had a higher likelihood of unmet need for mental healthcare at three steps on the pathway to care. Men were more likely than women to 1) not perceive a need for mental healthcare even when having symptoms indicating a clinical need for care, in particular men with low mental health literacy, 2) refrain from seeking care when perceiving a need, in particular men with low mental health literacy and secondary education, and 3) perceive the care as insufficient when seeking it. Men who had refrained from seeking mental healthcare, or perceived the care as insufficient, had poorer mental well-being than men that had not. Men were also more likely than women to think that sick leave was not reasonable for a fictive person with symptoms of depression, partly due to more stigmatizing attitudes towards depression among men than women.

The findings indicate that pathways to mental healthcare are gendered, with male gender being a risk factor for unmet need at multiple steps, even in a relatively gender-equal country like Sweden. However, some men seem more vulnerable. Low mental health literacy, lower education, and stigmatizing attitudes towards depression, may enhance barriers on the gendered pathways to care. More knowledge is needed on how the healthcare system and the wider society can contribute to reducing these barriers.

The gendered inequalities observed in this thesis should be targeted urgently, considering the high prevalence of common mental disorders among men in Sweden, the benefit of treatment, and the risk for maladaptive coping strategies and suicide among men.

7 Future perspectives

The results of this thesis have implications for the healthcare system and the wider society. Firstly, the healthcare system should review how its design and communication can reduce barriers to mental healthcare, especially among men, and in particular men with low mental health literacy and secondary education. Secondly, the healthcare system should consider outreach strategies to build trust and increase knowledge about mental healthcare, considering that many do not seek care. Thirdly, there is a need for interventions outside the healthcare system to increase mental health literacy and reduce stigmatizing attitudes. The media, the school system, governmental and non-governmental organisations, male-dominated workplaces, and sports clubs can be important actors.

The observed heterogeneity among men and women in this thesis indicates that interventions and research on unmet need for mental healthcare should be conducted using an intersectional approach. The role of multiple intersecting social positions should be considered, e.g., education level, class, ethnicity, migration background, gender identity, and sexual orientation.

This thesis also raises some questions that could be investigated in future research:

- What are the relations between masculinity norms, mental health literacy, and stigmatizing attitudes towards depression in Sweden?

- What are the characteristics of men with low mental health literacy and how can they be reached?

- Is there a gender bias in the mental healthcare in Sweden that disfavours men in general, and some groups of men in particular?

- How are opinions on sick leave for depression related to men's lower perceived need for mental healthcare?

- What are the individual and societal consequences of men's unmet need for mental healthcare, and are there differences among men based on intersecting social positions as education level, and based on mental health literacy?

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Appendix

Questions on perceived need for mental healthcare, mental healthcare-seeking, and perceived sufficiency of the care, used in Paper I and II. In Swedish.

13. Har du någon gång mått så psykiskt dåligt att du kände behov av att söka vård?

1 ☐ Ja
2 ☐ Ja, men jag sökte inte vård → *Gå vidare till fråga 16*
3 ☐ Nej → *Gå vidare till fråga 17*

14. När du mådde så psykiskt dåligt att du behövde söka vård, var sökte du då vård?

1 ☐ Vårdcentralen
2 ☐ Öppenpsykiatrisk vård
3 ☐ Hos privatläkare
4 ☐ Hos privat psykolog eller psykoterapeut
5 ☐ Akutmottagningen
6 ☐ Annat
Ange var, skriv i rutan:

15. Tycker du att du fick den vård du behövde?

1 ☐ Ja → *Gå vidare till fråga 17*
2 ☐ Nej → *Gå vidare till fråga 17*

16. Vilka var skälen till att du inte sökte vård?
Flera alternativ kan anges.

1 ☐ Jag trodde inte att vård skulle kunna hjälpa mig
1 ☐ Jag skämdes för att visa att jag mådde så dåligt
1 ☐ Jag var rädd att någon jag känner skulle se mig när jag sökte vård
1 ☐ Det var för lång restid till vårdgivaren
1 ☐ Det var inte öppet hos vårdgivaren
1 ☐ Det var för dyrt att söka vård
1 ☐ Jag visste inte vart jag skulle vända mig
1 ☐ Det fanns inte kommunikationer så att jag kunde ta mig till vårdgivaren
1 ☐ Jag tänkte att den psykiska ohälsan säkert går över av sig själv
1 ☐ Jag var rädd att jag skulle bli inlagd mot min vilja

1 ☐ Annat skäl
Ange vilket, skriv i rutan:

Questions on perceived need for mental healthcare, and mental healthcare-seeking, used in Paper III. In Swedish.

29. Har du någon gång mått så psykiskt dåligt att du kände behov av att söka vård?

- ☐ Ja, och jag har en pågående vårdkontakt ➡ fortsätt till fråga 31
- ☐ Ja, men jag har avslutat vårdkontakten ➡ fortsätt till fråga 31
- ☐ Ja, men jag sökte inte vård
- ☐ Nej ➡ fortsätt till fråga 31

30. Vilket/vilka var skälen till att du inte sökte vård?
Flera alternativ kan markeras

- ☐ Jag trodde inte att vård skulle kunna hjälpa mig
- ☐ Jag skämdes för att visa att jag mådde så dåligt
- ☐ Jag var rädd att någon jag känner skulle se mig när jag sökte vård
- ☐ Det var för lång restid till vårdgivaren
- ☐ Det var inte öppet hos vårdgivaren
- ☐ Det var för dyrt att söka vård
- ☐ Jag visste inte vart jag skulle vända mig
- ☐ Det fanns inte kommunikationer så att jag kunde ta mig till vårdgivaren
- ☐ Jag tänkte att den psykiska ohälsan säkert går över av sig själv
- ☐ Jag var rädd att jag skulle bli inlagd mot min vilja
- ☐ Annat skäl, ange vilket: _____

_____

_____

The Swedish translation of WHO (ten) mental well-being index (WHO-10), used in Paper I and II.

11. Hur har du mått den senaste veckan?
Sätt ett kryss i den ruta som stämmer bäst för varje påstående.

		Hela tiden 1	Ofta 2	Ibland 3	Aldrig 4
a.	Jag har känt mig ledsen och nere	☐	☐	☐	☐
b.	Jag har känt mig lugn och avslappnad	☐	☐	☐	☐
c.	Jag har känt mig energisk, aktiv och företagsam	☐	☐	☐	☐
d.	När jag har vaknat upp har jag känt mig pigg, utvilad och företagsam	☐	☐	☐	☐
e.	Jag har känt mig lycklig eller nöjd och belåten med mitt personliga liv	☐	☐	☐	☐
f.	Jag känner mig tillfreds med min livssituation	☐	☐	☐	☐
g.	Jag lever det slags liv jag vill leva	☐	☐	☐	☐
h.	Jag har varit pigg på att ta itu med dagens arbete eller fatta nya beslut	☐	☐	☐	☐
i.	Jag har känt att jag kan klara av allvarliga problem eller förändringar i mitt liv	☐	☐	☐	☐
j.	Jag har känt att livet är fullt av intressanta saker	☐	☐	☐	☐

The Swedish translation of the Mental Health Knowledge Schedule (MAKS, items 1-6), used to measure mental health literacy in Paper III.

Frågor om uppfattningar kring psykiska problem samt vård och stöd för dessa

12. Här följer några påståenden kring uppfattning om psykiska problem.
Med begreppet "psykiska problem" menar vi problem som är av den graden att personen skulle behöva komma i kontakt med vården

Markera för varje påstående i vilken utsträckning du instämmer

	Instämmer helt	Instämmer delvis	Instämmer inte men tar ej heller avstånd från	Tar delvis avstånd ifrån	Tar helt avstånd ifrån	Vet ej
De flesta människor med psykiska problem vill ha ett lönearbete	☐	☐	☐	☐	☐	☐
Om jag hade en vän med psykiska problem, vet jag vilket råd jag skulle ge honom/henne för att få professionell hjälp	☐	☐	☐	☐	☐	☐
Läkemedel kan vara en effektiv behandling för människor med psykiska problem	☐	☐	☐	☐	☐	☐
Psykoterapi (t.ex. kognitiv terapi eller stödsamtal) kan vara en effektiv behandling för människor med psykiska problem	☐	☐	☐	☐	☐	☐
Människor med allvarliga psykiska problem kan återhämta sig fullständigt	☐	☐	☐	☐	☐	☐
De flesta människor med psykiska problem får professionell hjälp inom sjukvården	☐	☐	☐	☐	☐	☐

The Swedish translation of the General Health Questionnaire (GHQ-12), used to measure current mental health in Paper III

16. Har du de senaste veckorna kunnat koncentrera dig på allt du gjort?
- ☐ Bättre än vanligt
- ☐ Som vanligt
- ☐ Sämre än vanligt
- ☐ Mycket sämre än vanligt

17. Har du haft svårt att sova på grund av oro de senaste veckorna?
- ☐ Inte alls
- ☐ Inte mer än vanligt
- ☐ Mer än vanligt
- ☐ Mycket mer än vanligt

18. Upplever du att du har gjort nytta de senaste veckorna?
- ☐ Mer än vanligt
- ☐ Som vanligt
- ☐ Mindre än vanligt
- ☐ Mycket mindre än vanligt

19. Har du de senaste veckorna kunnat fatta beslut i olika frågor?
- ☐ Bättre än vanligt
- ☐ Som vanligt
- ☐ Sämre än vanligt
- ☐ Mycket sämre än vanligt

20. Har du ständigt känt dig spänd de senaste veckorna?
- ☐ Inte alls
- ☐ Inte mer än vanligt
- ☐ Mer än vanligt
- ☐ Mycket mer än vanligt

21. Har du de senaste veckorna känt att du inte kunnat klara dina probler
- ☐ Inte alls
- ☐ Inte mer än vanligt
- ☐ Mer än vanligt
- ☐ Mycket mer än vanligt

22. Har du de senaste veckorna känt att du kunnat uppskatta det du gjort dagarna?
- ☐ Mer än vanligt
- ☐ Som vanligt
- ☐ Mindre än vanligt
- ☐ Mycket mindre än vanligt

23. Har du de senaste veckorna kunnat ta itu med dina problem?
- ☐ Bättre än vanligt
- ☐ Som vanligt
- ☐ Sämre än vanligt
- ☐ Mycket sämre än vanligt

24. Har du ständigt de senaste veckorna känt dig olycklig och nedstämd?
- ☐ Inte alls
- ☐ Inte mer än vanligt
- ☐ Mer än vanligt
- ☐ Mycket mer än vanligt

25. Har du de senaste veckorna förlorat tron på dig själv?
- ☐ Inte alls
- ☐ Inte mer än vanligt
- ☐ Mer än vanligt
- ☐ Mycket mer än vanligt

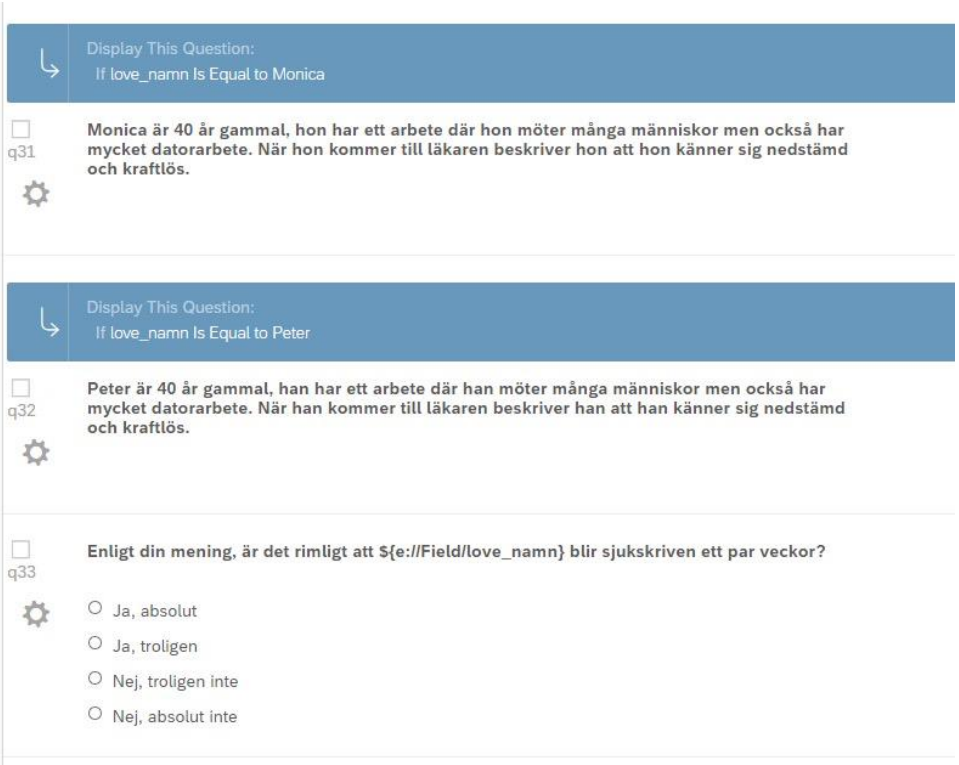
26. Har du tyckt att du varit värdelös de senaste veckorna?

- ☐ Inte alls
- ☐ Inte mer än vanligt
- ☐ Mer än vanligt
- ☐ Mycket mer än vanligt

27. Har du på det hela taget känt dig någorlunda lycklig de senaste veckorna?

- ☐ Mer än vanligt
- ☐ Som vanligt
- ☐ Mindre än vanligt
- ☐ Mycket mindre än vanligt

The Swedish original version of the vignette used in Paper IV.



The Swedish translation of the Depression Stigma Scale (DSS), used to measure stigmatizing attitudes in Paper IV.

I vilken utsträckning instämmer du i följande påståenden?

	Instämmer inte alls 1	2	3	4	Instämmer helt 5
Människor med depression kan ta sig ur det om de bara vill	○	○	○	○	○
Depression är ett tecken på svaghet	○	○	○	○	○
Depression är inte en riktig medicinsk sjukdom	○	○	○	○	○
Människor med depression är farliga	○	○	○	○	○
Det är bäst att undvika människor med depression så man inte blir deprimerad själv	○	○	○	○	○
Människor med depression är svårberäkneliga	○	○	○	○	○
Om jag hade depression skulle jag inte berätta detta för någon	○	○	○	○	○
Jag skulle inte anställa någon som jag visste varit deprimerad	○	○	○	○	○
Jag skulle inte rösta på en politiker om jag visste att denne varit deprimerad	○	○	○	○	○