Gender & Depression in Europe

GENDER & DEPRESSION IN EUROPE

Analyzing gender differences in Depression
from a Cross-National Comparative Perspective

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PART I
GENERAL INTRODUCTION

CHAPTER 1
INTRODUCTION

In both the popular media and academia there is much debate about the impact of female empowerment and gender equality on the well-being of men and women. Some point to the benefits of increased gender equality, some however accentuate the negative effects, both for women, who become more burdened and for men, who as a group lose many of their old privileges. In this thesis I want to contribute to this debate by focusing on gender inequality using depression as an outcome. In the course of studying social influences on depression in men and women, I intend to identify critical features of the gender organization of social life that put men and women at higher risk of depression.

A recurrent finding in international literature is a greater prevalence of depression in women compared to men. This gender gap has been studied extensively by different disciplines, ranging from the utter micro-level, e.g. the study of genes and sex steroids, to the macro social and political context. Sociological research has shown that depression is intimately tied to and a consequence of power and powerlessness. Most research focuses on micro-level power resources and constraints - the gender-specific demands of marriage, childcare, and employment - and stressful life-events - divorce, poverty and employment problems. Hitherto, macro-sociological determinants of depression and the gender difference in depression have largely been ignored, even though a number of studies established substantial cross-national differences in the prevalence of depression. This is problematic, since the mental health benefits that women and men can draw from individual power resources are moderated by the social and political context.

A lack of focus on macro-level moderators, for the most part, stems from insufficient data that allows cross-national and comparative research. Fortunately, at the start of my PhD endeavour, the third round of the European Social Survey (ESS-3) was released. The ESS-3 covers the general population in most European countries and gathered information on depression using a shortened version of a well-established depression inventory. It has substantially broadened the possibilities for macro-sociological research on depression, thus introducing a much needed multilevel perspective.

Using this data, I intend to contribute to the existing literature on gender differences in depression by incorporating a macro-sociological perspective. I deliberately speak of 'incorporation', because I do not intend to compete with existing research at other levels of analysis, such as the biological or psychological approach to depression. In fact, I claim that each of these levels is distinct, but complementary to one another. In the current thesis however, I focus on the association between gender equality and depression from a cross-national perspective. I combine insights from 'gender role' literature, 'doing gender' literature and most prominently gender stratification literature. The central aim of my research is to examine to what extent there is cross-national variation in the association between micro-level gender inequality and depression, and to what extent contextual explanations are able to account for these patterns of variation.

My study is relevant to society and social policy. Tackling depression is high on the public health agenda - depression has been identified as the leading cause of the global burden of disease by the World Health Organization, and the EU-Commission recently adopted a green paper on how to promote mental health in the European Union. In addition, this study is also relevant to sociological research. It enables us to distinguish between personal assumptions and social facts, and also between personal problems and social problems. Researchers who study discrimination, poverty or divorce often speculate on how these problems arise from the social context and the effect it has on the well-being of those individuals affected by the problem. The subjective quality of social conditions can, however, be objectively assessed by measuring feelings such as fear, anxiety, frustration, anger, guilt, despair, depression and by mapping the relationship of these feelings to social conditions and positions. For instance, I might find that women with jobs outside the house are less depressed than housewives. If so, this is not my opinion or assumption, it is a social fact.

An example by Mirowsky and Ross (1989, 3) in their inspiring book 'Social Causes of Psychological Distress' vividly shows how personal feelings of despair can result from social problems:

> Imagine a man who left his inner city high school at the first opportunity, without a degree and without basic skills; who spent years unemployed or underemployed; who finally got a factory job that he managed to hold onto long enough to make a down payment on a house and start a family; who was among the first laid off when the product his factory produced could not compete

> with similar items made where labor costs are lower; and whose unemployment compensation has run out.
>
> Imagine a women who married young because she was pregnant; who had two more unplanned children in quick succession; who took a boring and unpleasant job at a minimum wage because her husband could not support the family; whose husband says she trapped him into marriage, is embarrassed that she has a job, and gives her little help with the children, cannot afford day care and cannot afford to miss work; whose boss gave her a bad report for being absent or late too often; and who has just learned she is pregnant again.

The despair these people feel is deeply personal. Their problems are deeply social (Mills, 1959). It is the despair that identifies the social facts as social problems. Mapping the social causes of depression and of gender differences in depression gives me a unique opportunity to identify social facts (e.g. gender inequality) as social problems (e.g. gender differences in depression).

In the upcoming parts of the theoretical introduction, I will first discuss the epidemiological evidence for gender differences in depression, as well as the main concepts 'gender' and 'depression'. In the first part of this thesis, I will provide an overview of the different approaches to explaining gender differences in depression, among which are the biological underpinnings, some of the psychological models, and finally the two most prominent social models: the social stress model, and the structural strain model. Sociological approaches to gender inequality are discussed in a separate section by distinguishing between micro-level and macro-level models. Finally, theories explaining depression on the one hand, and theories explaining gender inequality on the other hand, are integrated into a conceptual model that will be applied in the empirical research discussed in the second part of this thesis.

Epidemiological Evidence

Epidemiological findings point to a higher prevalence of depression in women than men. Depression is approximately twice as prevalent in women as it is in men (Piccinelli & Wilkinson, 2000). The gender gap in depression remains one of the most robust findings in the epidemiological studies on mental health. The pattern appears in both clinical and general population samples and is virtually

independent of location, method of assessment and diagnostic system (Kessler et al., 1993). However, the size of the gender gap depends on the way it is measured, and varies with the positions that men and women occupy within societies.

Frequency can be measured in a variety of ways: degree, incidence, point, period or lifetime prevalence, and risk. General population studies commonly report period or lifetime prevalence, while investigations of clinical series usually use first contact or admission as a proxy for incidence. However, gender differences based on these indices may vary (Bebbington, 1996). If the age of onset and duration of depression were greater in women, estimated gender differences based on point or period prevalence will be larger than that in incidence or lifetime prevalence. Some studies report higher rates of first onset depression episodes in women rather than a longer duration (Kessler et al., 1993; Wilhelm & Parker, 1994), while others found a female preponderance in chronic depression (Bracke, 1998, 2000). The size in the gender gap also depends on the use of a discrete or a continuous variable and the height of the symptom threshold set for discrete inventories. Females have the tendency to report more depressive symptoms than males, and are therefore more likely to meet criteria for depression (Stommel et al., 1993). In addition, the prevalence of depression associated with somatic symptoms is much higher among women than men (Kornstein et al., 2000; Silverstein, 2002). Therefore a gender sensitive depression inventory should be warranted when comparing depression in men and women.

Another important aspect of the study of gender differences in depression refers to the different expression of men and women when confronted with stressful circumstances. Indeed, men and women differ in the types of mental disorders they experience. Women are about twice as likely to have mood and/or anxiety disorders whereas men are about four times more likely to have substance use disorders, antisocial behaviors and impulsive disorders (Offord et al., 1996; Seedat et al., 2009). In addition, comorbidity is more common among women than men. Most often, it takes the form of a concurrence of depressive, anxiety and somatoform disorders in women and of substance abuse and antisocial behavior in men (Bland et al., 1994; Jacobi et al., 2004; R. C. Kessler et al., 1994). For that reason, some research based on a broad range of assessed mental disorders does not confirm the female preponderance in depression or even mental health problems in general. Some studies show that women are not more likely than men to suffer from mental illness in general (Kessler et al., 1994), while others do find higher rates of mental health problems among women compared to men (Alonso et al., 2004). The gender balance in mental health thus

depends on the type of mental health problems evaluated in the surveys. Studies that focus only on one dimension of mental health, for example depression, might not reflect the true gender balance in mental health. For that reason, some authors have claimed that men and women do not differ in the frequency of mental health problems, but rather in its nature.

However, central to the sociological study of mental health is not so much how men and women respond to stressful circumstances and experiences, but rather which social problems within society are associated with mental problems, and how these social problems are unevenly distributed between men and women. The gender gap in depression varies according to the position that men and women fulfill within society. Some research reveals that women's levels of depression diminish as their work and family circumstances approach those more typical for males (Gore & Mangione, 1983; Lennon & Rosenfield, 1992; Seedat et al., 2009). It is related to employment (Artazcoz et al., 2004a; Fryers et al., 2003; Howe et al., 2004; Leeflang et al., 1992; Ross & Mirowsky, 1995), education (Ross & Mirowsky, 2006), income and economic hardship (Levecque et al., 2011), marriage and divorce (Beach et al., 1993; Breslau et al., 2011; Fletcher, 2009; Frech & Williams, 2007; Marks, 1996; Simon & Marcussen, 1999; Strohschein et al., 2005), and parenthood (Brown & Moran, 1997; Evenson & Simon, 2005; Garfield et al., 2006; Helbig et al., 2006). Research also showed that age is a crucial factor, with the female preponderance only appearing after mid-puberty (Angold et al., 2002; Hankin et al., 1998; Lewinsohn et al., 1993). While previous research on the association between age and depression in the general population shows contradictory patterns (Jorm, 2000; Klerman, 1988), the few that focused on gender, point to a growing gender gap in adulthood as women and men undergo their unequal adult statuses, as well as a higher probability of widowhood at a later age (Mirowsky, 1996; Wauterickx & Bracke, 2005). Depression also varies across cohorts (Brault et al., 2011), but it remains uncertain how these cohort-trends differ by gender.

Finally, the size of the gender gap in depression does not only vary across social groups within a society. A number of multi-country studies also point to cross-national variation in the size of the average gender gap in depression. Due to different population and mental health assessment tools, these studies present mixed results concerning cross-national variation in gender differences in depression. In certain studies, countries can be grouped by the size of the gender gap in depression. For example, based on the ODIN data, one study reported that the largest gender differences in depression were found in Anglo-Saxon countries, and lower levels of depression were reported in Nordic countries (Ayuso-Mateos

et al., 2001). Other data however did not confirm this clustering, but found that among Eastern European countries the smallest and the largest gender gap in depression could be established in two separate countries; the same held for some of the Northern and Southern European countries (Hopcroft & Bradley, 2007; Immerman & Mackey, 2003). Other studies found a smaller variation in gender differences in depression across countries (Börsch-Supan et al., 2005; Maier et al., 1999). However, all studies reveal significant cross-national variation in the gender gap in depression between men and women.

Main Concepts

Gender

A distinction between sex and gender is often made in feminist literature (Stoller, 1968). Sex generally refers to biological differences between males and females (e.g. chromosomal, hormonal, and morphological). Gender has come to mean the socio-culturally constructed components attached to each sex. However, in practice it is difficult to disentangle the sex component from the gender component, since both are in constant interaction. However, we might assume that biological differences are basically constant across time and space. The phenomena of interest in the current research are aspects of gender systems that can and have varied and, therefore, must be explicable by phenomena that vary, that is the social aspect.

The term 'gender system' refers to the socio-cultural status quo in stable systems, and to the status quo ante in changing systems, as it relates to gender (Chafetz, 1990). It includes systems of gender stratification and gender differentiation. 'Gender stratification' refers to the extent to which males and females who are otherwise social equals (e.g. in terms of age, social class, race/ethnicity, and religion) are equal in their access to the scarce and valued resources of their society. All systems of stratification are, by definition, systems of power inequality. Power can be defined in the Weberian sense as the ability of persons or groups to command compliance from other persons or groups, even in the face of opposition. Power requires resources superior to those controlled by compliers. The bases (types of resources) and degree of the power inequality differs from one form of stratification to another, and from one society or time to another. Also, the higher the level of gender stratification, the greater the inequality between males and females in terms of general categories.

Empirically, gender stratification has always meant some degree of female disadvantage. The scarce and valued resources that may be unequally distributed by gender include at least the following: materials goods, services provided by others, leisure, prestige-conferring roles, health care and nutrition, personal autonomy, physical safety, opportunities for psychic enrichment and gratification, and opportunities for education and training (Chafetz, 1990). The degree of gender stratification is not uniform throughout a complex society. It varies by class and possibly by ethnicity and religion (Blumberg, 1984). Underpinning all systems of stratification is inequality of power and authority, which are themselves scarce and valued resources.

The degree of 'gender differentiation' refers to a number of traits upon which males and females differ, and the extent to which men and women differ on those traits. Examples are cognitive skills and style, basic personality, emotional expression, self-concept, priorities among various social roles, task usage, and so on (Spence, 1993). The process by which males and females as individuals come to be gender differentiated is referred to as 'engendering' (Coltrane, 2006). Gender differentiation does not, conceptually, imply inequality. Empirically, however, gender differentiation and gender stratification are closely related to one another (Sanday, 1974).

Gender systems arise over time and reflect historical as well as contemporary phenomena. According to Chafetz (1990) three kinds of social definitions are of importance to understanding gender system maintenance and change; gender ideology, gender norms and gender stereotypes. Ideologies are coherent belief systems that orient people to a particular way of understanding and assessing the world. 'Gender ideologies' are defined as belief systems that explain how and why males and females differ, and specify, on that basis, different rights, responsibilities, restrictions and rewards to each gender, and justify negative reactions to nonconformists. They are often grounded in religious principles and/or conceptions of biologically inherent, 'natural' sex differences. 'Gender norms' refer to behavior that is expected of people on the basis of the status to which they are assigned, given their sexual biology. The concept is closely linked to theories on 'doing gender' (West & Zimmerman, 1987) and 'gender performity' (Butler, 1990). They vary over time and space in two ways: the level of consensus among societal members and the number of behaviors that are defined as gender specific. Earlier, gender differentiation was discussed as real differences, on the average, between males and females. Regardless of the reality of such differences, there usually exist beliefs or perceptions that the genders are fundamentally different on a variety of traits. These beliefs constitute 'gender

stereotypes' when they are shared by collectives. Again, societies vary in the number of stereotyped beliefs they hold concerning males and females and the degree of consensus among societal members concerning them.

Depression

The meaning of the term depression (and other words derived from it, such as depressive, depressed) depends to a large extent on the context in which it is used. It has a different meaning depending on whether it is used by researchers and mental health professionals in their work, and how it is used by ordinary people in their everyday lives. It has a long history that dates back to the Hippocratic writings of the 5th century B.C. describing melancholia as an 'aversion to food, despondency, sleeplessness, irritability, restlessness' and 'fears and despondencies, if they last a long time' (Jackson, 1990). Today, the characteristic features of melancholia described many centuries ago are still recognizable in current definitions of depression. The nosology has changed over time, with different meanings and connotations depending on the context in which it is used. In general, depression has always been perceived as a negative aspect of mental life, but its meaning has been subject to much debate. Areas of particular interest have included the definition and quantification of the nature of depression in different populations, applications and how the concept differs from normal human experiences.

One area of debate concerns the particular features of a person's experiences that should be specified as symptoms of the disorder of depression. At the present time, among both mental health professionals and researchers, the symptoms considered diagnostic for depression are those listed in the volume published by the American Psychiatric Association, entitled the 'Diagnostic and Statistical Manual of Mental Disorders' (DSM) (American Psychiatric Association, 1994). DSM diagnosis of 'major depressive disorders' requires that five symptoms out of the following nine be present during a 2-week period (the five must include either depressed mood or diminished interest or pleasure): (1) depressed mood; (2) diminished interest or pleasure in activities; (3) weight gain or loss or change in appetite; (4) insomnia or hypersomnia (excessive sleep); (5) psychomotor agitation or retardation (slowing down); (6) fatigue or loss of energy; (7) feelings of worthlessness or excessive or inappropriate guilt; (8) diminished ability to think or concentrate or indecisiveness; (9) recurrent thoughts of death or suicidal ideation or suicide attempt (American Psychiatric Association, 1994). Additionally the DSM requires that the symptoms are not better accounted for by

bereavement, i.e. after the loss of a loved one, the symptoms persist for longer than 2 weeks or are characterized by marked functional impairment, morbid preoccupations with worthlessness, suicidal ideation, psychotic symptoms or psychomotor retardation. The other commonly used classification system, the 'International Statistical Classification of Diseases and Related Health Problems' (ICD-10) by the World Health Organization, uses the name 'recurrent depressive disorder'. ICD-10 defines three typical depressive symptoms (depressed mood, anhedonia, and reduced energy), two of which should be present to determine depressive disorder diagnosis. The differences in thresholds for diagnosing depression between the DSM and ICD-10 have consequences for epidemiological research, with lower prevalence rates of defined cases as judged by the DSM criteria than when ICD criteria are applied.

Many scholars have subsequently questioned the validity of such diagnosis criteria. Horwitz & Wakefield (2007) claim that the DSM nosology for major depression are fundamentally flawed, because it fails to take into account the context in which the symptoms occur. They stress the importance of distinguishing between abnormal reactions due to internal dysfunction and normal sadness brought on by external circumstances. Under the current DSM classification system, this distinction is impossible to make, so the expected emotional distress caused by upsetting events - for example, the loss of a job or the end of a relationship - could lead to a mistaken diagnosis of depressive disorder.

Others criticize the predominantly Western perspective on mental health taken by the DSM and ICD-10. A number of studies that looked at the applicability of diagnosis criteria in non-Western countries concluded that depression appeared to be less evident and was more likely to be expressed somatically than in the West (Escobar & Vega, 2006; Munoz et al., 2005; Parker et al., 2001; Simon et al., 1999). While the first two editions of the DSM never mentioned culture, the 1980 third edition included the following disclaimer:

> Culture specific symptoms . . . may create difficulties in the use of the DSM-III-R [either] because the psychopathology is unique to that culture or because the DSM-III-R categories are not based on extensive research with non-Western populations.

The current 1994 edition includes a seven-page appendix with 'culture-bound syndromes': mental illnesses that psychiatrists officially acknowledge occur only within a particular society. Critiques on the appendix have been formulated via

the fact that disorders or concepts from non-Western or non-mainstream cultures are described as 'culture-bound', whereas standard psychiatric diagnoses are given no cultural qualification whatsoever (Kleinman, 1997).

A second area of debate refers to whether depression can be conceptualized as a category or as a dimension or continuum. The question of whether the construct of depression is dimensional or categorical is important in determining how depression is conceptualized (whether on a continuum with normal experience or something that is qualitatively different) and how it is best measured. On the one hand, most social scientists tend to propose a dimensional or spectrum model, with depression ranging from well-being to severe depression (e.g. Mirowsky & Ross, 2003) or from mild depression to severe depression (e.g. Keyes & Goodman, 2006). On the other hand, most psychiatrists and psychologists tend to assess depression as a category (depressed or not depressed). Others incorporate a measure of severity in their research by distinguishing between dysthymia, minor depression and major depression, along with differentiating a depressive episode from the more severe depressive disorder (e.g. Alonso et al., 2004). However, much of the epidemiological research on depression is based on self-reporting scales, for which the establishment of the cut-off point is often problematic and arbitrary. While some researchers use statistical grounds (e.g. the highest 20^{th} percentile), most aim to use empirical grounds (based on criterion validity). However, unlike other health conditions thought to originate within a biological disorder within the body, there is no procedure (analogous to a blood test or brain scan) independent of subjective (or clinical) judgments made by clinicians to determine whether or not someone should be diagnosed with depression (Ross & Pam, 1995). Although the past two decades have produced a great deal of progress in neurobiological investigations, the field has failed to identify a single neurobiological phenotypic marker or gene that uniquely identifies depressive disorder (Moner et al., 2007). While there is no clear single biomarker, there is mounting evidence of multiple dysregulated contributing factors (cf. infra). However, most of these findings are often not disorder specific, both in threshold and in type of disorder (e.g. also related to anxiety disorders) (Schmidt et al., 2011). A non-invasive, quantitative clinical test to aid in the diagnosis and treatment of major mood disorder, as defined by the DSM remains elusive (Lakhan et al., 2010).

The distinction between mental health disorders is not clinically irrelevant however, especially within the context of psycho-pharmaceutical treatment. Separating the depression of bipolar illness from major depressive disorder is important, for example, given the risk of precipitating mania by treating a bipolar

patient with an antidepressant. Another example is the importance in distinguishing severe immobilizing depression (the so-called melancholic subtype) from other forms of depression, because electroconvulsive therapy is extremely effective for that subtype. But more often than not, treatment is not very specific, as is the case with major depression. A psychiatrist will almost surely prescribe an antidepressant for a patient with major depressive disorder. However, the very same drug can be helpful in obsessive-compulsive disorder, eating disorders and panic attacks. Perhaps this is because the drug's psychopharmacological properties are broad enough to affect multiple forms of pathology. Or perhaps it is because depression and the other disorders share a common defect far upstream in the causal chain. Moreover, just as a single medication may ameliorate several different mental conditions, the converse is also true: a single condition may require more than one medication. The manic phase of bipolar disorder, for example, often requires a mood stabilizer and a sedating antipsychotic to control the excursions of mood, to combat accompanying paranoia, and to quell the agitation. So drug treatment is often guided less by diagnosis and more by symptoms.

In the current thesis, for the most part, the idea of depression as a continuum is applied. The last empirical paper studying the presence of depression in lone mothers however is an exception, because it does differentiate between low frequency of depressive feelings and high frequency of depressive feelings. This choice was made because the paper also includes two dichotomous general health indicators; general subjective health (good versus bad GSH), and limiting longstanding illness (yes/no). In order to use the same type of outcomes, depression was dichotomized to correspond with the other two outcomes. However, in the other empirical papers, depression is thus not conceptualized as something discrete, something that is entirely present or something that is absent. For the last empirical paper comparing lone mothers with cohabiting mothers, we additionally performed a sensitivity analysis using a continuous depression measure. This did not lead to different results.

Perceiving depression as a continuum has two benefits for our research. First, it acknowledges that two people on either side of the cut-off that defines depression will be more similar to one another than to people at the extreme low or high on the depression scale. Therefore it enables us to examine both clinical and sub-clinical cases of depression. Moreover, previous research has indicated that the use of dimensional models is more reliable and more sensitive to the nature and the degree of symptoms, making it more suitable for regression analyses (Shankman & Klein, 2002). Reliability increases with the precision of assessment.

For example, a measure of length is more reliable if the ruler is marked in inches than if the ruler is marked only in feet (Mirowsky & Ross, 2003). In the same logic, the reliability of a dichotomous assessment of depression is much lower than that of a continuous assessment. Therefore, when we use the term 'depression' in the upcoming chapters, we refer to a person experiencing fewer or more depressive symptoms rather than to the presence or absence of a clinical depression within the person.

CHAPTER 2
EXPLAINING GENDER DIFFERENCES IN DEPRESSION

Introduction

Depression is widely regarded as a stress-related condition, both by the biomedical, the psychological, and the social approach to depression. Although genetic and psychological vulnerability is critical to the development of depression, in the absence of environmental/social stressors, the incidence of depression is very low (Kendler et al., 1995; Munafo, 2012). The first stress studies date back to the mid-1930s when Selye (1936) showed that prolonged or repeated exposure to noxious stressors increase the likelihood of illness in laboratory animals. Since then, literally thousands of studies have shown a significant relationship between the amount of stress that one experiences and illness, including heart attacks, strokes, tuberculosis, asthma attacks, the common cold, and most relevant to this thesis, a number of mental disorders (Thoits, 1999). Likewise, depression has been conceptualized as a maladaptive, exaggerated responses to stress. It is important to understand that people often use the term 'stress' ambiguously: it can refer to the cause of psychological problems or it can describe one's subjective emotional experience (e.g. 'I feel so stressed'). However, researchers usually restrict the terms 'stress' and 'stressor' to refer to major life events and chronic strains – the environmental causes of emotional problems (Thoits, 1999). A substantial body of research has found higher levels of significant stressors prior to the onset of depression (Brown & Harris, 1989; Mazure, 2006). While most people do not become depressed when they experience stress, research shows that most depressive episodes are preceded by stressful events. A number of researchers have raised the question of whether all stressors are equally likely to precipitate depression or whether some classes of events are especially likely to provoke depressive reactions. Within the field of psychology, the vast majority of stress research places near-exclusive emphasis on life events. The most extensive line of research has focused on the contribution of interpersonal loss, such as divorce, separations, bereavements, as well as relationship stressors (Hammen, 2005; Kendler et al., 1995). In addition, attention has been paid to parental separation and to physical and sexual abuse in childhood. Some research suggests that early traumatic experiences may be partly responsible for a higher prevalence of depression in women, since they are at

greater risk of certain events (such as sexual abuse) and seem to be more sensitive to their depressogenic effects (Kessler et al., 1997; Rodgers, 1994). In addition, women seem to be more likely to define stress events in their networks as their own stressors (Davis et al., 2001). Social researchers tend to additionally focus on social sources of *chronic* stress, such as poverty, employment problems, or lasting marital discord.

Most researchers these days accept that depression arises as the result of the interplay of biological, psychological, and social factors (Bebbington, 1996; Immerman & Mackey, 2003). The field of medicine and psychiatry refers to the biopsychosocial model (Engel, 1980), within psychology, stress-diathesis models are often put forward, and sociological research speaks of a differential stress-vulnerability model (Pearlin, 1989). Each of these models calls for theorists to consider biological mechanisms, psychological processes, and social influences on depression. When applied to gender, these models assume that men and women differ in the amount and severity of stressors (differential exposure), in the way they cope with these stressors (differential vulnerability), and in the way they express their feelings (differential expression). While the latter two relate to psycho-biological dynamics, gender-specific social risk factors are also deemed to play a role for all three components. In the upcoming section we will first give a concise overview of the biological underpinnings and some of the psychological models separately. Next, I discuss the most prominent social models for explaining gender differences in depression: the social stress model and the structural strain model. In the current thesis, the focus will be on the social approach. However, I do not intend to neglect or downplay the biological and psychological levels of analysis. As will be shown in the upcoming section, each level is distinct from, but also complementary to, the other levels and they are in constant interaction with one another.

Biological Underpinnings

In recent decades, psychiatry has made revolutionary progress in identifying biological underpinnings for many mental disorders. This revolution was sparked by two achievements in biological psychiatry – the compelling evidence from twin and adoption studies for a genetic component to certain psychiatric disorders and pharmaceutical advancements in the development of drugs that target specific symptom constellations (Chua & McKenna, 1995). It has gained momentum from technological advances in molecular genetics and neuroscience and the

increased ability to visualize the structure and functioning of the brain (Pilowsky, 2001).

To the biological/medical approach, the constructs of interest are 'disease entities,' with the ultimate goal being to define diseases by their particular biological mechanisms (i.e., pathophysiology) and, if possible, distinct causes (i.e., pathogenesis). As discussed earlier, there are currently still no neurobiological markers that identify depression (First & Zimmerman, 2006) and diagnoses are still defined by clinical symptoms. The relationship between diagnosis and etiology is therefore an example of reification: current diagnostic categories are used to search for pathophysiology, and knowledge of pathophysiology will be used to refine diagnostic categories. The current imprecision in diagnosis is a great challenge to biological psychiatry and is frequently invoked as an impediment to advancement and the reason for inconsistent and non-replicated research findings (Schwartz & Corcoran, 2010). Many of the findings discussed below refer to either a very specific form of depression, or to a broad range distress related disorders covering both depression and anxiety. The literature review showed that biological theories of gender differences in mental health disorders primarily point to genetics, to differentiation in the structure and functioning of the human brain and the regulation of the hypothalamo-pituitary-adrenal (HPA)-axis, and to sex steroids (Kendler et al., 2001a; Kuehner, 2003; Naninck et al., 2011).

Genetic Vulnerability

While stress is clearly a precipitating factor in the onset of depression, not everyone who experiences stress develops depression, suggesting an underlying vulnerability (Korszun et al., 2006). Heritability of depression based on twin studies is established at 40% to 50% (Levinson, 2006). The heritability indicates roughly what the percentage of the cause of depression is due to genes. In other words, on average around 50% of the cause is genetic, and around 50% is unrelated to genes (psychological or social factors). Adoption studies also provide some support for there being a role for genetic factors (Cadoret, 1978; Mendlewicz & Rainer, 1977; Wender et al., 1986). The relative risk (ratio of risk to first-degree relatives of depressed individuals vs. the general population) is around 2 to 3 (Gershon et al., 1982; Maier et al., 1992; Weissman et al., 1984). Both twin and adoption studies have methodological limitations however (Sullivan et al., 2000).

Most of the published genetic association studies of stress-related disorders such as depression, have focused on functional polymorphisms (DNA sequence variations that alter the expression and/or functioning of the gene product) in the loci encoding the serotonin transporter (SLC6A4), serotonin 2A receptor (5HTR2A), tyrosine hydroxylase (TH) (the limiting enzyme for dopamine synthesis), tryptophan hydroxylase 1 (TPH1) (serotonin synthesis), and catechol-o-methyltransferase (COMT) (dopamine catabolism). For an overview of these polymorphisms for depression and depression-related disorders, see Levinson 2006. For the current thesis, it is important to note that in none of the studies discussed here, depression was predicted by genotype alone, emphasizing the importance of both biological, as well as psychological and social factors in explaining depression. Most studies on gene-environment interactions focus on early stressful life experiences, and how these sensitize genetically predisposed individuals to the development of later depression under the influence of stressors that might not otherwise be sufficient to cause it (i.e. a 'two-hit' hypothesis) (Caspi et al., 2003; Vigod & Stewart, 2009). This will also be discussed in the upcoming section on the HPA axis.

Gene related research specifically identified a functional polymorphism in the promoter region of the serotonin transporter (5-HTT) gene on chromosome 17q11.2 called the 5-HTT gene-linked polymorphic region (5HTTLPR) as a mediating factor in the development of depression. A seminal large prospective cohort study by Caspi et al. (2003) tested why stressful life experiences lead to depression in some people but not in others. They found that childhood maltreatment predicted adult depression only in those individuals with the 'short' ('s') allele of 5HTTLPR. They also found that individuals with one or two copies of the 's' allele exhibited more depressive complaints in relation to current social stressors than individuals with two copies of the 'long' ('l') allele. The study by Caspi et al. (2003) has since been followed by research to support the interaction between 5HTTLPR and both early childhood and current social stressors. Zalsman et al. (2006) showed that 's' alleles increased the impact of stressful life events on the severity of depression, explaining 31% of the variance of depression severity. Gunthert et al. (2007) found that individuals with at least one copy of the 's' allele exhibited greater increases in anxiety under periods of high daily stress. Stein and colleagues (2008) showed that individuals homozygous for the 5HTTLPR 's/s' allele had significantly higher anxiety if they had been exposed to childhood maltreatment than other individuals.

Initially, very few genetic studies specifically investigated sex differences, and most samples were primarily female. Some studies on the 5HTTLPR have now

addressed the question of sex directly. Sjoberg et al. (2006) found that girls who were homozygous for the 's' allele were more likely to develop depression if they also experienced family conflict than girls with either no family conflict or the presence of at least one 'l' allele. For boys, the presence of the 's' allele served to protect them from depression in the face of family conflict. Brummett et al. (2008) investigated the sex–gene–environment interaction in two samples, one with current stress (caregiving for an elderly relative with dementia) and one in which individuals had a history of fathers with low socioeconomic status (designed as a proxy measure for stressful childhood events). In both samples, they found a three-way interaction in which the 's/s' genotype conferred increased risk for depressive symptoms in women with stress and the 'l/l' genotype conferred increased risk of depressive symptoms in men with stress.

Another etiological hypothesis about depression is related to the level of brain-derived neurotrophic factor (BDNF) and its interaction with the serotonine system. Genetic factors could alter the balance of neurotoxic and neuroprotective responses to stress, while antidepressants have been shown to enhance neuroprotective effects (Manji et al., 2001). BDNF is one such neuroprotective protein. It plays a major role in brain cell development in the fetus, child and throughout the lifespan. Low levels of BDNF have been found in the brains of individuals suffering from depression (Yulug et al., 2009). Kim et al. (2007) showed that a common BDNF polymorphism (Val 66 Met) and 5-HTTLPR and psychosocial adversity all increased the vulnerability to depression. A polymorphism of the dopamine type 2 receptor gene has been found to influence the effect of past stressful life events on mood (Elovainio et al., 2007). Bradley et al. (2008) suggest that a gene involved in corticotrophin-releasing factor functioning (CRHR1) may influence the effect of childhood adversity on the vulnerability to MDD. Binder et al. (2008) specifically studied the interaction of child abuse and non-child abuse trauma with genetic polymorphisms at the stress-related gene, FKBP5. Polymorphisms in this gene were associated with the development of post-traumatic stress disorder in child abuse trauma patients but not in non-child abuse trauma ones. Porter et al.(2008) uncovered an interaction between a polymorphism in the tryptophan hydroxylase gene (TPH1) where the presence of the 218C allele was associated with decreased tryptophan levels in women but not in men. However, this study did not examine the role of psychosocial adversity.

Hippocampal Plasticity, HPA Axis Regulation and Hormones

Abnormalities of the HPA axis, as manifested by hypercortisolemia and disruption of the circadian rhythm of cortisol secretion, are well established phenomena in depression. Women are more likely than men to have a dysregulated HPA-axis, which plays a major role in regulating levels of a number of hormones that moderate responses to stress (Weiss et al., 1999; Young & Korszun, 1999). In almost one-half of all clinically depressed individuals, the HPA axis is hyperactive (Swaab et al., 2005) as is clear from elevated plasma cortisol levels, increased corticotrophin-releasing hormone (CRH) and vasopressin expression in the hypothalamus and increased rates of dexamethason nonsuppressors among depressed individuals (Bao & Swaab, 2010; Raadsheer et al., 1995). Notably, the anatomy of the hippocampus, an area of the brain that is sexually dimorphic, represents a sensitive target for sex steroids because it is richly endowed with estrogen and other steroid receptors (Castren, 2005; Peper et al., 2009). Despite this sensitivity and the strong HPA activation in a majority of depressed individuals, not many severe pathological changes are found in the hippocampus in depression (Lucassen et al., 2001; Muller et al., 2001; Raadsheer et al., 1995), except for some alterations in structural plasticity (Boldrini et al., 2009; Lucassen et al., 2010). Nevertheless, hippocampal volume reductions (10–15%) are commonly found in depressed individuals (Campbell et al., 2004). It has been proposed that this reduction of hippocampal volume may result from alterations in neuronal plasticity induced by early life stress (Chen et al., 2010; Czeh & Lucassen, 2007; Romeo & McEwen, 2006), possibly in a sex-dependent manner (Oomen et al., 2010, 2011; Vythilingam et al., 2002). Early life stress (possibly via changes in hippocampus structure and function) forms a risk factor for the development of stress-related disorders in adult individuals (Heim & Nemeroff, 2001; Mcewen, 2003; Rao et al., 2010) and particularly in women (Schmitz et al., 2002; Weinstock, 2007).

A fundamental hypothesis of the etiology of depression is that it results from a relative deficiency of serotonin (Schildkraut, 1965). Sex steroids appear to modulate mood, at least in part, through effects on serotonergic systems. Overall, the literature suggests that estrogen enhances the efficiency of serotonergic neurotransmitters. There are clear sex differences in brain serotonin systems, some of which may depend on estrogen and others upon testosterone. The growing field of research on serotonin systems in humans indicates that it is likely that there are sex differences in serotonin systems and the differences may be

larger in depressed women compared to depressed men than the differences seen in normal subjects (Korszun et al., 2006).

Compared to other sex steroids, estrogen also influences mood and behavior (Joffe & Cohen, 1998; Rubinow et al., 1998; Seeman, 1997; Solomon & Herman, 2009; Steiner et al., 2003). Two different estrogen receptor subtypes (ERα and ERβ) are expressed in the nervous system. In both sexes, ERα expression dominates brain regions that are important in the regulation of reproductive behavior, whereas ERβ expression levels are higher in brain regions that are involved in the regulation of mood, such as the hippocampus (Solomon & Herman, 2009) and the BNST, a sexually dimorphic limbic brain region which is crucially involved in long-term, contextual fear responses and are highly responsive to sex steroids (Toufexis, 2007). Animal studies have revealed that the ERβ receptor subtype is important in the modulation of depression-like behavior in both males and females (Solomon & Herman, 2009). Depressive symptoms have been associated with low levels of estrogen and drops in estrogen concentrations, whereas high levels of estrogen correlate with a positive mood (Buchanan et al., 1992). In the literature, reduced levels of estrogen in women form a risk factor for depression (Steiner et al., 2003). Furthermore, the initiation of cyclic fluctuations in sex steroid levels at adolescence has been reported to involve the emergence of depression in adolescent girls (Steiner et al., 2003). In girls, the onset of menarche introduces monthly fluctuations in levels of gonadal hormones and gonadotropins. Especially in periods of marked hormonal fluctuations, women have an increased risk of experiencing an episode of depression (Solomon & Herman, 2009). Fluctuating levels of sex steroids at adolescence thus induces a major transformation in the hormonal levels in the brain, to which the rest of the systems have to adjust (Steiner et al., 2003).

Although speculative at this time, it has been proposed that there are gender differences in the bio-behavioral effects of stress which might help explain women's particular vulnerability to social stress and depression. The evolutionary theory of Taylor (2000, 2006) suggests that although men and women display the traditional fight-or-flight response to some stressors, a behavioral pattern of *tend-and-befriend* might better explain women's stress responses in general. 'Tending involves nurturant activities designed to protect the self and offspring that promote safety and reduce distress; befriending is the creation and maintenance of social networks that may aid in this process' (Taylor et al., 2000). A working model of affiliation under stress suggests that oxytocin may be a biomarker of social distress that accompanies gaps or problems with social relationships and that may provide an impetus for affiliation. Oxytocin is implicated in the seeking

of affiliate contact in response to stress, and, in conjunction with opioids, it also modulates stress responses. Specifically, in conjunction with positive affiliate contacts, oxytocin attenuates psychological and biological stress responses, but in conjunction with hostile and unsupportive contacts, oxytocin may exacerbate psychological and biological stress responses.

Concluding Remarks

An understanding of the biological underpinnings of depression is important for sociology as the basis for advancing the social component in biological theories of depression or other distress-related disorders, and for using such theories to advance the sociology of mental health. However, as Schwartz (2010, 102) states, 'the biological revolution in psychiatry carries – along with promise – the danger of biological reductionism, biological determinism, and the hegemony of biological explanations for psychiatric disorders and other social problems.' All behaviors have biological, psychological, and sociological components. The question is: On which level of organization is the phenomenon defined, and why? Deciding to define a phenomenon in terms of its biological component and call it a 'disease' is a political issue, one that demands sociological analysis (Horwitz & Wakefield, 2007). Sociologists also need to examine the types of questions that a biological perspective cannot address. Biology, for example, fails to explain why gender differences in depression show such notable cross-national variation, or why rates of depression are higher in certain social groups compared to others.

Psychological Models

In terms of the bio-psycho-social model, the unique contribution of psychology lies in its attention to the intra-individual mechanisms that produce abnormal thoughts, feelings and behaviors (Persons, 1986). All useful psychological models of depression share a set of assumptions about human nature. Each model takes a stance on the nature of normal behavior versus depression, and how depression can be prevented and/or corrected. In the upcoming part, I will focus on the stress-diathesis model that has received the most attention in psychological research on depression in recent years. According to this model, if a person with certain psychological characteristics (traits, attitudes), conceptualized as 'diathesis', experiences a stressful life event or chronic stress (the 'stress' component) which in some way matches or is congruent with the psychological

diathesis, then that person is especially likely to become depressed. It is however important to note that there are a number of other psychological approaches to depression, among others the psychoanalytical approach, the existential-phenomenological approach, and the family systems approach. Discussing these approaches separately is beyond the scope of the current thesis because they are less able to be congruent with social explanations for depression. Peterson (1999) however provides an excellent overview of these models elsewhere.

An important forerunner of contemporary diathesis-stress models is the cognitive approach to explaining depression. Cognitive theorists suggest that depression results from maladaptive, faulty, or irrational cognitions taking the form of distorted thoughts and judgments. Depressive cognitions can be learned socially (observationally) as is the case when children in a dysfunctional family watch their parents fail to successfully cope with stressful experiences or traumatic events. Or, depressive cognitions can result from a lack of experiences that would facilitate the development of adaptive coping skills. Within the domain of depressogenic cognitive styles research, three major theories have been formulated: (1) Beck's (1967) cognitive theory of negative triad and his personality orientation of 'sociotropy' and 'autonomy'; (2) the learned helplessness theory of Abramson, Seligman, and Teasdale (1978), and (3) response styles theory by Nolen-Hoeksema (2000). These theories propose that particular thought patterns make individuals more prone to or enhance depression when faced with stressful circumstances.

Beck's Cognitive Theory of Depression

The *negative cognitive triad* theory of Beck (1967) refers to a style of thinking that leads people to be unrealistically negative about themselves, their experiences and their future. He claims that these dysfunctional beliefs are typically the primary cause of depressive symptoms. According to the theory, certain people are prone to certain kinds of errors when thinking about the bad things that happen in their lives. These errors, which Beck refers to as *faulty information processing*, include overgeneralization (sweeping conclusions on the basis of a single incident), selective abstraction (focusing on negative details and ignoring positive details), personalization (relating external events to oneself without justification), and catastrophizing (concluding that things are much worse than they really are). When confronted with stress, these people are much more likely to develop depression. All of these maneuvers, which happen quite unconsciously, function to help maintain a depressed person's core negative schemas in the face

of contradictory evidence, and allow them to remain feeling hopeless about the future even when the evidence suggests that things will get better. Beck asserts that there are three main dysfunctional belief schemas that dominate depressed people's thinking: 1) I am defective or inadequate, 2) All of my experiences result in defeats or failures, and 3) The future is hopeless. Together, these three themes are described as the *negative cognitive triad*.

Cognitive theory of depression has undergone further refinements in recent years to address the issue of why some people, but not others, become depressed. There is abundant evidence that when individuals are depressed, their thinking is dominated by negative, pessimistic thoughts (Coyne, 1994). However, evidence has not been forthcoming that this distinctive thinking style is also present when those individuals are not depressed (Clark & Steer, 1996). Cognitive theorists now postulate instead, that individuals prone to depression are characterized by personality traits which predispose them to becoming depressed (Beck, 1996; Clark & Steer, 1996). In an elaboration of the original theory, Beck, et al. (1983) identified two personality orientations: 'sociotropy' and 'autonomy'. Individuals with a sociotropic personality are said to place a high value on having close interpersonal relationships. They 'satisfy their needs for security and self-worth by pleasing others and avoiding others' disapproval through maintenance of close interpersonal attachments' (Clark & Steer, 1996, 81). Individuals with an autonomous personality orientation are said to be characterized by a high investment in personal independence, achievement and freedom of choice. They 'derive self-worth from mastery and achievement, which may lead to excessive personal demands for self-control and accomplishment' (ibid.). Sociotropic people would be more sensitive to experiences involving relationship loss or threat of such loss. In contrast, autonomous personality orientations are more sensitive to experiences involving failure in achievement and personal goals. Central to the theory is the idea that individuals actively construct their reality through the particular way in which they interpret the meaning of events in their lives. Individuals with heightened vulnerability to depression are more likely to construct a negative view of their own reality.

Within Beck's theory of depression, the personality orientations of sociotropy represents the 'diathesis' component of the 'diathesis-stress model'. The term 'diathesis' has medical roots and is used within medicine to refer to a constitutional (or inborn) predisposition to a disease. Adoption of the term diathesis within Beck's theory implies that some individuals are inherently depression-prone, because of their personality. Use of the term diathesis, then, implies that personality is inborn. Indeed, Beck suggests that the personality

diathesis for psychological disorders such as depression, have their origin in 'primal modes [that] evolved in ancient environment'. (Beck, 1996, 12).

Notions of personality diathesis for depression have also been formulated within psychoanalytical theories. The personality types of 'dependency' and 'self-criticism' have been proposed by psychoanalytical researchers as predisposing individuals to depression (Coyne & Whiffen, 1995). The personality type of dependency and the personality orientation of sociotropy, as well as between self-critical personality type and the personality orientation of autonomy, show clear parallels (ibid.). The stress component of the diathesis-stress interaction also has been conceptualized in similar ways in cognitive and psychoanalytic formulations. In both theoretical strands the stress component is conceptualized in terms of the occurrence of 'negative events', but remains relatively under-developed. This reflects a tradition within psychology of a focus on intrapsychic influences on behavior, particularly in research informed by psychoanalytical theories. Events occurring in people's lives do not have an objective reality which can be defined separately from the meaning such events have for the person who experiences them. Thus, whether a specific event is likely to trigger a depressive reaction depends on how it is interpreted, and is shaped by their personality mode or orientation. In research investigating Beck's cognitive diathesis-stress model, negative events have been classified as either interpersonal- or achievement-related (Clark & Steer, 1996). An example of a negative interpersonal event would be a marital breakup. A negative achievement event might involve failure on an examination or loss of a job.

Some researchers suggest that the proposed personality diatheses may be more characteristic of women than men. Interpersonal dependency has been considered an aspect of a feminine gender identity (Lippa, 2001), and attempts have been made to explain women's greater susceptibility to depression in terms of their feminine personality traits (Whitley, 1983). However, empirical research on personality diathesis has been hampered by the lack of attention paid to implicit incorporated assumptions reflecting a femininity-masculinity form of dualism. Feminist critiques suggest that measures of diathesis for depression may simply be alternate ways of assessing femininity and masculinity, given the lack of attention by researchers to symbolic and sociocultural aspects of gender in the development of personality measures. However, research in the sociotropy-autonomy tradition generally finds greater support for a specific vulnerability between sociotropy and interpersonal events, whereas autonomy has been less clearly supported.

An alternative explanation for women's greater susceptibility to depression is that women are more likely than men to be exposed to stressful events. The gendered distribution of social stressors will be discussed in greater detail in the upcoming section on gender inequality. Women could also be more likely than men to be characterized by the personality types posited as diatheses *and* more likely to experience negative events that match their personality.

Learned Helplessness Theory

The *learned helplessness* theory, first developed by Overmier, Seligman and Maier (Maier & Seligman, 1976; Overmier & Seligman, 1967; Seligman & Beagley, 1975) and later revised by (Abramson et al., 1978), proposes that some people are more likely than others to attribute negative life events to internal, global, and stable causes and positive life events to external, specific and unstable causes. The first version of the theory was based on experiments in which an animal was repeatedly hurt by an adverse stimulus from which it could not escape (Seligman & Beagley, 1975; Seligman & Maier, 1967). The animal eventually stopped trying to avoid the pain and instead started to behave as if it was utterly helpless to change the situation. The only coping mechanism the animal used was to be stoical and to put up with the discomfort. Even when opportunities to escape were presented, the learned helplessness prevented any action. Similar results were found in experimental studies on humans (Glass et al., 1971; Hiroto, 1974; Hiroto & Seligman, 1975; Krantz et al., 1974; Miller & Seligman, 1975; Roth & Kubal, 1975). According to Maier and Seligman, learned helplessness includes motivational, cognitive, and emotional effects of uncontrollability.

> In general, when an organism experiences uncontrollable events, three deficits often ensue: motivational, cognitive, and emotional. a) The motivation to respond in the face of later aversive events seems to wane, b) Moreover, even if the subject does respond and the response succeeds in producing relief, the subject often has difficulty learning that the response worked, c) Finally, emotional balance may be distributed; depression and anxiety, measured in a variety of ways, may predominate. (Maier & Seligman, 1976, 7).

Central to the theory of learned helplessness is the inherent need within humans to have a sense of control over their own life, and by lack of it, have a higher vulnerability for depression (Seligman, 1975).

When applied to learned helplessness in humans, the first version of the learned helplessness theory had two major problems: (a) It did not distinguish between cases in which outcomes are uncontrollable for all people and cases in which they are uncontrollable only for some people (universal vs. personal helplessness), and (b) it did not explain when helplessness is general and when specific, or when chronic and when acute. In the revised version of the theory Abramson, Seligman and Teasdale (1978) incorporated a refined version of the attribution theory developed by Kelley (1967). They argue that three attributive dimensions are crucial for explaining human helplessness and depression: internal-external, stable-unstable and global-specific. The reformulated model asserts that attributing lack of control to internal factors leads to lowered self-esteem, whereas attributing lack of control to external factors does not. Furthermore, attributing lack of control to stable factors should lead to helplessness deficits extended across time, and attributing lack of control to global factors should lead to the wide generalization of helplessness deficits across situations. Alternatively, attributing lack of control to unstable, specific factors should lead to short-lived, situation-specific helplessness deficits. Abramson et al. (1978) speculated depression-prone individuals tend to attribute bad outcomes to global, stable, and internal factors. In addition, although not specifically predicted by the reformulated helplessness model of depression, attributing good outcomes to external, specific, and unstable factors might increase vulnerability to depression (Girgus & Nolen-hoeksema, 2006). Longitudinal studies have indeed confirmed that this type of attributive style is associated with people feeling depressed and helpless about their ability to do anything about the stressful event (Abramson et al., 1978; Grazioli & Terry, 2000).

Coping Style Theory

Coping is often defined as cognitive and a behavioral effort made in response to a stressor or threat. A common model of coping set forth by Lazarus and Folkman (1984) stresses that coping choices are dependent on both the appraisal of the threat (primary appraisal) and the appraisal of one's resources to address the threat (secondary appraisal). The nature of the stressor itself also might evoke different coping responses from men and women. One popular classification system described by Lazarus and Folkman (1984) distinguishes between problem-focused coping and emotion-focused coping. Problem-focused coping behaviors are aimed at altering the stressor. Problem solving and planning are examples. Emotion-focused behaviors are those that are directed at altering the emotional

response to the stressor. Examples are venting emotions, ruminating, avoidance, accepting the problem, interpreting the problem in a positive light, and wallowing in blame (Tamres et al., 2002). Within the literature on depression, the *response styles theory* has been particularly useful in explaining gender differences in depression. It proposes that the way an individual responds to a depressed mood is the central factor determining the development, severity, and duration of a depressive episode (Nolen-hoeksema, 1991). Individuals who respond to their depressed moods by repetitively focusing their attention on their symptoms and their implications demonstrate a so-called ruminative response style. This ruminative process is thought to lead to a worsening of the depressed mood. Women are more likely to ruminate in response to sad, depressed or anxious moods (Lopez et al., 2009; Tamres et al., 2002). Males tend to distract themselves from stressful situations by engaging in physical or instrumental activities, whereas females are less active and ruminate over the possible causes and implications of their mental health problems. Less-effective coping responses involving verbal and self-consolatory strategies have been shown to occur more frequently in females (Hanninen & Aro, 1996; Nolen-hoeksema et al., 2008; Rosenfield et al., 2005). Some studies even found that when statistically controlling for rumination, the gender difference in depression becomes non-significant (Nolen-hoeksema et al., 1999). Research additionally suggested that there may be more than one kind of rumination, and that different aspects of the overall tendency to ruminate may relate differently to depression (Treynor et al., 2003). Rumination would consist of two aspects; reflection, the part of rumination that indicates the tendency to contemplate and reflect (e.g. 'analyzing recent events to try to understand how the depression came about'), as well as brooding, a tendency toward melancholic pondering (e.g. 'What am I doing to deserve this?'). Brooding, rather than reflection, is the aspect that predicts vulnerability for depression and that moderates gender differences in depression.

Concluding Remarks

Both the negative trait theory, the learned helplessness theory and response styles theory describe a relatively stable, trait-like cognitive vulnerability or diathesis for depression. Nolen-Hoeksema identifies rumination as an ineffective coping style. Abramson *et aL* (1978) point to the importance of a characterological tendency to attribute negative events to internal, stable, and global causes, which they refer to as a depressogenic attributive style. Beck (1967) has described a rather broader set of dysfunctional attitudes that create a diathesis for depression. In addition,

these theories also encompass at least one additional level of cognition relevant to depression. Abramson *et al.* (1978) propose that it is when the depressogenic attributive style is brought to bear on events experienced by the individual, giving rise to *actual event attributions,* that depressive symptoms may occur. Similarily, Beck (1967) suggests that when events are interpreted in the context of dysfunctional attitudes, certain negative *actual event perceptions* will occur that may give rise to depressive symptoms. Nolen-Hoeksema suggests that when responses to negative events are exploited via rumination, depression may be provoked. Thus, all three theories specify both a trait-like cognitive diathesis and a set of specific event-related cognitions that derive from that diathesis.

The two cognitive variables that seem most promising as contributors to the gender difference in depression are the sociotropy orientation and rumination. Women are more interpersonally orientated than men, and this may lead them to sacrifice their own wants and needs excessively to maintain positive relationships with others and to rely on others' approval for their own sense of self-worth. This tendency toward sociotropy may contribute to depression. In addition, when confronted with stress, women are more prone than men to engage in rumination, and this appears to contribute to their higher rates of depression. It enhances negative thinking and interferes with good problem solving and motivation, making it more difficult for individuals to overcome problems that may be associated with depression.

The advantages of psychological theory clearly lie within the focus on intra-individual and cognitive processes. It helps to explain why some people, when confronted with stress, develop a depression, and others not. It however, fails to explain rate differences in depression over time and space, by mainly focusing on the diathesis-part of the diathesis-stress model. It thereby fails to focus on aspects of the individual's current social situation, something that sociological approaches emphasize.

Social Theories on Depression

Sociological approaches regard depression as an aspect of social circumstances. One type of sociological study examines the sorts of social conditions, such as negative life events, ongoing stressful circumstances, demanding social roles, levels of social support, and the strength of cultural systems of meaning, that affect levels of mental health. Another type of study focuses on how social and

cultural influences shape the definitions of, and responses to, mental health problems. These kinds of studies show how key recent trends –including the medicalization of a growing number of conditions, the increased use of prescription drugs to deal with mental health problems, and a greater willingness to identify emotional suffering as mental illnesses that require professional help, are transforming how modern societies deal with psychological problems, such as depression. In the current thesis, I will focus on the first sociological approach, which examines the social conditions that associate with depression in men and women. This approach is both distinct from and complementary to the more individualistic psychological and biological approaches previously discussed. It regards depression as a consequence of basic aspects of social organization (Pearlin, 1989). Dimensions of social life including integration, stratification, and cultural systems of meanings shape rates of depression. From a sociological point of view, regular features of social life rather than abnormal processes within individuals explain how much depression will emerge among people living in any given time and place.

Social Stress Models

Social stress models are based on the finding that stress, as well as other aspects of well-being such as social support, self-esteem and mastery, are unequally distributed in the population, leaving some groups (e.g. women) both more likely to experience stress and more vulnerable to the effects of stress as well. Social researchers usually use the term 'stressor' to refer to 'major life events' and 'chronic strains' – the environmental causes of mental health problems. Less frequent types of stressors are 'daily hassles' and 'non events'. The first refers to the irritating, frustrating and distressing demands that to some degree characterize everyday interactions with the environment, such as work overload, noise or status incongruity between spouses (Chamberlain & Zika, 1990; Lyons & Chamberlain, 2011). In contrast, lack of change, also referred to as 'non events', can be as stressful as change. These are events that are desired or anticipated but do not occur, such as an anticipated promotion that does not occur, or not being married by a certain age (Wheaton & Montazer, 2010)).

Chronic stressors were also identified as almost as important as severe negative events in predicting depression (Brown & Harris, 1978; Pearlin et al., 1981). Many of the chronic stressors are rooted in social structures, roles, and relationships that tend to persist over time. Pearlin (1999) distinguished between three types of chronic strains: status strains, role strains, and contextual strains.

'Status strains' are stressors that arise directly from one's position in unequal social stratified systems. Depending on a person's position within the system, he/she may experience material deprivation, personal devaluation or damage to the self-esteem (Rosenberg & Pearlin, 1978). 'Role strains' are stressors that arise within the context of institutionalized social roles, such as family and occupational roles. They may arise from both intra- and inter-role conflicts or overload. Such role strains have been observed in a variety of circumstances, such as difficulties of people meeting both the requirements of their jobs and of those of child rearing – a problem for many mothers (Grzywacz & Bass, 2003; Lewis & Campbell, 2008). A related concept is 'role captivity', where one assumes or retains a role without wanting it (Pearlin, 1975), e.g. being involuntarily retired or unemployed, grandparents who are surrogate parents or working out of necessity. Role strains may refer to stressors that accompany role occupancy (e.g. work overload, marital conflict), but also role inoccupancy (e.g. not having children when you want to, being single when you want to be in a relationship). However there are also a number of stressors that are not role bound (e.g. time pressure, financial problems or living in a noisy house). 'Contextual strains' finally refer to the hardships and problems that derive from one's proximal environments, such as the neighborhood or community. As in the case of role strains, exposure to those that are contextual may vary with the social and economic characteristics of people, as well as their gender and age.

In an attempt to explain why some people do not develop depression when confronted with severe stressors, Brown and Harris (1978) called for the need to contextualize stressors both within the current social setting of the person as within his/her past experiences. Based on the finding that females with children in the working class were more prone to depression than females with children in the middle class, Brown and Harris (1978) claimed that researchers should not only look at the unequal distribution of life events, but should also contextualize them within the societal structural meaning-shaping context. Brown and Harris additionally claimed that certain 'vulnerability factors', such as early maternal loss, lack of a confiding relationship, greater than three children under the age of 14 at home and unemployment, can interact with 'provoking agents' to increase the risk of depression. Since then, a variety of vulnerability factors have been studied, most of them situated within the psychosocial context (cf supra). Sociologists however tend to emphasize social support and coping resources and strategies.

Both Lazarus and Folkman (1984), and Pearlin (1989; 1981), for example, state that people may have extensive coping resources and coping strategies when

handling stressful demands, thus buffering the negative psychological impact of those demands. 'Coping resources' refer to social and personal characteristics that people rely on when dealing with stressors (Pearlin & Schooler, 1978). Examples are the social network a person can turn to for emotional and practical support, such as friends and family. Self-esteem and sense of control or mastery over life have been identified as important personal resources, because it increases active problem-solving efforts to overcome difficulties (Folkman, 1984; Pearlin et al., 1981) or to use a variety of coping strategies flexible to meet stressful demands (Mattlin et al., 1990; Pearlin & Schooler, 1978). 'Coping strategies' are usually defined as behavioral or cognitive attempts to manage situational demands that one perceives as taxing or exceeding one's ability to adapt (Lazarus & Folkman, 1984). They are usually subdivided into problem-focused and emotion-focused strategies. The first are directed at changing or eliminating the stressful demands themselves, while the latter are attempts to alter one's emotional reactions to stressful demands. Most people use both strategies at the same time, for example by dealing with the situation, while at the same time telling themselves that the situation isn't that bad.

Figure 2.1 shows a sequence of stressors that may precipitate stress depending on the context, or social circumstances of the occurrence of the stressor and therefore its meaning, which in turn precipitates distress, depending on the state of coping resources when the stressor occurs. The figure shows that stressful events do not always translate into increased depression.

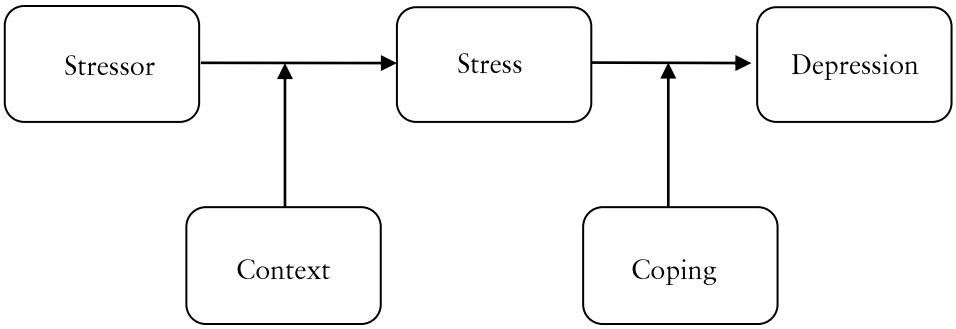

Figure 2.1: Stressors, stress and depression (adapted from Wheaton & Montazer, 2010).

The advantages of the stress theory are several. First, the theory focuses on aspects of the individual's current social situation, which the biological and psychological approaches tend to de-emphasize or ignore. In addition, it helps to explain why mental disorders, such as depression occur more frequently in lower-status groups than in high-status groups, patterns that the biological and psychological perspectives have difficulty to explain easily. The stress theory however is also limited in several ways. It cannot explain why a certain person becomes mentally ill or not. It is better suited to explaining group differences in mental health, for example why people with a lower socioeconomic status are more likely to have a depression than people with a higher socioeconomic status. The theory is nonspecific with respect to its outcomes as well. It does not explain why some groups are more prone to certain disorders, while others develop different disorders (e.g. why women become depressed and anxious, while men abuse alcohol and drugs). It thus seems that the social stress theory needs to be integrated into the diathesis-stress models in order to explain specific outcomes.

Structural Strain Models

Structural strain theory is an umbrella term that covers several more specific sociological hypotheses about deviant behavior. It can also be extended to mental health problems such as depression. In contrast to stress theory, which focuses on specific events and strains in people's social lives as causal, structural strain theory locates the origins of distress and disorder in the broader organization of society, in which some social groups are disadvantaged compared to others. Mental illness is perceived as an adaptive response to structural strain due to the disadvantaged position of persons in society. Structural strain research dates back as early as Durkheim's (1897) study on suicide. He showed that even such extreme behaviors as suicide can often result from the way people are attached to social institutions rather than from the irrational behavior of abnormal individuals. According to Durkheim, the cause of suicide resides in the degree to which a society's members are tied tightly or loosely together through shared normative expectations for behavior. A too weakly or too strongly integrated society and a society undergoing rapid change are conditions of structural strain, manifested in noticeably higher rates of suicide in its members, relative to groups with moderate degrees of integration.

Merton's (1938) structural strain theory has advanced following the work of Durkheim. Merton used the term 'anomie' to describe the gap between cultural goals and the structural means to those goals. In a well-integrated society, people

use accepted means to achieve the goals society establishes. When the means are out of balance with the goals, deviance is likely to occur. This imbalance between cultural goals and structurally available means can compel the individual into deviant behavior. He argued that people who experience anomie adapt to that dilemma in one of several possible ways: by changing their goals, pursuing alternative means, or both. Mental health researchers use Merton's analysis of anomie, by perceiving mental illness an adaptive response to structural strain.

> Specifically, it is a response to finding one's legitimate roads to valued rewards irrevocably blocked. Importantly, that blockage is not due to one's own inadequacies but to the structure of society, which unfairly privileges the desires and efforts of some social groups over others. Social groups that create expectations that many people cannot fulfill are marked by widespread frustration and unhappiness (Thoits, 1999, 115).

Merton uses the American meritocratic culture as an example. American values traditionally have stressed that all people, regardless of their backgrounds, can achieve material success (Merton, 1938). In fact, only a relatively small proportion of people will attain high-paying, prestigious and fulfilling positions. Those who fail to realize their goals will tend to blame themselves, rather than the cultural values that emphasize success or the structural conditions that place limits on how many people can actually reach such high levels of accomplishment. High levels of distress result from the inability of people to attain the values their cultures encourage them to achieve. Like Merton's more general theory of deviance, most structural strain explanations of mental illness suggest that strains in macro social and economic systems cause higher rates of mental illness in certain groups. Gender differences in depression would then be explained by the way the structure in society is set up, e.g. the degree of patriarchy or gender inequality that women as a whole are confronted with.

Merton's structural strain theory has been particularly useful in the field of criminology and was extended by researchers such as Messner and Rosenfeld (1994), Agnew (1985; 1992), and Broidy and Agnew (1997). The theory however did not perform equally well when applied to gender differences in deviant behavior. In fact, Broidy and Agnew's attempt to build a gender specific strain theory resembles classic stress and role strain theories very closely. In contrast, Zhang's (2010) strain theory of suicide provides a useful framework for explaining gender differences in structural strain. His theory postulates four strain sources. First, 'value strain' occurs when two conflicting social values or beliefs

are competing in an individual's daily life. In the former Soviet Union, for example, women could appreciate gender egalitarianism advocated by the communist government, but at the same time, in the private sphere traditional role patterns were assumed. When these two conflicting values are taken as equally important in a woman's daily life, she experiences great strain. Second, 'aspiration strain' occurs in cases of discrepancy between a person's aspiration and the reality the person has to live with. This type of strain is very similar to Merton's conceptualization of structural strain. Applied to gender, a young woman might for example aspire equal opportunity and equal treatment, but may have to live within the limitations set by a patriarchic society. The third type of strain set forward by Zhang is 'deprivation strain', which occurs in the situation where an economically poor individual realizes that other people of the same or similar background are leading a much better life. Increased perception of deprivation indicates relatively greater strain for individuals. The final source of strain, 'coping strain', occurs when a person facing a negative life event is not able to cope with it. For example a woman who is frequently wronged by her spouse may have strain if she is not psychologically ready to cope with a different situation. The less capable the coping skills, the stronger the strain when a crisis takes place.

Structural strain theory however is limited in several ways. Structural theorists generally do not elaborate the ways in which broad social structures and broad socioeconomic trends become actualized in the lives of specific individuals, and thus they do not clarify how or why macro social trends can produce depression, or mental illness in general. Because their thinking and empirical research usually stay at the aggregate or group level, they usually do not spell out the stress implications explicitly. Therefore stress theory implicitly underlies all structural strain approaches. That stress theory is necessary to make the link between structural strains and mental health sensible is one of the weaknesses of structural approaches.

In addition, empirical applications of the structural strain approach, especially studies that focus on neighborhoods, tend to emphasize class-related or socioeconomic disadvantages in the public sphere as etiologically crucial while neglecting the strain sources within the private sphere. For example, existing research on depression and gender differences in depression kept the focus primarily on the impact of the economic context, including socioeconomic position, income inequality, and neighborhood poverty (see for example the research by Bockerman et al., 2009; Kahn et al., 2000; Van Praag et al., 2009). Similarly, the macro-structural theories on gender inequality tend to emphasize

the economic resources of the public sphere, with the most well-known model presented by Blumberg (1984). She argues that women's economic power is the strongest predictor of their overall status (cf. infra). It is argued that the economic resources of the public sphere bring greater power and are hence more socially valued than the socio-emotional resources of the private sphere. Because men and women are split along public–private lines, they hold different amounts of power and esteem in the social eye (Rosenfield & Smith, 2010). Research on gender differences in depression therefore often puts forward a disadvantaged socioeconomic position as the primary explanation for higher levels of depression in women.

However, other sources of structural strain, such as changing trends in the organization and quality of family relationships (e.g., high rates of divorce, more absentee fathers, and increasing numbers of parents or grandparents who are frail and elderly), degree of patriarchy in the household or levels of familization may be particularly important structural sources of stress in people's lives (Thoits, 1999). The family is one of the most important contexts for the structuring of women's lives, and a key site of male power over women. Largely as a result of gendered power relations, familial welfare in all countries remains overwhelmingly the responsibility of women (Lewis et al., 2008). Unfortunately, to date only few studies have empirically tested structural strains beyond the economic context.

Structural strain theories however have several advantages. The most important is the unique contribution they make to theories of mental illness etiology. As mentioned earlier, mental illness is not randomly distributed in society; it is concentrated in several demographic groups that are socially and economically disadvantaged or low in power and influence. The theory suggests that the very structure or organization of society itself may play a role in the epidemiology and etiology of mental illness, which is an idea that stress theory, for example, does not capture well and psychological and biological theories miss altogether. Stress theorists certainly recognize but usually do not capitalize on the idea that stressors may themselves be a product of the very way our society is organized.

If our goal is to understand thoroughly the complex and multiple causes of gender differences in depression, then the strains induced by social systems, social institutions, and community contexts surely must be taken into account. Structural strain theory suggests that to prevent or reduce depression in society one must intervene in fairly large-scale ways, for example, by combating gender

inequality in the workplace and at the home front and by expanding services that specifically target work/life balance, such as childcare services or elderly care.

Conclusion

As shown in the literature review above, each level of analysis, be it biological, psychological or social acknowledges the interaction with the other levels. The biological and psychological models focus on the diathesis component in the development of depression, while social models focus on the differential distribution of stressors within society. It remains difficult, however, to disentangle which of the biological, psychological or social factors are primarily associated with gender differences in depression. This is especially true in single country surveys, where the larger social context is more or less constant in many respects. Cross-national samples can bring some clarity, since a consistent gender ratio in depression across countries would provide evidence of an important psycho-biological contribution, while substantial cross-cultural variation in this ratio would expose the importance of societal factors in explaining gender differences in depression. In the current research, I intend to use a multi-country dataset in order to map the stressors related to the social gender system, and how these are moderated by the larger sociopolitical context. I however do not claim that social factors explain most of the gender variation in depression. As discussed earlier, the heritability of depression is fairly large, but this does not place limits on the importance of social etiological factors. Heritability estimates are not inherent to a mental disorder, but are in fact environment-specific. If you change the environment, the heritability estimate may change as well (Schwartz & Corcoran, 2010). The more environmentally homogenous the study population, the larger the heritability estimate, all other things being equal (Tucker, 1996). Applied to the study of depression, cross-national samples will show us how variations in the social environment are associated with gender differences in depression, given the psycho-biological basis of gender differences in depression. In that sense, our study is a notable improvement to single country studies with fairly homogenous compositions, and no variation at the macro-level. Furthermore, the reader should note that there is a disjuncture between apparent causal importance and appropriate intervention. A commonly cited example of this is phenylketonuria, a genetic disorder leading to an inability to metabolize phenoalynine that has a heritability estimate of virtually 100%. The successful intervention for this disorder – a diet without phenoalynines – is environmental. In other words, in the unlikely case that future biomedical or

psychological research would fully explain the cause of gender differences in depression, this tells us nothing about the importance of environmental/social causal factors or the potential efficacy of environmental and specifically social interventions.

In summary, in the current thesis I assume that men and women differ in their biological vulnerability to stressors, as well as in a number of psychological traits and attitudes that moderates their vulnerability to depression. I also assume that women's greater susceptibility to depression is due to their greater exposure to certain social stressors. In the upcoming part, I will discuss this gendered distribution of social stressors in greater detail. I claim that this gendered distribution of social stressors is intimately tied to and a consequence of gender inequality both at the micro- and macro-level of society. In that sense I do not restrict myself to individual social stress models, but extend the current research with structural strain models that incorporate a macro-sociological point of view.

CHAPTER 3
SOCIOLOGICAL APPROACHES TO GENDER INEQUALITY

Introduction

Regardless of perspective or theoretical emphasis, virtually all recent theories on gender differences in inequality have recognized that the *family* and the *economy* constitute the central arenas where gender inequality is produced and sustained. The tasks for which each gender is responsible may overlap or be totally segregated. Moreover, the precise nature of what constitutes men's tasks versus women's varies extensively cross-culturally. Such variability is especially noticeable when comparing societies with fundamentally different forms of technology and economic bases. However, two important cross-cultural uniformities in the gendered division of labor can be identified. First, women are uniformly more responsible than men for the work of child rearing, food preparation, and care of the domicile. Men's participation in such tasks range from none at all to substantial, while women's participation, in general, is high (Lewis et al., 2008). Second, men usually participate in a variety of the extra-domestic tasks of their societies in those realms that in complex societies are differentiated as the economic, political, religious, educational, and other culture-producing spheres of activities. Women's participation in such work varies from practically none to substantial. Chafetz (1991) identifies this gendered based division of labor, by which women are mainly responsible for child-rearing and domestic work regardless of their other work, and men's main responsibilities are to nondomestic tasks in the economy, politics, and other social and cultural institutions as the root of gender-based power differences. Because the economy and polity (rather than the family) constitute the central institutions of modern societies, she claims that this division of labor, priorities, and responsibilities produces power inequalities between the genders. In turn, the greater power that accrues to men, results in a variety of other differences and inequalities as well as reinforcing the gender division of labor.

Most theories that deal with the reproduction of gender systems focus their attention on one of two types of mechanisms. On the one hand, there are theories that stress the socialization process and its consequences for adult life. During childhood most people become engendered in ways that are defined as socially normative. The result is that in adulthood, their differentially gendered

personalities and self-concepts lead men and women to make different choices, which in turn result in the perpetuation of the gender labor division and inequality. On the other hand, there are theories that argue that existing structures of gender labor division and inequality constrain women's options and relegate them to work roles and behaviors that reinforce superior male power and privilege regardless of the choices women may wish to make.

In addition, existing theories concerning gender inequality often focus attention on either micro- or macro-level processes, but rarely attempt to systematically articulate the relationships between the levels. The micro-level refers to those processes that occur in face-to-face interactions and, in the area of gender, especially those that occur within the family (Chafetz, 1991). The macro level is composed of structures and processes that exist in units that encompass families or other primary groups, ranging from organizations, to communities, to total societies, and also includes broadly accepted social definitions such as ideologies, stereotypes, and social norms (Chafetz, 1991). The line between micro and macro is often fuzzy however; families may for example act as a social institution as well.

In the upcoming part, I focus on the myriad feminist sociological theories that attempt to explain gender differences and inequality, as they manifest at the micro- and macro-level. I will discuss those approaches that I found the most relevant to the current thesis, among which are the micro-level models such as the social role model, the doing gender model, the social exchange model and a number of macro-level stratification approaches. I combine micro-level models with macro-levels models, because, by definition, to assume gender inequality is to assume differences in the level of power and resources to which, on average, men and women have access, as well as in the amount and types of opportunities and constraints they typically confront. In the upcoming part, I will discuss how micro-level processes are significantly shaped and constrained by macro-level features. It thus follows that gender differences in depression are also shaped by micro- and macro-level processes.

Micro-Level Approaches

From Sex Roles to Gendered Social Roles

Sex role models for explaining depression perceive differences between men and women as differences in the content of their sex role. While early sociological research mainly ignored women altogether, the sex role literature was the first to assume some possibilities of social change in the unequal relationships between men and women. The assumption was that sex roles, although still assumed to be resting on a natural biological foundation, resulted from pre-adolescence socialization and internalization into appropriate male/female roles. From this perspective, the biological determinants of maleness and femaleness could be combined with social determination via upbringing in any proportion of nature or nurture that seemed appropriate. The distinction between men and women was often linked to two sets of personality attributes(Spence & Helmreich, 1981); 'masculine instrumentality' and 'feminine expressiveness'. Instrumentality – which refers to self-assertive, self-promoting traits presumably characteristic of males – and expressiveness – which refers to selfless, interpersonally oriented traits presumably characteristic of females – were terms borrowed from Parsons and Bales (1955), who distinguished between the instrumental and expressive roles traditionally assigned to husbands and wives within the nuclear family. These presumably inborn differences in the personal qualities of men and women were used to explain and justify the existence of traditional sex roles.

Sex role models locked men and women into seemingly immutable positions. Parsons (1942; 1955) perceived a profound variation in the roles and functions, such as women having careers, as dysfunctional to the stability of the social system. The differentiation between men and women in the nuclear family was perceived as functional because it eliminates competition between the spouses, and increases the integration of the nuclear family as a social system. Parsons acknowledged that housewives suffer from the lack of meaningful work and loss of self-esteem because of the devaluation of expressive work, but he concluded that the division of labor was nonetheless necessary for the smooth functioning of the family and of society as a whole. Instrumentality and expressiveness were held to be incompatible; possession of one tended to preclude the other. Men and women who displayed attributes associated with the other gender or did not accept the roles that society assigned to them were believed to be deviant or to suffer from a psychopathology (Spence & Helmreich, 1978). In addition, the

content of the female sex role would make women less likely to respond assertively in interpersonal conflicts, making them more prone to depression (Nolen-hoeksema, 1990).

By emphasizing integration and differentiation, early sex role models neglected stratification, inequality and asymmetry. The notion of sex roles has tended to focus attention more on individuals than on social strata, more on socialization, than on social structure, and has thereby deflected attention away from historic, economic, and political questions. As Lopata and Thorne (1978) argue, this is neither the way that sociologists have usually theorized roles nor is it a plausible model of female behavior.

> The absurdity of speaking of 'race roles' or 'the black role' brings home the contrast between the structural and situational perspective used for race and class, on the one hand, and the individualized, essentialist view inherent in the sex roles approach on the other (Hess & Ferree, 1987, 15).

For this reason a number of authors distinguished sex roles from other roles by referring to them as a 'master status' (Hughes, 1945), a 'basic role' (Turner, 1990), or a 'general or diffuse role' (Eagly et al., 2000). The relevance of social factors was additionally reduced to the degree to which individuals internalize them via sex role socialization. It was also pointed out that roles are prescriptive expectations that vary culturally and historically and are not enacted passively; rather both men and women actively and reflexively shape their sex roles (Connell, 1987). Consequently, the 'functional ideas embedded in the concept of 'sex role' or 'socialization' were shown to be inadequate because people often do not become what they are expected to be (Hess & Ferree, 1987, 14). Finally, the functional approach to sex roles was still tied to the dictates of a biological binary.

In attempting to navigate the nature/nurture binary, Stoller's (1968) distinction between 'sex' and 'gender' was particularly influential. Gender was employed to emphasize the social and relational nature of differences between men and women in contrast to biological differences between the sexes. In the language of sociology, gender roles replaced sex roles, as gender represented more accurately than sex the social construction of identities and roles dividing societies into women and men. Instead of assuming one female sex role and one male sex role, which complemented each other, gender was integrated into the 'social role model'. This model assumes that men and women occupy different roles within

the public and private sphere. Gender differences in mental health would accordingly be accounted for by differences in the roles that are occupied by each sex.

Gove and his colleagues (1973; 1978) were among the first sociologists to examine why women are more distressed than men by applying this social role model. At the time of the study, the male breadwinner system prevailed, with only the majority of women being housewives, and men being breadwinners and job holders. Gove reasoned that if women are more distressed than men because of something different in their lives, then women who are employed will be less distressed than women who are exclusively housewives. His hypothesis was confirmed based on a sample of over 2000 respondents in the United States. It was an important discovery. Up until then, theoretical models on gender assumed that women were best off in the private sphere of the household (cf. Parson's model of sex segregation in the nuclear family). 'The discovery that women with jobs are less distressed than women without them overturned a century of armchair theorizing' (Mirowsky & Ross, 1989, 86).

However, Gove also found that employed women are still more distressed than employed men. Having a job apparently wasn't the whole story. By trying to explain this gap, Kessler and McRae (1982) found that employment is associated with less distress among women whose husbands help with housework and child care, but that there is little advantage to employment among women whose husbands do not help. These results provide evidence for the 'scarcity approach' developed by Merton (1968) and Goode (1960) referring to the alleged difficulty of managing multiple roles. Accordingly, a person's time and energy is limited. Goode (1960, 487) argues that 'the individual's total role obligations are over demanding. […] Role strain – difficulty in meeting given role demands – is therefore normal. […] The individual's problem is how to allocate his energies and skills so as to reduce role strain to some bearable proportions.'

While Goode claimed that it is normal for people to juggle with different role demands, health sociologists used it to explain ill-health in the population. It was applied to research on higher levels of depression in employed mothers (Arber et al., 2008; Artazcoz et al., 2004b; Evenson & Simon, 2005; Nomaguchi et al., 2005; Ross & Mirowsky, 1988), in women with limited spousal contribution to household chores (Bird, 1999; Boye, 2009; Kushnir & Melamed, 2006; Ross & Mirowsky, 1988), and other aspects of work/family conflict (Grzywacz & Bass, 2003; Parasuraman et al., 2006; Simon, 1995). It was assumed that the

accumulation of different roles resulted in higher levels of depression in women, because of role strain and role conflict.

A majority of the research in the study of gender differences in depression nowadays is still cast in the language of roles. It is a useful approach because it acknowledges that being a women or a man incorporates a multitude of roles. Studies for example look at how the role of an employee, a spouse, or a parent associates with depression. Female roles seem more prone to role limitations associated with lack of choice, to role overload, to competing social roles and to a tendency for females to be undervalued (Mirowsky & Ross, 2003; Piccinelli & Wilkinson, 2000). The underlying premise is often that gender differences in depression will be small to absent in the case that men and women occupy similar roles and similar stressors confront them (Annandale & Hunt, 2000). Researchers tend to associate the social role model with the social stress model, assuming that role strain and role conflict are examples of stressors. But also a lack of roles might result in depression, due to isolation and lack of social support (cf. expansion hypothesis by Marks, 1977; Sieber, 1974; Thoits, 1983).

Both the scarcity and expansion hypothesis were only partly confirmed by research, mainly because the theoretical framework asked for a complex approach of the association between depression and the gendered division of social roles. It was found that only under certain circumstances, and in certain contexts, certain social roles were associated with depression. This complexity reveals one of the major drawbacks of applying the social role model in the sociology of mental illness. The notion of a social role focuses attention more on individuals than on social structure. It tends to depoliticize and strip experience from its historical and political context. In addition, it tends to neglect questions of power and conflict. Within this framework, role strain and role conflict are perceived as individual problems that need individual solutions. Connell (1985; 1987) argues that the emergence of role theory in the social sciences supported a conservative political ideology that attempted to maintain social cohesiveness and restrict resistance to the established social norms defined by those in power. Role theory promotes social conformity by endorsing a normative analysis of human behavior, implying that certain behaviors exist that exemplify the 'proper way to live'(Connell, 1987, 51). Those individuals who engage in behaviors outside these norms are labeled 'deviants' and their maladaptive behaviors are explained in terms of role conflicts. When using role conflict to analyze deviant behavior, role theorists rely on explanations of insufficient socialization or a mismatch between one's personality and behavioral expectations as the primary reasons an individual does not engage in proper behavior. Thus, 'the problems of role

performance and deviance are represented ultimately as individual problems'(Connell, 1983, 205). Likewise, when the social role model is integrated into the social stress model, it claims that an individual is confronted with depression because he/she is unable to cope with the stress that results from role conflicts or strains.

An exception to the individualistic approach of most role theorists springs from a symbolic interactionist perspective that conceptualizes social roles as negotiated performances (Lopata, 1994). Lopota relates role-playing to social change by linking the definitions, constraints, and opportunities generated at the macro-structural level with women's role negotiations, performances and therefore identities. It is one of the few micro-level feminists to explicitly consider change, but the specific structural changes entailed by modernization and the actual processes that connect them with expanded role options for women are not well delineated (Chafetz, 2002).

Doing Gender; An Interactionist Approach

Feminist interactionists and ethnomethodologists conceptualize gender as an emergent property of situated interaction rather than a role or attribute. Kessler and McKenna (1985) argue that people are constantly engaged in creating a sense of gender difference and defining self and others through that lens. West and Zimmerman (1987) coined the term 'doing gender' to refer to the work done during interactions in order to recreate each partner's sense of their own and the other's gender. They define sex/gender roles as 'situated identities – assumed and relinquished as the situation demands - rather than master identities such as sex category, that cut across situations' (West & Zimmerman, 1987, 128). Gender is 'omnirelevant' in that any action can be interpreted as exemplifying it (West & Fenstermaker, 1995). Based on the taken-for-granted view that there are only two sexes to one of which each person belongs, people automatically engage in gender attribution of self and other when they enter an interaction. On that basis, they interpret any and all kinds of behavior according to its normative 'gender appropriateness', legitimating or discrediting it accordingly. The concept of doing gender reflects that individuals are not simply born into a sex or gender identity or merely functioning in a gender role, but that gender is a 'routine, methodical, and recurring accomplishment' (West & Zimmerman, 1987, 126). Social interactions provide the context for reinforcing the prescribed essentialness of gender. These interactions do not express natural differences between women and men, but produce the differences (Goffman, 1977). By doing gender, individuals

reflect the social structure as well as derive relative power consequences of gender category membership (West & Zimmerman, 1987). In this way, individual members of society actively replicate gender hierarchies in social interactions.

The doing gender perspective has been particularly useful in explaining processes of household bargaining and conflict over housework. Both economic dependency and the doing of housework carry tremendous symbolic weight as markers of gender, of being accountably feminine when one is dependent and does housework and accountably masculine when one earns most of the family income and leaves the housework to others (Brines, 1994; Fenstermaker et al., 1991). Based on a sample of nearly 5000 U.S. families, Brines (1994) found a negative relationship between the proportion of family income that wives earn and the amount of time they spend on their housework. For husbands however, she found a curvilinear relationship in which husbands at the extremes of the dependency continuum do the least housework, whereas where their earnings are approximately equal to those of their wives, they do the most. She explains this by reasoning that couples who violate the traditional structure of the breadwinner husband with dependent wife might be expected to resort to more traditional divisions of housework to achieve 'gender accountability' in terms of how they are viewed by their partners, their friends and themselves.

The doing gender approach can also be applied to the sociology of mental health, via the perception of health-related beliefs and behaviors as a means of constructing or demonstrating gender. The social practices required for demonstrating femininity and masculinity are associated with very different health advantages and risks. Saltonstall (1993) for example writes:

> The doing of health is a form of doing gender. This is not because there is an essential difference between male and female body healthiness, but because of social and cultural interpretations of masculine and feminine selves — selves which are attached to biological male and female bodies. Health activities can be seen as a form of practice which constructs the subject (the 'person') in the same way that other social and cultural activities do.

Women are often perceived as more able to cope with ill health than men because of the stereotypical expectations of femininity as being adaptive and passive (Coppock et al., 1995). Charmaz (2005a, b) found that women with a chronic illness generally showed a greater adaptability than men, and that women 'rarely

persisted in tying their futures to recapturing their past selves when they defined physical changes as permanent' .

In addition, a commonly derived hypothesis from the doing gender theory is that in counter-normative situations women will do gender by engaging in more stereotypically female work, such as housework and care-giving, while men will do gender by performing stereotypically male work and avoiding stereotypically female work. This compensatory feminine or masculine behavior in a counter-normative situation may result in actual harm to health. Courtenay (2000) claims that the social practices that undermine men's healthcare are often the instruments men use in the structuring and acquisition of power. Men's acquisition of power requires, for example, that men suppress their needs and refuse to admit to or acknowledge their pain (Kaufman, 1994). Additional health-related beliefs and behaviors that can be used in the demonstration of hegemonic masculinity include the denial of weakness or vulnerability, emotional and physical control, the appearance of being strong and robust, dismissal of any need for help, the display of aggressive behavior and physical dominance. These health-related demonstrations of gender and power represent forms of micro-level power practices, that are 'part of a system that affirms and (re)constitutes broader relations of inequality' (Pyke, 1996, 546). Men's greater economic independence and lesser responsibility for housekeeping and care work additionally provide more opportunities for risky behavior, such as driving, excessive alcohol consumption and irregular food habits (Backhans et al., 2007)..

Similarly, research has shown that in male-breadwinner societies, women with relatively high economic power suffer more from health problems than women with low economic power, due to an increase in their role overload and work–family conflicts (Bambra et al., 2008). Others found an increase in unhealthy compensatory masculine behavior such as driving, excessive alcohol consumption and aggressive behavior in gender-equal societies, both among lower class men (Connell, 1995) and among higher class women (Ferraro, 2010; Stets & Burke, 2005). Research showed that in societies that transition towards greater gender equality, certain men feel threatened by female competition and the (perceived or real) loss of power and prestige they enjoyed (Sabo & Gordon, 1996). In addition these forms of increased masculinity are also found among men who then compete with higher class men, thus also contributing to increased inequalities between social groups (Pyke, 1996).

Greater possibilities for women may also go hand in hand with ideas of the emancipated woman as embracing such risky and health-threatening 'masculine'

practices. The implications of male gender for health have been highlighted by recent debates about increased mortality and morbidity in central and eastern Europe (Watson, 1995). The collapse of state socialism highlighted the importance of the family as a means for supporting those who are jobless. Especially unmarried men were at risk, which is reflected in higher mortality rates (Bobak et al., 1998). At the same time, fewer opportunities for men were available to carry out the economic activities traditionally associated with masculinity. This has generated feelings of loss of control, helplessness and frustration which have been linked both directly and indirectly to the greater decline in male health (Bobak et al., 1998).

The major advantage of the doing gender perspective is that is gives insights into how gender systems are maintained through interaction. The actual content of gender (i.e. that which is socially defined as masculine and feminine) is not defined by biological sex, nor is it cast in roles, but rather varies across time, space, and even situation. Likewise, health risks associated with gender vary in time and space. Rather than focusing on individual problems within individual men and women, people do gender in the light of societal expectations about what is appropriate for one's sex category, regardless of whether this is harmful to their health. While essentially a micro-level approach, doing gender hence places gender within the broader meaning-shaping context.

Macro-Level Approaches

Macro-level theories on gender equality focus primarily on the gender division of labor, differentiating between the 'gender organization of production', which stresses the economic positions of men and women, and the 'gender organization of reproduction', which focuses on childbirth and parenting and the effects they have on women's economic activities or on gender psychodynamics and culture. Chafetz summarizes the macro-structural approach on the gender division of labor as such (Chafetz, 2002, 617);

1. The greater the amount of domestic-reproductive labor for which women are responsible, the less access they have to, and the lower the reward level they receive from economic roles (i.e., those that produce income or non-domestically exchangeable products/services), and vice versa.
2. The more women control exchangeable products – services and income derived from economic labor, the lower the level of gender inequality.

Macro-level approaches to gender inequality do not assume that the degree of gender inequality is uniform in a complex society. It varies depending on the level of other power structures such as class, age, ethnicity and family composition. Inequality of power, which is itself a scarce and valued resource, underlies all systems of stratification. Resources and prestige associated with social positions affect power, defined as individuals' ability to impose their will on other people (Weber, 1946). Women's primary responsibilities within the gender organization of reproduction are often associated with lower status and less reward than those of men in the gender organization of production (Lennon & Rosenfield, 1992). However, in advanced industrial societies the largest variation in power distribution between men and women exists at the micro level, where power resources are relatively more accessible to women, than at the supra-micro level (Blumberg, 1984). At the mezzo and macro levels, power accrues specifically to the incumbents in elite positions, particularly in dominant social institutions. Structural gender stratification theorists claim that political and economic organizations constitute the dominant social institutions, with religious, educational and other culture-producing organizations constituting secondary but nonetheless important social institutions (Chafetz, 1990). In advanced industrial societies, men overwhelmingly fill these elite roles and the variation in gender inequality is smaller than it is at the micro level. Although only a small and privileged handful of their sex, elite men, who constitute the policy and decision makers of the central institution of society, represent what Connell (1987) calls 'hegemonic masculinity'. Elite role incumbents control the resources of their organizations, as they serve as societal gatekeepers distributing concrete opportunities and rewards. Individual-level and macro-level gender inequality are therefore closely intertwined. Macro-level gender inequality not only creates opportunities and constraints for women and men but also defines models of normality, influencing preferences, identities and moral rationalities.

Central to the macro-structural approaches on gender inequality is thus the interrelatedness of the different levels of society and the unequal distribution of power. In the upcoming section, I will first discuss two of the most prominent models within this theoretical approach. The first model by Blumberg emphasizes the economic system as the main force of gender stratification. Blumberg (1979) conceptualizes gender inequality as the gendered distribution of three forms of power: political, coercive and most importantly, economic, and later (Blumberg, 1984) adds a fourth: ideological. The second model by Chafetz (1984, 1990) presents a set of propositions to explain both the forces maintaining a system of gender inequality as well as a theory of how such a system can be changed. Also

Chafetz links gender inequality to the unequal distribution of power. She defines the degree of gender stratification as the extent to which men and women who are otherwise social equals (for example, in terms of age, social class, ethnicity and religion) are unequal in their access to the scarce and valued resources of their society.

Blumberg's Gender Stratification Theory

Blumberg (1984) developed a theory emphasizing women's degree of control of the means of production and the distribution of economic surplus. Her theory is based on Lenski's (1966) model of social stratification, in which the dominant technology and resultant size of the economic surplus defines societal types and degree of social stratification. Blumberg claims that the system of gender inequality corresponds to the type of society it belongs to and its corresponding stratification system. She attempts to model a pan-historical theory that explains the position of women relative to men in all types of societies, from the earliest to the most complex societies of the late twentieth century.

Gender stratification, Blumberg argues, is ultimately driven by the degree to which women, relative to men, control the means of production and the allocation of productive surplus. Such control gives women economic power that, in turn, influences their level of political power, prestige, and other stratifying resources. In Blumberg's view, gender inequalities are 'nested' at diverse levels: male-female relations are nested in households; households are nested in local communities; and if a society is sufficiently large to reveal a coercive state and a system of class stratification, household and community are nested inside of the class structure that, in turn, is lodged within a larger state-managed society. Women's control of economic resources can be located at different levels, and the level at which their economic power is strongest influences the power that women can command at the other levels of social organization.

Nesting of economic power is marked by what Blumberg calls a 'discount rate' in which women's economic power will be reduced or enhanced depending on the level at which it is concentrated. If women's relative economic power is at the micro level of the household (for example, women work and contribute to family income), women will not have household authority proportionate to their economic contribution if males control more macro social spheres. Male control at these more macro levels 'discounts' or reduces the power that women should have in the household. Conversely, if women possess power at more macro levels,

then the discount rate turns positive and will enhance women's power at the more micro, household level. Thus, as a general proposition, the more women have economic power at macro levels of social organization, the more they will be able to gain access to other forms of power—political, coercive, ideological—and the more their economic contributions at the micro level will be appreciated and increase their authority within the household and their influence within a community.

The classic study by Blood and Wolfe (1960) on power struggles within the family provides an example of how different levels of power affect bargaining situations. Blood and Wolfe identified two sources of marital power, derived from macro- and micro-levels; The first is the 'patriarchal culture', which gives husbands authority in decision-making and leads to traditional male breadwinner households where women take responsibility for the housekeeping and child care. The second source of marital power is the 'relative resources' that the husband and wife bring to the marriage. Individuals' resources – such as education, employment status, income, and constraints on time availability – allow couples to depart from the traditional division of labor. Thus, for example, Blood and Wolfe predicted that employed wives would have greater power than non-employed wives. However, the strength of patriarchal authority and culture varies within and between societies. As husband-wife power relationships differ for each couple within a community, different communities also manifest different degrees of male domination. Further, the degree of male domination in a community may influence the bargaining process between husbands and wives within a household.

Likewise the dependency model of the division of labor at home (Delphy & Leonard, 1984; Walby, 1986) is based on the idea that the exchange between household labor and economic support among spouses is moderated by socio-institutional arrangements. It is suggested that wives, as women, confront occupational, legal, and political or policy structures that accentuate the status of dependency and its consequences for future life chances more powerfully than do men.

> Because men generally encounter more favorable wage and promotional prospects than women, chances are high that a dependent husband could subsist on his earnings alone should the marriage dissolve; his odds of gaining economic independence are better than those facing most married women. Married men's greater structural opportunities for independence are thus likely to set limits on any exchange disadvantage that might arise as a

> consequence of dependency upon their wives. In comparison, limited structural opportunities leave dependent wives much more subject to imbalance in the current exchange relation (Brines, 1994, 659).

The model's view of macro-level arrangements thus suggests that actual dependency within marriage might have a greater effect on the housework behavior of wives than that of husbands.

In addition, according to the dependency model, the status of dependency affects all women, regardless of whether or not one is actually dependent upon a man, because the assumption of women's dependency is built upon employment practices, sex-segregated occupational structures, welfare state policies, and the institutionalization of the household income (Acker, 1988). Blumberg's multi-level conception of gender stratification can thus be applied to marital power and marital dependency as it incorporates the dynamics of power relationships in macro-level units into micro-level negotiation dynamics.

Women's economic power, which can be used in negotiation with their husbands, is a function of individual power resources and macro-level male domination in economic, political, and ideological areas (Blumberg, 1984; Blumberg & Coleman, 1989). Women may possess high income relative to their husbands, but their 'net economic power' to be used in actual bargaining situations may be reduced by male dominance at the macro-level. Blumberg and Coleman (1989, 234) maintain that

> male control of the top echelons of the political economy affects the national policy agenda, the opportunity structure that women encounter, and the prevailing ideology of what women's place in that structure should be.

The unequal distribution of opportunities may affect couples' calculations regarding the woman's present and future career trajectories. Also dominant gender ideologies that devalue women's work may condition the negotiations over the value of women's employment.

Without economic power, Blumberg argues, women are denied honor and prestige, and more importantly, they have less control over such basic matters as their fertility patterns (when and how many children to have), their marriages (when, if, and with whom), their rights to seek a divorce, their premarital sex, their access to extramarital sex, their household activities, their levels and types of

education, and their freedom to move about and pursue diverse interests and opportunities. Thus, economic power has important consequences for what women can, or cannot do in a society. And, Blumberg emphasizes, it is not just women's economic participation that matters; rather, does such economic participation translate into control of one's own productive activities and the distribution of the outputs from this productive activity? If women's work is strategically indispensable, if kinship facilitates their inheritance and acquisition of property, and if stratification at the macro level does not so blatantly favor men, then women can gain economic power. Without such economic power, gender stratification will be high, but with this economic power, the degree of gender inequality will decline.

The Gender Equity Theory by Chafetz

Like Blumberg, Chafetz examines gender as a form of stratification from a macro-perspective, where Lenski's (1964) macro-evolutionary theory of stratification exerted some influence. With her theory, she tries to explain the conditions that either maintain or change gender stratification. As she emphasizes, the two are interrelated because

> a theory of the maintenance and reproduction of gender systems is a theory of change targets, because it identifies the critical variables that sustain the status quo and, therefore, must be changed (Chafetz, 1990, 48).

The Maintenance of Gender Stratification - Chafetz argues that two types of forces sustain a system of gender inequality: (1) those that are coercive and (2) those that are voluntary acts by individuals. The two are interrelated, but Chafetz initially theorizes about them as separate forces. Coercive forces resolve around the extent to which males have resource advantages over women at the macro-level of social organization and are able to use this advantage to control micro-encounters among men and women, to control elite positions in the broader society, to regulate the opportunities for work for men and women, to define the labor of women in negative terms, and to generate a system of gender ideologies, gender norms and gender stereotypes that favor men's attributes over those of women. Thus, once there is a macro-level division of labor that favors men, this system gives men power advantages for interpersonal demands and as a result makes them, for example, less likely to contribute to family and domestic work. Wives thus become burdened with domestic chores, even when they work, which

makes it increasingly difficult for them to compete with men for resource-generating work outside the home—a situation that, in turn, sustains the macro-level gendered division of labor.

Voluntary forces follow from these coercive forces because once a system favoring men exists, it constrains the options that women have. When ideologies, norms and stereotypes portray men and women differently, socialization will tend to reinforce these cultural definitions. Subsequently, women will 'voluntarily' act in ways that perpetuate these social definitions. When adult roles are gendered, the role models for women will also be gendered, with the consequence that women tend to 'choose' female roles and hence sustain the gendered division of labor inside and outside of the family. In addition, the attitudes and behaviors in work roles will continue to give men advantages, because these roles will be viewed as attributes favoring men over women. Indeed, the attributes of women will often be negatively evaluated, thereby perpetuating the advantage of men in competition with women for those positions generating material and power resources.

This process is exacerbated because men control elite positions in the broader society and can, therefore, perpetuate definitions of worth that favor men; these definitions typically lead to the devaluation of the work that women perform, inside and outside of the domestic sphere. For example, domestic family work of a wife goes unpaid and, hence, undervalued, whereas traditional work roles for women, such as secretary, are underpaid because they are not valued as highly as are roles performed by men. The maintenance of a gender system via voluntary forces is thus related closely Gramsci's notion of 'ideological hegemony'; a certain gender system becomes part of everyday thought and is taken for granted as the way things are and should be.

Gender social definitions become, in Chafetz's model, a critical link between macro- and meso-level coercive processes and voluntaristic processes that operate more typically at the personal, decision-making level. Chafetz distinguishes among three types of gender definitions: (1) 'gender ideology' or beliefs about the basic and, typically, presumably biological differences in the natures of men and women; (2) 'gender norms' or expectations about the appropriate and proper ways for men and women to behave; and (3) 'gender stereotypes' or accentuation of the differences between men and women in how they will generally respond in situations. For Chafetz, the greater the level of consensus among members of a population on these gender definitions and the more the gendered differences are presumed by individuals to be the way the sexes are, the more power these

definitions have to influence both macro- and micro-level social processes sustaining gender inequality. In general, Chafetz argues, the gender ideology sets the constraints for gender norms that then contribute to gender stereotyping about the differences between men and women.

Changing the gender system - According to Chafetz, once the forces maintaining a system are understood, the critical targets for change are also identified. Chafetz differentiates between intentional and unintentional change processes. Examples of the latter are demographic alternations increasing opportunities for women to move out of gendered roles; technological innovations reducing the strength and mobility requirements for jobs, while freeing women from domestic activities, that allow women to overcome gendered definitions and roles; and structural changes, such as an economic growth, that create new opportunities for women. Other unintended processes that work against women include deskilling of jobs, as these increase female unemployment, and political conflicts, as these harden gender definitions. These demographic, technological, economic, and political forces are, as Chafetz stresses, often unintended; they simply occur as the world economy and technologies on which it runs change, and the political and the international politics among nations are altered, and also as the international migration of populations unfolds over time. Yet, much change in gender stratification is intentional, involving deliberate acts to alter the distribution of resources among men and women.

One source of intended change is, at first glance, not easily predicted: elite males who control key positions actively seeking to change gender stratification. Chafetz argues that two conditions cause this kind of elite-initiated change to occur: (1) when elites perceive that gender inequality threatens their incumbency as elites or thwarts their plans for the society; and (2) when competing groups of elites need to recruit women to their side to prevail in a conflict. Under these conditions, elites will attempt to mobilize women's support in exchange for promises to ameliorate women's disadvantages in the division of labor and in the system of gender definitions.

Another source of intended change comes from women's effort to mobilize and pursue their interests, with this mobilization being easier under certain conditions: industrialization, as it increases the number of nondomestic roles; urbanization, as it congregates women who can better communicate their common interests; escalated deprivation among women, as this is experienced collectively through ideological ferment; and positive experiences of empowerment, as some women are able to assume non-gendered roles outside of

the family. When women experience these sentiments collectively and in proximity, Chafetz forsees the development of women's movement organizations. These movements then pursue the interests of women in eliminating or at least mitigating gender inequality. Even if these movements split into diverse factions, the ideological and political ferment created will begin to erode old gender definitions and to instill those of the more moderate organizations of the women's movement. As public support increases for these moderate definitions, more expansive efforts to change the gender-biased division of labor, the system of gender ideology, norms, and stereotypes, and the distribution of power can proceed. And, if elites begin to support these efforts, the women's movement will proceed more rapidly and successfully.

Yet unintended forces and deliberate efforts to change the content of gender definitions and the macro-level division of labor will inevitably threaten interest groups who will mobilize against changes in the existing system of stratification. These counter-movements will gain power when a large proportion of women play traditional gender roles and abide by gender definitions, when a significant number of male roles in the division of labor are threatened, and when the women's movement reveals a high degree of internal conflict and has thereby alienated former support of change. Yet, Chatez emphasizes, successful mobilization of women inevitably generates a sense of threat among powerful interest groups in a society. The greater this sense of threat is, the more likely those threatened are to lobby against efforts of the women's movement.

Concluding Remarks

The previously discussed macro-level approaches to gender inequality show how micro-level processes are significantly shaped and constrained by macro-level features. Macro-level approaches place the unequal distribution of power resources central in its model. This is why the models are of such great relevance to explaining gender differences in depression. Powerlessness, or lack of control in one's life, are well-known risk factors for depression. Societies with a macro-level division of labor that favor men, and give men power advantages for interpersonal demands, and can create gender stratification systems that can be harmful to the health of women. For the upcoming empirical studies, three main ideas are of special relevance:

First, macro-level approaches to gender inequality acknowledge that the unequal distribution of power resources is dependent on the broader gendered social

structure and gendered social definitions. They acknowledge that micro- and macro-level processes are both at play and interact in the gender organization of society. Blumberg speaks of 'nested layers of gender inequality' and 'discount factors'. Chafetz refers to coercive and voluntary forces at the macro-level that moderate micro-encounters. Second, macro-level models identify and emphasize the economic force as the most important stratifying force. As Blumberg argues, gender stratification is ultimately driven by the degree to which women, relative to men, control the means of production and the allocation of productive surplus. In general, women's primary responsibilities are within the gender organization of reproduction, which is associated with lower status and less reward than those of men in the gender organization of production. Economic participation has important consequences for what women can, or cannot do in society, and the degree to which women can control their own lives. Third, inequality between men and women manifests itself to different degrees across and within societies. In all societies, to a greater of lesser degree, men have resource advantages over women at the macro-level, and they are therefore able to control micro-interactions among men and women, to regulate opportunities for men and women, and generate systems of gender beliefs.

Conclusion

The vast majority of research that examines gender differences in depression, applies a micro-level approach, either by applying the social role model, and in some instances also the doing gender approach. If our goal is to understand thoroughly the complex and multiple causes of gender differences in depression, then the stressors and structural strains induced by both micro- and macro-level processes, as well as their interaction must be taken into account. Doing gender theory does this in part, by acknowledging that people try to 'do gender' in the light of societal expectations. It additionally acknowledges that sources of stress are often located within human interaction, and that health risks associated with gender therefore vary in time and space. By doing gender, individuals reflect the social structure of society. However, how variations in doing gender come about, why femininity is associated with less status and power than masculinity, and how societal expectations moderate gender-specific health risks, is something the doing gender approach fails to explain. Likewise, the social role model focuses its attention more on health risks related to individual roles than to the social structure. While this approach does not neglect the social structure, it does tend to neglect questions of power and conflict that are associated with the gender

system. It assumes that men and women who occupy similar roles, and who are therefore confronted with similar stressors, will show similar levels of mental health. Thereby, it perceives mental health problems ultimately as individual problems that need individual solutions. In the current thesis, I intend to investigate variations in gender inequality at both the micro- and macro-level. By incorporating a macro-approach, I intend to explain why only in certain circumstances, and in certain contexts, certain social roles and ways of doing gender are associated with depression. I argue that health risks reflect both micro- and macro-level gender inequalities. Although the society and health perspective on health research is not new, empirical research is scarce. Therefore, at this point, we know relatively little about the degree to which macro-level characteristics influence the magnitude of gender mental health inequalities.

CHAPTER 4
RESEARCH AIMS AND METHODOLOGY

Research Aims and Hypotheses

A recurrent finding in international literature is a greater prevalence of depression in women than men. Research on the social determinants of depression in the general population is more than three decades old. So far, these social determinants have mostly been studied at the individual or the household level. Macro-sociological determinants of depression and the gender difference in depression have largely been ignored. This hiatus, for the most part, stems from a lack of data that allows the cross-national, comparative and macro sociological study of depression. In this thesis, I will make use of cross-national data from the third wave of the European Social Survey (2006-2007). The data covers the general population in almost all European countries and the gathered information on depression using a shortened version of the internationally validated and reliable inventory, the Centre for Epidemiologic Depression Scale. The previous literature review allows me to identify two advantages of using cross-national data in the study of gender differences in depression. First, it allows me to focus on stressors that vary across different social settings. I am therefore able to move beyond gender differences in vulnerability and expression, and focus on the gender distribution of social stressors. In addition, by using multi-country data, I am able to incorporate macro-level indicators of gender inequality. I will make use of the previously discussed micro- and macro-level models of gender inequality in order to explain cross-national variation in gender differences in depression. Based on the literature review, I propose four main hypotheses. The first hypothesis is based on the finding that degree of gender inequality varies across and within societies. As depression is closely related to power and feelings of powerlessness, I assume that gender differences in depression will associate with this variation in gender inequality. *I expect that women suffer more from depression than men in all countries, but that the size of this gender gap will vary cross-nationally (hypothesis 1).* This hypothesis will be investigated in chapter five and six.

A high degree of cross-national variability would indicate that the consideration of social sources of stress is important for understanding the gender gap in depression. Theories about gender-based exposure to social stressors show

elevated depression in women to be a consequence of inequality. The majority of depression-related research focuses on micro-level stressors, such as the gender-specific demands of marriage, childcare and employment, and on stressful life events, such as divorce, poverty and employment problems. Most macro-level models however specifically assume that *economic power* is the strongest predictor of overall status. Subsequently, I assume that *micro-level stressors related to the gender organization of production are more powerful at explaining gender differences in depression, than micro-level stressors related to the gender organization of reproduction (hypothesis 2).* This hypothesis will be investigated in chapter six.

Resonating with macro-level approaches on gender inequality, I additionally propose that gender differences in depression are not only associated with gender inequality at the micro-level, but also moderated by the macro-level context. In the current thesis I will examine two specific sets of power resources at the macro level. First, I will examine the impact of the degree of macro-level gender equality as measured by the Gender Empowerment Index (Programme, 2005). The GEM captures gender equality in three key areas: (i) political participation and decision making power, (ii) economic participation and decision making power, and (iii) power over economic resources. *I expect that gender differences in depression will be moderated by macro-level gender inequality (hypothesis 3).* This hypothesis will be discussed in chapter seven.

Second, I will look at the impact of welfare policies on depression. For this part of the thesis I will focus on lone mothers, because they are particularly sensitive to the setup of the welfare state. As the sole main carer of children and the sole possible breadwinner in a family, lone mothers are likely to represent an extreme in the tensions between paid work and care responsibilities. This makes them particularly vulnerable for health problems. A comparative study of the health status of lone mothers between welfare regimes creates a quintessential example of how welfare states construct the relationship between paid work and caring for all women. *I expect that welfare regimes moderate the level of depression in lone mothers (hypothesis 4).* This last hypothesis will be discussed in chapter eight.

METHODOLOGY

Statistical Approach

My research will make use of a dataset linking individual- and country-level information within a hierarchical design. In all the empirical chapters of this PhD thesis, with the exception of the first empirical chapter, I therefore use linear multilevel regression analyses. Using ordinary regression analyses would be inappropriate given the nested structure of the ESS-3 data: individuals are nested within countries. Neglecting this pattern of clustering leads to an underestimation of standard errors for country-level characteristics. After all, similarities between individuals that are simply caused by being nested in the same national context would be ignored by using ordinary regression analysis. As a result, in ordinary regression analysis the significance of national level effects would be overestimated. Multilevel analysis accounts for this clustering of individuals within countries by separating individual variance in depression from national variance in depression. In addition, ignoring the multilevel structure of data also creates conceptual problems. If I would drop the contextual levels, in my case the national level, I would also ignore the national-level moderators, such as gendered social policies or the national gender ideology, which could have a significant impact on micro-level gender inequality and depression.

Applying multilevel analysis in the current empirical research has two main advantages. First, it allows me to investigate whether effects of micro-level gender inequality on depression vary across countries by estimating a random slope variance. In other words, I can assess whether a certain social stressor is associated with depression, but also whether the strength of this association is equal in all the countries, or in contrast varies significantly between the countries. Second, hypotheses on the effects of macro-level indicators can be tested appropriately using this technique. The statistical procedure of multilevel modeling enables net effects to be estimated at one level of analysis (e.g. the country) while controlling for variation at another level (e.g. the individual). It also enables an adequate computation of cross-level interaction effects between micro-level gender inequality and macro-level moderators. Detailed technical information on multilevel analyses can be found in Hox (2002), as well as Snijders and Bosker (1999).

Research Sample: European Social Survey

The European Social Survey (ESS) is an academically-driven social survey designed to chart and explain the interaction between Europe's changing institutions and the attitudes, beliefs and behavior patterns of its diverse populations. The ESS has currently finished five rounds of data collection (R1: 2002, R2: 2004, R3: 2006, R4: 2008, R5: 2010). It has been administered in over 30 countries to date and contains a large amount of respondents. Therefore, it is suited to study behavior that is relatively uncommon in the general population. In addition, the stratified individual-within-country sampling procedure provides a multilevel dataset, which allows the simulation to estimate both individual effects, and compositional and structural country-level effects using multilevel analysis (Raudenbush & Bryk, 2002).The ESS selected respondents using strict probability samples of the resident national population aged 15 or older living in private households. Proxies were not allowed. Data was gathered via face-to-face interviews. The ESS aimed to target a response rate of 70% and used rigorous translation protocols.

The ESS is funded via the European Commission's 6th Framework Programme, the European Science Foundation, and national funding bodies in each country. Developed by leading European subject specialists, the questionnaire combines continuity with change through a consistent core module and a series of rotating modules. Repeated each round, it contains twelve broad topics that form one half of an hour-long interview, which covers topics such as trust in institutions, national, ethnic and religious identity, political engagement, well-being, health and security, socio-political values, demographic composition, moral and social values, education and occupation, social capital, financial circumstances, social exclusion and household circumstances. The other half of the interview is changed each round and consists of new modules designed in conjunction with leading academic specialists. The third ESS-round (ESS-3; 2005-2006) incorporated a module on 'personal and social well-being', which included a depression inventory. For the most part, the current thesis therefore uses data from this round. In the third round, the survey covers 25 countries and employs the most rigorous methodologies. Response rates ranged from 45.97% in France to 73.19% in Slovakia. All data are weighted using the design weight provided by the ESS-3, which corrects for slightly different probabilities of selection. Extensive survey documentation can be found on the ESS website: http://ess.nsd.uib.no/ess/round3/surveydoc.html

Operationalization of Dependent Variable

Depression is measured using an eight item version of the Center of Epidemiological Studies-Depression (CES-D) scale (Radloff, 1977). The CES-D is a key instrument in the measurement of depression in American research, but is implemented less often within the European context. Initially, it was built using 20 self-report items in order to identify populations at risk of developing depressive disorders; it should not, however, be used as a clinical diagnostic tool by itself. The ESS-3 includes 8 items from the original scale. The selection of items was based on a study by Santor and Coyne (1997), and was previously implemented in the AHEAD/HRS dataset. Respondents are asked to indicate how often in the week previous to the survey they 1) felt depressed, 2) felt lonely, 3) felt sad, 4) were happy, 5) enjoyed life, 6) felt everything they did was an effort, 7) had restless sleep, and 8) could not get going. Response options range from *none or almost none of the time* (score 1) to *all or almost or all of the time* (score 4). Scale scores are assessed using a non-weighted summated rating and range from 1 to 24, with higher scores indicating a higher intensity of depressive complaints. With the exception of the last empirical chapter of this thesis, depression was defined as a continuous variable. In this last chapter, however, I included a dichotomous version of the CES-D 8, in order to improve the coherence with the other two health measures included in the analysis. However, as discussed in the discussion of this chapter, a sensitivity analysis using the continuous version of the CES-D 8 showed similar results. As will be shown in the first empirical chapter, the CES-D 8 shows strong reliability and validity across both genders and countries.

Operationalization of Independent Variables

In the current thesis, I incorporate theories of the gender organization of production and theories of the gender organization of reproduction. The former stresses the economic positions of men and women and presents the major factors which structure male and female socioeconomic power. The latter focuses particularly on childbirth and parenting and their effects on gender psychodynamics and the culture or women's and men's economic activities.

Indicators related to the gender organization of production: The gender organization of production refers to the relative economic power of men and women. We assess this by means of the socioeconomic position of men and

women using indicators of employment status, educational level and household income.

Employment status is coded as a set of dummy variables, using information on the activity during the last 7 days. Respondents were either in paid employment, students, unemployed, permanently sick or disabled, retired, housekeepers (performing housework or caring for children or others) or in another unidentified occupational position. This last category includes respondents such as those in community or military service, whose occupational position does not fit into one of the other categories.

Educational level of the respondents is measured by their total number of years in full-time education. Even though the highest level of education obtained was also assessed by the ESS, we prefer the total number of years of education completed by the respondent. While this is not an optimal way of measuring educational level, Schneider (2007) has shown that this measure is more acceptable for cross-national comparisons.

Income information in the ESS-3 reports the total net household income as estimated by the respondent when adding up income from all sources. Adjusting for differences in the size and composition of households is done by implementing the modified OECD equivalence scale, which attributes a weight of 1 to the first adult, .5 to each additional adult, and .3 to each child younger than 14 years old (Hagenaars et al., 1994). To take into account the high number of item non-responses, relative equivalent income is coded into five categories, with one category representing respondents with missing data on income. The other categories represent people living in relative poverty (<50% of the median equivalent income); a low-income group (50–80% of the median equivalent income); people with an income around the national average (80–120% of the median equivalent income), and people with relatively high incomes (≥120% of the median equivalent income). A non-response analysis of the income variable shows more missing information for the lower educated and those who are not in paid employment, as well as for unmarried respondents and individuals with higher depression scores. In addition, missing information is concentrated in Portugal (45,5%), Spain (39,9%), Slovakia (39,1%) and Austria (38,1%). Finally, it is important to note that the income variable captures household income and therefore does not give an indication of the differential control over family income between husbands and wives.

Indicators related to the gender organization of reproduction: The gender organization of reproduction is assessed by measures related to the family situation and childcare responsibilities. First, m*arital status* is measured by differentiating between four categories: (1) married or in a civil partnership (includes the ESS categories 'married' and 'in a civil partnership') (2) divorced or separated (includes the ESS categories 'separated (still legally married)', 'separated (still in a civil partnership)', 'divorced', and 'formerly in civil partnership, now dissolved' (3) widowed (includes the ESS categories 'widowed' and 'formerly in civil partnership, partner died'), and (4) single (includes the ESS category 'never married and never in civil partnership'). Second, the presence of *children* is measured using data on the household composition regardless of whether these children are the biological, step or foster children. Depending on the research question, age selection is applied to the operationalization (e.g. 12 years or younger, 18 years or younger).

PART II
EMPIRICAL ANALYSES

CHAPTER 5
GENDER DIFFERENCES IN DEPRESSION IN 25 EUROPEAN COUNTRIES AFTER ELIMINATING MEASUREMENT BIAS IN THE CES-D 8.

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Abstract

Cross-national comparisons of the prevalence of depression in general populations are hampered by the absence of comparable data. Using information on the frequency and severity of depressive symptoms from the third wave of the European Social Survey (ESS-3), we are able to fill this gap. In the ESS-3, depression is measured with an 8-item version of the Center for Epidemiological Studies-Depression (CES-D 8) scale. Using multi-group confirmatory factor analysis, we assess configural, metric, and scalar measurement invariance of the CES-D 8. Next, best fitting factor models are used for latent mean comparisons of women and men in the 25 participating European countries. The present study is the first to present highly comparable data on the prevalence of depression in women and men in Europe. Results show that, after eliminating measurement bias, the gender difference in depression stays significant and regional clustering can be noted.

Introduction

Cross-National Gender Differences in Depression: A Measurement Bias?

According to the World Health Organization (WHO), depression is the most common mental health problem in the Western world (WHO, 2000). It has a high prevalence in nearly every society; some studies even suggest that depression is on the rise, at least in the Western world (Wauterickx & Bracke, 2005; Kessler et al., 1993). A recurrent finding in international literature is that there is a 1.5–3 times greater prevalence of depression in women compared to men (Piccinelli & Wilkinson, 2000; Bebbington, 1996). This is true for both inpatient and outpatient studies, as well as for general population studies. The pattern of a higher prevalence of depression in women compared to men is consistent across nations, cultures, and population groups, in studies using different methods and measurement instruments, and for a diversity of incidence and prevalence indicators (Weissman et al., 1984; Kessler et al., 1993).

Unfortunately, cross-national comparisons of gender differences in depression in the general population have been hampered by the absence of comparable data. Usually, cross-national differences are estimated using meta-analyses of data from a diverse set of studies using divergent depression inventories, different sampling designs, or sampling populations that are not completely comparable. In Europe three cross-national psychiatric epidemiological surveys went beyond those limitations and delivered comparable data: the DEPRES I and II studies, the ESEMeD study, and the ODIN investigation. Nevertheless, these studies too have their drawbacks. The DEPRES II study (Angst et al., 2002) allows for the estimation of gender differences in depression in a cross-national sample of treated individuals only. Moreover, like the DEPRES I study (Lepine et al., 1997), this sample consists of only six countries. The ESEMeD study (Alonso et al., 2004) also contains data from only six European countries. Finally, the ODIN study (Ayuso-Mateos et al., 2001) contains information on individuals from nine urban centers and rural areas in five countries, albeit some of them were identified via primary care databases. Other studies containing information on depression and anxiety-related complaints are (a) the Survey of Health, Aging and Retirement in Europe (SHARE) and (b) the WHO's Psychological Problems in Primary Care study. SHARE covers 11 European countries, but is limited to couples aged 50 and older (Börsch-Supan et al., 2005). The WHO study sampled clients of 15 primary care centers in 14 countries (Maier et al., 1999). The

samples were enriched with depressed cases, so they are not representative for the general population.

In the present study, we make use of the third round of the European Social Survey (ESS-3) (Jowell, 2007), organized in 2006 and 2007 and covering data from 25 European countries. In the ESS-3 the frequency and severity of symptoms related to the DSM IV criteria for major depressive disorders are measured using a shorter version of the Center for Epidemiologic Studies-Depression (CES-D) scale (Radloff, 1977). Since its introduction the scale has been used to measure depressive symptoms across several populations (elderly, adolescents, women, clinical populations, and ethnic populations). The ESS-3 thus allows us to compare gender differences in depression across multiple European countries.

An analysis of gender and cross-cultural differences in rates of depression, however, presupposes that this concept is measured in an equivalent or invariant way (Moors, 2004; vandeVijver, 2003). In our study the notion measurement invariance refers to "whether or not, under different conditions of observing and studying phenomena, measurement operations yield measures of the same attribute" (Horn & McArdle, 1992). If measurement invariance is absent, comparisons across gender or cultural groups become highly problematic. After all, observed between-group differences might be due to measurement artifacts rather than to real differences in the prevalence of depression (Vandenberg & Lance, 2000). The CES-D, like most other mental health assessment instruments, was initially developed and tested on samples comprised of mainly European Americans. Most research on the cross-cultural equivalence of the CES-D was done on populations within the United States and, at a later stage, with Hispanic or Asian populations. Unfortunately, validation of the CES-D across European countries is still lacking. A study of the validity of translated versions of the CES-D scale has been made for German populations (Hautzinger, 1988), Dutch populations (Bouma et al., 1995), Turkish and Moroccan populations in the Netherlands (Spijker et al., 2004), Portuguese populations (Goncalves & Fagulha, 2004), and French populations (Fuhrer & Rouillon, 1989). A recent study by Meads et al. (2006) assessed the comparability of the CES-D scale across UK, German, and US populations and found a bad fit for the European countries.

The results of previous research on the measurement invariance of the scale across gender are also ambivalent, with a number of studies confirming measurement invariance (Berkman et al., 1986; Clark et al., 1981), while other studies point towards a bias (Callahan & Wolinsky, 1994; Stommel et al., 1993). Additionally, several other depression inventories show a gender bias (Byrne et

al., 1993, Mirowsky & Ross, 1995; Piccinelli & Wilkinson, 2000). In the ESS-3, depression was not assessed using the full-length CES-D scale, but instead respondents were administered an 8-item version, with many of the biased items excluded. It is therefore uncertain whether the shortened version shows measurement invariance properties in cross-cultural and cross-gender research.

Measurement Invariance: A Hierarchy of Hypotheses

Comparative research raises methodological issues that do not present themselves in single-group surveys. In cross-national and gender research, three types of bias can be distinguished: construct bias, item bias, and method bias (vandeVijver & Poortinga, 1997). The first type of bias occurs when the construct measured, in this case, depression, is not identical across groups. The definition of depression or the symptoms associated with it might differ slightly across groups, interfering with the equivalence of the measurement. Item bias occurs most often when specific items of the depression scale are translated poorly, when there is low familiarity with the item content in certain cultures, or when there are cultural specifics such as nuisance factors or connotations associated with the item wording causing extreme or additive response styles (vandeVijver, 2003). Finally, method bias occurs when there are sample incomparabilities, instrument differences, interviewer or respondent effects, or differences in the mode of administration.

In analysis, these forms of bias should be identified as measurement error. However, commonly used approaches such as ordinary least squares assume that variables have been measured without error, 'that is, they are perfectly reliable, meaning that all of an observed measure's variance is true score variance' (Brown, 2006). Multi-group confirmatory factor analysis (MCFA) allows for relationships to be estimated after adjusting for certain types of measurement error. In particular, it offers a very strong analytic framework for evaluating the invariance of measurement models across distinct groups (e.g., demographic groups defined by gender and nationalities) and is currently considered the methodology of choice for assessing cross-national measurement invariance (Steenkamp & Baumgartner, 1998).

The measurement invariance analysis starts with evaluating the best fitting model form of the CES-D 8 scale. In CES-D 20 literature, the number of factors identified is usually four, namely, depressed affect, positive affect, somatic complaints, and interpersonal problems, that together load on the common factor

depression (Perreira et al., 2005, Radloff, 1977, Golding & Aneshensel, 1989, Hertzog et al., 1990, Joseph & Lewis, 1995; Shafer, 2006). For the CES-D 8, previous research on the structural form of the scale is not available. However, based on the available items in the 8-item version and the identified structure of the full CES-D, three structural forms can be hypothesized. The first is a one-dimensional model, with all items loading on one common factor, depression. An alternative form is a two-dimensional second-order factor model, built up by the factors depressed affect and somatic complaints, each loading on the underlying factor, depression (Riddle & Hess, 2008; Steffick & Steffick, 2000). Several authors additionally construct a distinct factor of the reverse-worded items were happy and enjoyed life, proposing a three- rather than two-dimensional construct (Perreira et al., 2005). However, we believe that the relationship among the reverse-worded items is better accounted for by correlated errors than separate factors. The differential covariance among these items is not based on the influence of a distinct, substantially important latent dimension, but rather reflects an artifact of response styles associated with the wording of the items (Brown, 2006; Marsch, 1996).

After identifying the best fitting structural form for the measurement model, we use MCFA to evaluate the cross-national and cross-gender measurement invariance of the construct. The available tests for MCFA form a nested hierarchy defining several levels of measurement invariance: configural, metric, and scalar invariance (Bollen, 1989, Byrne, 1989; Meredith, 1993). At each level a more restrictive hypothesis is introduced, providing increasing evidence of measurement invariance, and allowing specific group comparisons to be made.

Configural invariance. Configural invariance requires that an instrument represents the same number of common factors across groups, and that each common factor is associated with identical item sets across groups. If a specific model form fits well in all groups, then configural invariance is supported. However, configural invariance is not sufficient to defend quantitative groups comparisons.

Metric invariance. The hypothesis of metric invariance tests whether the corresponding factor loadings are equal across groups. When the loading of each item on the underlying factor is equal across groups, the unit of measurement of the underlying factor is identical and the (co)variances of the estimated factors can be compared between groups. Metric invariance can be disturbed by extreme response styles (ERS) due to culturally based response norms, which cause bias to a subset of the factor loadings in one or more groups (Gregorich, 2006).

Respondents in high-ERS countries might favor decisiveness or humility, whereas in low-ERS countries respondents might desire to appear modest and non-judgmental (Cheung & Rensvold, 2000). Some cultures may have very strong opinions about certain topics or feelings, while others may have no opinion (Riordan & Vandenberg, 1994). In both cases the first group will favor extreme categories in self-report scales, while the second group will tend to cluster around middle categories, In the case of a self-report scale such as the CES-D 8, certain groups thus might restrain or overrate their reported of level of depression. This results in cross-cultural differences in response style, unrelated to the construct of interest.

Scalar invariance. Scalar invariance is tested by restricting the corresponding item intercepts so that they are equal across groups. This level of measurement invariance addresses the question of whether there is differential additive response style (ARS) bias (Cheung & Rensvold, 2000; Rorer, 1965) which results in systematically higher- or lower-valued item responses in one population group compared to another. Cross-cultural ARS differences have been demonstrated in previous studies (Baumgartner & Steenkamp, 2001; Cheung and Rensvold, 2000). For example, a study by Riordan and Vandenberg (1994) indicated that the middle answer category of a Likert-scale had a different meaning in different cultures. Within the CFA model, ARS is reflected in the item intercepts. When this level of measurement invariance is met, the group comparisons of latent and observed means are valid.

Measurement invariance of any of the above-mentioned hypotheses is said to be 'full' when all parameters are invariant across groups. However, in practical applications full measurement invariance frequently does not hold. The researcher should then ascertain whether there is at least partial measurement invariance (Steenkamp & Baumgartner, 1998), which assumes that the construct is configurally invariant across groups, and that a substantial number of parameters are also invariant in the additional hypotheses. Finding partial invariance suggests that the substantive group comparisons associated with the corresponding full invariance hypotheses are defensible since only the subset of items meeting the metric or scalar invariance criteria are used to estimate associated group differences (Byrne et al., 1989).

In the current study we aim to determine whether the CES-D 8 scale is psychometrically equivalent across gender and countries involved in the ESS-3 by testing its measurement invariance. The different hypotheses of measurement invariance have been tested relatively infrequently in the past (Gregorich, 2006).

When they have been tested, investigators have predominantly focused on invariance of construct validity (Vandenberg & Lance, 2000) or on the identification of biased items from the full 20-item scale and the reduction of its length (Cole et al., 2000; Perreira et al., 2005; Vega & Rumbaut, 1991). The current study makes use of an abbreviated CES-D scale and tests whether its equivalence can effectively be determined across gender and countries in the ESS-3. The aim of our study is therefore three-fold. First, we determine the best fitting model for our data. This baseline model is then used to test the hierarchal hypotheses of measurement invariance, allowing us to control for gender and cultural bias in the measurement of depression. Finally, we use our model to estimate latent means of the CES-D 8 and compare these to the observed means. To the best of our knowledge, the present study is the first to present highly comparable data on gender differences in the prevalence of depression in Europe.

Materials and Methods

Samples

Our analyses use data from the third round of the European Social Survey (ESS-3) (Jowell, 2007), which covered 25 European countries in 2006 and 2007. For each participating country, respondents were selected by means of strict probability samples of the resident population aged 15 years and older living in private households (irrespective of nationality or language). The use of proxies was not allowed. Data were gathered via face-to-face interviews. Response rates range from 45.97% in France to 73.19% in Slovakia. After deleting cases lacking minimum information on gender or depression, our unweighted sample consists of 46,669 respondents, of which 45% are male.

The CES-D 8

The Center of Epidemiological Studies-Depression (CES-D) scale (Radloff, 1977) is a key instrument in the measurement of depression in American research, but is implemented less often within the European context. Initially, the CES-D was built using 20 self-report items in order to identify populations at risk of developing depressive disorders; it should not, however, be used as a clinical diagnostic tool by itself (Radloff, 1977). The ESS-3 includes 8 items from the

original scale. Respondents are asked to indicate how often in the week previous to the survey they (1) felt depressed, (2) felt lonely, (3) felt sad, (4) were happy, (5) enjoyed life, (6) felt everything they did was an effort, (7) had restless sleep, and (8) could not get going. Response options range from none or almost none of the time (score 1) to all or almost or all of the time (score 4). Scale scores are assessed using a non-weighted summated rating and range from 8 to 32, with higher scores indicating a higher intensity of depressive complaints.

Based on the data of the ESS-3, we can confirm the reliability of the CES-D 8 for measurement of depression within a general population context. Total response rates ranged between 95% in men and 94% in women, with the lowest in Ukraine (77.1%) and the highest in Norway (99.8%). Respondent mean substitution was applied to respondents answering at least 5 items of the scale. Respondents who answered fewer than 5 items of the CES-D 8 scale (330 cases) or who did not report their gender (100 cases) were excluded from our analysis. The Cronbach alpha of the CES-D 8 scale was 0.812 in male data and 0.847 in female data with the lowest score in Denmark (0.728) and highest in Hungary (0.881). Consistent with international literature, our findings show higher levels of depression in women compared to men, with a mean score of 14.8 in women and 13.7 in men ($F(1, 15,147.037)$: 834.724, $p < 0.001$).

Statistical Procedure

Measurement invariance is examined via MCFA using maximum likelihood estimations. Analysis is conducted using the AMOS 16.0 program. We evaluate the acceptability of our model on the basis of overall goodness-of-fit in additional to specific points of ill fit. The standard way to compare the overall fit of the different models is the chi-square test. However, this test may easily lead to a type I error (and thus to an incorrect rejection of the model) in case of non-normality of data, large sample sizes, and complex models. Since the first two conditions are inherent to our study, we also report three model fit indices that have shown a more robust performance (Hu and Bentler, 1998): the Tucker–Lewis index (TLI) (Tucker and Lewis, 1973), the Comparative Fit Index (CFI) (Bentler, 1990), and the Root Mean Squared Error of Approximation (RMSEA) (Steiger, 1990). The first two indices range from 0 (poor fit) to 1 (perfect fit). A value of 0.90 or higher provides evidence for a good fit, and a value of 0.95 or above for an excellent fit (Hu & Bentler, 1998). The RMSEA indicates a reasonable fit when

its score is 0.08 or less and a good fit when the score is 0.05 or less (Browne & Cudeck, 1992).

Goodness-of-fit is further verified by the absence of large modification indices (MIs) and expected parameter changes (EPC), which both indicate specific points of ill fit in the model. The MI of a parameter is a conservative estimate of the decrease in chi-square that would occur if the parameter was relaxed (Arbuckle, 2007). The EPC values provide an estimate of how much the parameter is expected to change in a positive or negative direction if freely estimated (Brown, 2006). A specific parameter is relaxed only if its MI is highly significant both in magnitude and in comparison with the majority of other MIs and if its EPC is substantial.

Results

Tests of Measurement Invariance Hypotheses

Table 5.1 gives an overview of the goodness-of-fit indices of the different levels of measurement invariance. In a first step the best fitting model of the CES-D 8 instrument is assessed with the pooled dataset by, respectively, fitting a one- and two-dimensional model (Models 1a–1b) to our data. The analysis is repeated by additionally controlling for measurement effects of the reverse-worded items were happy and enjoyed life (Models 1c–1d)1. All models are identified by constraining the factor loading of the item felt depressed to 1 and its intercept to 0. As shown in the first panel of Table 5.1, all models have a significant chi-square, but the three other indices show only a good fit for the models with correlated-error terms—TLI and CFI above 0.90, RMSEA below 0.08. However, the two dimensions of Model 1d correlate strongly (0.91), making their discriminant validity problematic (Cohen et al., 2003). Based on these results we use Model 1c—with all items loading on one dimension and with correlated errors between the reverse-worded items—as our baseline model for the upcoming MCFA.

The second panel of Table 5.1 shows the fit statistics of the MCFA, with 50 groups defined by gender and country simultaneously. As Model 2 in Table 5.1 shows, imposing equality constraints on the underlying factor and item sets provides evidence for configural invariance of the CES-D 8 across gender and countries. The assumption that factor loadings are identical (metric invariance) in

both the male and female data from the different countries is also supported based on the overall goodness-of-fit indices. Although there was a significant decrease in chi-square between the model of configural and metric invariance ($\Delta\chi(343) = 1868.73$, $p < 0.001$), the alternative indices determine a good fit, with CFI and TLI above 0.90 and RMSEA below 0.05. In addition, examination of the MIs and EPCs reveals no specific points of ill fit. Our results therefore indicate that comparing the latent (co)variances of the CES-D 8 across gender and countries is valid.

Table 5.1
Model Fit Summary: chi-square, CFI, TLI and RMSEA. ESS-3, 2006–2007

Model	χ^2	df	Sign.	CFI	TLI	RMSEA
Best fitting model						
1a. One dimensional	12793.362	20	0.000	0.894	0.852	0.117
1b. Two dimensional	11585.181	19	0.000	0.904	0.858	0.114
1c. One dimensional – correlated errors	2715.030	19	0.000	0.978	0.967	0.055
1d. Two dimensional – correlated errors	1839.087	18	0.000	0.985	0.976	0.047
MCFA Equivalence tests						
2. Configural	5026.743	950	0.000	0.964	0.946	0.010
3a. Metric	6895.473	1293	0.000	0.950	0.946	0.010
4a. Scalar	15659.113	1636	0.000	0.875	0.893	0.014
4b. Partial Scalar	9580.847	1553	0.000	0.928	0.935	0.011

The Tucker–Lewis index (TLI) and the comparative fit index (CFI) provide evidence for a good fit if 0.90 or higher. The Root Mean Squared Error of Approximation (RMSEA) indicates a good fit when the score is 0.05 or less.

The fourth model in Table 5.1 tests scalar invariance by additionally imposing equality constraints on the corresponding item intercepts. We reject this model; the increase in chi-square is significant ($\Delta\chi(392) = 14{,}564.723$, $p < 0.001$), and all fit indices except RMSEA are below the acceptable level. Based on the MIs and EPCs, we relaxed our model restrictions in order to meet partial scalar invariance. Of all 400 constrained intercepts in our model, 83 needed to be freed for the model to show an acceptable fit and for specific points of ill fit to be eliminated. The relaxed intercepts of the German males and French females contribute most to the increase in fit. On the other hand, the Belgian, Estonian, Irish, and Slovenian populations show very stable conditions with no significant MIs reported. The EPCs indicate that of the 85 intercepts freed, a little less than half were expected to be lower compared to the other groups. The Northern European countries also have lower intercepts than expected, and the Eastern European countries have higher intercepts than expected. This suggests that certain regional

cultural norms cause systematic lower-valued item responses in the Northern European countries while in the Eastern European countries the opposite is true. A closer look at the specific items indicates that the items were happy and couldn't get going were most at risk for additive response bias, with their intercepts being variant in one third of the groups. The items felt lonely and felt sad showed the most stable conditions across the groups, and were thus least a risk for additive response bias.

In sum, the findings for all models in Table 5.1 indicate that the one-dimensional CES-D 8 scale with correlated errors of the reverse-worded items showed configural, metric, and partial scalar invariance across all countries and gender groups in the analysis. At this level of invariance, comparison of latent (co)variances and latent means of the CES-D 8 across gender and countries, is warranted.

Comparison of the Observed and Latent Means

The previously mentioned results suggest that the CES-D 8 measures the same construct both in gender and in countries included in the analysis. Based on the partial metric invariance model, we estimated the latent means of the CES-D 8 for men and women in each country separately. These latent means can be regarded as very conservative, gender- and culture-neutral estimates of gender differences in depression. Since identification of the model requires the factor loading of the item felt depressed to be set to 1 and its intercept to 0, the scale of the latent means is arbitrary (Meuleman et al., 2009; Gregorich, 2006). Therefore, interpretation of the absolute values is not useful, but comparisons of the rankings in the overall depression level and gender gap are more informative. Results are shown in Table 5.2, along with the observed means and their standard deviations.

The observed means indicate that overall depression rates (results not shown) are clustered together by region, with the highest scores in Eastern and Central European countries, and the lowest scores in Western and Northern European countries. The Norwegian population reports the lowest CES-D 8 scores, followed by Denmark and Switzerland, while the highest mean scores were found in the Ukraine, Hungary, and the Russian Federation. However, gender differences in depression do not show a similar trend. The former Soviet countries do show higher gender differences than the other countries; this is also the case in the Southern European countries. However, in all countries but Ireland and

Table 5.2
Comparison of Observed Means and Standard Deviations with Latent Means and Standard Deviations. ESS-3, 2006–2007

	Observed means					Latent means					Ranking Observed → Latent	
	Male		Female		Δ; p	Male		Female		Δ; p	Country Mean	Gender difference
	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.			
Austria	13.23	3.77	13.75	4.16	0.53; 0.001	1.34	0.41	1.49	0.41	0.14; 0.000	10 →10	5 → 8
Belgium	12.74	3.77	14.07	4.34	1.33; 0.000	1.32	0.41	1.56	0.41	0.23; 0.000	9 → 11	18 → 16
Bulgaria	15.25	4.79	16.54	5.02	1.29; 0.000	1.71	0.60	1.91	0.60	0.20; 0.000	22 → 22	17 → 15
Switzerland	12.39	3.14	13.08	3.51	0.69; 0.000	1.17	0.31	1.34	0.31	0.18; 0.000	3 → 4	7 → 11
Cyprus	12.47	3.14	14.02	3.90	1.57; 0.000	1.11	0.29	1.41	0.29	0.30; 0.000	7 → 5	22 → 24
Germany	13.65	3.47	14.49	3.92	0.84; 0.000	1.32	0.37	1.51	0.37	0.19; 0.000	15 → 9	10 → 12
Denmark	12.50	3.12	13.02	3.51	0.53; 0.002	1.12	0.31	1.25	0.30	0.13; 0.000	2 → 1	6 → 6
Estonia	14.32	3.77	15.16	4.14	0.85; 0.000	1.46	0.41	1.63	0.41	0.17; 0.000	17 → 16	11 → 10
Spain	12.86	3.81	14.35	4.53	1.49; 0.000	1.40	0.45	1.67	0.45	0.27; 0.000	12 → 15	21 → 21
Finland	12.82	3.14	13.11	3.48	0.29; 0.057	1.13	0.30	1.26	0.30	0.13; 0.000	5 → 2	2 → 7
France	12.90	3.74	14.25	4.63	1.35; 0.000	1.31	0.41	1.59	0.41	0.28; 0.000	11 → 12	19 → 23
United Kingdom	13.44	4.03	14.16	4.30	0.72; 0.000	1.40	0.43	1.52	0.43	0.13; 0.000	14 → 13	8 → 5
Hungary	16.13	4.98	17.08	5.21	0.95; 0.000	1.91	0.63	2.06	0.63	0.15; 0.000	24 → 25	13 → 9
Ireland	12.84	3.67	12.93	3.61	0.10; 0.579	1.28	0.40	1.31	0.40	0.02; 0.230	4 → 6	1 → 1
Latvia	15.48	3.85	16.21	3.77	0.73; 0.000	1.68	0.45	1.72	0.45	0.05; 0.018	21 → 20	9 → 2
Netherlands	12.71	3.50	13.88	3.95	1.17; 0.000	1.28	0.37	1.47	0.37	0.19; 0.000	8 → 8	16 → 14
Norway	12.04	3.01	12.49	3.22	0.46; 0.002	1.16	0.32	1.25	0.32	0.09; 0.000	1 → 3	3 → 3
Poland	13.92	4.43	15.29	5.15	1.36; 0.000	1.52	0.51	1.78	0.51	0.26; 0.000	16 → 19	20 → 20
Portugal	14.64	3.95	16.47	4.74	1.83; 0.000	1.56	0.47	1.88	0.47	0.33; 0.000	20 → 21	25 → 25
Romania	14.78	3.83	15.92	4.02	1.14; 0.000	1.46	0.42	1.65	0.42	0.19; 0.000	18 → 17	15 → 13
Russian Fed.	15.12	4.35	16.83	4.67	1.71; 0.000	1.70	0.52	1.95	0.52	0.26; 0.000	23 → 23	23 → 19
Sweden	12.46	3.41	13.52	4.15	1.06; 0.000	1.17	0.34	1.42	0.34	0.25; 0.000	6 → 7	14 → 18
Slovenia	13.33	3.28	14.21	4.23	0.88; 0.000	1.33	0.34	1.58	0.34	0.25; 0.000	13 → 14	12 → 17
Slovakia	15.18	3.82	15.69	4.08	0.51; 0.007	1.53	0.41	1.65	0.41	0.13: 0.000	19 → 18	4 → 4
Ukraine	15.69	4.67	17.44	5.07	1.75; 0.000	1.73	0.55	2.00	0.55	0.27; 0.000	25 → 24	24 → 22
Total	13.67	3.96	14.81	4.50	1.14; 0.000	1.40	0.47	1.61	0.55	0.22; 0.000		

Finland, female respondents score significantly higher on the CES-D 8 scale than male respondents. The gender difference is largest in Portugal ($\Delta = 1.83$, $p<0.000$) and smallest in Ireland ($\Delta = 0.10$, n.s.). Ukrainian females and Hungarian males report the highest depression level of their sex, with a mean score of, respectively, 17.44 and 16.13. Lowest depression levels in each sex are reported by Norwegian females (mean of 12.49) and Norwegian males (mean of 12.04).

The impact of our model at the level of partial metric invariance does not modify the ranking of the countries by overall mean depression score much. The latent means are highest in the Eastern and Central European countries, and lowest in Northern and Western European countries. Gender differences in depression are confirmed, with significantly higher scores for females than males in all countries but Ireland. The highest gender differences in depression are confirmed by the latent means in the former Soviet Union, Poland, and in the Southern European countries, with a substantial increase in the latter. The latent means indicate the largest difference in depression in Portugal ($\Delta = 0.33$, $p < 0.000$), followed by Cyprus ($\Delta = 0.30$, $p < 0.000$). The smallest differences were found in Ireland ($\Delta = 0.02$, n.s.) and Latvia ($\Delta = 0.05$, $p < 0.05$).

Our observed means overestimated the level of depression most in the German and Finnish population, and underestimated it the most in the Spanish and Polish population, compared to the other countries. The impact of our model on the cross-national ranking of gender differences in depression is highest in Latvia, followed by Slovenia and Finland. In the former the estimated gender difference is much lower than the observed difference compared to the other countries; in the latter two the opposite is true.

These differences in the ranking of the countries based on the observed depression means and the latent means signal the impact of gender- and culture-related symptom differences in depression. In general, depression is most strongly related to feeling depressed and is least strongly related to lack of enjoyment in life. However, somatic complaints carry more weight in most of the Central and Eastern European countries, while in the remaining countries this is the case only in Austrian and Cypriot men. In the Northern European countries mood affects are more pivotal than somatic complaints. Finally, the symptoms felt sad, effort, and get going showed the largest gender * country variation in expression.

Discussion

Women generally report more complaints of depression. Cross-national comparative research and meta-analyses usually put the gender ratio in the prevalence of depression in Western countries at approximately 2:1, although the same studies report substantial cross-national and cross-cultural variation (Kessler et al., 1993, Nolen-hoeksema, 1990; Weissman et al., 1984), even within the more homogeneous sample of Western advanced economies. This variability points to important societal-level determinants of mental ill health in women and men. Nevertheless, comparative research explaining this variability is hampered by a lack of useable data. The third round of the European Social Survey, utilized in our research, uses the same research design and the same depression inventory across a substantial set of European countries. It includes a shorter version of the CES-D, allowing for the most comprehensive estimation of the frequency and severity of symptoms of depression in women and men across Europe, and, so far, covers 25,490 women and 21,179 men in 25 European countries.

Simultaneous analysis of multiple groups places higher demands on the measurement scale than single-group research. It requires that instruments measure constructs with the same meaning across groups and allow defensible quantitative group comparisons. In this study, we made use of MCFA in order to establish measurement invariance of the CES-D 8 across gender and countries. A one-dimensional depression model, with all items loading on the factor depression and with correlated errors between the reverse-worded items were happy and enjoyed life, fit the data best. Measurement invariance was established at the level of configural, scalar, and partial metric invariance. Partial metric invariance was obtained by relaxing 83 intercepts. The items were happy and couldn't get going were most at risk for additive response bias, while the items felt lonely and felt sad were least at risk. In addition the Belgian, Estonian, Irish and Slovenian populations show very stable conditions, while the CES-D8 item scores of the German males and French females were most invariant. Our results indicate that the CES-D 8 scale can be used to compare (co)variances, observed means, and latent means in depression of men and women across Europe.

Next we estimated the latent means of de CES-D 8 across gender and countries, eliminating all measurement artifacts. To the best of our knowledge, this study is the first to present information on gender differences in the frequency and severity of symptoms of depression in 25 European countries using a depression inventory freed from extraneous influences on observed differences in responses

that are unrelated to actual levels of depression. Our study confirms the consistent epidemiological finding that women report more complaints of depression than men, although there is substantial cross-national variation. First, as concerns the gender ratio, it is important to note that in both the Irish and the Finnish sample no gender differences in observed mean depression scores were found. However, after correcting for the partial metric model, only the gender difference in the Irish population stays insignificant. The latent means also indicate highest gender differences in the Southern European countries, the former Soviet countries, and Poland. Comparing our results with those of other cross-national comparisons based on survey data (Hopcroft & Bradley, 2007) or on meta-analyses of the results of surveys (Immerman & Mackey, 2003) makes clear that it is difficult to consistently rank countries according to the gender gap in depression across studies.

While the average gender difference points to more universal genetic, neuro-hormonal or psychobiological gender-linked causes of depression (Kuehner, 2003), its cross-national variation suggests that social conditions have an important impact too (Weissman et al., 1996). Social models to explain gender differences in depression have emphasized the activities and circumstances of women's and men's everyday lives as sources of stress. Both within and outside the family, female roles seems more prone to role limitations associated with lack of choice, to role overload, to competing social roles and to role underevaluation (Piccinelli & Wilkinson, 2000). However, the impact of these determinants might be modified by macro-level conditions, such as gendered welfare state regimes and levels of de-familialisation (Bambra et al., 2008; Bambra, 2007), gender stratification systems (Hopcroft & Bradley, 2007; Immerman & Mackey, 2003), but also gender beliefs and ideologies (Chafetz, 1990; Stoppard, 2000). However, these causes for cross-national variation in the gender ratio in depression have seldom been empirically tested. In subsequent analyses of the present data, we will explore these and other possible macro-sociological determinants.

Some limitations of our study are worth noting when interpreting the results. When testing measurement invariance in large community samples such as the ESS-3, the researcher should bear in mind that the variables of interest are often non-normally distributed, specifically when working with ordinal Likert scales (Lubke & Muthen, 2004). However, the maximum likelihood estimation method assumes that data have a normal distribution. In our analyses, we tested the robustness of our findings by additionally estimating a Bollen–Stine significance level via bootstrapping, a procedure that compensates for the normality

assumption (Nevitt & Hancock, 1997). Results (not shown) did not indicate a different significance level than the one reported for the chi-square tests. An additional robustness test was based on a logarithmic transformation of the CES-D 8 data, decreasing the non-normality of the item and scale score distributions. This procedure results in better fit indices (not shown), but it simultaneously increases the complexity of a substantive interpretation of the parameter estimates. Important to note is that the hypotheses of factorial invariance were supported by all estimations methods even after controlling for non-normality.

In our analysis some intercepts were found to vary across our groups, whereas other intercepts were invariant, resulting in partial metric invariance. We based our decision to relax a certain intercept on the MIs and EPCs as provided by AMOS 16.0. This was done only if the intercept to be relaxed could be substantially interpreted. How should we then interpret our partial metric model? In our analysis, 85 of the 400 intercepts were relaxed. There are three options for what to do with our scale. One option might be to omit the items that were found to perform differently across groups. A second option might be to retain all 8 items of the CES-D 8 scale in the belief that the population differences in factor structure are 'small' in some sense and that these differences will not obscure inferences from the scale. A third option might be to abandon the use of the scale altogether for comparisons across populations, reasoning that the lack of invariance establishes that the scale is measuring different latent variables in the two populations. Unfortunately, the current literature on factorial invariance offers little guidance for choosing among these three options (Millsap & Kwok, 2004).

It is important to note that we did not take into account differences between countries in either demographic or socioeconomic characteristics of the populations—i.e., the age structure of the population, divorce, and unemployment rates—or gendered welfare state regimes (Bambra et al., 2008) or gender stratification systems (Hopcroft & Bradley, 2007; Immerman & Mackey, 2003) as possible causes for cross-national variation in the gender ratio in depression. In subsequent analyses of the present data, we will explore these and other possible macro-sociological determinants.

Finally, the current findings do not automatically imply psychometric equivalence across social groups distinguished by other criteria such as language, ethnicity, social class, or age. All of these social groups may have group-specific attributes that lead to measurement inequivalence of (self-report) scales. We therefore strongly suggest testing measurement invariance before comparing specific group

scores. The actual experience and expression of depression may vary sufficiently according to other demographic and social or cultural factors to effectively undermine attempts to compare rates of depressive symptoms across all groups. Further research is needed to determine the extent to which these factors influence responses to self-report instrument.

CHAPTER 6

GENDER DIFFERENCES IN DEPRESSION IN 23 EUROPEAN COUNTRIES. CROSS-NATIONAL VARIATION IN THE GENDER GAP IN DEPRESSION

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Abstract One of the most consistent findings in the social epidemiology of mental health is the gender gap in depression. Depression is approximately twice as prevalent among women as it is among men. However, the absence of comparable data hampers cross-national comparisons of the prevalence of depression in general populations. Using information about the frequency and severity of depressive symptoms from the third wave of the European Social Survey (ESS-3), we are able to fill the gap the absence of comparable data leaves. In the ESS-3, depression is measured with an eight-item version of the Center for Epidemiological Studies–Depression Scale. In the current study, we examine depression among men and women aged 18–75 in 23 European countries. Our results indicate that women report higher levels of depression than men do in all countries, but there is significant cross-national variation in this gender gap. Gender differences in depression are largest in some of the Eastern and Southern European countries and smallest in Ireland, Slovakia and some Nordic countries. Hierarchical linear models show that socioeconomic as well as family-related factors moderate the relationship between gender and depression. Lower risk of depression is associated in both genders with marriage and cohabiting with a partner as well as with having a generally good socioeconomic position. In a majority of countries,

socioeconomic factors have the strongest association with depression in both men and women. This research contributes new findings, expanding the small existing body of literature that presents highly comparable data on the prevalence of depression in women and men in Europe

Introduction

Cross-National Research on Gender Differences in Depression

In the Western world, depression is approximately twice as prevalent in women as it is in men (Piccinelli & Wilkinson, 2000). This pattern appears in both clinical and general population samples and is virtually independent of location, method of assessment and diagnostic system (Kessler, et al., 1993). While the average gender difference points to more universal genetic, neurohormonal, or psychobiological gender-linked antecedents of depression (Kuehner, 2003), cross-national variation in the gender ratio of depression suggests that social conditions also have a strong association with depression (Weissman et al., 1996). Hence, most current research accepts that gender differences in depression are the result of a variable interplay among biological, psychological and social factors (Hopcroft & Bradley, 2007; Kuehner, 2003).

The available research on cross-national variation in the gender ratio of depression should be considered cautiously since it is limited in several ways. The main limitation is the absence of comparable data that is representative of the general population. Usually, cross-national differences are estimated using meta-analyses of data from a diverse set of studies using different depression inventories, sampling designs and sampling populations. Moreover, the few multi-country epidemiological studies that do use a comparable design have several shortcomings. A recent study based on the World Values Study (Hopcroft & Bradley, 2007) had only one item available as a factor of depression/unhappiness. Other studies are limited to samples of students (Fischer & Manstead, 2000) or couples aged 50 and older (Börsch-Supan et al., 2005). Some are based on patient samples only (Angst et al., 2002; Ayuso-Mateos et al., 2001; Maier et al., 1999) or contain only a small set of countries (Alonso et al., 2004). In these studies, it is not the number of countries involved that hampers

the usefulness of these data so much as it is that they are convenience samples, which hinders the generalizability of the findings.

In addition, the aforementioned studies present mixed results concerning cross-national variation in gender differences in depression. In certain studies, countries can be grouped by the size of the gender gap in depression. For example, based on the ODIN data, one study reported that the largest gender differences in depression were found in Anglo-Saxon countries, and lower levels of depression were reported in Nordic countries (Ayuso-Mateos et al., 2001). Other data however did not confirm this clustering, but found that among Eastern European countries the smallest and the largest gender gap in depression could be established in two separate countries; the same held for some of the Northern and Southern European countries (Hopcroft & Bradley, 2007; Immerman & Mackey, 2003). Other studies found a smaller variation in gender differences in depression across countries (Börsch-Supan et al., 2005; Maier et al., 1999).

Using information from the third wave of the European Social Survey (ESS-3) we are able to fill this gap in the literature. The ESS-3 is representative of the general population in almost all European countries and has gathered information on depression using a shortened version of the internationally validated and reliable inventory, the Center for Epidemiologic Depression Scale (CES-D). The ESS-3 data thus allow us to analyze to what extent gender differences in depression vary across Europe. A high degree of cross-national variability would indicate that the consideration of social sources of stress is important for understanding the gender gap in depression.

Explaining the Gender Gap in Depression

The stress and vulnerability model, which describes the relationship between stressors the individual is exposed to and the individual's reaction to those stressors, is often used to predict the causes of depression (Pearlin, 1989). In addition to biological and psychological risk factors (for an overview, see Kuehner, 2003), the literature addressing the gender gap in depression identifies a large variety of gender-specific social risk factors. Theories on depression often address the gendered pattern of social roles and social positions within different domains of private and social life. Female roles seem more prone to role limitations associated with lack of choice, to role overload, to competing social roles and to a tendency for females to be under-valued (Piccinelli & Wilkinson,

2000; Stoppard, 2000); female social positions are therefore more characterized by powerlessness and lower status levels (Collins et al., 1993; Connell, 1985).

When studying these roles and positions, depression researchers usually focus on the gender-specific demands that marriage, childcare and employment often make. These demands and role expectations show increasing differentiation according to gender because of structural and cultural changes that have taken place, particularly in the last two decades. For example, mothers who stay at home and are unemployed are increasingly less valued. Additionally, women continue to join the workforce in larger numbers, becoming economically independent and increasingly share childcare responsibilities with men. However, filling the role of homemaker and childcare provider continues to decrease the likelihood of paid employment for women; it can also result in additional responsibilities for those women who fill those roles and are employed (Bebbington, 1996; Piccinelli & Wilkinson, 2000). Women entering the job market face a higher risk of economic discrimination and job inequality than men do, and when employed, they may face an increased risk of depression due to role overload and role conflict because of the combination of responsibilities associated with employment and the household and care giving (Piccinelli & Wilkinson, 2000). For men, structural changes in family arrangements and the labor market are often accompanied by a significant challenge to the traditional definition of masculinity, which includes an inhibition against help-seeking and specific ideas about fatherhood, about male emotional expression, and about the role of men as sole breadwinners (Courtenay, 2000; Garfield et al., 2006). The effect of these social changes on male depression and male risk and vulnerability factors has not been sufficiently studied and remains unclear (Addis, 2008; Garfield et al., 2006), but there is evidence that divorced fathers — even as non-custodial parents — experience many parenting-related strains; this partly explains why they are more depressed than married men (Umberson & Williams, 1993). One related finding is that, after marital dissolution, fathers are as equally prone to depression as mothers when there are preschool-aged children in the home (Williams & Dunne-Bryant, 2006). Recent research has shown however that despite the emergence of new male risk groups for depression and the decline of the stereotypical, traditional family—a wage-earning father and a stay-at-home mother, in most European countries housekeeping and care giving is still mainly a woman's responsibility (Lewis, Campbell, & Huerta, 2008).

Related research on the social determinants of the female preponderance of depression focuses on stressful life events, like marital disruption and employment

problems. Some models show that the gender gap in depression is due to a higher exposure of women to such events; other models point to gender differences in vulnerability as well (Kendler, Thornton, & Prescott, 2001). The empirical evidence for gendered patterns in depressive reactions to both marital disruption (see e.g., Kalmijn & Monden, 2006; Simon & Marcussen, 1999 vs. Lucas, 2005 & Marks, 1996) and employment problems (see e.g., Leeflang, Kleinhesselink, & Spruit, 1992 vs. Artazcoz et al., 2004; Vanroelen et al., in press) is mixed. One recurrent finding is that females are more dependent on emotional support and on personal relationships in which emotional intimacy, trust and solidarity are exchanged than men are (Pearlin et al., 1981; Rosenfield et al., 2000). Women seem to bear 'the cost of caring' (Bracke et al., 2008; Kendler et al., 2001), meaning that they are more exposed to and more sensitive to social network events, leading to increased levels of depression when interpersonal stress or interpersonal loss is experienced. For men, there is a large body of evidence that suggest they are more prone to depression due to work-related stressful events (Kendler et al., 2001). However, empirical studies often report conflicting findings, suggesting that the association of the risk ratio of depression with negative life events and chronic strains needs further consideration (Kuehner, 2003).

Explaining Cross-National Variation in the Gender Gap in Depression

Social models that explain gender differences in depression have emphasized the activities and circumstances of the everyday lives of women and men as sources of stress that may have an adverse effect on mental health. These models relate both socioeconomic- and family-related factors to stress. General gender stratification theories, for example, focus on the link between the differences in privilege and power in society and gender-based inequality (Collins et al., 1993). Blumberg (1984) argues that women's economic power is the strongest predictor of their overall status. A disadvantaged socioeconomic position, therefore, may be the primary explanation for higher levels of depression in women (Chonody & Siebert, 2008). However, the question that remains is to what extent does this hypothesis hold across different European countries. Women's economic power is directly related to the extent to which a welfare state enables women to survive as independent workers and decreases women's economic dependence on the family (Bambra, 2007). While high levels of defamilization are typical of Nordic countries, in Southern European countries women are strongly dependent on family (Zunzunegui et al., 2007). The Anglo-Saxon countries offer women the

right to gender equality at work, but offer limited public assistance for the cost of childcare, creating problems regarding income and time, and resulting in gender inequality, questionable childcare arrangements and poor outcomes for children (Gornick & Meyers, 2003). Similarly, Eastern European countries publicly advocate a dual-earner model. However, in the private sphere, gender roles have remained rather traditional (Pascall & Lewis, 2004). It is reasonable to assume that, in addition to structural restrictions, stressors that occur in life domains that are highly valued also trigger depression. Research indicates that gender ideology is still relatively traditional in Eastern and Southern Europe and is more egalitarian in Nordic and Anglo-Saxon countries (Stickney & Konrad, 2007). Research has not yet tested empirically whether women suffer more from family-related stress in countries with a more traditional gender ideology.

The aim of the current study is threefold. First, we will determine cross-national variation in the gender gap in depression in 23 European countries. Second, we will examine to what extent socioeconomic factors and family-related factors explain the gender difference. Last, we will study how social risk factors associated with depression vary across countries and between genders.

Methodology

Sample: The European Social Survey, 2006/2007

Our analyses are based on the third round of the European Social Survey (ESS-3; http://www.europeansocialsurvey.org), which covered 25 European countries in 2006 and 2007. The ESS selected respondents using strict probability samples of the resident national population aged 15 or older living in private households. Proxies were not allowed. Data was gathered via face-to-face interviews. Our analyses were restricted to respondents aged 18–75 (N = 36,752 respondents; 17,165 men and 19,587 women). We did not consider Latvia and Romania since the design weights for these countries were missing. The other countries included in the ESS-3 are a selection from Northern Europe (Denmark, Estonia, Finland, Ireland, Norway, Sweden and the United Kingdom), Western Europe (Austria, Belgium, France, Germany, the Netherlands and Switzerland), Southern Europe (Cyprus, Portugal, Slovenia and Spain) and Eastern Europe (Bulgaria, Hungary, Poland, the Russian Federation, Slovakia and Ukraine) (United Nation Statistics Division, 2009). Countries were grouped together in these broad regions to

facilitate discussion of results; the grouping was not intended to suggest a substantial differentiation of any kind by broad region. Response rates ranged from 45.97% in France to 73.19% in Slovakia. All data are weighted using the design weight provided by the ESS-3, which corrects for slightly different probabilities of selection.

Dependent Variable: Depression

Depression is measured using an eight-item version of the Center for Epidemiologic Studies–Depression Scale (CES-D) (Radloff, 1977). The CES-D was constructed to identify populations at risk for developing depressive disorders; it should not however, be used as a clinical diagnostic tool by itself (Radloff, 1977). Respondents were asked to indicate how often in the week before the survey they felt or behaved in a certain way (felt depressed, felt that everything was an effort, slept badly, felt lonely, felt sad, could not get going, enjoyed life, or felt happy). Response categories range from none or almost none of the time (0) to all or almost or all of the time (3). Scale scores for the CES-D 8 are assessed using nonweighted, summated rating and range from 0 to 24, with higher scores indicating a greater frequency and severity of depressive complaints. If four or fewer items are missing, mean substitution is applied. Reliability and validity of the inventory are confirmed across gender and countries (Van de Velde, Bracke, Levecque, & Meuleman, 2010). Cronbach's alpha ranges between 0.81 (in male data) and 0.85 (in female data), with the lowest score found in Denmark (0.73), the highest in Hungary (0.88). A one-dimensional depression model, with all items loading on the factor depression and with correlated errors between the reverse-worded items were happy and did not enjoy life, showed measurement invariance up to the level of partial scalar invariance (CFI:0.98; TLI: 0.94; RMSEA: 0.01).

Independent Variables

We include gender (0 = male, 1 = female) and age (in years) in our model. Squared value of age is also added to account for the non-linear association between depression and age (Mirowsky & Ross, 1992). Age squared is divided by 100 so that the order of magnitude of the variance corresponds more to the variance of the dependent variables (Hox, 2002).

Socioeconomic-related factors - Socioeconomic position is measured by labor market position, educational level and household income. Labor market position is coded as a set of dummy variables. Respondents are either in paid employment (reference category), students, unemployed, permanently sick or disabled, retired, housekeepers (doing housework or looking after children or others) or in another unidentified labor market position. (e.g., military service). Educational level is measured by total number of years of full-time education. Income position is assessed by the relative equivalent household income, using the modified OECD equivalence scale (OECD, 2005). Income position is coded into five categories, with one category representing respondents with missing data. The other categories represent people living in relative poverty (<50% of the median equivalent income); a low-income group (50–80% of the median equivalent income); people with an income around the national average (80–120% of the median equivalent income); and those with a relatively high income (> 120% of the median equivalent income: reference category).

Family-related factors - The effect of the respondent's family situation on gender differences in depression is assessed using three separate factors. Marital status indicates whether someone is married or in a civil partnership (reference category), divorced or separated, widowed or single. We also include a factor of co-habitation with a partner regardless of marital status (0 = no, 1 = yes). Finally, we assess whether there are children less than 12 years of age living in the respondent's household (0 = no, = yes).

Statistical Procedure

We begin by examining differences in means and standard deviations using the ANOVA method in SPSS 17.0 (see Table 1). The association of gender differences in depression with socioeconomic-related and family-related factors is studied via regression analyses using a hierarchical linear model (HLM) (see Table 2). The HLM results show regression coefficients for the fixed effects in the model and variance associated with the random slopes model. For the fixed effects model, additional interaction terms of the independent variables with gender are calculated, but we report only significant results in the text. The random slopes model indicates to what extent the association with depression differs across countries. Last, we indicate the extent to which the variance in depression is predicted specifically by the group of socioeconomic-related factors vs. the group of family-related factors (see Fig. 1). This can be calculated by comparing the

explained variance of the full model, including all the 'predictive' and 'control' factors, with the explained variance of a model that includes only the socioeconomic-related factors or the family-related factors. For this part of the analysis, we did not include information on whether the person was permanently sick or disabled. Like the unemployed or the retired, the permanently sick or disabled are outside the labor market when they are eligible for income support (Esping-Andersen, 1990). However, their health condition determines their status, so the causal direction of the association between their mental health status and their status of being permanently sick or disabled is unclear, and probably differs from that of unemployed or retired people. To circumvent all problems of interpretation those classified as permanently sick or disabled are excluded from analyses in some studies (Hillsdon et al., 2002; Olsen, 2007; Sloggett & Joshi, 1998). We chose to include them in our analyses in order to consider between-country differences in self-reported membership of those categories (Erlinghagen, Knuth, & Knuth, 2008). However, we excluded them when evaluating the relative importance of socioeconomic- vs. family-related determinants across countries because their inclusion in the category of socioeconomic-related factors would lead to an overestimation of the relative importance of socioeconomic conditions. Finally, our statistical analyses do not offer a causal explanation, so when the term 'explain' is used in the upcoming Results and Discussion sections, it should be understood in a statistical rather than a causal relationship sense.

Results

Cross-National Comparisons of Means

Table 6.1 gives an overview of mean depression scores and their dispersion by country and by gender. These descriptives indicate that overall depression levels are clustered together by region, with the highest scores found in Eastern European countries, the lowest in Northern and Western European countries. Countries with high mean scores generally show lower levels of dispersion, while scores are generally more dispersed in countries with a lower mean depression level. Norway reports the lowest depression scores, followed by Switzerland and Ireland; the highest mean scores were found in Hungary, Ukraine and the Russian Federation.

Table 6.1

Mean depression scores and standard deviations (S.D.) of total dataset and of men and women, and difference in mean depression scores between men and women (Δ). ESS-3, 2006–2007.

	N	Total		Men		Women		
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Δ; sig.
Total	36,435	5,90	4.11	5.40	3.84	6.34	4.29	0.94; 0.000
Western Europe								
Austria	2038	5.22	3.71	4.94	3.48	5.44	3.87	0.50;0.002
Belgium	1551	5.42	4.18	4.74	3.81	6.04	4.40	1.30; 0.000
France	1739	5.32	4.13	4.71	3.55	5.90	4.53	1.19; 0.000
Germany	2482	5.84	3.58	5.59	3.48	6.10	3.67	0.51; 0.000
Netherlands	1659	4.99	3.58	4.44	3.26	5.50	3.79	1.06; 0.000
Switzerland	1558	4.54	3.22	4.21	3.05	4.82	3.33	0.61; 0.000
Northern Europe								
Denmark	1296	4.73	3.30	4.50	3.07	4.95	3.50	0.45; 0.014
Estonia	1310	6.63	3.87	6.23	3.64	6.95	4.01	0.72; 0.001
Finland	1617	4.91	3.26	4.79	3.12	5.04	3.40	0.25; 0.138
Ireland	1359	4.71	3.54	4.66	3.54	4.75	3.55	0.09; 0.622
Norway	1523	4.17	3.08	3.97	2.99	4.38	3.16	0.41; 0.009
Sweden	1678	4.92	3.83	4.46	3.40	5.38	4.17	0.92; 0.000
United Kingdom	2001	5.52	4.06	5.07	3.81	5.92	4.24	0.85; 0.000
Southern Europe								
Cyprus	869	5.05	3.45	4.34	2.98	5.67	3.71	1.33; 0.000
Portugal	1854	7.22	4.18	6.33	3.71	7.83	4.37	1.50; 0.000
Slovenia	1217	5.61	3.71	5.22	3.22	5.93	4.06	0.71; 0.001
Spain	1535	5.41	4.19	4.84	3.92	5.96	4.36	1.12; 0.000
Eastern Europe								
Bulgaria	1190	7.60	4.65	7.09	4.66	7.93	4.62	0.84; 0.002
Hungary	1274	8.15	4.78	7.73	4.81	8.47	4.73	0.74; 0.005
Poland	1486	6.55	4.74	5.90	4.36	7.18	5.00	1.28; 0.000
Russian Fed.	2050	7.62	4.32	6.82	4.22	8.18	4.29	1.36; 0.000
Slovakia	1467	7.22	3.88	7.03	3.77	7.40	3.97	0.37; 0.065
Ukraine	1682	8.06	4.69	7.49	4.60	8.51	4.72	1.02; 0.000

Mean gender differences in depression however do not show a similar trend: the largest gender differences are noted not only in some Eastern European countries, but also in Southern European countries. Additionally, in all countries, with the exception of Ireland, Finland and Slovakia, women report significantly higher levels of depression than men do. The gender difference is largest in Portugal (Δ=

difference in mean depression scores of men and women; Δ= 1.50, $p < 0.001$) and smallest in Ireland (Δ= 0.09, ns). Ukrainian females and Hungarian males report the highest level of depression of their sex, with a mean score of, respectively, 8.51 and 7.73. Norwegian females and Norwegian males report the lowest depression levels for each sex, with a mean score of 4.38 and 3.97, respectively. Comparisons of the standard deviations suggest that depression scores are more widely spread among women than men in all countries except Bulgaria and Hungary. In sum, there is clear evidence of higher depression levels among women. However, we also found variability between countries. We examine the sources of this variability in the next section.

The Relevance of Socioeconomic- vs. Family-Related Factors to Explaining Gender Differences in Depression.

Table 6.2 shows the results of the hierarchical linear analysis covering the 23 European countries included in the ESS-3, as well as the results of the analyses for men and women, separately. The results confirm the epidemiological finding that women report higher levels of depression than men do, and that, overall, this gender gap is highly significant ($p < 0.001$). Controlling for age, this difference is 0.81 units higher among women than among men. Socioeconomic- as well as family-related factors can explain about 20% of this gender disparity. Additionally, analysis of the random slopes indicates a significant variation between countries ($p < 0.001$). Therefore, although gender overall is universally an important predictive factor for depression, its importance varies greatly from one country to another.

Respondents with a generally good socioeconomic position report lower levels of depression, regardless of their gender. Lower depression levels among those with higher incomes and more years of education and among those who are students or have paid employment demonstrate this association. The association of higher education with better mental health is significantly more pronounced in women than men ($p < 0.001$). While the effect of unemployment or permanent sickness or disability on depression seems to be similar among both genders, retirement ($p < 0.05$) and housekeeping or looking after young children or others ($p < 0.001$) show significant gender differences. Retired men report higher levels of depression than men in paid employment do. However, this is not the case among

Table 6.2

Hierarchical linear model results for gender differences in depression, controlled for socioeconomic- and family-related factors. Fixed effects and random slopes of all data, and of men and women, separately. ESS-3, 2006–2007.

	Total				Men				Women			
	Fixed effects		Random slopes		Fixed effects		Random slopes		Fixed effects		Random slopes	
	B (s.e.)	sig.	Variance	sig.	B (s.e.)	sig.	Variance	sig.	B (s.e.)	sig.	Variance	sig.
Model I: intercept	5.12 (0.28)	***	1.21	***								
Gender (0 = men)	0.81 (0.08)	***	0.10	***								
Age	-0.02 (0.01)	n.s.	0.00	***								
Age²	0.05 (0.01)	**	0.00	***								
Model II: intercept	4.50 (0.40)	***	2.58	**	3.30 (0.52)	***	4.16	***	6.03 (0.57)	***	5.21	*
Gender (0 = men)	0.64 (0.07)	***	0.08	***								
Age	0.07 (0.02)	***	0.00	**	0.11 (0.02)	***	0.01	***	0.04 (0.02)	n.s.	0.01	*
Age square	-0.06 (0.02)	***	0.00	n.s.	-0.10 (0.02)	***	0.01	***	-0.06 (0.02)	*	0.01	*
Socioeconomic- related												
Household income												
< 50% of median inc.	1.02 (0.09)	***	0.09	n.s.	0.85 (0.13)	***	0.25	*	1.16 (0.11)	***	0.12	n.s.
50 to 80% of median inc.	0.73 (0.10)	***	0.16	***	0.72 (0.11)	***	0.17	**	0.75 (0.12)	***	0.16	n.s.
80 to 120% of median inc.	0.28 (0.07)	***	0.10	*	0.26 (0.09)	**	0.11	*	0.31 (0.09)	**	0.12	n.s.
(> 120% of median inc.)	-	-	-	-	-	-	-	-	-	-	-	-
Data income missing	0.28 (0.06)	***	0.05	n.s.	0.21 (0.07)	**	0.05	n.s.	0.31 (0.09)	**	0.09	n.s.
Years of full-time education	-0.09 (0.02)	***	0.00	***	-0.06 (0.02)	**	0.01	***	-0.11 (0.02)	***	0.01	***
Employment												
(paid employment)	-	-	-	-	-	-	-	-	-	-	-	-
Student	-0.11 (0.14)	n.s.	0.32	**	-0.09 (0.18)	n.s.	0.47	n.s.	-0.07 (0.19)	n.s.	0.49	*
Unemployed	1.21 (0.13)	***	0.25	*	1.31 (0.16)	***	0.36	*	1.13 (0.14)	***	0.23	n.s.
Permanently sick or disabled	3.73 (0.14)	***	0.30	n.s.	3.68 (0.22)	***	0.70	n.s.	3.86 (0.26)	***	1.15	*
Retired	0.26 (0.11)	*	0.19	n.s.	0.31 (0.14)	*	0.27	n.s.	0.27 (0.16)	n.s.	0.38	*
Housekeeper	0.18 (0.08)	*	0.07	n.s.	0.78 (0.25)	**	0.87	n.s.	0.00 (0.07)	n.s.	0.05	n.s.
Other	1.18 (0.38)	**	2.70	***	1.17 (0.44)	*	3.20	***	1.00 (0.33)	**	1.29	n.s.
Family-related												
Marital status												
(Married/civil partnership)	-	-	-	-	-	-	-	-	-	-	-	-
Divorced/separated	0.75 (0.16)	***	0.44	***	0.85 (0.16)	***	0.35	*	0.71 (0.21)	**	0.68	*
Widow	1.21 (0.18)	***	0.55	***	1.90 (0.31)	***	1.31	n.s.	0.96 (0.20)	***	0.62	n.s.
Single	0.21 (0.14)	n.s.	0.34	*	0.47 (0.14)	**	0.29	n.s.	-0.03 (0.17)	n.s.	0.44	n.s.
Living with partner (0 = no)	-0.80 (0.10)	***	0.14	n.s.	-0.83 (0.11)	***	0.13	n.s.	-0.73 (0.14)	***	0.24	n.s.
Young children in HH (0 = none)	-0.02 (0.07)	n.s.	0.07	n.s.	0.01 (0.08)	n.s.	0.08	n.s.	0.01 (0.09)	n.s.	0.12	n.s.
Proportion variance explained	12.4%				12.8%				12.2%			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ Reference category in parentheses

retired women, who do not report significantly more depression than employed women. Overall, housekeeping does not have a negative effect on the depression level of women, but it does on that of men. Finally, people living in poverty report the highest levels of depression compared to other income categories; this effect seems to be most detrimental to women. The gender difference in the effect of poverty on depression was not significant, however.

The results of the random slopes model indicate that significant cross-national variation in the effect of most socioeconomic-related factors on depression can be established. The effect of education on depression varies significantly across countries for both genders. However, income varies significantly across countries only among men; for women cross-national variation is small and non-significant. Unemployment also varies significantly cross-nationally in men only, while the effect of sickness or disability and retirement on depression only varies significantly across countries for women. Finally, across Europe, housekeeping is associated with depression in a similar way for both genders.

Consideration of the association between family-related factors and depression reveals that, overall, married respondents or those in a civil relationship report lower levels of depression than divorced, separated, widowed and single respondents. The association is strongest for respondents who have lost a partner through death and it is much stronger for men than women ($p < 0.01$). The presence of young children in the household does not have a significant association with depression in women or men. Finally, living with a partner seems to be an important buffer against depression for both genders. The random slopes model indicates that the association between marriage dissolution and depression differs significantly cross-nationally in both men and women. However, the mental health of widowed or single men and women seems to be similar across European countries. In addition, the strong association between depression and the absence of a partner is universal for both genders, with no significant cross-national variation.

In sum, differences in depression levels in men and women can be accounted for in part by differences in their social and economic roles. However, the significant variance of some of the factors suggests between-country differences in the relative importance of socioeconomic position and of family situation for predicting the level of depressive complaints.

Cross-National Variation in the Relationship of Socioeconomic- vs. Family-Related Factors to Depression

Figure 6.1 shows the country- and gender-specific contributions of the set of socioeconomic- and of family-related factors to the explanation of variance in depression. We hypothesized that the predictive value of both sets of factors would be moderated by national structural and cultural conditions, like level of defamilization and type of gender ideology. Our results confirm cross-national variation in the contribution of both sets of factors. For men, the independent contribution of socioeconomic-related factors ranges from 1.5% of the variance (Ukraine) to 14.3% (Bulgaria); for women it ranges from 2.1% (Austria) to 9.7% (Slovenia). The contribution of family-related characteristics ranges from 1.1% (Slovakia) to 7.1% (Ukraine) among men and from 0.4% (Finland) to 5.4% (Spain) in women.

In regions with lower levels of defamilization and/or a more traditional gender ideology, like countries in Southern and Eastern Europe, we expected to find that female depressive levels are related more to problems in family life than to socioeconomic positions and that male depressive levels are related more to a disadvantaged socioeconomic position than to family life problems. However, in most Southern and Eastern European countries, we find that both men and women are vulnerable to socioeconomic problems. The assumption that family situation rather than socioeconomic position explains the majority of variance in depression is found to be the case for only Spanish women (5.4% vs. 2.8%); in other Southern European countries the opposite is found to be true. The latter is most pronounced in Slovenia, where, for women, the independent contribution of socioeconomic position to depression is tenfold the contribution of family situation (9.7% vs. 0.9%).

Similarly, in most of the Eastern European countries we find that depressive levels in both men and women are more strongly associated with socioeconomic position than family life. Russian women are the exception (family-related factors explain 4.3% of the variance; socioeconomic-related factors explain 2.3%). The results for Ukrainian men also deviate from the regional trend. In this country, the variation in men's depression scores is more sensitive to variation in family-related factors (7.1%), than socioeconomic-related factors (1.5%). The association between socioeconomic position and depression is most pronounced in Bulgaria and Hungary, explaining almost 15% of the variance in depression

among Bulgarian men and more than 5% among Bulgarian women, while for both genders family situation explains less than 3%. Similarly, in Hungary

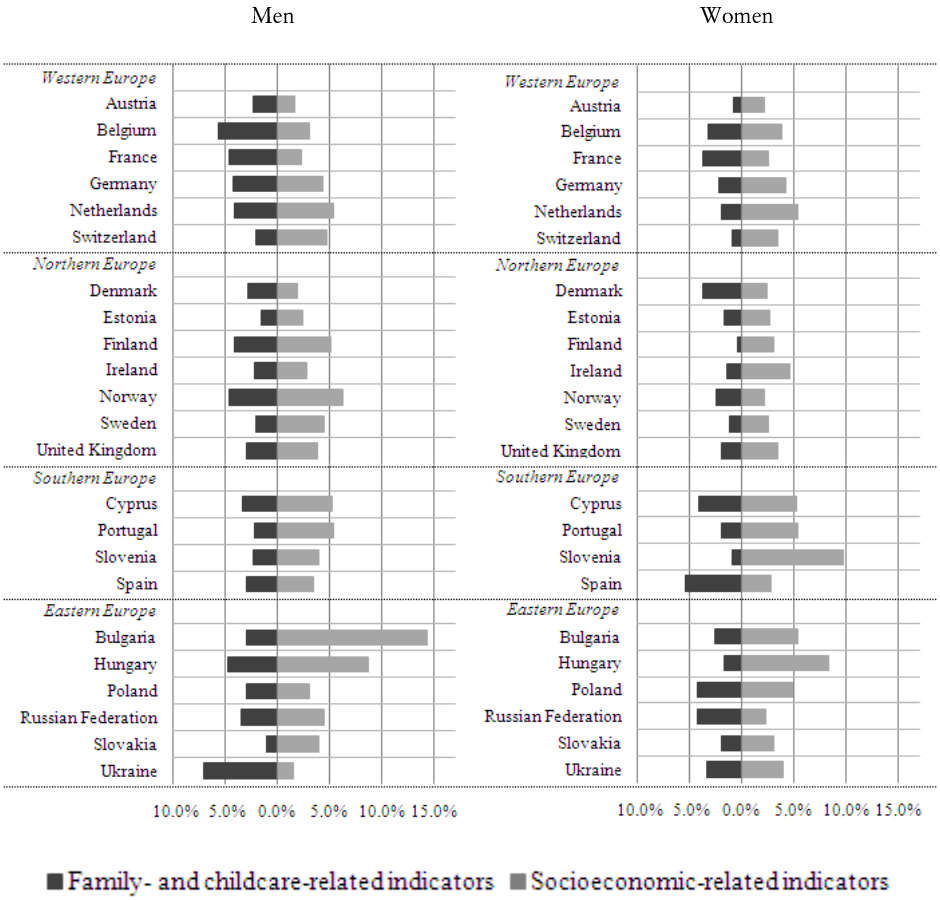

Figure 6.1
Independent contribution of family- and socioeconomic-related factors to the variance in depression, controlled for age and sickness and disability, by country and gender. ESS-3, 2006-2007.
('%' indicates % of variance explained by the group of factors.)

within-gender differences in depression are more strongly related to socioeconomic position than family life in both men (8.7% vs. 4.8%) and women (8.3% vs. 1.7%).

A more diverse pattern is seen in Western Europe. With the exception of the French, women in this region are also more vulnerable to a variation in socioeconomic-related factors than family-related factors. The contribution of the

considered family-related characteristics is less than 1% in both Switzerland and Austria. However, for men, family-related factors explain more of the variance in depression than socioeconomic position in Austria (4.6% vs. 2.3%), Belgium (5.6% vs. 3.0%) and France (4.6% vs. 2.3%). Most notable is the relatively large contribution of socioeconomic position for Dutch men and women (5.3% in both genders) compared to other countries in the region.

As we expected, both men and women in Northern European countries are more affected by socioeconomic discrepancies than family problems. This is most pronounced in Swedish men, where socioeconomic position explains 4.4% of the variance in depression, while family situation explains less than half of that figure (2.1%). In addition, depression among Finnish women is weakly associated with family-related factors, which explain less than 0.5% of the variance in depression. However, for Danish men and women, the pattern is reversed. For both genders, family-related factors explain almost twice as much of the variance in depression as socioeconomic-related factors do.

Thus, in most countries the socioeconomic position of men and women has a stronger association with depression than factors related to the family. We found depressive problems related to family life rather than socioeconomic position to be more detrimental among men in 7 of the 23 countries and among women in 5 of the 23 countries. A comparison of the combined predictive power of socioeconomic- and family-related factors across genders shows that the model explains more of the variance in depression in men than women. In 16 of the 23 countries, socioeconomic factors contribute more to the explained variance in depression among men than among women; in 13 of the 23 countries, family factors are also more predictive of depression in men than in women. Finally, when we place these findings in the context of relative depression levels, it is difficult to find a straightforward explanation for the variation we observe between countries and genders. We did not find that the association of socioeconomic- or of family-related factors with depression to be stronger in countries with high levels of depression or a large gender gap.

Discussion

Our results confirm the findings in international research that there is a gender gap in depression across Europe. Socioeconomic-related factors as well as family-related characteristics moderate the relationship between gender and depression.

We found that a generally good socioeconomic position is associated with lower levels of depression in both men and women. However, for women education is significantly more predictive of depression than for men. Perhaps women get smaller labor market payoffs than men do, resulting in a socioeconomic disadvantage that makes them more dependent on education for achieving well-being (Ross & Mirowsky, 2006). Similarly, we found that housekeeping and looking after young children or others, a task that is still mainly a woman's responsibility in most European countries (Lewis et al., 2008), does not, overall, have a negative effect on the depression level of women; it does however on that of men. We also found that marriage or cohabiting are important buffers against depression in both men and women. Both men and women name a spouse or partner as the person they are most likely to turn to for support in time of need (Bracke et al., 2008; Dakof & Taylor, 1990; Kalmijn & van Groenou, 2005) and they are relied on to provide most types of support among couples (Beach, Martin, Blum, & Roman, 1993). However, previous research has indicated that being married is more stressful for women than men (Kalmijn & Monden, 2006; Simon, 2002). Moreover, men seem to suffer more from the loss of a partner, especially since their wife is often also their closest confidant, while women often have confidants that are outside the family (Symoens, Van de Velde, Colman, & Bracke, 2008). This is partly reflected in our results, with widowhood as well as singlehood being a more significant risk factor for depression in men than women.

We observed variability across countries, in addition to variability within countries. The results show that in most countries the socioeconomic position of men and women has a stronger association with depression than factors related to the family. Hence, our results seem to confirm the general gender stratification hypothesis that depressive levels in the majority of European countries most strongly relate to socioeconomic position. However, cross-national variation in the size of the effect of socioeconomic position can be noted.

The largest gender differences in depression were found in a number of Southern European countries and in certain Eastern European countries. Until recently, many studies would have characterized Southern European countries as traditional, male-breadwinner systems. In contrast, the Eastern European countries, especially the former Soviet Union countries, have a history of socialist policy that encourages dual-breadwinner households (Ferrera, 1996; Pascall & Manning, 2000). However, both Southern and Eastern European countries are currently in transition. During the past decade, the Southern countries have been

confronted with a rapid expansion of women's employment, which has forced them to be innovative in how they manage household responsibilities. Changes in men's behavior, especially in relation to the unpaid work of care giving, have nevertheless been relatively small (Lewis, 2006). For example, in Portugal, where we found the largest gender gap in depression, there is a relatively large number of mothers who are employed full time and of dual full-time income earners, along with relatively low levels of formal childcare provision (Plantenga & Remery, 2005). This may result in greater stress for women who are increasingly engaged in paid work but who continue to do the bulk of unpaid care work. Lewis (2006) states that higher standards of mothering in this region also increase the tension between a personal career and aspirations for the family. In former Soviet Union countries, the case may be similar, as women in these countries also struggle to combine paid work and unpaid care work. The former Soviet era supported women as workers and socialized many costs of motherhood and care work (Pascall & Manning, 2000). This resulted in a high rate of female participation in the labor force at a much earlier date than in the West (Molyneux, 1990), although that participation remained gender segregated. The recent transition away from former Soviet policy has removed much of the support for women's unpaid care work and resulted in women becoming more family orientated out of necessity. To understand fully the gender differences in depression, future research should therefore focus on the conflict between the roles of parenthood and employment. However, notable gender differences in depression were also found in countries with a tradition of an extensive, formal childcare system and a high rate of female employment, like Belgium, France and Sweden. Thus, future research should consider these specific conditions in each country.

Some limitations of our study are worth noting when interpreting the results. First, as with all other cross-sectional surveys, it is difficult to distinguish the cause from the effect. A particular socioeconomic position or family situation may increase the risk of depression in a person; depression itself however may move a person into a less favorable socioeconomic position or family situation. In addition, some research findings indicate that gender differences in depression disappear when considering the socioeconomic and health differences between men and women across the entire life course. (Alvarado, Zunzunegui, Beland, Sicotte, & Tellechea, 2007). However, the use of cross-sectional data does not allow us to confirm this finding.

A second limitation is that, though the ESS-3 presents an outstanding opportunity for cross-national comparisons of gender differences in depression, some of the issues that affect the comparability of multi-country studies, like selective non-response, differential modes of data collection, translation and conduct, may not be eliminated completely. If these issues are related to depression or the independent variables, some bias in the estimates cannot be excluded. For example, the non-response analysis of the income variable showed more missing information for the lower educated and those who are not in paid employment, as well as for unmarried respondents and individuals with higher depression scores. In addition, the income variable captured household income and therefore did not give an indication of the differential control over family income between husbands and wives. Our study is further limited because it utilizes only self-reported measures, and these may vary by country, culture and position within society. However, a multi-group confirmatory factor analysis based on the CES-D 8 scale in the ESS-3 has shown that depression scores can be compared validly between the 23 countries in our analysis and between men and women (Van de Velde et al., 2010).

Third, our study uses a self-report depression inventory for which valid cut-off points have not yet been established and which does not allow us to assess clinical depression. We therefore could not make a distinction between respondents who are depressed and those who are not depressed. However, by using a dimensional rather than a categorical diagnostic system, we were able to identify populations at risk of developing depressive disorders and therefore did not restrict our study to those respondents who reported severe depressive symptoms. This reduces the potential of misclassifying individuals (Angst & Merikangas, 1997). Moreover, previous research has indicated that the use of dimensional models is more reliable and is more sensitive to the nature and the degree of symptoms, making it more suitable for regression analyses (Mirowsky & Ross, 1992; Shankman & Klein, 2002).

Finally, the current research focuses on gender differences in depression, but does not discuss how certain factors may affect depressive levels in men and women similarly in certain countries. For example, in Slovakia, a country recently faced with socioeconomic transitions, the gender difference in depression was insignificant, while the mean depression scores for both men and women were among the highest in Europe. In addition, we did not consider differences between countries in terms of either demographic or socioeconomic population composition, or in terms of gendered welfare state regimes (Bambra et al., 2008)

or gender stratification systems (Hopcroft & Bradley, 2007) as possible causes for cross-national variation in the gender ratio of depression. In subsequent analyses of the present data, we will explore these and other possible macro-sociological factors.

CHAPTER 7
MACRO-LEVEL GENDER EQUALITY AND DEPRESSION IN MEN AND WOMEN IN EUROPE

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Abstract A recurrent finding in international literature is a greater prevalence of depression in women than in men. While explanations for this gender gap have been studied extensively at the individual level, few researchers have studied macro-level determinants of depression in men and women. In the current study we aim to examine the micro–macro linkage of the relationship between gender equality and depression by gender in Europe, using data from the European Social Survey, 2006–2007 (N = 39,891). Using a multilevel framework we find that a high degree of macro-level gender equality is related to lower levels of depression in both women and men. It is also related to a smaller gender difference in depression, but only for certain social subgroups and only for specific dimensions of gender equality.

Introduction

A recurrent finding in international literature is a greater prevalence of depression in women than in men (Van de Velde et al., 2009). Theories about gender-based exposure to social stressors show elevated depression in women to be a consequence of inequality. The underlying premise has often been that absolute gender equality will result in little or no gender difference in mental health, since men and women now occupy similar roles and similar stressors confront them (Annandale & Hunt, 2000). The greater the equality in a society, the smaller the gender gap in mental health problems. The literature on social risk factors is replete with studies about the association between depression and individual-level risk factors. Few studies have explored the relationship between macro-level gender equality and depression. Because the aims of the current study resonate with the recently recognized importance of the macro-level social and political context in determining mental health (Diez-Roux, 2000), we intend to examine how macro-level gender equality is associated with depression in men and women and how this association varies according to individual power resources.

Review of literature and hypotheses

The Gendered Distribution of Power Resources at the Micro and Macro-Level

Gender equality implies a society in which women and men enjoy the same opportunities and outcomes in all spheres of life (Kabeer, 1999). A critical aspect of promoting gender equality is the empowerment of women, identifying and redressing power imbalances and giving women more autonomy to manage their own lives. The ability to exercise choice is embedded in the gendered distribution of resources as well as the degree of agency of men and women. The first dimension relates to the extent to which men and women who are otherwise social equals (for example, in terms of age, social class, ethnicity and religion) are equal in their access to the scarce and valued resources of their society (Chafetz, 1990). Access to such resources reflects the rules and norms which govern distribution and exchange in different institutional arenas. These rules and norms give certain actors authority over others in determining the principles of distribution and exchange so that the distribution of 'allocative' resources tends to be embedded within the distribution of 'authoritative resources' (Giddens,

1979) – the ability to define priorities and enforce claims. The second dimension of power relates to agency – the ability to define one's goals and act upon them. It refers to people's capacity to define and pursue their own life-choices even in the face of opposition from others. Resources and agency together constitute what Sen (1985) refers to as capabilities: the potential of men and women to live the lives they want to. When the failure to achieve one's goals reflects some deep-seated constraint on the ability to choose, it can be taken as a manifestation of disempowerment.

Theories on gender equality focus primarily on the gender organization of production, which stresses the economic positions of men and women, and the gender organization of reproduction, which focuses on childbirth and parenting and the effects they have on women's economic activities or on gender psychodynamics and culture. Other dimensions sometimes include sexual politics, which concerns erotic relationships and their connection to social power (Collins et al., 1993) and gender social definitions, including beliefs, values, stereotypes and norms that are widely shared by societal members (Chafetz, 1990). The roles and power resources available to each gender may overlap or be completely segregated and they vary extensively cross-culturally. However, in advanced industrial societies two important cross-cultural uniformities in the gendered division of labor can be identified (Lewis, 2006). First, men invest more time in the gender organization of production and participate in a variety of extra-domestic tasks in their societies, while women's participation in such work varies from practically none to substantial. Second, women invest more time in the gender organization of reproduction; they are uniformly more responsible than men for child rearing, food preparation and care of the home. Men's participation in such tasks ranges from none at all to substantial, while women's participation is generally high. While the traditional family with a wage-earning father and a stay-at-home mother is declining in number, in most European countries housekeeping and care-giving is still mainly a woman's responsibility (Lewis et al., 2008).

Additionally, the degree of gender inequality is not uniform in a complex society. It varies depending on the level of other power structures such as class, age, ethnicity and family composition (Blumberg, 1984). Inequality of power, which is itself a scarce and valued resource, underlies all systems of stratification. Resources and prestige associated with social positions affect power, defined as individuals' ability to impose their will on other people (Weber, 1946). Women's primary responsibilities within the gender organization of reproduction are often

associated with lower status and less reward than those of men in the gender organization of production (Rosenfield, 1992). However, in advanced industrial societies the largest variation in power distribution between men and women exists at the micro level, where power resources are relatively more accessible to women, than at the supra-micro level (Blumberg, 1984). At the mezzo and macro levels, power accrues specifically to the incumbents in elite positions, particularly in dominant social institutions. Political and economic organizations constitute the dominant social institutions, with religious, educational and other culture-producing organizations constituting secondary but nonetheless important social institutions (Chafetz, 1990). In advanced industrial societies, men overwhelmingly fill these elite roles and the variation in gender inequality is smaller than it is at the micro level. In elite roles incumbents control the resources of their organizations. They serve as societal gatekeepers distributing concrete opportunities and rewards. Individual-level and macro-level gender inequality are therefore closely intertwined. Macro-level gender inequality not only creates opportunities and constraints for women and men but also defines models of normality, influencing preferences, identities and moral rationalities.

Macro-Level Gender Inequality and Depression in Men and Women

Research has demonstrated that depression is intimately tied to and a consequence of power and powerlessness. Powerlessness or lack of control in one's life is a well-known risk factor for depression (Mirowsky & Ross, 2003). Female roles are often associated with a lack of choice and with role overload, and women in these roles tend to have competing social roles and to be undervalued; therefore, powerlessness and lower status levels characterize female social positions more (Collins et al., 1993). Most depression-related research has focused on individual-level risk factors – the gender-specific demands of marriage, childcare, and employment – and on stressful life events – marital disruption, poverty and employment problems (for an overview, see Piccinelli & Wilkinson 2000). An important aspect here is the combination of responsibilities associated with employment, housekeeping and care-giving resulting in possible role overload and role conflict (Bird, 1999). Research on macro-level gender inequality and depression is less extensive. Although the society and health perspective on depression research is not new, we know relatively little about the degree to which macro-level characteristics influence the magnitude of gender mental health inequalities. Research in other health-related domains has shown that there are genuine population-level risk factors. Generally, the relative

resources hypothesis or the 'doing-gender' hypothesis is used to explain these associations.

The relative resources hypothesis derives from both game theory in economics and social exchange theory in sociology (Blood & Wolfe, 1960). Individual-level power resources, such as education, employment, income and time constraints due to care responsibilities, allow men and women to depart from the traditional division of labor. At the individual level women may have achieved relatively higher 'net economic power' (Blumberg & Coleman, 1989) than men, which they can use in bargaining over personal career trajectories or housekeeping and care arrangements. However, male control over the political economy and male-dominated ideologies at the macro level may act as a 'discount factor' countering the power of individual women's resources. Blumberg and Coleman (1989: 234) state that:

> male control at the top echelons of the political economy affects the national policy agenda, the opportunity structure that women encounter, and the prevailing ideology of what women's place in that structure should be.

Conversely, more female power at the macro level may enable women to create opportunities that actually benefit their health. Previous research has found positive associations between gender equality and general health outcomes. Kawachi et al. (1999) demonstrated that both American women and men experience higher mortality and morbidity in states with lower levels of macro-level gender equality. In a study of 51 countries Stanistreet et al. (2005) demonstrated that a greater level of patriarchy correlated with higher mortality rates among men. Torsheim et al. (2006) found that gender differences in health complaints were larger in countries with a low gender-development index score. Backhans et al. (2007), however, found negative effects of increased gender equality, both for women, who become more burdened, and for men, who as a group lose many of their old privileges.

The doing-gender hypothesis focuses on gendered expectations about interaction and on how individuals construct gender through daily tasks. West and Zimmerman (1987) posited that people actively manage social interactions in the light of normative expectations. The most common hypothesis derived from their theory is that in counter-normative situations women will do gender by engaging in more stereotypically female work, such as housework and care-giving, while men will do gender by performing stereotypically male work and avoiding

stereotypically female work. This compensatory feminine or masculine behavior in a counter-normative situation may result in actual harm to health. Research has shown that in male-breadwinner societies, women with relatively high economic power suffer more from health problems than women with low economic power, due to an increase in their role overload and work–family conflicts (Bambra et al. 2008; Van de Velde et al. 2010). Others found an increase in unhealthy compensatory masculine behavior such as driving, excessive alcohol consumption and aggressive behavior in gender-equal societies both among lower-class men (Backhans et al. 2007; Connell 1995; Sabo & Gordon 1996), and among higher-class women (Stets & Burke 2005; Ferraro 2010).

While research in other health-related domains has extensively shown the relevance of macro-level gender inequality, in depression research the focus has been limited primarily to the impact of the economic context. A study by Kahn et al. (2000) showed that in the USA state-level income inequality is associated with higher odds of depressive symptoms in women, regardless of their individual income. Bockerman et al. (2009) found that the effect of gender differences in regional income inequality affected physical but not mental health. Van Praag et al. (2009) found that living in an area with high unemployment is more detrimental to the mental health of women than of men. Only two studies have tested an inclusive gender equality hypothesis on depression. Their findings, however, were contradictory. The first study (Chen et al. 2005) found that states in the USA in which women's status was higher reported that depression among women was less prevalent. This effect was consistent across racial and socioeconomic backgrounds. In contrast, Hopcroft and Bradley's study (2007) found that even though depression is more a feature of societies with low levels of gender equality, the gender gap in depression was larger in countries with high levels of equality, as measured by the United Nation's gender development index. However, both studies have several shortcomings. The first study considered only women from a homogenous sample of US states. The second examined a larger range of countries, including both less advanced and advanced industrial societies. However, it used only one general item as an indicator of depression. Moreover, it did not control for the overall level of wealth, making the interpretation of the gender development index imprecise. It thus remains unclear how societal gender equality is associated with gender differences in mental health.

Study Aim and Hypotheses

In the current study we aim to examine how macro-level gender equality, measured by the gender empowerment measure (GEM) (United Nations Development Program, 2005), is associated with depression in men and women. We make use of the third wave of the European Social Survey (ESS-3). The ESS-3 is representative for the general population in almost all European countries and has gathered information on depression using a shortened version of an internationally validated and reliable inventory, the Centre for Epidemiologic Depression scale (CES-D). Using the ESS-3 has certain advantages. Firstly, it allows us to examine information from most European countries instead of resorting to a convenience sample within Europe. Secondly, by restricting our analysis to Europe, we exclude much of the complexity in the sociopolitical background of other regions, which is difficult to capture fully in cross-continental research. Europe has a shared social and cultural history (Chirot, 1985) but provides enough variation in the degree of gender equality and economic development to be useful for our research aims.

We have structured our investigation according to two sets of hypotheses. We base our first set of hypotheses on concepts often formulated in research investigating macro-level gender equality and health-related research and that assume a general population perspective. We derive our baseline hypothesis from the idea that healthy societies produce healthy individuals. The concept of an overall correspondence between the whole and its parts is an integral part of our thinking about social facts (Hondrich, 1987). After applying this idea to the association between macro-level gender equality and depression, we propose the following:

> *Hypothesis 1: Increases in macro-level gender equality are associated with lower levels of depression in men and women*

Some research, however, has found that an increase in macro-level gender equality is actually detrimental to mental health. Several mechanisms may explain this. With greater gender equality new risk factors arise, such as a higher incidence of relationship disruption and single parenthood (Cooke & Baxter, 2010). Additionally, lives are less predetermined in highly gender-equal societies: greater choice may mean more conflict over possible roles and a higher risk of feeling relatively deprived, thus reducing the mental health of both men and women (Hopcroft & Bradley, 2007). Women might become more burdened or

adopt some of the risky forms of health behavior of men. Men might feel threatened because of the loss of some privileges (Backhans et al., 2007). Therefore, our second hypothesis proposes the following:

> *Hypothesis 2: Increases in macro-level gender equality are associated with higher levels of depression in men and women*

Most ecological studies, however, have found that increased gender equality at the macro-level predicts smaller gender differences in mental health. Therefore, our third hypothesis does not focus on whether increases in equality lead to an increase or decrease in depressive feelings but on the possible convergence of the prevalence in depressive feelings in men and women:

> *Hypothesis 3: Increases in macro-level gender equality will reduce gender differences in depression*

Our second set of hypotheses is more explorative and focuses on the interaction between macro-level gender equality, gender and a number of other power resources. Findings that are more recent indicate that there is not a linear relationship between gender and health, as groups of women and men are not homogenous. Hence, we link mental health to the theoretical framework of intersectionality. Intersectionality demonstrates that gender does not act independently but is moderated by context, which determines access to resources that can promote or damage mental health. Dominant and subordinate gender groups are produced not only in relation to the opposite gender but also in relation to one another (Connell, 1995). Therefore, it is likely that changes in the degree of macro-level gender equality will not affect all layers of society equally.

As noted above, specific groups may draw more or fewer benefits from macro-level gender equality depending on individual access to certain power resources, such as socioeconomic resources and freedom from housekeeping and childcare responsibilities. On the one hand, intersectionality theory proposes that macro-level gender equality can enhance or reduce the net amount of power of men and women. On the other hand, the alignment between macro-level gender equality and individual resources also comes into play, suggesting that in counter-normative situations the mental health of men and women is actually threatened. Research on the specific pathways, however, is still scarce and hypothetical. In the current study, we therefore select specific positions of men and women within the gender organization of production and reproduction in order to explore a nuanced association between macro-level gender equality and depression.

Regarding the gender organization of production, we propose that both employment and income are important moderators of the association between macro-level gender equality and depression in men and women. A higher income increases decision-making power among men and women, while economic hardship is a major risk factor for both (Levecque et al., 2011; Ross & Huber 1985). Likewise, an employed individual experiences more personal power, unemployment enhances feelings of powerlessness (Artazcoz et al., 2004; Bird & Ross, 1993; Reynolds & Ross, 1998). However, inequalities in power between men and women are particularly pronounced when women are not employed; when women are employed, inequalities in demand increase (Rosenfield, 1992):

> *Hypothesis 4: The level of gender equality within the society moderates the degree to which being in paid employment and living in poverty are associated with depression in men and women*

Regarding the organization of reproduction, empirical research shows that both childcare and cohabiting with a partner are associated with depression. Cohabiting is shown to be beneficial for wellbeing (Marks, 1996), but the benefits vary by gender (Bird, 1999) and the degree of gender equality among spouses moderates them (Horwitz et al., 1998; Mirowsky, 1985). Most research finds that parents do not significantly differ from nonparents in their levels of depression, nor do they report significantly more emotional distress than the childless (Evenson & Simon, 2005). Mothers with young children especially seem to be at risk (Umberson & Gove, 1989). The emotional rewards derived from parenthood are often overshadowed by demands and stressors associated with the role. In the current study we therefore examine the association between macro-level gender equality and both aspects of the gender organization of reproduction – cohabiting with a partner and childcare responsibilities:

> *Hypothesis 5: The level of gender equality within the society moderates the degree to which the presence of young children and cohabiting with a partner is associated with depression in men and women.*

Methodology

Sample: The European Social Survey, 2006/2007

We based our analyses on the third round of the European Social Survey (ESS-3), which covered 25 European countries in 2006 and 2007. The ESS-3 selected respondents using strict probability samples of the resident national population aged 15 or older living in private households irrespective of their language, citizenship and nationality. Proxies were not allowed. Data were gathered via face-to-face interviews. In our analyses we restricted ourselves to respondents aged 18 to 75. The unweighted sample consisted of 39,891 respondents (18,306 men and 21,585 women).

Dependent Variable: Depression

An eight-item version of the CES-D scale (Radloff, 1977) is used to measure the frequency and severity of depressive symptoms, as defined in the DSM-IV criteria for major depressive disorder. The CES-D was built to identify populations at risk of developing depressive disorders; it should not, however, be used as a clinical diagnostic tool by itself. Respondents were asked to indicate how often in the week previous to the survey they felt or behaved in a certain way (felt depressed, felt that everything was an effort, slept badly, felt lonely, felt sad, could not get going, enjoyed life or felt happy). Response categories forming a 4-point Likert scale ranged from none or almost none of the time (0) to all or almost or all of the time (3). Scale scores for the CES-D 8 were assessed using nonweighted summed rating and ranged from 0 to 24, with higher scores indicating a higher frequency and severity of depressive complaints. If four or fewer items were missing, mean substitution was applied (N = 1753). The reliability and validity of the inventory were confirmed across genders and countries (Van de Velde et al., 2010).

Macro-Level Indicators

Macro-level gender equality. Macro-level gender equality is measured using the GEM, which examines the extent to which women and men are able to participate in economic and political life and take part in decision making. GEM

captures gender equality in three key areas: (i) political participation and decision-making power, as measured by women and men's percentage shares in parliamentary seats; (ii) economic participation and decision-making power, as measured by two indicators – women and men's percentage shares of positions as legislators, senior officials, and managers, and women and men's percentage shares of professional and technical positions; and (iii) power over economic resources, as measured by women and men's estimated earned income (purchasing power parity US$). In our analyses we used these three separate subscales as well as the general GEM (all subscales combined) to see if using subscales instead of an all-encompassing measure would lead to different results. For each indicator a higher score reflects a higher level of gender equality. All macro-level indicators were grand-mean centered in order to control for multicollinearity between the main effect of gender and the interaction term of gender with the GEM indicators.

Controls. In all models that include our gender equality measures, we controlled for Gini coefficients, with a higher score indicating a higher level of income inequality (World Bank, 2009). By controlling for Gini coefficients we took correlations between countries' levels of income inequality and gender equality into account.

Micro-Level Indicators

Our main variable, gender, was coded as a dummy variable, with men as the reference category (0 = men, 1 = women). We controlled for respondents' age and a squared term for age (divided by 100) to account for nonlinear effects.

Socioeconomic-related indicators. The socioeconomic position of a respondent was measured by employment status, educational level and household income. Employment status was coded as a set of dummy variables. Respondents were either in paid employment, students, unemployed, permanently sick or disabled, retired, housekeepers (performing housework or caring for children or others) or in another unidentified occupational position. This last category included respondents such as those in community or military service, whose occupational position did not fit into one of the other categories. Respondents in paid employment were identified as the reference category. We measured the educational level of the respondents by their total number of years in full-time education. While this is not an optimal way of measuring educational level, Schneider (2007) has shown that this measure is acceptable for cross-national

comparisons. To account for the nonlinear effects of the number of years in full-time education, we included a squared term (divided by 100). The income position of the respondents was assessed by their relative equivalent household income, using the modified OECD equivalence scale (OECD 2005). To take into account the high number of item nonresponses, relative equivalent income was coded into five categories, with one category representing respondents with missing data on income. The other categories represented people living in relative poverty (<50% of the median equivalent income); a low-income group (50–80% of the median equivalent income); people with an income around the national average (80–120% of the median equivalent income); and people with relatively high incomes (≥120% of the median equivalent income: the reference category).

Family-related and childcare-related indicators. The marital status of the respondents was measured by a set of four dummy variables: respondents may either have been (i) married or in a civil partnership, (ii) divorced or separated, (iii) widowed, or (iv) single. The first category was identified as the reference group, with a civil partnership having an equivalent legal status with being married. We also included an indicator for whether the respondent cohabited with a partner, regardless of marital status (0 = no, 1 = yes). Finally, an indicator was included that measured whether or not children less than 12 years of age lived in the respondent's household (0 = no, 1 = yes).

Statistical Procedure

In order to test our first set of hypotheses we analyzed the relationship between the macro-level gender equality indicators and depression in men and women using linear multilevel regression analyses in the HLM software package. Multilevel models offer the advantage of taking into account the structure of our data: individuals are hierarchically nested within countries. Neglecting this pattern of clustering leads to an underestimation of standard errors for country-level characteristics (Snijders & Bosker, 1999). Firstly, we modeled the main effects of both the gender and the macro-level gender equality indicators (Hypotheses 1 and 2); secondly, we added a cross-level interaction term between gender and the four macro-level gender equality measures (Hypothesis 3). Table 1 presents the results. The main effects are reported in the upper part of the table (Model 1a to 6a) and the interaction terms are reported in the lower part of the table (Model 4b to 6b). For each variable, we report unstandardized regression coefficients (B), with higher scores indicating more depressive feelings, as well as

standard errors (SE) and significance. Additionally, we examined the extent to which the overall variation in depression is located at either the individual (individual variance) or the country level (country variance). Finally, the random slope component allowed us to examine whether the effect of gender varies significantly across countries.

To test our second set of hypotheses we examined the extent to which the association between macro-level gender equality and depression in men and women varied among subgroups. Regarding the gender organization of production, we compared employed with unemployed people, and people who live in relative poverty (<50% of the median equivalent income) with those who do not. When considering the organization of reproduction, we compared people cohabiting with a partner with people who do not, and people with children below age 12 in the household with people without young children. Table 2 presents the results of these subgroup analyses. Mean depression scores for each country in our sample for men and women separately, along with the values of the macro-level gender equality indicators, are presented in Appendix A1.

Results

Gender Equality and Depression in Men and Women: Analyses of the Total Sample

Table 7.1 presents the results of the multilevel models testing our first set of hypotheses. In Model 1, we included one fixed and one random parameter for gender, thereby allowing the effect of gender on depression to vary across countries. We controlled only for age and a quadratic term for age in this model. The results show a clear gender gap in depression in Europe: women score almost one unit higher (0.82) on the depression scale than men. Additionally, the significant random slope parameter indicates that the gender difference in depression does indeed vary across European countries. The other variance components demonstrate that while the largest part of variance (91.2%) is located at the individual level {[15.07/(1.46 + 15.07)] * 100 = 91.2%}, the country level also contributes to variation in depression (8.8%).

In Model 2 we added all control variables at the individual level to examine to what extent cross-national variation in the gender gap in depression is due to

Table 7.1

Multilevel Model Results of Macro-Level Gender Equality to Depression and Gender Differences in Depression.

	Model 1	Model 2	Model 3a	Model 4a	Model 5a	Model 6a
	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
Gender (0 = men)	0.81* (0.07)	0.65* (0.06)	0.65* (0.06)	0.65* (0.06)	0.65* (0.06)	0.65* (0.06)
GEM			–5.68* (1.27)			
Political participation				–2.61* (0.80)		
Economic participation					3.56* (0.71)	
Power over resources						–4.59* (0.60)
Country variance	1.45*	1.28*	0.64*	0.81*	1.01*	0.34*
Individual variance	15.06*	13.84*	13.84*	13.84*	13.84*	13.84*
Random slope gender	0.11*	0.09*	0.09*	0.09*	0.09*	0.09*

	Model 3b	Model 4b	Model 5b	Model 6b
	B (SE)	B (SE)	B (SE)	B (SE)
Gender (0 = men)	0.65* (0.06)	0.65* (0.06)	0.65*(0.06)	0.65* (0.06)
GEM	–5.25* (1.36)			
GEM * gender	–0.55 (0.43)			
Political participation		–2.40* (0.83)		
Political participation * gender		–0.28 (0.27)		
Economic participation			3.45* (0.78)	
Economic participation *gender			0.16 (0.44)	
Power over resources				–4.32* (0.62)
Power over resources * gender				–0.35 (0.24)
Country variance	0.64*	0.81*	1.01*	0.33*
Individual variance	13.84*	13.84*	13.84*	13.84*
Random slope gender	0.09*	0.09*	0.09*	0.09*

* $p < 0.05$

differences among countries in socioeconomic or demographic composition. After including the control variables, both the gender effect on depression and, to a lesser extent, the random slope estimate, is reduced. This indicates that at the micro level, socioeconomic and demographic characteristics partly explain both the gender gap in depression and cross-national variation in this gender gap. The largest part of the cross-national variation in the gender difference in depression is however still unexplained in Model 2, meaning that country-level variables may account for the variation in the gender gap in depression between countries.

In Models 3a to 6a, we included the four indicators of macro-level gender equality and added the Gini coefficient as a control variable. The results indicate that in general, macro-level gender equality is associated with less depression in men and women, confirming our first hypothesis. We find this association for the general GEM, political participation, and power over resources. However, macro-level gender equality as measured by economic participation is associated with more depression in men and women, confirming our second hypothesis. This may reflect the fact that gender equality in economic participation is especially high in the former Soviet republics, where depression levels among both men and women are also among the highest.

We added cross-level interaction terms between the macro-level gender equality measures and gender to Models 3b to 6b, allowing us to test our third convergence hypothesis. None of these cross-level interaction effects appears to be significant, suggesting that both men and women benefit similarly from increased macro-level gender equality. Country-level variance is reduced strongly in the models that include macro-level gender equality measures, indicating that these measures along with the control of the Gini coefficient may account for much of the cross-national variation in mean depression scores. However, the inclusion of these macro-level gender inequality measures only slightly reduces the random slope effect of gender, meaning that macro-level gender equality explains cross-national variation in the gender gap in depression to only a limited extent.

Gender Equality and the Gender Gap in Depression: Subgroup Analyses

Table 7.2 presents the results of multilevel models distinguishing four subgroups within the gender organization of production and four subgroups within the gender organization of reproduction. For all eight subgroups, the main effects of the four indicators of gender equality are similar to the main effects in Table 7.1, suggesting that these effects of gender equality are quite robust across different

Table 7.2

Multilevel Model Results of Macro-Level Gender Equality to Depression and Gender Differences in Depression, for Eight Subgroups.

	Employed	Non-employed	In poverty	Not in poverty	Cohabiting	Not cohabiting	Children	No children
	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
Gender	0.63* (0.05)	0.45* (0.09)	0.76* (0.12)	0.66* (0.06)	0.78* (0.06)	0.39* (0.09)	0.67* (0.11)	0.63* (0.06)
GEM	–4.81* (1.35)	–6.06* (1.51)	–5.26* (1.13)	–5.14* (1.41)	–5.92* (1.40)	–3.97* (1.38)	-3.26* (1.33)	–5.77* (1.43)
GEM x gender	–1.04* (0.35)	0.65 (0.63)	0.28 (0.91)	–0.67 (0.42)	–0.24 (0.46)	–1.33* (0.61)	-1.24 (0.72)	–0.49 (0.49)
Gender	0.63* (0.05)	0.45* (0.09)	0.74* (0.12)	0.66* (0.06)	0.78* (0.06)	0.38* (0.09)	0.66* (0.11)	0.63* (0.06)
Political participation	–2.19* (0.80)	–2.85* (0.93)	–2.12* (0.75)	–2.41* (0.84)	–2.54* (0.87)	–2.17* (0.81)	-1.38 (0.75)	–2.65* (0.88)
Political participation x gender	–0.58* (0.24)	0.39 (0.36)	–0.24 (0.57)	–0.29 (0.27)	–0.20 (0.28)	–0.51 (0.42)	-0.67 (0.42)	–0.24 (0.31)
Gender	0.62* (0.06)	0.45* (0.09)	0.73* (0.12)	0.65* (0.06)	0.77* (0.06)	0.38* (0.08)	0.66* (0.11)	0.63* (0.06)
Economic participation	3.24* (0.74)	3.91* (0.95)	4.04*** (0.90)	3.28* (0.80)	3.44* (0.83)	3.32* (0.74)	3.31* (0.64)	3.47* (0.84)
Economic participation x gender	0.29 (0.30)	0.42 (0.63)	–0.13 (0.69)	0.23 (0.50)	–0.02 (0.41)	0.55 (0.55)	-0.64 (0.48)	0.35 (0.48)
Gender	0.63* (0.05)	0.45* (0.09)	0.78* (0.11)	0.66* (0.06)	0.77* (0.06)	0.38* (0.09)	0.67* (0.28)	0.63* (0.06)
Power over resources	–3.95* (0.60)	–4.93* (0.75)	–4.53* (0.60)	–4.12* (0.64)	–4.91* (0.61)	–3.03* (0.78)	-3.07* (0.74)	–4.63* (0.63)
Power over resources x gender	–0.62* (0.22)	0.25 (0.38)	0.59 (0.60)	–0.51* (0.24)	–0.05 (0.24)	–1.09* (0.38)	-0.58 (0.43)	–0.37 (0.29)

* $p < 0.5$

social strata (results not shown). When considering the gender organization of production (Hypothesis 4), we find that macro-level gender equality is associated with fewer feelings of depression among the employed respondents, but not among the unemployed. Only equality in economic participation does not influence the gender gap in depression in both unemployed and employed respondents as well. The association between macro-level gender equality, depression and relative poverty is less apparent. When gender equality in power over resources is higher, the gender gap in depression is smaller, but only for respondents who do not live in poverty. For the other dimensions of macro-level gender equality a significant association could not be established.

Regarding the gender organization of reproduction (Hypothesis 5), we compared respondents who were cohabiting with a partner to those who were not. The results demonstrate that high gender equality as indicated by the general GEM strongly reduces the gender gap in depression for those who are living without a partner, but not for cohabiting respondents. The gender equality subscales indicate that this is mostly due to equality in power over resources: as power over resources is divided more equally between men and women, the gender difference in depression is smaller, but this only applies to respondents who were not cohabiting with a partner. Equality in political and economic participation is not significantly associated with the gender gap in depression for either of these subgroups.

Finally, we analyzed separate models for respondents living with children below the age of 12 and respondents without young children. For both respondents with children below the age of 12 and respondents without children below the age of 12, none of the gender equality indicators appears to influence the gender gap in depression. This completely refutes the argument that the influence of gender equality on the gender difference in depression is different for individuals with young children in the household than it is for people without young children.

Discussion

In this study, we tested two sets of hypotheses. The first set considered the way that macro-level gender equality is associated with depression in men and women. For our sample as a whole, we were able to confirm Hypothesis 1 and reject Hypotheses 2 and 3. We found that men and women profit equally from macro-level gender equality, thus it neither amplifies nor diminishes women's

disadvantage in depression. Exception to this were the results related to macro-level gender equality in economic participation, which was associated with more depression in men and women, confirming our second hypothesis. Distinguishing three subscales of gender equality thus demonstrated that some sub-dimensions of gender equality are more important than others are in influencing depression in men and women.

Our results also indicate that the degree of macro-level gender equality is not uniform throughout a society but varies according to other power structures in the gender organization of production and reproduction. Our approach – combining three sub-dimensions of gender equality with subgroup analyses in which we made four comparisons between social strata – yielded a number of interesting findings. Firstly, gender equality in power over resources appears able to reduce the gender difference in depression only for respondents who were not cohabiting with a partner, respondents in paid employment and respondents who do not live in poverty. This implies that women who act outside traditional role patterns (for example, women who are in paid employment and not cohabiting) are most likely to benefit from high equality in power over resources. However, this may also imply that in societies with low equality in power over resources, women who do not conform to traditional role patterns will have especially high levels of depression. For women who are nonemployed, cohabiting with a partner and living in poverty, living in societies with high equality in power over resources does not seem to be beneficial. We tentatively conclude that having equal power over resources has salutary effects for independent women and that a lack of power over resources may also harm this group most.

It is also interesting to note that high gender equality in political participation appears beneficial only to employed women. It is plausible that having a high percentage of women involved in political decision-making is conducive to employment policies that suit women's preferences. In many western countries, increasing social welfare expenditures to implement policies requiring and supporting the employment of women, particularly mothers, certainly reflects this (Cooke & Baxter, 2010). Consequently, women may face less role conflict, role overload and stress in those countries with high equality in political participation. Future research should elucidate whether specific policies may indeed account for the beneficial effect of equality in political participation among this social subgroup.

Finally, we found that gender equality in economic participation does not influence gender differences in depression in any of our models. Apparently,

living in countries with equal representation of men and women in managerial and professional functions does not lead to a smaller difference in depression between men and women. Equal political participation and power over resources may improve women's lives in ways that equality of economic participation cannot. Perhaps equal employment opportunities might only be beneficial for mental health if they do not increase stress about work versus family responsibilities. The importance of economic power is directly related to the extent to which the welfare state enables women to survive as independent workers and the extent to which it decreases the economic importance of the family in women's lives, also described as defamilization (Bambra, 2007). An optimal level of defamilization should accompany equality of economic participation or it may have the opposite effect. Additionally, while economic participation is an important resource for empowerment, it might have an adverse effect if employment is compulsory because of high poverty levels and limited government-provided income replacement. Finally, in Eastern European countries we see high levels of gender equality in economic participation but also high levels of unemployment among both men and women. Previous research showed that unemployment hurts wellbeing less in high-employment regions (Clark, 2003).

In sum, we conclude that, overall, a high degree of macro-level gender equality is beneficial for the mental health of both men and women but the benefit is more pronounced in certain social subgroups, and for specific sub-dimensions of macro-level gender equality. Clearly, our results are more in line with the conclusion of Chen et al. (2005) that gender equality may reduce women's disadvantage in depression than with the findings of Hopcroft and Bradley (2007), who concluded that high gender equality might actually lead to a large gender gap in depression. There are two main differences between the conclusions drawn by Hopcroft and Bradley (2007) and our findings. Firstly, Hopcroft and Bradley used a nonvalidated single-item measure of depression, whereas we were able to employ a shortened version of the often-used CES-D scale. Secondly, whereas our sample was limited to European countries, Hopcroft and Bradley (2007) were able to include a few non-western countries. In these societies gender equality appeared to be low and the gender gap in depression proved to be small. Unfortunately, the authors did not report whether excluding non-western countries might lead to different conclusions.

Our study has some important implications for European societies as they provide support for the importance of equal gender representation at the

decision-making level. For a very long time the Nordic countries and The Netherlands were alone at the very top of the world rank order in terms of women's political and economic representation. However, female empowerment has been on the agenda of many other European countries with a variety of new laws and actions. Since 1994 an additional six countries in the European Union (EU)/European Economic Area have introduced legislative electoral gender quotas, most recently Slovenia, Spain and Poland. In many other countries political parties have introduced voluntary quotas. In addition the EU drafted a pledge with the aim of encouraging companies to increase the percentage of women on their boards to 40 per cent by 2020; however this has been met with limited effective implementation in the corporate world. Finally, the EU mandates that men and women receive equal pay for equal work but the gender pay gap remains significant in most countries. In the light of the current research results, these initiatives need to be encouraged, as a more equal gender distribution of power at the macro-level has benefits for the mental health of the entire population, not just women.

However, focusing solely on top-level equality will not be sufficient. In the early twenty-first century many European countries find themselves in transition. Whereas southern European countries are experiencing a trend towards defamilization, many post-Communist Eastern European countries are seeing an increased reliance on familial ties. As we have shown, these European regions also have the highest overall depression levels and the largest gender gaps in depression. Our results suggest that the trend towards defamilization in southern Europe may lead to a reduction in the gender difference in depression only if an improvement in gender equality in political participation and an increased power over resources complements it. If the level of gender equality remains stable in these societies, the growing number of unmarried women and women in paid employment may result in an increase of depressive problems among women. Conversely, in Eastern Europe, improving gender equality may not lead to a reduction of the gender gap in depression. Nevertheless, our results have demonstrated that gender equality does not influence the level of depression for married people and women not in employment.

CHAPTER 8

KEEPING IT IN THE FAMILY: THE SELF-RATED HEALTH OF LONE MOTHERS IN DIFFERENT EUROPEAN WELFARE STATE REGIMES

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Abstract

This study examines whether there are health inequalities between lone and cohabiting mothers across Europe, and how these may differ by welfare state regime . Data from the European Social Survey are used to compare self-rated general health, limiting longstanding illness and depressive feelings by means of multi-level logistic regression. The 27 countries included in the analyses are classified into five welfare state regimes (Anglo-Saxon, Bismarckian, Southern, Nordic, Central-Eastern). Results indicate that lone mothers are more at risk of poor health than cohabiting mothers. This is most pronounced in the Anglo-Saxon regime for self-rated general health and limiting longstanding illness, while for depressive feelings it is most pronounced in the Bismarckian welfare state regime. However, while the risk difference is smallest in the Eastern and Southern welfare regime, this is due to the overall poor health status of all mothers. Adjusting for the socioeconomic position weakened that association between lone motherhood and ill health. However, while employment and poverty were associated with subjective general health and limiting longstanding illness in lone mothers, feelings of depression were mainly buffered by education.

Introduction

Previous research has indicated that lone mothers, compared to cohabiting mothers are at higher risk for poverty, unemployment because of lack of

affordable childcare, employed in low-pay, low-status occupations, and are at higher risk of social exclusion (Lewis, 2006).Their disadvantaged socio-economic situation has also been associated with a number of health problems. Compared to cohabiting mothers, lone mothers are more likely to report general health problems (Burstrom et al., 2010; Fritzell et al., 2007; Whitehead et al., 2000), and mental health problems (Brown & Moran 1997; Targosz et al., 2003). Lone mothers are therefore one of the most vulnerable groups in society. Variations between countries in the pattern of lone mothers' employment and poverty rates have been widely documented (e.g. Kilkey & Bradshaw 1999). This suggests that welfare state regimes may differ in the nature and quality of social rights conferred to women, and how paid work and care is reconciled. To date, analysis of the moderating effect of different welfare state arrangements on the health status of lone mothers has been hampered by a lack of comparative cross-national data. The few studies that have looked at the topic present mixed results. Burstrom and colleagues (2010) found that the gap in health between lone and cohabiting mothers was smaller in Italy, than Sweden and Britain. Lahelma and colleagues (2002) found that in Britain, the disadvantaged social position of lone mothers accounted to a greater proportion of poor health than in Finland. In contrast, Whitebread and colleagues (2000) showed that the magnitude of the differential between lone and cohabiting mothers was similar in Sweden compared to Britain. In this study, we are the first to make use of cross-national data from the European Social Survey which covers the general population in almost all European countries and covers the full geographical range of Europe (West, North, South and East). The data allows us to analyze to what extent inequalities in health exist between lone and cohabiting mothers and how this varies by welfare state regime.

Theoretical Background

Pathways to Ill Health amongst Lone Mothers

Pathways leading to ill health are often explained using the stress-and-vulnerability model, which describes the relationship between the stressors the individual is exposed to and the way the individual reacts (Pearlin, 1989). Next to a number of biological and psychological risk factors, a large variety of social risk factors have been identified in the literature. At the individual level, certain social positions are associated with different probabilities of exposures detrimental to

health. For example, low education or unemployment is often associated with health risks such as bad housing, poverty, negative health behaviors, and overall feelings of powerlessness (Mirowsky & Ross, 2003). Whether an exposure leads to ill health or not is in part dependent on the presence of other risk factors as well. Lone mothers are often exposed to several health risks at once, and these may further interact to produce higher susceptibility (Fritzell et al., 2007).

The current literature on the health of lone mothers suggests a number of pathways to ill health. Most research focuses on their disadvantaged socioeconomic position; lone mothers are at higher risk of unemployment or worklessness, they are less likely to work full-time than other women, and they are more likely to be employed in low wage parts of the economy (Benzeval, 1998; Kilkey & Bradshaw, 1999). They are also less likely to have enjoyed education opportunities, putting them at a higher risk of poverty (eg. lone mother poverty rate versus overall poverty rate in Germany,31% versus 8%; in Sweden,11% versus 7%; in the UK 40% versus 14%; in Spain 29% versus 14% (Luxembourg Income Study, 2000)). The links between a disadvantaged socioeconomic position and ill health are well established (Mackenbach, et al. 2008; Mirowsky & Ross 2003). In addition, as the sole carer of a child and the sole possible breadwinner in a family, the dual responsibility of lone mothers to provide both cash and care is likely to represent an extreme in the tensions between paid work and care responsibilities. Dual roles have been posited as a reason behind the inequalities in morbidity found amongst men and women (Bambra et al., 2008). Further, the literature on work-life balance, work-family conflict and work-care responsibilities suggests that imbalance and tensions in such relationships can be health damaging. For example, Netemeyer and colleagues (1996) found an association between increased work-family conflict and physical ill health and Frone and colleagues (1997) found a strong association between work-family conflict and depression, poor physical health, hypertension and alcohol misuse.

Welfare State Regimes and Lone Mothers

Since Esping-Andersen's (1990) *The Three Worlds of Welfare Capitalism*, many researchers have used the concept of welfare state regimes in comparative social policy research. His typology was based upon three dimensions: the nexus of state and market in the distribution system, the quality of social rights as reflected in decommodification, and the stratifying effects of welfare entitlements. While

Esping-Andersen made a major contribution to the field of comparative macro social-policy research, criticisms were made of his original typology which mostly related to the limited number of countries included, their categorization within a certain regime, and the insufficient consideration of gender (Sainsbury 1999). Several alternative typologies have since been developed including those which integrate issues of defamilization alongside decommodification (e.g. Lewis 1992; Bambra 2004). Defamilization refers to the extent to which the welfare state undermines women's dependency on the family and facilitates women's economic independence (Lister, 1998; Bambra, 2004). The structure of modern welfare regimes have never provided well for those who were marginal in some way to the labor market, as in the case with many lone mothers. In general, only widows have been able to rely on derived benefits, consisting of social insurance benefits paid for by their husbands' contributions. These are invariably higher than the mean-tested social assistance benefits that the growing proportion of divorced and unmarried mothers extract from the 'absent' father (Lewis, 2006).This is particularly important when considering how welfare state regimes treat lone mothers.

Resonating with the recent recognition of the importance of the macro social and political context in determining health (Diez-Roux, 2000), many researchers have started to examine how different national welfare arrangements influence population health (Bambra, 2007a). The underlying assumption is that welfare regimes are important determinants not only of the socio-economic position, but also of health, as they mediate the health effects of socio-economic position. Welfare regimes can additionally help to explain gender differences in health as well, as they act as a force in ordering gender relations (Bambra, et al, 2008). They are deeply implicated in shaping women's access to an independent income. They may support women's waged labor, by providing services and cash transfers that reduce both the burden of women's domestic labor and the costs entailed in undertaking paid work (Orloff, 1996; Sainsbury, 1999). Additionally, the welfare regime itself may present an important source of employment for women (Meyer, 1994). The type of welfare state regime may also award those not engaged in the labor market with an independent income. Depending on the amount, method, and conditions of payment, child benefits, extended parental leave-programs, social assistance when child-rearing responsibilities preclude the obligation to seek work, and carer's allowances can represent an important economic resource to women. Conversely, by not facilitating women's access to an independent income, welfare policies may also reinforce their dependency on men. Lone mothers' living conditions are therefore particularly sensitive to the setup of

welfare policies andhow women in such situations are treated, therefore may be the quintessential example of how welfare states construct the relationship between paid work and caring for all women (Kilkey & Bradshaw, 1999).

In the current study, we make use of Ferrera's (1996) typology, which distinguishes four welfare state regimes: the Anglo-Saxon regime, the Nordic regime, the Bismarckian regime, and the Southern regime. They differ with respect to the main source of financing for care (private purchase, income taxation, pay-roll taxation), the main place where care takes place (private services, public services, the family), and the amount and the channels of resources directed to the needy (cash transfers or transfers in kind by the state, private intra-family transfers). While the Anglo-Saxon and Nordic regime are very different in design and final outcomes, they are similar because they foster more 'symmetric' gender relations. In contrast the Bismarckian and Southern welfare regime are 'asymmetric', because they direct men and women towards different types of work, unpaid care work in the case of women and paid non-care work in the case of men (Addis, 2002). We prefer this typology to Esping-Andersen's classification, because in contrast to the latter, it is not only based on cash benefits, but also considers welfare services, including child care and social services which are of importance in terms of defamilization and gender stratification within the welfare state (Bambra, 2004). The Ferrera typology has also been used extensively in previous comparative sociology of health research (e.g. Bambra & Eikemo, 2009; Bambra et al., 2008) and has been shown to be empirically robust (Bambra, 2007b).

The first regime type groups the **Nordic** countries. It is characterized by a universalistic approach to social rights, a high level of decommodification, in addition to promoting gender equality both on the labor market and in care tasks (Fritzell, et al., 2007). This benefits lone mothers in a number of ways. Subsidized public day care for children is widely available, encouraging high rates of employment among lone mothers (Allen, 2003). The provision of housing allowances supports families and lone mothers with limited incomes with good accommodations (Scheiwe, 2003). In addition, child maintenance transfers and other need-based social assistances schemes for lone mothers are provided by the state (Bergmark & Palme, 2003).

In contrast, the **Anglo-Saxon** welfare model provides only limited social insurance. Its social programs are directed mainly toward the working class and the poor, and means-tested assistance is prevalent. It grants mothers the time to care for their children by offering financial assistance on the basis of their caring

status – although recent changes have placed age restrictions on this (for example in the UK there is now a requirement to seek work once the youngest child is 5). However, the regime is weak in respect of the social rights attached to paid work and the transition from care-giving to paid work, which may act to constrain lone mothers' choice to do other than full-time caring (Kilkey & Bradshaw, 1999). There is only limited publicly funded child care. Therefore, lone mothers are predominantly full-time carers as opposed to engaging in paid work, resulting in relatively high rates of poverty (Kilkey & Bradshaw, 1999).

The **Bismarckian** welfare regime was traditionally set up to support the male-breadwinner system, with a focus on cash-transfers to households rather than on the direct provision of services (Bussemaker & van Kersbergen, 1994). The family is selected as the unit of benefits, with welfare provisions being conferred upon the head of the household. Female labor force participation is generally discouraged through tax disincentives or even explicit policies (van Kersbergen, 1995). A wife has been entitled to benefits only when she has become the head of the household through the death of her husband (widow pensions). Benefits for women in case of divorce have typically been absent. In recent years, some of the Bismarckian countries have adopted policies to facilitate child care with employment. The Netherlands provide high replacements rates for non- or part-time working lone mothers, while France and Belgium offer extensive service and parental employment rights. However, most other Bismarckian countries welfare policies remain highly familized.

The **Southern** welfare regime is typified by high levels of familialism as the family has a central role in the organization of both employment and welfare (Tavora, 2012). The state does not support families' normal functioning, but only covers social risks against which the family cannot protect itself. In contrast to the other welfare regimes, the subject interacting with welfare agencies may be the extended family, rather than the nuclear one (Trifiletti, 2012). Generous protection is provided to full-time workers on the official labor market, while no guarantee of a minimum income is provided for those outside the labor market. Care work is taken for granted and female employment is low. However, women in employment almost always work full-time and, only in this case, get benefits and access to social services through their worker status. Because social protection covers women mainly on the basis of their marital status, special provisions for lone mothers are nearly absent (Lewis & Ostner, 1994). In addition, unmarried and widowed mothers are often granted more provisions than divorced or separated lone mothers. However, the likelihood of full-time

employment is considerably higher in lone mothers than cohabiting mothers (Fadiga Zanatta, 1996), due to the lack of social protection, and the informal support from the extended family in care tasks.

In the current study we add a fifth welfare regime for the post socialist countries of **Central and Eastern Europe**. Research incorporating these countries into a welfare regime typology is still scarce, and recent transition make it uncertain to identify which type of welfare model they will converge with. The former socialist era supported women as workers and socialized many costs of motherhood and care work (Pascall & Manning, 2000). This resulted in high female labor participation at a much earlier date than even in the West (Molyneux, 1990), although it remained gender segregated. However, this region has recently experienced extensive economic upheaval and has undertaken comprehensive social reforms throughout the 1990s (Kovacs, 2002). They have emphasized the Liberal regime approaches of marketization, decentralization and the reform of health insurance schemes (European Communities & World Health Organization, 2002), putting people outside of the job market especially at risk for health problems. Along with mass employment, many of the social assistance provisions previously distributed through the workplace as well as public child care arrangements diminished. In addition, most countries in this region have no special provisions for lone mothers, making them especially susceptible for health risks.

Study aim and hypotheses

The aim of the current study is threefold. First, we will determine whether lone mothers suffer more from health problems than cohabiting mothers in all welfare states. Different aspects of health are assessed by distinguishing between subjective general health, limiting longstanding illness and feelings of depression. In line with the available research, we expect that lone mothers will report more health problems than cohabiting mothers in all welfare regimes. Second, we will examine whether this health gap differs by type of welfare regime. We expect that welfare states with high levels of universalism and policies targeted at defamilization will benefit the health status of mothers in general. Welfare state generosity is one of the most influential factors explaining cross-national differences in health risks such as poverty (Brady, et al., 2009). However, we expect that lone mothers will be even more sensitive to the set-up of these welfare policies. Third, we will look at differences in the pathways linking lone

motherhood to ill health, by examining well-established health risks such as poverty, low education and non-employment (Mackenbach, et al., 2008; Van de Velde, et al., 2010). We expect that controlling for socioeconomic risk factors will weaken that association between lone motherhood and poor health, but to what extent will depend on the type of welfare regime.

Our study utilizes survey data from the European Social Survey, covering most European countries, which we categorize into five regimes based on Ferrera's (1996) classification, plus an additional category for Central-Eastern Europe. An overview of the data descriptive is provided in the Appendix (Table A2).

Methods

Data

We based our analyses on data from the European Social Survey (ESS), which collected information on subjective health by means of three indicators: self-reported subjective general health, limiting longstanding illness and depressive feelings. The first two indicators were included in the first four ESS waves (2002-2008, covering 27 countries), while the depression-related indicator was only included in the third ESS wave (2006, covering 23 countries). The data and extensive documentation are freely available for downloading at the Norwegian Social Science Data Services web site (www.nsd.uib.no). ESS information is representative for all individuals in the general population aged 15 and older living in a private household. The ESS selected respondents using strict probability samples of the resident national population aged 15 or older living in private households irrespective of their language, citizenship, and nationality. Proxies were not allowed. Data was gathered via face-to-face interviews. In our analyses, we restricted ourselves to women, aged 18-55 years, with children aged 18 years or younger in the household. A weight was applied in all analyses to correct for design effects due to sampling designs in countries where not all individuals in the population have an identical selection probability. The merged data file was additionally weighted to adjust for country presence across the different waves (= total number of respondents/total number of countries)/(number of respondents in country X). The unweighted sample consisted of 26,499 respondents (3619 lone mothers) in the merged dataset, and of 6603 (753 lone mothers) in the ESS wave 3 file.

Self-reported general health was constructed from a variable asking; 'How is your (physical and mental) health in general?'. Eligible responses were 'very good', 'good', 'fair', 'bad', and 'very bad'. We dichotomized the variable into 'very good or good health' versus 'less than good' health ('fair', 'bad', and 'very bad'). As for limiting longstanding illness, people were asked if they were hampered in daily activities in any way by any longstanding illness or disability, infirmity or mental health problem. Eligible responses were 'yes a lot', 'yes to some extent' and 'no'. We dichotomized this variable into 'yes' (regardless of whether to some extent or a lot) and 'no'. Depressive feelings were assessed using an eight-item version of the Center for Epidemiologic Studies Depression Scale (CES-D 8). Respondents were asked to indicate how often in the week previous to the survey they felt or behaved in a certain way (felt depressed, felt that everything was an effort, slept badly, felt lonely, felt sad, could not get going, enjoyed life, or felt happy). Response categories forming a 4-point Likert scale ranged from 'none or almost none of the time' (0) to 'all or almost or all of the time' (3). Respondents were grouped into two categories: Low degree of depressive feelings (summated CES-D score between 0 and 9) and high degree of depressive feelings (summated CES-D score of 10 and 24).

Singlehood was measured by comparing those who were living together with a partner, regardless of their marital status, with those who were not cohabiting with a partner, therefore capturing the factual rather than legal status of cohabiting. Socioeconomic position was measured by employment status, educational level and presence of poverty. Employment status was coded as a dummy variable, with persons either in paid employment (1) or not (0). Educational level was measured by the total number of years in full-time education. Respondents who deviated more than three standard deviations from the national mean were capped off to the closest valid number. Poverty was defined as less than 50 percent of the country's median income (Not in poverty = 0; in poverty = 1). All results are age-adjusted.

Analysis

Table 8.1 presents prevalence rates of ill health (poor/fair general subjective health, limiting longstanding illness and depressive feelings) for the total sample, for only lone mothers, as well as the rate differences. Results were age standardized by means of the European Standard Population. Additionally, relative health inequalities (odds ratio's) were calculated applying a series of

multi-level logistic regression analyses, in which lone motherhood was introduced as an independent variable, adjusted by age, with health outcomes as the dependent variables. An odds ratio of 1 indicates that the event (ill health) is equally likely to happen in both cohabiting and lone mothers. An odds ratio above 1 indicates that the event is more likely to happen in lone mothers compared to cohabiting mothers. An odds ratio of less than 1 indicates that the event is less likely to happen in lone mothers compared to cohabiting mothers. Furthermore, we examined the extent to which the association between the weakened socioeconomic position of lone mothers and ill health varies across welfare regimes. Results are presented in Table 8.2.

To test the robustness of the main findings, three sensitivity analyses were performed: First, one-way ANOVA was used to examine whether the between welfare regime difference is greater than the within welfare regime difference in ill health. A significant result of the F-test would provide support for this. Second, the degree to which welfare regimes explain cross-national variation in the health status of lone mothers is examined using the interaction 'lone motherhood*regime' within a multi-level design. The Anglo-Saxon regime was used as reference category, allowing us to compare if and where largest differences between welfare regimes could be established. In addition, a decrease in the size of the country variance will allow us to gauge the magnitude of variation in the health outcomes that is explained by Ferrera's welfare regime typology. Finally, additional adjustments were made for between regime differences in the association between health and lone motherhood in terms of the socio-economic position (unemployment, low education, and poverty), allowing us to examine the degree to which health differences between lone and cohabiting mothers can be explained by socioeconomic differences.

Results

Health differences between lone and cohabiting mothers by welfare regime.

Table 8.1 shows that Central-Eastern European welfare regimes have the highest prevalence of poor general subjective health, as well as depressive feelings among women with children, regardless of whether they are single or cohabiting. Limiting longstanding illness is also high in the Central-Eastern welfare regimes, but even more pronounced in the Nordic regime. The Southern European regime

also shows high prevalence of poor general subjective health as well as depressive feelings. However, respondents with limiting longstanding illness are lowest in number in this regime compared to the rest of Europe. The dissimilar report of ill health between limiting longstanding illness and general subjective health as well as depressive feelings in the South is relatively large. This might suggest that limiting longstanding illness is understood differently in the South from elsewhere. In all regimes, we find that the prevalence of poor general subjective health is higher than that of depressive feelings, while that of limiting longstanding illness is lowest, with the exception of the Anglo-Saxon regime, where the prevalence general subjective health is lower than that of depressive feelings.

A closer look at the difference in health status between cohabiting and lone mothers reveals that overall this last group suffers more from ill health than cohabiting mothers. In all regimes this difference is significant, with the exception of poor subjective general health in the Central-Eastern and Southern regime and limiting longstanding illness in the Central-Eastern regime. However, in both regimes the overall prevalence of poor health is notably higher among cohabiting mothers as well. The difference in health status between lone and cohabiting mothers is most pronounced for depressive feelings, with smallest difference found in the Nordic regime and largest in the Bismarckian regime. According to the size of rate differences and OR's, it appears that the negative health experiences of lone mothers are particularly strong in the Anglo-Saxon regime as well.

The sensitivity analyses (presented in appendix table A3) show that within-welfare regime variance is significantly smaller than between-welfare regime variance for measures of prevalence and relative equalities and for all measures of ill health. A closer look at the differences between specific welfare regimes shows that adding the welfare regime typology to the model decreases the level of country variance substantially for all ill health indicators (appendix table A4). The difference in ill health of lone mothers is most pronounced between the Anglo-Saxon and Southern, as well as Central-Eastern regime for general subjective health. Concerning the association between limiting longstanding illness and lone motherhood, it was most pronounced between the Anglo-Saxon and Nordic regime, as well as the Central-Eastern welfare regime. However, welfare regimes are unable to explain the significant association between feelings of depression and lone motherhood, indicating that social policies and services are less able to affect individual risks for depression.

Table 8.1
Prevalence rates, rate differences and odds ratios (95% CI) for each welfare regime separately.

	Poor/fair general subjective health				Limiting longstanding illness				Depressive feelings			
	Prev. (%)	Single (%)	(RD)	OR (95% C.I.)	Prev. (%)	Single (%)	(RD)	OR (95% C.I.)	Prev. (%)	Single (%)	(RD)	OR (95% C.I.)
Anglo-Saxon	15.1	22.2	9.49	2.02(1.59-2.56)	13.1	17.2	4.35	1.94(1.50-2.50)	17.3	24.3	8.69	2.16(1.35-3.45)
Bismarckian	21.6	29	8.08	1.64(1.30-2.08)	14.8	19.4	4.81	1.67(1.43-1.96)	16.4	28.8	12.79	3.32(2.48-4.43)
Nordic	19.2	21.2	1.75	1.36(1.16-1.60)	22.9	28.3	5.89	1.37(1.26-1.50)	10.9	17.0	7.47	2.09(1.40-3.13)
Southern	22.1	24.9	2.33	1.04(0.73-1.47)	6.3	7.3	1.09	1.43(1.11-1.86)	18.0	29.7	16.69	2.11(1.21-3.68)
All Eastern	41.9	46.3	5.24	1.16(0.96-1.41)	19.4	20.3	1.03	1.03(0.89-1.20)	24.1	40.9	20.66	2.48(1.77-3.48)

Socioeconomic Health Risks in Lone Mothers by Welfare State Regime.

Table 8.2 shows the association of the socio-economic position of lone mothers with health problems by welfare state regime. These results allow us to examine to what extent socioeconomic risks are differently associated with ill health in lone mothers across welfare regimes. Overall, poor general subjective health is associated with lower education, unemployment and poverty in all welfare state regimes. Lone mothers who enjoyed fewer years of education, who are not in paid employment and those living in poverty are more likely to report poor general subjective health than lone mothers who enjoyed more education, employment and a higher income. However, this association is less pronounced in the Southern regime, where lower educated lone mothers and those living in poverty do not report more general health complaints than lone mothers from higher socioeconomic groups. In addition, poverty is also unrelated to poor general subjective health in lone mothers in the Nordic welfare regime, while unemployment does not help to explain health differences in lone mothers in the Central-Eastern welfare regime. A comparison between welfare regimes shows that the association between socioeconomic position and health varies by type of welfare regime. Lower education is more harmful for subjective general health in the Nordic regime, while the effect is smaller in the Southern and Bismarckian regime. Similarly unemployment shows a stronger association in the Nordic regime, but this social stressor explains even more of the difference in health between lone and cohabiting mothers in the Anglo-Saxon regime. Finally, while poverty is related to more general health problems in both the Anglo-Saxon, Bismarckian and to a lesser extent Central-Eastern regime, it is unrelated to general subjective health in the Nordic and Southern regimes.

Table 8.2
The Association between ill health and socioeconomic risk factors among lone mothers.

	Anglo-Saxon	Bismarckian	Nordic	Southern	Central-Eastern
	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)
General subjective health					
Education	0.92(0.87-0.98)	0.95(0.91-0.99)	0.89(0.84-0.94)	0.96(0.90-1.02)	0.91(0.87-0.96)
Employment	0.39(0.25-0.59)	0.61(0.41-0.90)	0.40(0.26-0.60)	0.57(0.35-0.93)	0.79(0.59-1.06)
Poverty	1.69(1.17-2.46)	1.75(1.28-2.41)	0.65(0.36-1.18)	1.33(0.78-2.26)	1.34(1.22-1.48)
Limiting Longstanding Illness					
Education	0.95(0.89-1.01)	0.98(0.94-1.02)	0.98(0.93-1.03)	1.00(0.92-1.08)	0.93(0.87-0.99)
Employment	0.32(0.20-0.51)	0.37(0.26-0.55)	0.35(0.24-0.52)	0.33(0.17-0.66)	0.71(0.45-1.13)
Poverty	1.19(0.80-1.76)	1.01(0.66-1.55)	0.85(0.50-1.44)	0.89(0.41-1.90)	1.90(1.57-2.30)
Depressive feelings					
Education	0.87(0.78-0.98)	0.92(0.85-0.99)	0.92(0.82-1.04)	0.87(0.77-0.98)	0.86(0.79-0.95)
Employment	0.52(0.24-1.13)	0.73(0.51-1.04)	0.74(0.27-2.02)	0.63(0.23-1.71)	1.00(0.64-1.57)
Poverty	1.33(0.64-2.78)	1.95(1.04-3.66)	2.48(0.92-6.73)	1.80(0.60-5.39)	1.38(0.74-2.56)

Additionally, the results show that the socioeconomic position of lone mothers is less strongly related to limiting longstanding illness. With the exception of the Central-Eastern regime, lower education and poverty do not help to explain differences in limiting longstanding illness in lone mothers. In contrast, unemployment is strongly related to ill health in lone mothers across all welfare regimes, with the exception of Central-Eastern regime. Either limiting longstanding illness is thus less sensitive to the presence of social stressors, or different mechanisms are at play when analyzing general subjective health versus limiting longstanding illness.

Finally, it seems that only lower education is related with the presence of depressive feelings in lone mothers across Europe. Except in the Nordic regime, the more education a lone mother enjoyed, the less likely she is at reporting depressive feelings. In contrast, unemployment is unrelated to depression in lone mothers in the European welfare regimes, while poverty only places Bismarckian lone mothers more at risk for depression.

An additional sensitivity analysis looks at the degree to which these socioeconomic risk factors help explain differences in ill health between lone and cohabiting mothers (appendix table A5). While in general lone mother are more likely to be unemployed, living in poverty, and less educated than cohabiting mothers, this difference in socioeconomic position fully explains the difference in the degree of depressive feelings between cohabiting mothers and lone mothers in the Anglo-Saxon and Nordic regime. In the other regimes, the decrease was smaller and could not fully account for the differences in health between cohabiting and lone mothers. Similarly, adjusting for the socioeconomic position explains a part of the difference in subjective general health and limiting longstanding illness in the different welfare regimes, but does not fully account for the difference between lone and cohabiting mothers. Thus, lower education, poverty and unemployment put both lone and cohabiting mothers at risk for ill health, these risks factors are in general even more harmful to the health of lone mothers. However, this differences depends on the type of welfare regime and type of health problem.

Discussion

Our study provides evidence for the hypothesis that welfare regimes help to explain health differences between lone and cohabiting mothers. First, with a few

exceptions, our data show that in all welfare regimes lone mothers suffer more from health problems than cohabiting mothers. This difference is most pronounced in the level of depressive feelings, while differences in the level of general subjective health and limiting longstanding illness between lone and cohabiting mothers are smaller. Thus, while the health risks associated with lone motherhood affect both somatic and psychological aspects of health, they seem to be especially detrimental for the latter. Comorbidity of psychological and physical health has been widely documented in the literature. However, varying prevalence rates of the different health measures indicate that they capture distinctive aspects of health, rather than a general underlying subjective well-being index. Lone mothers who bear sole responsibility over housework, childcare and family income are often confronted with a low sense of control that reflects their role overload (Rosenfield, 1989). People who do not feel in control of their lives are less likely to attempt to solve problems (Mirowsky & Ross, 2003). This sense of powerlessness, which lone mothers are confronted with often, is a critical trigger of an increase in depressive feelings. Our results showed that while employment and poverty were associated with subjective general health and limiting longstanding illness in lone mothers, feelings of depression were mainly buffered by education. Education plays a critical role in the path to wellbeing because it is a resource itself and the human capital it indicated helps people generate other resources such as employment and income. In addition, education has been linked to learned effectiveness, while its absence breeds learned helplessness, a key psychological element in depression (Ross & Mirowsky, 2006). The current paper assessed the contribution that these poor socioeconomic circumstances of lone mothers make to their relative health disadvantage. In doing so, however, it is important to bear in mind other potential explanations for their relative health position. Previous research also focused on the psychosocial health damaging effects of the lack of an intimate relationship, health selection into lone motherhood, the stress associated with becoming a lone parent, and the stigma associated with being a lone mother (Benzeval, 1998). In many countries lone motherhood is associated with social stigma either for non-compliance with social norms around the nuclear family, or for receipts of social assistance. Social stigma can lead to ill health via the stress-and-vulnerability model as well as via social exclusion. The reader should bear in mind that these psychosocial health risks might also contribute to the health difference between lone and cohabiting mothers.

Second, our study results also show that the size of the health gap between lone and cohabiting mothers varies by the type of welfare regime. Our results are in

line with the research findings of Lahelma and colleagues (2002), who established a larger health difference between lone and cohabiting mothers in Great Britain than Sweden, and contradict those of Burstrom and colleagues (2010), who found the opposite, as well as Whitebread and colleagues (2000), who could not establish any difference between welfare regimes. Overall, our data reveal similar prevalence patterns across the different aspects of ill health. In the Central-Eastern welfare regime in both cohabiting and lone mothers overall levels of ill health are high, and the health gap between the two groups small. The Central-Eastern welfare regime seems less able to moderate many of the health risk that affect both groups of women. High prevalence rates of ill health in Central-Eastern Europe compared to the rest of Europe have been confirmed in previous studies (Kunst et al., 1995). Several suggestions have been put forward as explanations of this East-West divide, eg. various behavioral patterns, such as heavy smoking and drinking (Peto et al., 1992; Leon et al., 1997), insufficient health care provisions (Bobak & Marmot, 1996), and the social stagnation and social disorganization of these societies after the fall of communism (Watson, 1995; Shapiro, 1995). With a welfare regime, highly dependent on a male-bread winner system, women seem to suffer even more from this than men (Van de Velde et al., 2010).

The more favorable 'women-friendly' social policies in the Nordic welfare regime are reflected in lower than average rates of depression among both cohabiting and lone mothers, and the difference between the two groups is small as well. A sensitivity analysis indeed shows that differences in socio-economic status between lone and cohabiting mothers fully explains the gap in depressive feelings, but not in the somatic health indicators. Prevalence rates of self-rated general health are not lower than average, and are above average for limiting longstanding illness. A number of authors have proposed that the effect of relative deprivation may be more extensive in the Nordic welfare regime (Eikemoet al., 2008; Huijts & Eikemo 2009), perhaps explaining why the Nordic model is not among the best performing welfare regime in terms of health equality. However, it remains unclear why this pattern is not reflected in the rates of depressive feelings in the current study.

During the last two decades, all welfare regimes have intensified the linkage between labor markets and welfare, with new forms of conditionality being imposed via welfare-to-work schemes, making citizens' welfare, regardless of gender increasingly dependent on their success in the labor market. Within Europe, only the Nordic welfare regime has its policies based on the assumption

that both men and women are fully engaged in the labor market, while other welfare regimes continue to promote more traditional roles and relationships, and tax systems still family-based rather than individualized. However, to varying degrees women's work has been broadly encouraged across all regimes and the care of, and support for, children has also become more of a policy priority. The Nordic welfare regime, where daycare was developed much earlier, has an advance. The trend in welfare regime restructuring towards an adult worker model family increasingly assumes that more care will become commodified and that women will become paid rather than unpaid carers

The three other Western-European welfare regimes however still lack behind, and this is reflected in a clear health gap between lone and cohabiting mothers. The Anglo-Saxon, Bismarckian and Southern welfare regime have average levels of ill health, with the exception of the Anglo-Saxon regime, where the prevalence of general subjective health is the lowest of all of Europe. However, in all three regimes lone mothers report worse health than cohabiting mothers, and the health gap between the two groups of women is most pronounced in these regimes. It thus seems that lone mothers benefit less from welfare provisions than cohabiting mothers, making them more dependent on their family, in case of the Bismarckian and Southern welfare regime, or the market, in case of the Anglo-Saxon welfare regime. This difference was particularly pronounced in the Anglo-Saxon regime, typified by high privatization of child care and low social assistance rates, as well as in the Bismarckian regime, where part-time work is encouraged. Social stigma may also be a factor behind these results with lone parenthood and benefit receipt more stigmatized in these regimes. A recent study by Brady and Burroway (2012) additionally showed that means-tested targeted programs towards lone mothers were less effective in reducing health risks such as poverty, than welfare universalism. Scholars have argued that welfare universalism is more effective because of its social policies tend to be more extensive, and it has also been associated with less health risks for all groups. In that sense, the better health status of lone mothers in universalist welfare regimes such as the Nordic regime might as well be a byproduct of its broader social equality.

Our study has some important implications for European societies. Given the significant prevalence of lone mothers in some countries, and their increased occurrence in most advanced capitalist countries, lone mothers are not simply a marginal case in the sphere of social rights (Hobson, 1994). Estimates from the United Kingdom for example, suggest that while by the turn of the century one-

quarter of children will be living in a lone-mother family, at least one-third and possibly one-half, of children are likely to have experienced this family form before they leave dependency (Ford & Millar, 1998). Thus, it would appear that in some countries, lone motherhood has become another stage in the female life-cycle. Research on the health of this group of women does not only give us a unique way of studying welfare regimes, but also tells us how a rising group of women are treated by society and underpins the importance of defamilizing welfare state regimes within the context of an increasingly feminized European workforce.

Limitations

Some limitations of our study are worth noting when interpreting the results. Although the ESS-3 presents an outstanding opportunity for comparisons of health differences in lone and cohabiting mothers across welfare regimes, some of the issues that affect the comparability of multi-country studies, like selective nonresponse, differential modes of data collection, translation and conduct, may not be eliminated completely. If these issues are related to any of the health indicators or the independent variables, some bias in the estimates cannot be excluded. Our study is further limited because it utilizes only self-reported measures, and these may vary by country, culture and position within society. However, a multi-group confirmatory factor analysis based on the CES-D 8 scale in the third wave of the ESS has shown that feelings of depression can be compared validly between the nations and sexes (Van de Velde, et al., 2010). An additional limitation relates to the low number of lone mothers used for some parts of the analysis. While subjective general health and limiting longstanding illness were examined using four waves of the European Social Survey, depressive feeling were only assessed in a single wave, making the sample size of lone mothers much smaller. The large confidence intervals of the association between poverty and depressive feelings in the Nordic and Southern region will most likely result from small sample size. However, analysis results in the other regimes and with the other health risks showed acceptable confidence intervals.

Additionally, the welfare typology we used in the current study is mainly based on the amount of financial incentives and services, but says little about the quality of those services. Research has shown that mothers' actions are not primarily based on the financial costs of childcare nor on the financial (dis)incentives embedded in tax and benefit policy. This means that women are more likely to

engage in paid employment when they find a solution for care, but this solution should fit their notions of what good care is (see also Lewis, 2003). European mothers only take up a job when they are satisfied with the solution for childcare. Good quality childcare – which suits their view on good-enough care – is a necessary condition for going to work (Kremer, 2005).

Finally, we defined lone motherhood on the basis of the factual situation, that is whether or not someone is cohabiting with a partner, regardless of her current marital status. We were therefore better able to capture health risks related to the dual responsibility of sole child care and income maintenance. However, welfare provisions exclusively granted to lone mothers based on their marital status are not captured in this operationalization. In addition, the extent to which couples share responsibilities and resources is variable, making the situation of some cohabiting mothers akin to that of lone mothers. Similarly, some non-resident fathers may maintain responsibilities in the functions of child-rearing, making the distinction between lone-mother families and cohabiting families blurred. Moreover, the emergence of alternative living arrangements among cohabiting families, 'living apart together', for example, may also weaken the distinction. Bearing these reservations in mind, the current study was interested in lone mothers as mothers who in the absence of a partner, must assume sole or primary responsibility for the material and emotional well-being of their children.

CHAPTER 9
GENERAL CONCLUSION

Introduction: general background and research aims

A recurrent finding in the international literature on mental health is the greater prevalence of depression in women than men. Theories about gender-based exposure to social stressors show elevated depression in women to be a consequence of inequality. The economic consequences of depression – in terms of loss of economic productivity and health care expenses — are huge (European Commission, 2005). The human costs - in terms of suffering and disability - cannot be underestimated either. Most researchers these days accept that depressive disorder and the gender difference in depression arises as the result of a variable interplay of biological, psychological and social factors. So far, macro-sociological determinants of depression and the gender difference in depression have largely been ignored, due to a lack of available multi-country data on depression. Using the third round of the European Social Survey (2006-2007), I was able to incorporate a macro-level perspective on the study of gender differences in depression. My study was the first to present highly comparable data on the prevalence of depression in women and men in Europe from a macro-sociological perspective. In this last chapter of the thesis, I will provide an overview of the main findings, and opportunities for future research. I will conclude this chapter with implications for the scientific community, mental health professionals and policy makers.

Specific research questions with answers

In the current thesis, I defined four main hypotheses related to the cross-national variation in gender differences in depression. Below I will recapture the main findings related to each hypothesis and the specific research questions related to them.

Hypothesis 1: Women suffer more from depression than men in all countries, but the size of this gender gap will vary cross-nationally.

In order to test this hypothesis, I first needed to exclude the possibility of measurement invariance of the CES-D 8 scale. As explained in the first empirical paper, simultaneous analysis of multiple countries places higher demands on the measurement scale than single-country research. It requires that the meaning of the construct 'depression' as measured by the CES-D 8 corresponds across the countries and sexes in order to allow defensible quantitative group comparisons. I made use of the statistical technique multi-group confirmatory factor analysis in order to establish measurement invariance of the CES-D 8 across gender and countries. The analysis showed that a one-dimensional depression model, with all items loading on the factor depression and with correlated errors between the reverse-worded items, 'were happy' and 'enjoyed life', fit the data best. Measurement invariance was established at the level of partial metric invariance. These results indicated that the CES-D 8 scale can be used to compare (co)variances, observed means, and latent means in depression of men and women across Europe.

The model was then used to estimate the cross-national variance of gender differences in depression in Europe, thus testing the first hypothesis. I found that in most, but not all countries, women suffer more from depression than men. In both the Irish and the Finnish sample, the gender difference in the observed means in depression was not significant, while the latent means model confirmed a non-significant gender gap in depression only in Ireland. This is the first important finding of my PhD research project. While previous research consistently finds that women suffer more from depression than men, our data show that this is not the case in every country. Of course, the gender gap in depression is still confirmed in the vast majority of European countries.

The Irish case is especially interesting, because you would expect the opposite from this Anglo-Saxon country. Ireland's parental leave remains unpaid and the female labor force is among the lowest in Western Europe, especially that of mothers (World Economic Forum 2012). In recent years, Ireland has made great progress in terms of gender equality. It now ranks at the fifth place on the World Economic Forum index (2012). This is especially due to political empowerment, rather than economic and educational empowerment. Further research should therefore look deeper at the Irish case.

I additionally found that the size of this gender gap in depression shows considerable cross-national variation. Largest gender differences in depression were found in the Central-Eastern European region, most prominently in the Former Soviet Union. Also the Southern European region showed a substantial difference in the level of depression in women compared to men. The smallest gender differences were found in the Nordic countries.

In summary, the first hypothesis is largely confirmed. With the exception of Ireland and Finland, there is clear evidence of higher depression levels in women than men. I also established substantial cross-national variation in this gender gap.

Hypothesis 2: Micro-level stressors related to the gender organization of production are more powerful at explaining gender differences in depression, than micro-level stressors related to the gender organization of reproduction.

The second empirical paper investigated the social sources of variability in depression in men and women. At this point, the focus remained on micro-level stressors. Indicators related to the gender organization of production included employment position, education and income/poverty. Indicators related to the gender organization of reproduction included marital status, cohabiting regardless of marital status, and the presence of young children in the household. In general, I found that gender differences in depression could partly be accounted for by different positions in the gender system. Regardless of gender, a good socioeconomic position, and being married or cohabiting were associated with lower levels of depression. Surprisingly, I did not find an association with the presence of young children in the household. I also found that some of the micro-level stressors were better able to explain depression in either men or women. On the one hand the benefits of education were more pronounced in women, and women living in poverty also reported more depression than men living in poverty. On the other hand, the association with employment position and marital status was more pronounced in men than women.

The underlying premise of social role models is often that gender differences in depression will be small to absent in the case that men and women occupy similar roles and that similar stressors confront them. My research shows that 20 percent of the gender difference in depression can be explained by stressors related to the socioeconomic position and roles within the family. However, this implies that the vast majority of variance remains unexplained by the current model. On the

one hand, this calls for the importance of applying a bio-psycho-social model in order to fully map gender differences in depression. Currently, however, I am unable to indicate whether the unexplained variance is related to biological, psychological or unmentioned social processes. On the other hand, the random slopes model shows that the gender difference in depression as well as social stressors currently incorporated into the model show significant cross-national variation. This forms evidence for the need to incorporate a macro-level sociological perspective that helps explain why certain social stressors carry a different weight depending on the social context.

The second main hypothesis of this thesis elaborates on the context-dependent importance of social stressors. I initially proposed that social stressors related to the gender organization of production would be more powerful in explaining gender differences in depression, than social stressors related to the organization of reproduction. I derived this hypothesis from Blumberg's gender stratification model, which emphasizes economic power as the most important stratifying force. In my second research paper, I however contradict this hypothesis by proposing that women's economic power is directly related to the extent to which the welfare state, as well as gender ideologies, decrease women's economic dependency on the family rather than the economy. This logic was derived from the fact that the functional equivalent of market dependency for many women is family dependency. The family is one of the most important contexts for the structuring of women's lives, and a key site of male power over women. Largely as a result of gendered power relations, familial welfare in all European countries remains overwhelmingly the responsibility of women. This is especially the case in the Central-Eastern and Southern European countries, where also a rather traditional gender ideology prevails. I therefore proposed that in countries with lower levels of defamilization[1] and more traditional gender ideologies, female depression would be more strongly associated with the gender organization of reproduction, than the gender organization of production. In other words, it might be that in countries where conventional ways of 'doing gender' mean being a good spouse and mother, stressful events such as divorce or childlessness are more detrimental to the health of women, than for example unemployment. My research results however did not confirm this finding, but rather confirmed Blumberg's proposition of economic power as the most powerful stratifying force. In most countries, and in both men and women, the socioeconomic position has a

[1] Defamilization refers to the degree to which women can uphold a socially acceptable standard of living, independently of family relationships, either through paid work or through social security provisions

stronger association with depression than factors related to the family and childcare. Exceptions to this pattern are discussed in detail in the empirical paper.

Blumberg's hypothesis has never empirically been tested in health sociology. My research provides evidence for the proposition that women and men's economic power is the most important factor in predicting their level of mental health. Blumberg assumed that the ability to control economic resources is strongly affected by the strategic indispensability of their work and constitutes the most important factor in predicting their level of autonomy and influence within the household. The fact that this is also associated with the level of mental health has important repercussions for research on gender stratification and sociology of health and illness.

Hypothesis 3: Gender differences in depression will be moderated by macro-level gender inequality.

The third hypothesis brings me to the core of this thesis; studying both micro- and macro-level forces of gender inequality. The results were presented in the third empirical paper. Micro-level gender inequality was measured in the same way as in the second empirical paper, covering stressors related to both the gender organization of production and reproduction. Macro-level gender equality was measured by means of three indicators: (i) the degree of political and decision-making power, as measured by women and men's percentage shares in parliamentary seats; (ii) economic participation and decision-making power, as measured by two indicators – women and men's percentage shares of positions as legislators, senior officials, and managers, and women and men's percentage shares of professional and technical positions and (iii) power over economic resources, as measured by women and men's estimated earned income. I assumed that macro-level gender inequality moderates gender differences in depression via two mechanisms. First, I proposed that male control over the political economy and male dominated ideologies, act as discount factors in micro-encounters and power negotiations between men and women. The greater this gender inequality at the macro-level, the more pronounced the effect of these discount factors would be. Second, I assumed that in situations where individual men or women deviate from the appropriate ways of doing gender (eg. a woman working outside the house in a society where the male breadwinner family is the norm) they may try to compensate their deviant ways of doing gender in a manner that might actually harm their health (eg. women, for example, might compensate by still doing the vast majority of housekeeping, resulting in role strain).

I structured this investigation according to two sub-sets of hypotheses. The first set assumed a general population perspective, and looked at the effect of macro-level gender inequality on the population as a whole. Macro-level gender equality could be associated with lower levels of depression in both men and women, or it could be associated with higher levels of depression in both men and women, or it could reduce gender differences in depression, implying that women gain more benefit from it than men. I found that both men and women profit from macro-level gender equality equally, and that it neither amplifies, not diminishes women's disadvantage in depression. An exception to this are the results related to macro-level gender equality in economic participation, which was in fact associated with more depression in men and women.

The second set of hypotheses focused on the degree to which the effect of macro-level gender inequality on depression varies according to other power structures in the gender organization of production and reproduction. I proposed that employment and poverty, as well as cohabiting with a partner and the presence of children in the household, are important moderators in the association between macro-level gender equality and depression in men and women. This approach – combining three sub-dimensions of gender equality with subgroup analyses in which we made four comparisons between social strata – yielded a number of interesting findings. First, I found that women who act outside traditional role patterns (for example, women who are in paid employment and not cohabiting) are most likely to benefit from high equality in power over resources. However, this may also imply that in societies with low equality in power over resources, women who do not conform to traditional role patterns will have especially high levels of depression. Likewise, high gender equality in political participation appears beneficial only to employed women. However, gender equality in economic participation does not influence gender differences in depression. Apparently, living in countries with equal representation of men and women in managerial and professional functions does not result in a smaller gender difference in depression. Equal political participation and power over resources may improve women's lives in ways that equality of economic participation cannot.

Hypothesis 4: Welfare state regimes moderate the level of depression in lone mothers.

In the final empirical paper of this thesis I focused on welfare state arrangements and social policies as a macro-level force in ordering the gendered distribution of

power resources. They differ in the nature and quality of social rights conferred to both genders, and how paid work and care are reconciled. Welfare states are deeply implicated in shaping women's access to an independent income. As welfare states act as a force in ordering the gendered distribution of power resources, and depression is intimately tied to and is a consequence of power and powerlessness, it follows that the study of gender differences in depression should incorporate a gendered welfare state analysis.

In this research, lone mothers were selected as an analytical category in an examination of how welfare states structure women's relationship to paid work and care. As the sole main carer of children and the sole possible breadwinner in a family, lone mothers are likely to represent an extreme in the tensions between paid work and care responsibilities. This makes them particularly vulnerable to depression. A comparative study of the health status of lone mothers between welfare regimes creates a quintessential example of how welfare states construct the relationship between paid work and caring for women. The objective of this last empirical study was therefore to determine whether the health status of lone mothers, and particularly their level of depression differs from that of cohabiting mothers, and how welfare regimes may moderate this difference in work-care tension. Cohabiting mothers were selected as a reference category because I assumed that they could rely on a partner for either a second income and/or help in the household and childcare.

I found that the welfare state indeed helps explain the health difference between lone and cohabiting mothers. This difference was most pronounced in the Bismarckian welfare regime. This however does not imply that the Bismarckian model is least able to buffer the detrimental effects of certain social stressors. In fact, overall levels of ill-health of both lone and cohabiting mothers were much higher in the Central-Eastern and the Southern welfare regime. In other words, these welfare regimes were less able to moderate the association between depression and social stressors in neither the lone mothers, nor the cohabiting mothers. In contrast, the more favorable woman-friendly social policies in the Nordic countries are reflected in lower than average rates of depression among both cohabiting and lone mothers, and the difference between the two groups is small as well. These results confirm my last hypothesis; welfare state arrangements are an important force in moderating levels of depression in lone mothers. Welfare state arrangements based on principles of universalism seem to tackle health problems in a more effective way than means-tested policies, or regimes that promote familialism.

Limitations of the thesis and suggestions for future research

The complexity of macro-sociological research reveals a number of limitations to the current research approach. In the upcoming part, I will attempt to identify the most prominent limitations, and also identify how these create opportunities for future research.

Extend to specific mental health disorders

Research aiming at detailed insights on the exact mechanisms linking gender inequality and specific mental health disorders may benefit from deriving and testing hypotheses on specific indicators of mental health. As Timmermans and Haas (2008) point out, sociologists often make a case for studying health and illness holistically rather than a narrow focus on biological factors. This aversion to taking the 'disease' aspects of medicine into consideration, according to these authors, results in analytical holes. Social scientists tend to study general mental health conditions at an abstract level of conceptual aggregation, eg., by focusing on 'general subjective health', 'depressive feelings', 'distress', instead of specific disorders, such as 'major depressive disorder', 'post-traumatic stress disorder', 'social phobia' and 'dysthymia'. In the first chapter of this thesis, I discussed the reasons and advantages of using a general approach to depression. Sociologists tend to refuse the ontological status to mental disorders as clinical entities, and rather apply a social constructionist point of view. In everyday life, however, most patients and health professionals deal with specific diseases and disorders (Rosenberg, 2003).

In the theoretical introduction, I complemented the social models with an overview of some biological and psychological models for depression. In my empirical research, however, I did not articulate the link between these different disciplines. As a result, I was unable to develop a depression-specific social approach. Rather, I followed the dominant path of medical sociology by using generalized conceptual models, such as the social stress and structural strain model. These models are also used to explain the social components of other diseases and problems like suicide, alcohol abuse, hypertension, HIV, obesity, diabetes, and so on. However, most clinicians and patients remain unconvinced

that these diseases can be lumped together in the melting pot of 'general subjective health' or 'distress'.

The advantage of this general approach is that it allows me to contribute to the literature that describes patterns in experiences that cut across many conditions. The drawback is that I was unable to identify specific social processes that are at play in the development and experience of depression. Forcing my research to take specific changes in physiology into consideration may help develop depression-specific models. This has already been attempted with other diseases. Abrahamson (1993) for example, investigated the trade-off between controlling blood pressure with an ACE inhibitor and causing impotency when studying hypertension. Perhaps, specific depression related processes can be identified in a similar manner. A similar approach to the social study of depression might reveal a whole new area of information. It would be interesting, for example, to study the choices women and men make in the process of being stressed over multiple stressors using mixed methods. However, at the present the definition of depression remains arbitrary due to the lack of clear markers, making this specific type of research difficult.

Extend to a broader range of mental disorders.

The gender differences in depression established in the current thesis might result from a number of artefactual determinants. The gendered-response theory for example says that women respond to the life stressors with somewhat different emotions than men. In particular, women might feel anxious and depressed, where men might feel agitated and angry. If surveys ask more questions about types of distress typical of women than those typical of men, then women may falsely appear more distressed. The course of depression also somewhat differs according to gender. Some studies report higher rates of first-onset depression in women rather than greater number or longer duration of episodes (Kessler et al., 1993; Wilhelm & Parker, 1994); others show a female preponderance in recurrent and chronic depression (Bracke, 1998). These artefactual determinants might obscure the comparisons of men and women within countries, as was done in the first empirical paper. However, in the remaining studies, I focused on cross-national variation of the gender gap in depression, thus circumventing this problem of bias. While absolute levels of depression in women versus men could be biased due to artefactual determinants, the cross-national variation in the gender gap should not be. Extending depression research with a broader range of

mental disorders for that reason is less imperative to cross-national than single country research.

However, gender specific stress-reactions also militate in favor of using a broad range of mental disorders. In response to stress, women are more likely to develop internalizing disorders, such as depression and anxiety, while men are more likely to experience externalizing disorders, such as alcoholism, antisocial personality and drugs misuse. This might partly explain the higher prevalence of depression in women compared to men. Therefore, a sensitivity analysis was performed in order to rule out the possibility that the gender difference in depression is biased due to a gender specific stress-reaction (Appendix A6). Analyses were performed on data of the EU-WMH Surveys covering 10 European countries. Some of the most common mental disorders were measured using the Composite International Diagnostic Interview 3.0 with criteria defined in the DSM-IV. Mental disorders included internalizing disorders (major depressive episode, dysthymia, panic disorder, specific phobia, social phobia, agoraphobia without panic disorder, generalized anxiety, post-traumatic stress) and externalizing disorders (attention deficit disorder, conduct disorder, alcohol and drugs use disorder). Some psychiatric epidemiological studies claim that measurement scales such as the CES-D assess only general distress, while the CIDI measures 'true clinical depression'. In general, however, the sensitivity analysis confirms the findings of the present study; women suffer more from depression (referred to as 'any mood disorder') than men in all regions. In addition, cross-regional variation in this gender gap was established. The largest gender gap was found in Central/Eastern and Southern Europe, while the smallest gender gap was established in the North and West of Europe. Part of the established gender gap in clinical depression could also be accounted for by differences in the socioeconomic position and the family situation. The proportion of explained variance in this study was however smaller compared to that of the main findings. This might imply that severe forms of depression are less strongly associated with social stressors. It might also reflect the lower reliability of using dichotomous variables compared to continuous variables (cf. chapter one). However, even though the explained variance is smaller, gender equality still explains part of the gender disparity in mental disorders, and cross-regional variance in this gender gap was also established. The study additionally shows that in general women also suffer more from anxiety disorders than men, but men tend to report higher rates of attention deficit disorder, conduct disorder and alcohol abuse.

Extend to couples/household research

Another important limitation to this study is the lack of inclusion of gender inequality at the household level. The household is one of the most important contexts for the structuring of women's lives, and a key site of male power over women. While not restricted to the household, many of the power negotiations do take place at the household level. Interpersonal conflict is commonly associated with depression (Hammen, 2005), but it is associated with higher levels of depression if it occurs with close partners. For instance, people have higher levels of depression if the conflict occurs in their most intimate circle of partners as opposed to less intimate circles (Antonucci et al., 1998) As a result many of the empirical studies have used the heterosexual couple as the unit of analysis to study gender differences in depression (see the theoretical introduction for an overview). In the current thesis, I argued that social power and powerlessness are associated with depression, and moderated by macro-level gender inequality. Extrapolation suggests that having more power in one's relationship would also affect depression, and thus could also be moderated by macro-level gender equality. It might for example be interesting to investigate whether the equity model of marital power (Glass & Fujimoto, 1994; Langner et al., 2012; Lennon & Rosenfield, 1992; Mirowsky, 1985) results in different optimal distributions of marital power across the gender systems with varying degrees of gender stratification and definitions. Another interesting point that could be examined at the household level is based on a social biological approach that perceives depression as an (unconscious) social manipulation technique. Some authors claim that depression serves to signal the need for more investment and attention from the social network; specifically the partner (Nettle, 2004; Price et al., 1994; Watson & Andrews, 2002). Hagen (2002), for example, argued that post-partum depression is a mechanism by which mothers extort greater investment from their social network, especially their partners, by making themselves unable to cope with nurturance of the child without such investment. Depression is thus seen as useful in negotiating a personally advantageous outcome when in conflict with close social partners.

The field of gender inequality and power negotiations within couples and households thus creates additional opportunities for investigating gender stratification systems and changes. In the current thesis, I focused solely on micro-level status, regardless of the spouse's status. One of the main advantages to this approach is that I could identify power processes that take place within and beyond the household. The drawback is that household specific processes were

incorporated in the hypotheses, but not directly tested in the empirical models. The dynamics at the household level create additional opportunities for future research. A cross-national perspective could, for example, shed light on the current trends away from male-breadwinner models to dual-earner models in many European countries and how these affect household gender inequality and depression.

Extend to gender sensitive welfare state policies

The last empirical paper, which examines the association between welfare state arrangements and health in lone mothers uses Ferrera's typology of welfare regimes. I preferred to use this typology to Esping-Andersen's classification, because in contrast to the latter, it is not only based on cash benefits, but also considers welfare services, including child care and social services which are of importance in terms of defamilization and gender stratification within the welfare state (Bambra 2004). Esping-Andersen's model has been criticized for neglecting the gendered division of welfare. His key dimension for assessing the quality of welfare states for citizens, decommodification, fails to acknowledge that often the functional equivalent of market dependency for many women is family dependency. Decommodification – the degree to which social rights free individuals from reliance on the market – is constructed in accordance with male lifestyles, and has only limited relevance to women. While independence from the market is likely to be a significant criterion for men's emancipation, for women, the independence from family obligations is also a prerequisite for women's emancipation.

Feminist research has subsequently focused on which policies reinforce existing gender relations or transform them. At least two broad alternative approaches have emerged from these efforts. The first approach has been to build gender into mainstream theoretical frameworks. This has been done by reconstructing the core ideas and key analytical categories so that they include gender. A major rationale for this strategy has been that the 'feminist research can thereby incorporate advances in the mainstream literature while transforming it to incorporate gender relations' (Orloff 1993, 305). The results of this approach (eg. Esping-Andersen, 1999; Orloff, 1996; Ferrera, 1996) however closely match Esping-Andersen's original three worlds of welfare typology. The second approach holds that mainstream theories are fundamentally lacking, and new frameworks and models must be formulated. Proponents of this approach warn

against a strategy that merely adds on women to frameworks where the male is the norm. Prominent within this latter approach are Lewis' (2001) breadwinner model and Sainsbury's (1999) work on public childcare provision. However, these approaches have tended to be limited by the focus on only one indicator, a small number of countries or a static qualitative concept (Esping-Andersen, 1990; Bambra, 2007). A more promising approach is the development of a 'defamilization' index. However, while this index has been defined conceptually, to date empirical measures are still lacking. The progress has been inhibited by the question of which of the two strategies has the greater potential to reduce gender inequalities: providing social rights which guarantee women equality on the labor market with men; or providing social rights which treat care-giving as an equally valid base for citizenship as paid work.

In my study on the health of lone mothers, I made use of Ferrera typology, but also identified specific policies regarding lone mothers typical for each regime. In that way, I attempted to identify how welfare states structure women's relationships to paid care and work. Ferrera's study is however also subject to the currently developed feminist critiques. A more gender-sensitive model might have resulted in different findings. Kilkey (2000) for example, developed welfare typology based on care arrangements (such as exemption from obligation to work, payments for care, caring-leave, labor market reinsertion policies, maternity leave, parental leave, formal childcare provisions, and so on). She identified four types of regimes; the poor mothers, the non-poor mothers, the poor workers and the non-poor workers. Unfortunately the number of countries used to build this classification was limited and therefore not applicable for the current study. Future social policy research should therefore elaborate more on the development of empirical measures that capture gender stratifying welfare arrangements.

Extend to other aspects of micro- and macro-level gender inequality measures

As was shown in the theoretical introduction, gender equality is a complex phenomenon that covers many aspects of life. It is of course impossible to cover all aspects of gender equality in the current thesis. Therefore I have focused on structural gender stratification measures, and how these affect individual levels of depression. Two main aspects of gender equality were not empirically tested.

First, the current research looked at specific social stressors, such as socioeconomic- as well as family and childcare related factors. However, with the

exception of the last empirical paper on lone mothers, I did not look at the impact of a combination of these social stressors. What is, for example, the impact of the combination of living in poverty and being divorced, or of juggling between paid employment and housekeeping? Subsequent studies should elaborate more intensively on how these types of role conflicts are moderated by macro-level processes. Likewise, I did not look at the interaction between current stressors and previous stressful life events. A significant amount of the psychological literature on depression and gender differences in depression takes a developmental approach to mental illness, stressing events and occurrences in early life that affect adult functioning. The approach of linking early childhood events and socialization processes with current social stressors creates a nuanced model of how societies not only treat individuals in the present time given their previous experiences. This might especially be interesting when applied to the association between gender definitions and depression (cf. infra).

Second, gender stratification literature refers not only to the unequal distribution of power resources, but also to gender definitions. While I did incorporate hypotheses that refer to gender definitions, actual measures of gender ideology were not included in the model due to the lack of available indicators. As Brown and Harris (1978) stress, the structural distribution of stressors will only affect mental health, if the person confronted with the stressor attaches meaning to the stressor. Whether a specific event is likely to trigger a depressive reaction depends on how it is interpreted, and is shaped by their personality mode or orientation, as well as the meaning-shaping context. Applying life course perspective could be a great improvement here. Likewise, access to resources does not always lead to greater control over resources, for example, where changes in legal statuses have little influence on practice, or where female political leaders do not necessarily work to promote women's interest. To use Chafetz words, 'coercive forces' and 'voluntaristic forces' do not always go hand in hand. (cf. discussion of 'agency' component below) Inclusion of both forces creates more possibilities to study micro- and macro-level interactions of gender equality.

Extend to longitudinal approaches

Because all the analyses in this book were based on cross-sectional data, I was unable to rule out the possibility that selection rather than causation processes may underlie the relationship between gender inequality and depression (eg. depressed people might lose their job due to decreased productivity, rather than

the other way around). Separating causal pathways from selection mechanisms will be greatly improved by longitudinal data.

Besides the statistical advantages of the use of longitudinal data, it can also be used to measure 'change' at both the micro- and macro-level. The growing body of literature on empowerment and health accentuates the importance of incorporating measures of change rather than static measures of gender equality. The empowerment literature (eg.Kabeer, 1999; Sen, 2001) differentiates between 'resources', 'agency' and 'outcomes'. Resources are defined as enabling factors, as catalysts for empowerment or conditions under which empowerment is likely to occur. The current thesis have mainly focused on resources, but paid less attention to the second component of empowerment; agency. Agency refers to the ability to formulate strategic choices, and to control resources and decisions that affect important life outcomes. Achievements are the outcomes of the empowerment process. Mental health is an outcome of empowerment, while depression is an example of disempowerment. Empowerment differs from concepts of equality in that it refers to a progression from one state (gender inequality) to another (gender equality). The empowerment literature thus claims that the outcome (eg. depression) is a result of a process of change (change in the level of gender equality, for example). As I proposed in the discussion of the second empirical paper, it seems that the process of change itself may be important to explaining gender differences in depression. Both the Southern and Central-Eastern European region underwent notable transitions in terms of gender equality. I proposed that this change might contribute to the relative larger gender gaps in depression. Incorporating empirical measures of change in future analyses might thus lead to interesting results.

Extend to a larger number of countries

Multilevel analysis needs sufficient units of analysis at the macro-level in order to make valid comparisons. Unfortunately, I was only able to include a rather small number of countries (N: 23) in the current thesis. Although this is sufficient for performing multilevel analyses, the statistical power at this level is relatively low as a result. Hence, part of the non-significant main effects at the macro-level, as well as of some of the cross-level interaction effects in this thesis, might have reached statistical significance if I would have been able to analyze a larger number of contextual units. One solution would be to study regions within

countries. Within country variation in gender inequality has been documented for a number of country, but comparable statistical data unfortunately is still lacking.

Partly because of the low number of contextual units, some of the national level characteristics correlated very strongly, preventing simultaneous inclusion in the models. For instance, I was not able to analytically separate the indicators of macro-level gender inequality by adding the three sub-dimensions simultaneously to the model. Likewise, I was not able to compare structural gender inequality as it was measured in the current thesis, with measures of national gender ideology or other relevant macro-level measures of gender inequality. However, keeping this limitation in mind, it is all the more compelling that substantial and robust main effects and cross-level interaction effects have been found. Apparently, the interaction between micro-level and macro-level gender inequality in affecting depression is strong enough to be detected even in a relatively small sample of contextual units. Thus, if future research is able to include a broader range of countries, this will probably result in even stronger findings on the interplay between micro-level and macro-level gender inequality.

It might be especially interesting to broaden my study to contexts outside the European continent. Restricting my analysis to Europe has had major advantages for the current research. I have excluded much of the complexity in the sociopolitical background of non-European regions, which is difficult to capture fully in cross-continental research. Europe has a shared social and cultural history (Chirot 1985) but provides enough variation in the degree of gender equality and economic development in order to assess the current research aims. However, what can be identified as an advantage, can also act as a drawback. The degree of gender development correlates closely with general development in terms of GDP in Europe. By controlling for GDP, I fully explained differences in gender inequality between Eastern and Western. In Europe, it is most likely the case that economic development goes hand in hand with the degree of gender equality. This does not mean that the two processes are actually the same, even though they correlate strongly. Broadening my research to contexts outside Europe would help create more diversity in the association between GDP and gender equality. It should be especially interesting to include countries with high levels of economic development, but low levels of gender equality (eg. Japan ranks in the top 10 GDP 2011 ranking, but ranks at place 101 in the Global Gender Gap index 2012). In contrast, a number of low GDP countries score high on gender equality (both the Philippines and Nicaragua for example, holding a place in the top 10 of the gender equality ranking, but hold a place below the top 100 in the

GDP ranking). Including countries that show a notable discrepancy between these two macro-level processes would give me a more precise idea of the difference between the two, and how both relate to gender differences in depression.

In Conclusion: Some Important Implications

Implications for the scientific community

From a scientific perspective, this book has relevant implications for both micro- and macro-level sociological research on depression in men and women. My findings suggest that studies mapping cross-national variations in the size of gender inequalities in depression can be extended fruitfully by deriving and testing contextual explanations for these variations. In order to tackle depression in men and women, it is important to obtain insights in different societal levels of gender inequality. The recognition of the finding that the size of gender differences in depression varies cross-nationally has already offered some clues in this direction, but actual testing of explanations underlying these variations are required to move this field of research further. My findings on the association between gender inequality and depression imply that this can be done by analyzing data from large numbers of countries from a multilevel perspective. I therefore encourage scholars to formulate and test macro-level explanations in this strand of research. Given the scientific benefits of the current approach, I also encourage the scientific community to increase the number of multi-country datasets developed, which are to date, still scarce in number.

In addition, my findings show that researchers should be cautious in generalizing findings based on single country studies to other national contexts. As I have shown, the societal context moderated to what extent micro-level gender inequality and gender differences in depression are associated. In future work in this field, I therefore advise researchers to explicitly acknowledge characteristics of the country on which their findings are based, and to reflect on the consequences of the specific country under study for the conclusions they have drawn.

Implications for mental health professionals

The biological or medical approach views depression as a disease of the brain. Medically-oriented treatments are often provided in the form of antidepressant drugs and in some instances electroconvulsive therapy. Psychologists focus attention on individual factors that produce abnormal thoughts, feelings, and behaviors. Psychologists also provide therapies that try to undo or neutralize psychological mechanisms specified by various theories of abnormality, thereby alleviating distress. Research testifies to the effectiveness of a variety of psychological therapies (Peterson, 1999). A discussion of strategies available to women and men for dealing with their depressive experiences might imply that I also attempt to answer the question 'What is the best treatment for depression?' Framing the discussion in this way, however, takes for granted the assumption that depression is something experienced by an individual and a problem that needs to be rectified. Many individuals however never seek professional help for their depressive experiences, and prefer to cope with them on their own. From the perspective of a mental health professional, some persons' eschewal of professionally-mediated help is perceived as a problem requiring solution. The assumption appears to be that without professional assistance, an individual will remain depressed or at best function less than optimally in his/her everyday life. Professionals also seem to believe that people do not seek help because they lack information about what is available or are misinformed about what is involved. Research is then focused on obstacles for seeking treatment, both at the individual and social level. Policymakers also ask these questions and target obstacles in seeking mental health care. The recent mental health campaign in Flanders, named 'Fit in je Hoofd' ('Mental Fitness'), for example, aims to raise awareness in the general population on mental health problems. People can go to the website, and fill out a short questionnaire that informs them about their mental state. It also offers tips on what people can do themselves in order to tackle mental health problems. The website states that self-caring and self-education are central aims of the campaign. The website encourages people with mental health problems to seek help from a professional. I encourage efforts such as these. They raise awareness about and they destigmatize mental health problems while also encouraging people to seek treatment when necessary. However, I also have certain reservations with this one-sided approach. A qualitative study by Scattolon and Stoppard (1999) in eastern Canada examined why certain depressed women do not seek help. Typically, these women understood their depressive experiences as being a part of their lives, something to be endured and coped with. In keeping with this understanding, they explained

these depressive experiences as arising out of the particular circumstances in their everyday lives, conditions which could not be changed by seeking professional help. This is clearly revealed in one of the quotes by a depressed woman living in poverty (Scattolon & Stoppard, 1999, 211):

> I still think that my problem would have been that I have no money, I don't even care for help. I know what my problem is. But if I went to the doctor, he probably would have said, well, you're depressed or something. And I probably would have said, yeah, and said, what's the use, whatever, you know. I know I am depressed and I don't know how you can help there. Are you going to give me some money?

It thus seems that some individuals are hesitant to seek help, because they believe it will not change the structural strains that they identify as the primary causes of distress.

The same dynamics are inherent to medical and psychological therapy. As discussed in the theoretical introduction, the cognitive approach to depression explains women's elevated depression as a consequence of ineffective coping strategies, such as rumination (Nolen-hoeksema et al., 2008). Therapy can then help women develop more effective coping styles, such as the more 'active' coping styles typical for men. However, it might also be the case that more 'active' alternatives are simply not available to women. For instance, a woman who is living on welfare benefits is unlikely to have enough money to engage in activities which might take her mind off everyday difficulties, especially if she has young children to take care of. Again, the effectiveness of treatment seems to be interrelated with the social system in which it is imbedded. In sum, the need to prevent and treat depression seems to call for intervention at the biological (cf. medication), psychological (cf. therapy) and social level. However, the purpose of medical treatment and therapy usually is perceived to be that of helping people, rather than changing the world outside the medical or therapeutic office.

As the current research project showed, a focus on interventions with individual women and men is too restrictive, because the sources of depression not only lie within the bodies and minds of men and women, but also in the social system surrounding them. This thesis exemplifies the importance for mental health professionals to consider the social contexts within which individuals mental problems can be treated.

Implications for policy makers

Policy makers can use my research results to set priorities on which social sources of stress should be tackled first. My research shows that depression in women and men is intimately tied to gender inequality, both at the micro- and macro-level. European policy makers have placed tackling gender inequality high on the agenda. Gender equality has been a key principle of the European Union ever since the Treaty of Rome introduced the principle of equal pay for men and women in 1957. Using the legal basis provided by the Treaties, the European Union has adopted thirteen directives on gender equality since the 1970s. These have ensured, among other things, equal treatment concerning access to work, training, promotions and working conditions, including equal pay and social security benefits, as well as guaranteed rights to parental leave. However, genuine equality has yet to be attained. Women are still marginalized in political and public life and paid less for work of equal value.

Policy makers seem to struggle with what should constitute women's social rights of citizenship vis-à-vis that of men. The problem revolves around the question of which of the two strategies has the greater potential to reduce gender inequalities: providing social rights which guarantee women equality in the labor market with men; or providing social rights which treat care-giving as an equally valid base for citizenship as paid work. Policy makers search for critical inputs that foster an empowerment process in order to have control over one's own life and over available resources. The political promotion of gender equality has been mainly on the equal distribution of resources, either through anti-discrimination laws, the availability of welfare benefits and services or positive action measures. However, while economic, social, and political resources are often critical in ensuring gender equality, they are not always sufficient. Without women's individual or collective ability to recognize and utilize resources in their own interests, resources cannot bring about empowerment.

My research shows that socioeconomic factors have a strong (but not exclusive) association with depression in men and women. Within Europe, great advancements have been made in the last decades concerning socioeconomic equality. Women have made more rapid gains than men in educational terms during the last two decades. This has resulted in increased inequality between women; younger women are formally educated to levels that meet, or even exceed, those of similar aged men, while older women had fewer educational opportunities earlier in life (Annandale & Hunt, 2000). However, even in the

younger generation of women, possession of qualifications does not simply translate into success in the public sphere of work. Women predominate in part-time work as they are disproportionally affected by the workforce conditions becoming more casual and flexible. Working patterns especially vary according to parental status. Paid employment in and of itself generally has beneficial effects on mental health (with those in paid work tending to be in better health than those who are not). However, this finding is tempered by the specific terms and conditions of employment, the relationship between paid work and other aspects of men and women's lives, and how men and women translate these available resources into actions defined by gender ideology.

Policy makers should first target coercive forces of gender inequality, and subsequently voluntaristic forces. Social policies should eliminate discrimination in recruitment and promotion, and work related experiences such as sexual harassment. In addition, policies should target enhancement of the social inclusion of women on the labor market. On the one hand, support should be developed to promote gender equality in employment related initiatives, as well as promotion and encouragement of female entrepreneurship. On the other hand, policies should target reconciliation between work and private life. Remaining gender gaps in the entitlement to family-related leave should be addressed. Co-responsibility in family and domestic tasks between men and women should also be encouraged via policies, welfare arrangements and services - such as parental leave programs and family benefit programs - and affordable and qualitative childcare. However, gender mainstreaming should also be accomplished via awareness-raising campaigns on the role of men regarding gender equality.

My research additionally provides support for the importance of equal gender representation at the decision-making level. Unfortunately, in Europe, women remain underrepresented in leadership positions in politics and business. In many countries, policy-makers have responded with direct policy interventions, most prominently the gender quotas in politics and in some instances also for corporate boards. Adoption of quotas by countries is likely correlated with attitudes about women within a country. Pro-quota arguments include the ability to bypass discrimination, a greater representation of women's policy interests, a reduction in taste discrimination and positive role models being created which could improve female aspirations and help to overcome self-imposed stereotypes. However, gender quotas may also crowd out other vulnerable groups in society, they may encourage promotion of inexperienced or unqualified women and reduce women's incentives to invest. In addition, if voters are forced to select a

female candidate and feel their choices are thereby restricted, they may lash out against women. A study by Pande and Ford (2011) in India and Norway showed that gender quotas increase female leadership and influences policy outcomes. In addition, rather than create a backlash against women, these authors found that quotas can reduce gender discrimination in the long-term. The board quota evidence was, however, more mixed. While female entry on boards is correlated with changing management practices, this change appeared to adversely influence short-run profits. This might explain why I did not find an association between macro-level economic decision making and power and depression. In the light of the current research results, gender quota initiatives within politics however should be encouraged, as a more equal gender distribution of power at the macro-level has benefits for the mental health of the entire population, not just women.

These suggested policy interventions blend into a complex approach, with no straight forward solution or recommendation. The recent extensions of maternity leaves into parental leaves, for example, did not result in long-term behavioral effects of men and women in the household (Ekberg et al., 2012). At this point, however, the Nordic welfare states seem most efficient in tackling gender inequality in the gender organization of production, which is reflected in lower than average levels of depression in men and women, and a smaller gender gap in depression. Welfare policies that are based on the assumption that both men and women are fully engaged in the labor market, and engage principles of universalism, are better at tackling depression in both men and women. In contrast, welfare policies that apply means-tested targeted programs, and promote more tradition roles and tax systems that are still family-based, rather than individualized, are less able to do so.

APPENDIX

Appendix A1

Mean Depression Scores and Standard Deviations for Men and Women, Significance of the Gender Difference, and Gender Equality Values per Country.

		Depression					Gender equality measures (UNDP)			
		Men		Women						
	N	Mean	S.D.	Mean	S.D.	Sign.	GEM	Political partici-pation	Econ-omic partici-pation	Power over resour-ces
Total	39,891	5.60	3.91	6.64	4.38	0.000	0.71	0.66	0.90	0.55
Norway	1,524	3.98	3.01	4.38	3.16	0.012	0.91	0.94	0.92	0.87
Sweden	1,680	4.45	3.39	5.40	4.18	0.000	0.92	1.00	0.92	0.80
Finland	1,620	4.81	3.13	5.04	3.40	0.158	0.89	0.97	0.91	0.78
Denmark	1,297	4.47	3.07	4.97	3.50	0.007	0.88	0.93	0.87	0.83
Netherlands	1,660	4.63	3.42	5.72	3.93	0.000	0.86	0.92	0.88	0.78
Belgium	1,559	4.74	3.81	6.04	4.39	0.000	0.85	0.91	0.93	0.70
Germany	2,489	5.63	3.46	6.27	3.80	0.000	0.83	0.84	0.96	0.68
Spain	1,540	4.82	3.85	6.02	4.36	0.000	0.79	0.84	0.93	0.60
Austria	2,045	5.17	3.68	5.54	3.95	0.029	0.79	0.84	0.89	0.62
UK	2,003	5.32	4.00	6.20	4.39	0.000	0.78	0.61	0.94	0.78
France	1,740	4.86	3.73	6.18	4.68	0.000	0.72	0.46	0.96	0.72
Ireland	1,383	4.75	3.61	4.93	3.66	0.355	0.70	0.49	0.93	0.69
Portugal	1,856	6.40	3.81	8.11	4.53	0.000	0.69	0.65	0.94	0.47
Switzerland	1,560	4.30	3.13	4.98	3.42	0.000	0.66	0.73	0.84	0.76
Estonia	1,311	6.23	3.64	6.96	4.01	0.001	0.64	0.62	0.90	0.36
Slovakia	1,488	7.06	3.77	7.44	3.96	0.059	0.63	0.60	0.91	0.36
Latvia	1,531	7.78	3.87	8.21	3.76	0.028	0.62	0.56	0.95	0.32
Poland	1,486	5.95	4.43	7.19	5.07	0.000	0.61	0.59	0.92	0.32
Slovenia	1,229	5.21	3.21	5.93	4.07	0.001	0.61	0.37	0.93	0.52
Bulgaria	1,190	7.17	4.70	8.24	4.74	0.000	0.61	0.67	0.93	0.21
Cyprus	876	4.37	3.02	5.78	3.76	0.000	0.58	0.47	0.74	0.52
Hungary	1,276	7.99	4.97	8.73	4.95	0.009	0.57	0.35	0.93	0.42
Romania	1,815	6.72	3.75	7.78	3.90	0.000	0.50	0.37	0.90	0.22
Rus. Fed.	2,051	6.97	4.27	8.48	4.52	0.000	0.49	0.26	0.94	0.25
Ukraine	1,682	7.46	4.51	9.12	4.85	0.000	0.46	0.28	0.94	0.15

Appendix A2

Number of Lone and Cohabiting Mothers by Country in third ESS wave, and combined first to fourth wave.

		ESS-3		ESS-1 to ESS-4	
		Cohabiting	Lone	Cohabiting	Lone
Anglo-Saxon	UK	301	85	809	245
	Ireland	272	51	1019	195
Nordic	Denmark	200	32	858	151
	Finland	208	30	742	142
	Norway	239	52	897	170
	Sweden	257	50	799	144
Bismarckian	Austria	379	58	1071	146
	Belgium	255	35	762	133
	Switzerland	268	24	892	109
	Germany	295	67	719	154
	France	320	46	987	155
	Luxembourg	-	-	922	104
	Netherlands	287	38	1039	130
Southern	Cyprus	174	9	948	83
	Spain	246	25	803	77
	Greece	-	-	994	67
	Italy	-	-	904	60
	Portugal	265	47	767	119
Central-Eastern	Bulgaria	187	24	814	80
	Czech Rep.	-	-	716	118
	Estonia	148	41	714	218
	Hungary	196	50	795	164
	Poland	219	30	899	96
	Russia	302	94	710	226
	Slovenia	163	16	720	87
	Slovakia	220	22	726	91
	Ukraine	240	36	854	155
Total		5641	962	22880	3619

Appendix A3

Proportion of between-country variance in health measures that can be explained by welfare typology, along with the rate difference and OR in health between lone and cohabiting mothers.

	General subjective health	Limited longstanding illness	Depressive feelings
	R^2	R^2	R^2
Overall prevalence	0.04***	0.01***	0.02***
Prevalence among single mothers	0.05***	0.01***	0.03***
Rate difference (RD)	6.23	4.38	8.64
Relative inequalities (OR)	1.48(1.37-1.60)	1.02(1.02-1.03)	2.64(2.24-3.09)

Appendix A4

Multilevel analysis results of poor general health, limited longstanding illness and depressive feelings on individual level variables (model 1), welfare state regime types (model 2) and interactions between welfare regimes types and lone motherhood (model 3).

	General subjective health			Limited longstanding illness			Depressive feelings		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	0.08(0.06-0.12)	0.06(0.04-0.10)	0.03(0.01-0.11)	0.03(0.02-0.05)	0.03(0.02-0.06)	0.02(0.01-0.05)	0.14(0.10-0.19)	0.11(0.06-0.20)	0.12(0.05-0.25)
Single Mother	1.32(1.14-1.52)	1.33(1.15-1.53)	2.12(1.30-3.46)	1.40(1.23-1.60)	1.37(1.20-1.57)	2.00(1.47-2.75)	2.51(2.09-3.02)	2.61(2.16-3.16)	2.43(1.36-4.35)
Age	1.04(1.03-1.05)	1.04(1.03-1.05)	1.04(1.04-1.05)	1.04(1.04-1.05)	1.04(1.04-1.05)	1.04(1.04-1.05)	1.01(1.00-1.01)	1.01(1.00-1.02)	1.01(1.00-1.02)
Anglo-Saxon		ref	ref		Ref	ref		ref	ref
Bismarckian		1.23(0.60-2.54)	1.97(0.47-8.22)		0.96(0.56-1.65)	1.17(0.54-2.50)		0.94(0.51-1.72)	0.81(0.38-1.74)
Nordic		0.68(0.43-1.09)	1.37(0.29-6.51)		1.51(1.00-2.28)	2.08(0.91-4.76)		0.62(0.34-1.13)	0.66(0.29-1.50)
Southern		0.78(0.41-1.49)	1.87(0.45-7.71)		0.42(0.26-0.67)	0.56(0.26-1.21)		1.18(0.64-2.18)	1.19(0.51-2.82)
Central-Eastern		2.01(1.22-3.32)	4.53(1.13-18.13)		1.16(0.70-1.91)	1.79(0.85-3.75)		1.81(1.02-3.21)	1.75(0.84-3.69)
Lone mother* Anglo-Saxon			ref			ref			ref
Lone mother* Bismarckian			0.75(0.43-1.30)			0.84(0.58-1.21)			1.36(0.68-2.71)
Lone mother* Nordic			0.63(0.35-1.15)			0.67(0.46-0.99)			0.85(0.38-1.90)
Lone mother* Southern			0.51(0.28-0.92)			0.72(0.44-1.18)			0.92(0.39-2.18)
Lone mother* Central-Eastern			0.58(0.34-0.98)			0.53(0.37-0.76)			1.05(0.53-2.05)
Country variance	0.71***	0.54***	0.51***	0.34***	0.15***	0.14***	0.28***	0.16***	0.16***
Random slope single mother	0.07***	0.07***	0.05***	0.03	0.03	0.00	0.03	0.04	0.04

Appendix A5

Odds ratio's of lone mothers *ill health (poor general health, limited longstanding illness and depressive feelings) adjusted by age (model 1), and by age, employment, education, and poverty (model 2).

	Model 1 OR (95% C.I.)	Model 2 OR (95% C.I.)
Subjective general health		
Anglo-Saxon	2.02(1.59-2.56)	1.37(1.03-1.80)
Bismarckian	1.64(1.30-2.08)	1.46(1.14-1.88)
Nordic	1.36(1.16-1.60)	1.19(0.94-1.49)
Southern	1.04(0.73-1.47)	1.08(0.81-1.45)
Central-Eastern	1.16(0.96-1.41)	1.06(1.05-1.07)
Limited longstanding illness		
Anglo-Saxon	1.94(1.50-2.50)	1.46(1.08-1.97)
Bismarckian	1.67(1.43-1.96)	1.61(1.28-2.02)
Nordic	1.37(1.26-1.50)	1.24(1.00-1.53)
Southern	1.43(1.11-1.86)	1.57(1.04-2.36)
Central-Eastern	1.03(0.89-1.20)	0.95(0.84-1.08)
Depressive feelings		
Anglo-Saxon	2.16(1.35-3.45)	1.65(0.96-2.82)
Bismarckian	3.32(2.48-4.43)	2.63(1.87-3.71)
Nordic	2.09(1.40-3.13)	1.50(0.87-2.58)
Southern	2.10(1.21-3.68)	1.99(1.12-3.53)
Central-Eastern	2.48(1.77-3.48)	2.29(1.74-3.01)

Appendix A6

GENDER DIFFERENCES IN MENTAL HEALTH: A COMPARISON OF SOCIAL RISK FACTORS ACROSS EUROPE.

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Abstract Epidemiological research consistently finds that women suffer more from internalizing disorders, such as mood and anxiety disorders, while men experience more externalizing disorders, such as substance abuse and conduct disorder. A wide variety of gender-specific biological and psychological risk factors have been identified when addressing these gender differences in mental disorders. However, previous research also shows regional variation in these gender-linked mental disorders, indicating that the social context plays a role too. In the current study we aim to describe and compare a number of common mental disorders in men and women across three European regions, taking this social context into account. We make use of the EU-WMH dataset (2001-2009, N=37,289), representative of the non-institutionalized adult population. Information on mental health was collected by the Composite International Diagnostic Interview (CIDI) 3.0. Logistic regression models were employed to relatively compare the presence of mental disorders in women versus men across regions and social position. Our results confirm that women suffer more from internalizing disorders, and men more from externalizing disorders. We found that the overall prevalence of mental disorders was highest in the Northern and Western European regions, but that gender differences were more pronounced in the Central and Eastern European region. Higher risk of mental disorders is associated strongly with divorce, but less so with an unfavorable socioeconomic position. This research contributes new findings, expanding the small existing body of literature that presents highly comparable data on the prevalence of mental health in women and men in Europe.

Introduction

Social researchers often use the stress and vulnerability model to help explain mental health problems(Pearlin, 1989), describing the relationship between stressors to which an individual is exposed and the individual's reaction to these stressors. When applied to gender, it assumes that men and women differ in the amount and severity of stressors (differential exposure), in the way they cope with these stressors (differential vulnerability), and in the way they express their feelings (differential expression) via internalizing or externalizing stress, for example. While the latter two relate to psycho-biological dynamics, gender-specific social risk factors are also deemed to play a role for all three components. However, it remains difficult to disentangle between which of the biological and social factors are primarily association with gender differences in mental health. This is especially true in single country surveys, where the larger social context is more or less constant in many respects. Cross-national samples can bring some clarity, since a consistent gender ratio in mental health disorders across countries would provide evidence of an important psychobiological contribution, while substantial cross-cultural variation in this ratio would suggest a preponderance of societal factors.

Unfortunately, information on the regional variation of mental disorders in men and women is scarce due to the lack of comparative data on representative of the general population. Previous epidemiological research has nevertheless demonstrated significantly higher rates of anxiety and mood disorders among women (Angst et al., 2002; Kuehner, 2003) and higher rates of impulse control and substance use disorders among men (De Graaf et al., 2012; Seedat et al., 2009). Most of the current literature uses meta-analytical approaches, combining studies with different inventories assessing mental health disorders, sampling designs and sampling populations. Moreover, the few multi-country epidemiological studies with a comparable design contain only one distress-related inventory (eg. (Hopcroft & Bradley, 2007; S. Van de Velde et al., 2010a), or are limited to specific populations, such as students (Fischer & Manstead, 2000), couples aged 50 and older (Börsch-Supan et al., 2005), or patients (Angst et al., 2002) (Ayuso-Mateos et al., 2001; W. Maier et al., 1999). These studies also find contradicting regional patterns of mental health problems in men and women. It thus remains unclear how social risk factors are associated with mental health problems in men and women across regions. In the current study, we make use of data from the European Union countries participating in the World Mental

Health (WMH) Surveys, which assesses the most common mental health disorders using a consistently administered questionnaire. This allows us to analyze to what extent gender differences in mental health vary across three European regions: North/West, South and Central/East Europe.

Social risk factors explaining gender differences in common mental health disorders

In both men and women, certain socioeconomic factors are associated with different probabilities of exposures detrimental to mental health. For example, low education or unemployment are often correlated with other risks of mental health problems; such as bad housing, poverty, negative health behaviors, and overall feelings of powerlessness (Mirowsky & Ross, 2003). In addition, a number of gender-specific, risk patterns have appeared during the last few decades (Piccinelli & Wilkinson, 2000). On the one hand, married respondents with no paid employment have to rely on the role of housewife for identity and self-esteem, which carries many frustrating elements and has been increasingly devalued in European societies (Piccinelli & Wilkinson, 2000). On the other hand, women continue to join the workforce in larger numbers, becoming more economically independent while sharing childcare and housekeeping responsibilities with men. However, women who enter the job market still face a higher risk of economic discrimination and job inequality than men (Mandel, 2009). When employed, combining employment and housekeeping responsibilities may lend to an increased risk of mental health problems among women due to role overload and role conflict (Bird, 1999). Societal changes have also led to emerging risk groups for mental health problems among men. For instance, a recent American study showed that fathers struggle just as much as mothers when trying to fulfill their dual responsibilities (Harrington et al., 2010). In addition, the traditional definition of masculinity, which includes inhibition against help-seeking and specific ideas about fatherhood, male expression, and the role of men as sole breadwinners; has also been undermined with the increasing economic power of women (Garfield et al., 2006; Sarah Van de Velde et al., 2012). Other studies among men report that job and parental role quality predict psychological distress (Barnett et al., 1992).

Additionally, research on gender differences in mental health problems points to a differential exposure of men and women to stressful life events, such as marital disruption and employment problems, as well as gender differences in

vulnerability (Kendler et al., 2001b). However, the empirical evidence for gender patterns in depressive reactions is mixed with regards to marital disruption [see e.g. (Kalmijn & Monden, 2006; R. W. Simon, 2002) versus (Lucas, 2005; N. F. Marks, 1996)] or employment problems [(C. Bambra & Eikemo, 2009; Leeflang et al., 1992) versus (Artazcoz et al., 2004a; Vanroelen et al., 2009)]. A large body of evidence suggests that men are more prone to depression due to work-related stressful events (Kendler et al., 2001a; Nolen-hoeksema, 2012), while women are more sensitive to problems in their social network, such as marriage and child care (Beck, 1967; D. G. Campbell & Kwon, 2001; Shih & Auerbach, 2010). However, concerning Europe, a recent study found that socioeconomic related factors, rather than problems related to the family and childcare, are more strongly associated with mental health problems in both men and women across most European countries (Sarah Van de Velde et al., 2010b).

Regional Variation of Socioeconomic Factors as It Relates to Mental Disorders in Men and Women

Many researchers have started to examine how different national welfare arrangements influence population health. The underlying assumption is that the social and political context determines health via mediation by socioeconomic position and care responsibilities (Diez-Roux, 2000). On the European level, prior research suggests that Northern and Western European national policies are more likely to promote gender equality at work, but at the same time offer varying social security coverage and public assistance for care. By comparison, Southern European governments are more likely to promote a male-breadwinner system and less secularized socio-cultural environment (Ferrera, 1996), whereas Central-Eastern European policies overtly advocate a dual-earner model. However, in the family context, gender roles have remained rather traditional in Central and Eastern Europe (Pascall & Lewis, 2004; Stickney & Konrad, 2007). In addition, problems related to highly-valued social roles, compared to low-valued ones, are more likely to trigger mental health problems (Beck, 1967). This would imply that, in male-breadwinner systems, women would be more sensitive to family-related stressors, whereas men to more socioeconomic related stressors. This gender difference might be less pronounced in dual earner societies. However, research in this field is limited and inconclusive (Seedat et al., 2009; S. Van de Velde et al., 2010a).

Research aim and hypotheses

Using data from the EU-WMH surveys, we assess the most common mental health disorders in the North/West, South and Central/East of Europe. We formulate three hypotheses. First, we expect that gender differences in the prevalence of these common mental health disorders differ by region. Second, we expect that the significance of adding social risk factors in predicting common mental health disorders may also be variable across regions. Finally, we also expect that the relationship between these individual risk-factors and mental health illness not only varies between genders, but also across European regions within genders. The dataset is large enough to properly assess to what extent socioeconomic, family, and child care related risk factors are associated with common mental health problems in men and women, and to establish the significance of regional variation in this association.

Methods

Study sample

The WMH Surveys Initiative aimed to assess the prevalence of common mental disorders, including their correlates. The EU countries in WMH include 6 cross-sectional surveys of the adult population of the European study of the Epidemiology of Mental Disorders (ESEMeD) (Belgium, France, Germany, Italy, the Netherlands, and Spain), as well as 4 other countries conducting surveys with similar methodology (Bulgaria, Romania, Northern Ireland, and Portugal). Respondents underwent a face-to-face, computer-assisted personal interview, conducted by a trained interviewer, speaking in lay terms. A stratified multi-stage random sample without replacement was drawn in each country. The sampling frame and the number of sampling stages used to obtain the final sample differed across countries. The target population was represented by non-institutionalized adults (aged 18 years or older) identified from a national household list or a list of residents in each country. This list was obtained from the census, local postal registries, or in the case of France from telephone lists. Additional details about sampling are provided elsewhere (Author et al. 2004). Data was collected in 2001-2003 during the ESEMeD survey while all other data was collected in 2003-2007 (Bulgaria), 2005-2007 (Romania), 2004-2007 (Northern Ireland), and 2008-2009 (Portugal).

After receiving a complete description of the study, all respondents provided written informed consent. Questions were administered at home by trained interviewers who used a computer-assisted personal interview, with the exception of Bulgaria where the interview was in paper-and-pencil version (R. Kessler & Ustun, 2004). The interview was conducted in two parts. All respondents were given a comprehensive questionnaire and were screened for the most common mood and anxiety disorders (Part 1 sample). Only those who presented symptoms of specific mood and anxiety disorders and a random sample of 25% of respondents without these symptoms were asked in-depth questions about additional mental disorders, as well as demographic and lifestyle features (Part 2 sample). No Part 2 sample exists for Romania as these questions were asked in the entire study sample. Any difference in sampling was corrected by weighting.

The 10 countries included in the present study represent three distinct European regions: North/West (Belgium, Germany, the Netherlands, France, and Northern Ireland), South (Spain, Italy, Portugal) and Central/East (Romania and Bulgaria). Data were obtained from 37,289 respondents, ranging from 2,357 in Romania to 5,473 in Spain. Response rates varied from 45.9% in France[2] to 78.6% in Spain, with an overall response rate of 65.5%. More details on the sampling and response rates are provided on the WMH website (http://www.hcp.med.harvard.edu/wmh/). The sample was weighted to take into account different selection probabilities within countries, specific age and gender distributions of the general population in each country, and the relative population sizes between countries. It should be noted that prevalence estimates are not meant to represent entire regions, rather the countries within the regions participating in the WMH study.

Mental disorders

The lifetime prevalence of mood, anxiety, and alcohol disorders was determined by using the Composite International Diagnostic Interview (CIDI) 3.0 with diagnostic criteria defined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (Association, 1994). Organic exclusion rules were imposed in making all diagnoses. The WHO CIDI 3.0 Field Trials and later

[2] In contrast to the other countries, in France respondents were first contacted via telephone, while in the other countries respondents were directly contacted face-to-face without an appointment. In addition, the random creation of telephone numbers resulted in a selection of ineligible contacts (eg. vacation or unused houses). This resulted in a lower than average French response rate.

clinical calibration studies have shown that all these disorders could be assessed with acceptable reliability and validity using the CIDI (Wittchen, 1994). A reappraisal study carried out in four WMH countries (US, Italy, Spain, and France; total N=468) has demonstrated good agreement between CIDI 3.0 diagnoses and diagnoses based on blinded re-interviews, with between-country ranges of the area under the receiver operator characteristics curve at 0.73-0.93 for lifetime mood and anxiety disorders, and 0.83-0.88 for 12-month mood and anxiety disorders (Haro et al., 2006).

For some analyses, mental disorders were grouped together into the categories *internalising disorders* (mood disorders – major depressive episode, dysthymia; and anxiety disorders – panic disorder, specific phobia, social phobia, agoraphobia without panic disorder, generalized anxiety, post-traumatic stress) and *externalizing disorders* (conduct disorder, alcohol use disorders). Attention deficit disorder was not systematically collected across countries and hence not included among the latter set of disorders. The end-point for analysis concerning social risk factors was any major mental disorder (AMD) grouping internalizing and externalizing disorders together.

Socio-demographic factors and social risk factors

Respondents were asked questions on several demographic variables, including *gender* and *age* at interview (continuous). Socioeconomic position was measured by the total years of *schooling* (≥12 or <12 years), *family income,* which was determined in relation to country medians (low, low average, high average, high), and *employment position.* Respondents were asked if they were currently working and if not, for what reason(s). Unemployment was then defined as any person not working, excluding persons retired, on sick-leave or with any other health condition preventing them to work. *Marital status* was assessed by distinguishing married or cohabitating from divorced, widowed and never married respondents. Questions on *family composition* were asked as follows: if at least one child was present in the household, respondents then gave information on their child(ren)'s age (<6, 6-12, 13-17 years old).

Statistical analysis

Descriptive analyses were geographically stratified within each region (North/West, Central/East, South). Prevalence of each mental disorder was given by gender.

Bivariate logistic regression models were employed to relatively compare the presence of mental disorders in women versus men per region. In order to determine the impact of adding various sociodemographic variables to the model, an adjusted Wald F-test was performed comparing the linear hypothesis of adding covariates to a recently fit model. This was done on the following, previously-defined models: (1) gender, (2) gender and age; (3) gender, age, income level, employment status, education, and marital status.

A multivariable logistic regression model was fitted with mental health illness as an end-point while including the following risk-factors defined *a priori*: age, years of education, employment status, income, marital status, presence of children at various ages, and region. Gender-differences in OR were then tested for each individual risk-factor by including an interaction term multiplying gender and risk-factor. Significance of this term was tested using a *t*-test based on the linearized standard error of the 2nd order interaction effect. In order to prevent model overfitting, only one interaction term per risk-factor was added to the model, thus representing one separate model per interaction tested. Gender-specific OR and 95%CI were calculated from these models.

Then, we tested the hypothesis that ORs would vary across regions within gender. The initial multivariable model was first stratified on gender. Differences between regions were compared within gender-stratum by including an interaction term multiplying the risk-factor and individual region in the multivariable model. Again, models were rerun while adding only one interaction term per risk-factor. No overall three-way interaction (gender×region×risk-factor) term was tested as we set out to determine which *specific* risk-factors were different across regions within gender.

All analyses were performed using STATA statistical software (v11.0, College Station, TX, USA) and significance was defined as a p-value < 0.05.

Results

Prevalence of mental disorders by gender and region

The proportion of male and female respondents with a mental disorder, as well as gender ORs, are presented by region in Table 1. Results indicate that lifetime prevalence of any mental disorder was highest in the North/West (21.7% in women, 12.1% in men), and lowest in the Central/East (7.0% in women, 3.1% in men). This regional difference in prevalence also held true when looking at internalizing and externalizing disorders separately. The highest prevalence of both disorder groups was found in the North/West, whereas the lowest prevalence in the Central/East.

Prevalence of each separate mood and anxiety disorders revealed similar ranges in the North/West and South. However, in contrast to the other two regions, anxiety disorders were more prevalent than mood disorders in Central/Eastern Europe. A major depressive episode was the most common mental health disorder in all regions, with the exception of Central and Eastern Europe, where specific phobia was the most common among women. Finally, our data showed that alcohol use disorders were the most common externalizing disorder for all regions and sexes.

With respect to gender differences in mental health, internalizing disorders were more prevalent among women and externalizing disorders among men. Gender differences were more pronounced in regions with an overall lower prevalence of mental health problems. In all regions, the gender ratio of internalizing disorders was at least two to one. The largest gender differences were found in the South (OR: 2.27), and smallest in the North/West (OR: 1.85). In the North/West, the largest gender OR was established at 2.62 for post-traumatic stress disorder and the smallest for social phobia at 1.43. In the Central/East, gender differences were also most pronounced for post-traumatic stress disorder (OR: 3.39), while women and men do not suffer differently from social phobia, agoraphobia and generalized anxiety disorder (nonsignificant ORs). In the South, women suffer notably more often from agoraphobia with and without panic disorder (OR: 3.23 and 3.00, respectively) while the gender-difference is smallest for social phobia compared to other internalizing disorders (OR: 1.51).

Table A1.
Percentage of men and women with lifetime mental health disorders, and gender odds ratio in the WMH-Europe survey

	North/West			Central/East			South		
Sample Size	Women	Men	OR (95% C.I.)	Women	Men	OR (95% C.I.)	Women	Men	OR (95% C.I.)
Part 1	N=8470	N=7110	N=15580	N=4153	N=3522	N=7675	N=7660	N=6374	N=14034
Part 2	N=3999	N=2883	N=6882	N=2547	N=2043	N=4590	N=3573	N=2387	N=5960
Any mood disorder*[1]	21.7	12.1	2.01 (1.82-2.21)	7.0	3.1	2.33 (1.74-3.13)	17.7	8.2	2.42 (2.16-2.71)
Major depressive episode*	20.3	11.5	1.95 (1.77-2.16)	6.8	3.0	2.33 (1.72-3.15)	16.6	7.8	2.37 (2.10-2.67)
Dysthymia with hierarchy*	2.9	1.7	1.73 (1.31-2.27)	0.8	0.3	3.00 (1.35-6.66)	2.2	0.8	2.76 (1.92-3.98)
Any anxiety disorder**[2]	21.7	13.6	1.77 (1.50-2.08)	11.2	5.3	2.25 (1.77-2.86)	18.8	9.4	2.22 (1.83-2.69)
Panic disorder*	2.9	1.8	1.64 (1.28-2.11)	1.4	0.5	2.83 (1.91-4.19)	1.9	1.0	1.91 (1.35-2.69)
Specific phobia*	12.1	5.9	2.19 (1.93-2.50)	7.1	3.1	2.43 (1.97-3.00)	9.3	3.6	2.75 (2.38-3.17)
Social phobia*	4.4	3.1	1.43 (1.20-1.70)	1.3	0.7	1.79 (0.91-3.50)	2.8	1.9	1.51 (1.13-2.02)
Agoraphobia without panic disorder*	1.3	0.8	1.57 (1.12-2.20)	0.3	0.1	2.84 (0.64-12.68)	1.2	0.4	3.00 (1.98-4.53)
Agoraphobia with panic disorder*	1.9	1.2	1.60 (1.19-2.15)	0.5	0.1	4.54 (1.12-18.38)	1.6	0.5	3.23 (2.24-4.66)
Generalized anxiety w/ hierarchy*	3.7	2.3	1.67 (1.35-2.05)	1.7	1.1	1.63 (0.93-2.85)	2.8	1.4	2.05 (1.57-2.69)
Post-traumatic stress**	6.7	2.7	2.62 (1.94-3.54)	2.2	0.7	3.39 (1.93-5.94)	4.7	1.9	2.53 (1.70-3.76)
Any internalizing disorder**[3]	33.9	21.8	1.85 (1.61-2.11)	15.9	7.6	2.31 (1.85-2.88)	29.7	15.7	2.27 (1.95-2.64)
Attention deficit disorder***	2.0	4.4	0.44 (0.23-0.83)	0[†]	0.8[†]	-	1.0	1.9	0.54 (0.24-1.19)
Conduct disorder***	1.8	2.6	0.68 (0.36-1.28)	1.8	0.8	0.22 (0.02-2.15)	0.6	1.4	0.44 (0.22-0.89)
Any alcohol-use disorder (for NW/S**,for E*)	3.6	14.6	0.22 (0.18-0.26)	0.5	6.0	0.08 (0.05-0.13)	1.1	9.3	0.11 (0.08-0.15)
Any externalizing disorder**[4]	4.3	15.4	0.25 (0.20-0.30)	0.4	6.5	0.06 (0.03-0.13)	1.3	9.7	0.13 (0.10-0.16)
Any disorder**	35.3	30.5	1.24 (1.10-1.40)	16.2	13.0	1.30 (1.06-1.58)	30.0	21.9	1.53 (1.32-1.77)

[1] Any mood disorder includes major depressive episode and dysthymia with hierarchy.
[2] Any anxiety disorder includes panic, specific phobia, social phobia, agoraphobia, generalized anxiety, and post-traumatic stress disorders.
[3] Any internalizing disorder includes any mood or anxiety disorders. [4] Any externalizing disorder includes conduct and alcohol-use disorder.
[†] Bulgaria does not have data on attention deficit disorder, therefore only data from Romania were included in the prevalence for Central/Eastern countries.
- OR was not calculated since disorder was not present in women and/or men strata

Table A6.2:
Gender OR of any internalizing, any externalizing disorder and any disorder by region, adjusted by age and social risk factors.

	Any internalizing disorder				Any externalizing disorder				Any disorder			
	Model parameters (Women vs men)		Adjusted Wald F-test**		Model parameters (Women vs men)		Adjusted Wald F-test**		Model parameters (Women vs men)		Adjusted Wald F-test**	
	OR (95% C.I.)	*p**	F	*p*	OR (95% C.I.)	*p**	F	*P*	OR (95% C.I.)	*p**	F	*p*
North/West (*n*=6882)												
Model 1	1.85 (1.61-2.11)	<0.001	81.5	<0.001	0.25 (0.20-0.30)	<0.001	185.4	<0.001	1.24 (1.10-1.40)	<0.001	11.9	<0.001
Model 2	1.89 (1.65-2.16)	<0.001	25.1	<0.001	0.25 (0.21-0.31)	<0.001	44.3	<0.001	1.27 (1.13-1.44)	<0.001	31.5	<0.001
Model 3	1.86 (1.63-2.13)	<0.001	23.4	<0.001	0.25 (0.20-0.32)	<0.001	3.0	n.s.	1.24 (1.09-1.42)	<0.001	20.3	<0.001
Central/East (n=4590)												
Model 1	2.31 (1.85-2.88)	<0.001	56.1	<0.001	0.06 (0.03-0.13)	<0.001	54.2	<0.001	1.30 (1.06-1.58)	<0.01	6.8	<0.01
Model 2	2.25 (1.80-2.81)	<0.001	11.3	<0.001	0.06 (0.03-0.13)	<0.001	3.5	n.s.	1.27 (1.05-1.55)	<0.05	6.2	<0.05
Model 3	2.14 (1.68-2.73)	<0.001	5.2	<0.05	0.05 (0.02-0.12)	<0.001	1.6	n.s.	1.21 (0.98-1.49)	n.s.	7.2	<0.01
South (n=5960)												
Model 1	2.27 (1.95-2.64)	<0.001	114.3	<0.001	0.13 (0.10-0.16)	<0.001	230.8	<0.001	1.53 (1.32-1.77)	<0.001	32.8	<0.001
Model 2	2.31 (1.98-2.69)	<0.001	15.4	<0.001	0.13 (0.10-0.17)	<0.001	24.9	<0.001	1.56 (1.34-1.81)	<0.001	21.0	<0.001
Model 3	2.47 (2.11-2.88)	<0.001	7.7	<0.01	0.15 (0.11-0.21)	<0.001	6.8	<0.01	1.68 (1.44-1.94)	<0.001	3.0	n.s.

Data presented are from the Part 2 samples of the ESeMED survey and separate surveys from Northern Ireland, Bulgaria, Romania, and Portugal.
Model 1: gender unadjusted
Model 2: gender and age
Model 3: gender, age, income level, employment status, education, and marital status.
*Significance of the OR was testing using a *t*-test based on the linearized standard error.
** *p*-value was determined using an adjusted Wald *F*-test determining if the linear combination of the added variables is significantly different than the previous model. Model 1 tests whether sex alone is significantly predicts the endpoint compared to 0

As for externalizing disorders, the most pronounced gender differences were established in the Central/East (OR: 0.06) and least pronounced in the North/West (OR: 0.25). Gender differences were greatest for alcohol use disorder in all three regions: OR North/West at 0.22, OR Central/East at 0.08, OR South at 0.11.

Including age and social risk factors to explain common mental disorders in men and women

Table 2 presents an overview of three sequential models using internalizing and externalizing disorders, separately and combined, as endpoints: unadjusted gender differences (model 1), gender ORs adjusted by age (model 2) and gender ORs adjusted by major social risk factors (model 3). Gender differences in mental health disorders remain significant and fairly robust in size after being adjusted by age and major social risk factors. The adjusted Wald F-test shows that gender is a significant predictor ($p<0.001$) of both internalizing and externalizing disorders in all regions. Age was also significant ($p<0.001$) in both the North/West and the South. However, in the Central/East this is only the case for internalizing disorders, but not for externalizing disorders. The significance when adding main social risk factors to the model shows regional discrepancies as well. Income level, employment status, education and marital status were significant for internalizing disorders ($p<0.01$) in all regions. These same variables overall were only significant for predicting externalizing disorders in the South, but not in the North/West and Central/East.

Supplementary results (not reported here) show that, individually, both internalizing and externalizing disorders are associated with age, socioeconomic position, and family situation. Consequently, we chose to further discuss results in terms of any mental disorder, no longer making the distinction between internalizing and externalizing disorders.

Age and social risk-factors for mental health disorders between men and women

As shown in Table 3, many of the risk-factors were not significantly different between genders. In both women and men, age was not associated with a higher risk of any mental disorder. Both male and female respondents who were not married, either from divorce or a deceased partner, were at a much higher risk for any mental health disorder than married persons. Moreover, having a teenager in

Table 3.
Risk-factors for any mental disorder stratified on gender

	Women (*n*=3997)		Men (*n*=2516)		*p* for
	OR	(95% CI)	OR	(95% CI)	intxn
Age *(in years)*	0.99	(0.98-1.00)	0.99	(0.98-0.99)	0.09
Income level					0.8
Low	1.00	-	1.00	-	
Low-average	1.09	(0.93-1.28)	0.97	(0.81-1.17)	
High-average	0.98	(0.83-1.16)	1.06	(0.88-1.28)	
High	1.03	(0.87-1.21)	1.04	(0.85-1.28)	
Employment status**					
Employed	1.00	-	1.00	-	
Self-employed	1.23	(0.95-1.59)	1.01	(0.80-1.28)	0.2
Unemployed	1.31	(1.03-1.67)	1.46	(1.10-1.93)	0.6
Retired	1.08	(0.91-1.29)	0.79	(0.64-0.98)	0.008
Homemaker	0.78	(0.65-0.93)	1.05	(0.52-2.13)	0.4
Student	0.86	(0.60-1.23)	0.59	(0.39-0.89)	0.16
Illness/sick leave/disabled	2.78	(1.94-3.98)	2.55	(1.64-3.99)	0.8
Other	0.98	(0.70-1.37)	2.08	(1.39-3.11)	0.004
Education					
≤12 years	1.00	-	1.00	-	1.00
>12 years	0.90	(0.79-1.02)	0.92	(0.78-1.08)	0.8
Marital status**					
Never married	0.96	(0.78-1.17)	1.21	(0.99-1.47)	0.06
Married/ cohabitated	1.00	-	1.00	-	
Separated/Divorced	1.83	(1.48-2.26)	2.03	(1.53-2.70)	0.6
Widowed	1.52	(1.24-1.86)	1.69	(1.13-2.53)	0.6
Presence of children at**					
No children	1.00	-	1.00	-	
0-5 years of age	0.98	(0.83-1.17)	1.05	(0.83-1.33)	0.7
6-12 years of age	1.04	(0.89-1.22)	1.02	(0.84-1.24)	0.9
13-17 years of age	1.26	(1.07-1.47)	1.32	(1.09-1.58)	0.7
Region**					
North/West	1.51	(1.40-1.63)	1.68	(1.53-1.85)	0.03
East	0.51	(0.46-0.56)	0.58	(0.51-0.65)	0.03
South	1.23	(1.14-1.33)	1.11	(1.00-1.23)	0.03

Data presented are from the Part 2 samples of the ESeMED survey and separate surveys from Northern Ireland, Bulgaria, Romania, and Portugal. All ORs are adjusted by age, income level, employment status, education, marital status, and presence of children.* P-value calculated using a *t*-test based on the linearized standard error for the interaction term, calculated by the cross-product of gender and risk factor.
**P-values when testing interaction between gender and overall levels of risk-factors: employment status (p=0.8), marital status (p=0.16), presence of children (p=0.9), and region (p=0.02)

the household was also associated with any mental disorder, but the presence of younger children was unrelated to mental health. Lower income and education were also not associated with any mental disorder, regardless of gender. A sensitivity analysis with more detailed education categories showed similar results overall. In contrast, unemployed respondents of both genders were significantly more likely to be at risk of any mental disorder.

Nonetheless, ORs were significantly different between genders for a handful of risk-factors (Table 3). For instance, retirement seemed to be a protective factor among men, which was statistically more so than women ($p<0.01$). Women homemakers were also significantly less likely to report any mental disorder than employed women, although this was not the case for men. It thus seems that most stressors related to family- and care responsibilities, as well as to the socioeconomic position put both men and women at risk for any mental disorder in a similar manner. Interestingly, regions were significant predictors of any mental disorder , with strong positive associations in the North/West and South regions and a negative association in the Central/Eastern population. There was a significant gender interaction for all three regions ($p<0.05$).

Regional differences in risk factors for mental health disorders within the genders

These results imply that some of the differences, or lack of differences, in risk-factors for mental disorders between genders could be masked by regional peculiarities. We then tested whether the role of social risk factors as predictors for mental health also varied across regions within genders (Table 4). Again, certain consistencies were observed, such as divorce showing the strongest association with any mental disorder. In women, the ORs for separated or divorced respondents ranged between 1.54 in the North/West and 2.49 in the South. The association was even more pronounced for men in the North/West (OR: 2.24) and Central/East (OR: 2.13), but slightly smaller for men in the South (OR: 1.81). The association between separation and divorce with any mental disorder showed non-significant regional differences in both men and women. In contrast, widowhood seemed only detrimental to the health of men and women in the Central/East (ORw: 1.96; ORm: 4.19), while in the South and North/West it is unrelated to mental health.

Presence of children in the household overall was also not related to the risk of having suffered from any mental disorder in both men and women, which was the same across European regions (Table 4). Only men in Central and Eastern

Table 4.
Risk-factors for any mental disorder stratified on gender and region

	Women							Men						
	North/West (*n*=3997)		Central/East (*n*=2516)		South (*n*=3572)		*p* diff	Northwest (*n*=2883)		Central/East (*n*=2003)		South (*n*=2387)		*p* diff
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	per region*	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	per region*
Age *(in years)*	0.98	(0.98-0.99)	1.01	(1.00-1.02)	0.99	(0.98-1.00)	*a, c*	1.00	(0.99-1.00)	1.02	(1.00-1.03)	0.99	(0.98-1.00)	*a, c*
Income level							*a*							*ns*
Low	1.00	-	1.00	-	1.00	-		1.00	-	1.00	-	1.00	-	
Low-average	0.97	(0.76-1.23)	1.49	(1.08-2.06)	1.12	(0.86-1.45)		1.03	(0.78-1.37)	1.17	(0.72-1.90)	0.85	(0.63-1.14)	
High-average	0.92	(0.72-1.17)	1.07	(0.72-1.58)	1.07	(0.82-1.41)		1.01	(0.76-1.35)	1.69	(1.09-2.63)	0.97	(0.71-1.33)	
High	1.30	(0.99-1.72)	0.76	(0.59-0.98)	1.01	(0.77-1.33)		1.09	(0.79-1.51)	0.76	(0.53-1.08)	1.23	(0.83-1.83)	
Employment status**														
Employed	1.00	-	1.00	-	1.00	-		1.00	-	1.00	-	1.00	-	
Self-employed	1.19	(0.75-1.87)	1.22	(0.50-2.97)	1.29	(0.92-1.81)	*ns*	1.13	(0.79-1.63)	0.84	(0.24-2.93)	0.83	(0.60-1.15)	*ns*
Unemployed	1.97	(1.15-3.39)	1.10	(0.67-1.81)	1.21	(0.89-1.65)	*ns*	1.27	(0.81-1.98)	1.37	(0.77-2.44)	1.51	(0.95-2.42)	*ns*
Retired	0.86	(0.66-1.13)	1.64	(1.13-2.39)	1.45	(1.11-1.89)	*a, b*	0.49	(0.34-0.69)	1.02	(0.68-1.52)	0.87	(0.58-1.33)	*a*
Homemaker	1.04	(0.80-1.35)	0.81	(0.41-1.59)	1.16	(0.95-1.43)	*b*	2.38	(0.62-9.16)	0.92	(0.34-2.43)	0.43	(0.08-2.23)	*ns*
Student	1.17	(0.59-2.31)	0.52	(0.18-1.49)	1.03	(0.65-1.63)	*ns*	0.68	(0.30-1.54)	0.40	(0.17-0.94)	0.49	(0.29-0.85)	*ns*
Illness/sick leave/disabled	2.68	(1.56-4.60)	7.61	(3.32-17.44)	2.78	(1.80-4.29)	*a, c*	1.75	(0.94-3.29)	3.52	(1.36-9.16)	3.24	(1.60-6.55)	*ns*
Other	4.43	(2.28-8.60)	0.77	(0.47-1.28)	0.99	(0.45-2.17)	*a, b*	3.69	(1.41-9.70)	1.64	(0.98-2.76)	1.68	(0.66-4.28)	*ns*
Education														
≤12 years	1.00	-	1.00	-	1.00	-		1.00	-	1.00	-	1.00	-	
>12 years	0.98	(0.80-1.19)	0.98	(0.68-1.40)	0.82	(0.67-1.00)	*ns*	1.09	(0.85-1.39)	1.02	(0.73-1.42)	0.67	(0.51-0.88)	*b*
Marital status**														
Never married	0.93	(0.69-1.24)	0.59	(0.32-1.08)	0.88	(0.67-1.16)	*ns*	1.61	(1.19-2.18)	1.11	(0.64-1.93)	1.13	(0.79-1.61)	*ns*
Married/ cohabitated	1.00	-	1.00	-	1.00	-		1.00	-	1.00	-	1.00	-	
Separated/Divorced	1.54	(1.14-2.07)	1.90	(1.20-3.00)	2.49	(1.66-3.73)	*ns*	2.24	(1.51-3.31)	2.13	(1.15-3.95)	1.81	(1.06-3.11)	*ns*
Widowed	1.16	(0.84-1.62)	1.96	(1.36-2.82)	1.32	(0.96-1.81)	*a*	1.26	(0.56-2.85)	4.19	(2.55-6.88)	1.50	(0.70-3.18)	*a, c*
Presence of children at**														
No children	1.00	-	1.00	-	1.00	-		1.00	-	1.00	-	1.00	-	
0-5 years of age	1.06	(0.82-1.37)	0.72	(0.51-1.03)	0.85	(0.63-1.15)	*ns*	1.09	(0.76-1.56)	0.66	(0.35-1.23)	1.33	(0.90-1.96)	*c*
6-12 years of age	1.37	(1.06-1.77)	0.66	(0.41-1.06)	0.89	(0.70-1.12)	*a, b*	1.16	(0.86-1.56)	0.82	(0.52-1.29)	0.97	(0.70-1.34)	*ns*
13-17 years of age	1.19	(0.95-1.49)	1.10	(0.78-1.56)	1.33	(1.01-1.76)	*ns*	1.23	(0.96-1.59)	1.78	(1.17-2.72)	1.09	(0.77-1.54)	*ns*

* P-value calculated using a *t*-test based on the linearized standard error for the interaction term, calculated by the cross-product of region and risk factor. Significant differences ($p<0.05$) in risk-factors across regions and within gender are represented as follows: a, North/West vs. East; b, North/West vs. South; c, East vs. South; ns, no significant differences across regions.

P-values when testing interaction between region and overall levels of risk-factors (stratified for women / men, respectively): employment status (b** / ns), marital status (**a, c** / **a, c**), and presence of children (**a** / *ns*).

Europe (OR: 1.78), as well as women in the South (OR: 1.33), were more at risk for any mental disorder when teenagers were in the household compared to their childless counterparts. In the North/West, mothers of children aged 6-12 years also had a higher odds of any mental disorder (OR: 1.37), while this was not the case in the other regions.

However, some regional discrepancies were more noticeable among women than men. Unemployment was associated with a higher risk of any mental disorder among women in the North/West (OR: 1.97), while retirement increased the odds of any mental disorder for women in the Central/East (OR: 1.64) and the South (OR:1.45). In contrast, for men, both unemployment and retirement were not associated with mental health problems, except for retired men in the North/West who were less likely to have any mental disorder compared to employed men (OR: 0.49,). The same gender contrast in regional discrepancies were also true for income. Despite a number of income groups being unassociated with any mental disorder in both men and women, middle income groups from Central/East countries were less likely to report any mental disorder while lower higher income groups appeared protective.

Discussion

Limitations

Several methodological issues should be considered when interpreting the present results. First, as with all cross-sectional data, it is difficult to determine the causal association between risk-factor and mental illness. A particular social condition, such as divorce or poverty, may increase the risk of a mental disorder in a person; the mental disorder itself however may move the person into a less favorable socioeconomic or family situation. Second, we grouped our countries into three broad regions. However, for the current analysis, respondents from the Eastern part of Germany were included in the North/West, even though it shares a common sociopolitical background with the Central/Eastern region. A sensitivity analysis with East-Germany in the Central/East category did not lead to substantial deviations from the results presented. Third, our study is limited by the use of fully structured interviews administered by lay interviewers rather than clinician-administered semi-structured interviews. This limitation is somewhat reduced by the fact that WMH clinical reappraisal studies have documented

generally good concordance between the diagnoses based on the CIDI and blinded semi-structured clinical reappraisal interviews (Haro et al., 2006). Nevertheless, diagnoses of externalizing disorders were not validated and might be less accurate than those of other disorders. In addition, the number of externalizing disorders was limited in number. Therefore we were unable to make absolute comparisons between internalizing and externalizing disorders, as such analysis would have given a slightly distorted view of gender differences in mental health. Fourth, lifetime prevalence rates were assessed with retrospective reports. However, a sensitivity analysis using the prevalence of common mental disorders during the last 12 months provided similar results. Finally, some caution should be given to the interpretation of interaction, as a significant interaction between two regions may not necessarily mean that the risk-factor is significant for both regions. For example, retired males had a significantly lower OR in Western (0.49) versus Eastern (1.02) Europe, however being a retired male was not a significant risk-factor in Eastern Europe.

Results and discussion

Within the context of these limitations, our study is the first to compare a number of common mental disorders in men and women across Europe, additionally allowing us to examine its association with some well-established social risk factors. In contrast with previous European studies on mental health, our study is innovative in the sense that it assesses many aspects of mental health in a valid and reliable way, rather than using a general distress indicator. Our results confirm that women suffer more from internalizing disorders and men more from externalizing disorders. As we expected, the size of gender difference in the prevalence of common mental health disorders varied across the three European regions. We found that the overall prevalence of mental disorders was highest in the Northern and Western European regions, in both men and women, which confirms the findings from the ODIN study (Ayuso-Mateos et al., 2001). In contrast to other studies using a general distress inventory, we established the lowest prevalence rates of any mental disorder in the Central/East. However, we also found a larger gender gap in mental health problems in both Southern and Central Eastern Europe, confirming most of the previous research.

Certain European regions have experienced a recent transition in gender equality. Until recently, Southern Europe had been typified as a traditional, male breadwinner system, while Central and Eastern Europe had had a history of

socialist policy encouraging dual-breadwinner households (Ferrera, 1996; Pascall & Manning, 2000). During the past decade, Southern Europe has experienced a rapid increase in women's employment. Changes in men's behavior, especially towards unpaid care work, were nevertheless small (Lewis, 2006) and provisions for formal childcare remain limited (Plantenga & Remery, 2005). This may induce greater stress for employed women who continue to do the bulk of unpaid care work. Additionally, higher standards of mothering in this region strengthen the conflict between women's personal careers and their family-raising aspirations (Lewis et al., 2008). This tension might be even more pronounced among women without a spouse, offering an explanation on why divorcees report more mental health problems in our study.

Conversely, the former socialist era had supported women as workers and socialized many of the costs associated with motherhood and care work (Pascall & Manning, 2000). This resulted in higher female participation rates in the work force, occurring much earlier than in the West, although it remained gender-segregated (Molyneux, 1990). The combination between work and care responsibilities was thus more feasible in this region, perhaps explaining why employed women do not report more mental problems than their male counterparts. However, this region has recently experienced extensive economic upheaval and has undertaken comprehensive social reforms throughout the 1990s (Kovacs, 2002). They have emphasized the Liberal regime approaches of marketisation, decentralization and the reform of health insurance schemes (Organization, 2002),, putting people who depend on welfare assistance especially at risk for mental health problems. This is partly reflected in our data, with long-term sickness and retirement being positively associated with mental health problems in the Central/Eastern population.

When testing our second and third hypothesis, differences in socioeconomic position, family and childcare responsibilities of respondents help explain the prevalence of common mental health disorders in men and women, at least partially. However, our final analysis also showed that not all of the social risk factors performed equally well in explaining the prevalence of common mental disorders in men and women across European regions. In contrast with previous research [eg. (C.E. Ross & Mirowsky, 2006; Sarah Van de Velde et al., 2010b)], we established a rather weak association between mental health and socioeconomic-related factors. Only a number of employment positions, such as unemployment, retirement and housekeeping were associated with mental health.

However, both income and education were unrelated to mental disorder, regardless of gender and region.

The strongest association was found for marital status. Respondents who went through a divorce reported significantly more mental health problems than married respondents, regardless of gender. Marriage confers a variety of benefits. On the one hand, entering marriage improves earnings and social well-being, while divorce has negative effects on subsequent earnings as well as mental health of both partners and children (Booth & Amato, 1991). Mental disorders also reduce the likelihood of entering marriage (Breslau et al., 2011). In addition, some researchers claim that men suffer more from the loss of a partner, because their wife is often their closest confidant (Soons & Kalmijn, 2009). However, women often have confidants outside the family, making the loss of a partner less detrimental to health (Kalmijn & van Groenou, 2005). This is partly reflected in our results, with divorce being more strongly related with mental health problems in men than women. In contrast to socioeconomic indicators, the association between marriage and mental health is similar in strength across regions, indicating that national policies might affect this group of factors less directly. In addition, our results contradict those using general distress indicators, which often find a closer association between mental health and socioeconomic factors than family situation (S. Van de Velde et al., 2010a). The only exception to this is among Southern European men, where a stronger association was established between mental disorders and unemployment rather than marital status.

In conclusion, our research shows that common mental disorders show variation in their prevalence across gender and regions. In addition, we showed that marital status, and to a lesser extent socioeconomic position help to explain this variation. Knowledge about mental health gained through research that ignores the social context might therefore be limited in terms of generalization. However, while we considered most well-established social risk factors, they do not explain all cross regional and gender variation in common mental disorders. Other explanations need to be explored as well as the potential interactions between them. To this end, other and additional sources of information are required to develop a much more detailed picture of circumstances surrounding the mental health of men and women across Europe, and to unravel the dynamic relationships between gender, social environment and mental health. For example, we did not take into account regional differences in population compositions, i.e., the age structure of the population, divorce and unemployment

rates, nor did we consider gendered welfare state regimes (C. Bambra, 2007) or gender stratification systems (Hopcroft & Bradley, 2007; Sarah Van de Velde et al., 2012). In addition, the interaction between social risk factors were not considered either, eg. the combination of childcare with single mothers, unemployment, and so on. Future research should elucidate whether and how these factors may indeed account for the cross-regional variation of mental health problems in men and women.

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