Gendered Patterns of Multimorbidity Across Migration Backgrounds: Evidence from Norwegian Population Registers (2014–2019)

Dina Maskileyson & Bettina Hünteler

Extended Abstract

Despite extensive research on the healthy migrant effect, less is known about how multimorbidity, a marker of cumulative health disadvantage, varies across migration backgrounds and genders within European welfare states. This study focuses on gendered patterns of multimorbidity, defined as the coexistence of two or more chronic diseases (Larsen et al., 2017. Using national registry data from the Norwegian Population Register and KUHR register (2014–2019), we analyze the health profiles of 2.7 million native-born individuals, 550,000 first-generation (FG) immigrants, and 190,000 second-generation (SG) immigrants aged 20 and older. The study places particular emphasis on women's health and on identifying women-specific multimorbidities within and across migration backgrounds.

Multimorbidity is a growing public health concern associated with premature mortality, hospitalizations, polypharmacy, and reduced quality of life (Barnett et al., 2012; Larsen et al., 2017). However, there is still limited research on multimorbidity among immigrant populations (Díaz et al., 2015; Academy of Medical Sciences, 2018). Existing studies rarely examine how these patterns differ between women and men or how women's specific health burdens are expressed across migration backgrounds. Women's morbidity often reflects both biological and social determinants that shape exposure to chronic conditions and access to care (e.g., Oksuzyan et al., 2008). While previous studies, such as Díaz et al. (2015), have examined multimorbidity among first-generation immigrants in Norway, this study extends that work by including both first- and second-generation immigrants as well as native-born individuals, and by applying latent class analysis to identify multimorbidity clusters by gender and migration background.

We examine 39 chronic conditions grouped into 15 diagnostic categories based on their severity and economic impact (Larsen et al., 2017). Diagnoses were recorded by general practitioners between 2014 and 2019 and analyzed cross-sectionally. To capture the social structuring of disease patterns, individuals are categorized by immigrant status (FG, SG, native-born), region of origin (Norway, Nordic countries, EU-15, other EU, other OECD, and other regions), and reason for migration (economic, educational, family reunification, or political). Control variables include age, gender, years since migration, number of children, and marital status. Latent Class Analysis (LCA) identifies distinct multimorbidity clusters, and multinomial logistic regression examines how these clusters vary by migration background and gender.

The results presented here are preliminary and reflect the first analytical step of this study. At this stage, we identify general chronic disease clusters and explore gender and migration differences in these patterns. LCA reveals five multimorbidity clusters. The majority (63.4 percent) belong to a “Relatively Healthy” cluster, marked by low probabilities for all chronic conditions (mean = 1.41). Other clusters include “Primary Hypertension” (17.5 percent), “Mental and Chronic Pain Conditions” (12.4 percent), “Mixed Cardiopulmonary Conditions” (4.5 percent), and “Severe Asthma and Allergy” (2.1 percent).

At the population level, FG and SG immigrants show slightly lower rates of multimorbidity (53 percent) compared to natives (57 percent), but disease patterns vary significantly. Hypertension is more common in natives (15 percent) than FG (11 percent) and SG immigrants (7 percent), whereas diabetes is more prevalent among FG immigrants (7 percent) compared to natives (6 percent) and SG immigrants (3 percent). Chronic obstructive pulmonary disease (COPD), mental disorders, and back problems are more frequently seen in natives, while allergies are notably higher among SG immigrants (18 percent).

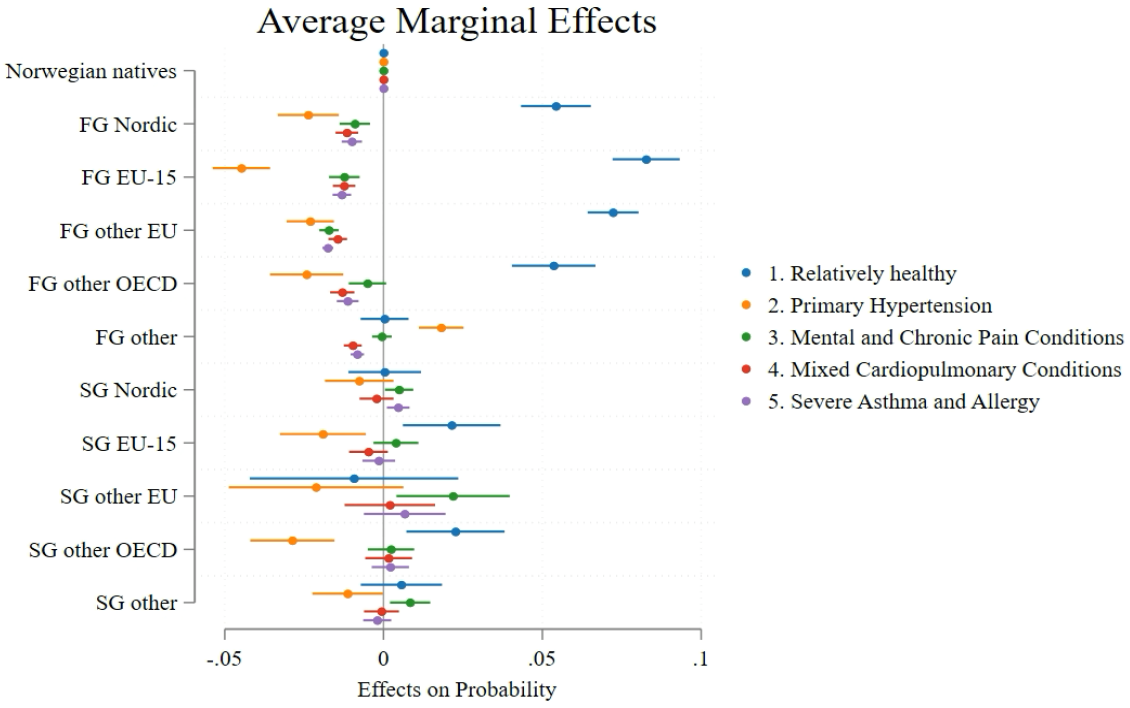
Multimorbidity by Migration Background. Health outcomes differ by region of origin and migration reason. Nordic immigrants tend to have better health and are more likely to be "Relatively Healthy" compared to natives and other immigrant groups. Non-Western immigrants face greater challenges, with an increased likelihood of being classified into the "Primary Hypertension" or "Mental and Chronic Pain Conditions" clusters. Work and education migrants generally have better health profiles, while refugees are more vulnerable, with a strong association with the "Primary Hypertension" cluster, potentially linked to pre-migration trauma and post-migration stress (see Figure 1).

Gender Disparities. Gender differences are evident across all groups. Women are generally less likely to be "Relatively Healthy" and are at higher risk for conditions in the "Mental and Chronic Pain" and "Severe Asthma and Allergy" clusters. These disparities are especially marked in SG immigrants (see Figure 2 as an example of an interaction with gender). For example, the prevalence of mental health issues and chronic pain in women is significantly higher compared to men, with an estimated 31,000 Norwegian-born men and 83,000 women affected by these conditions. Our findings reveal that multimorbidity in Norway is complex, with patterns shaped by immigrant status, origin, migration reasons, and gender. These complexities indicate that simply counting chronic diseases does not capture the broader factors influencing health. A more comprehensive approach that considers these demographic variables is crucial for understanding and addressing health disparities effectively.

In the next analytical step, we will extend this work by incorporating women-specific morbidity indicators, including menstrual, menopausal, breast, and pregnancy-related conditions available in the KUHR registry. This will allow us to focus more directly on women's multimorbidity while maintaining a comparative gender perspective, thereby

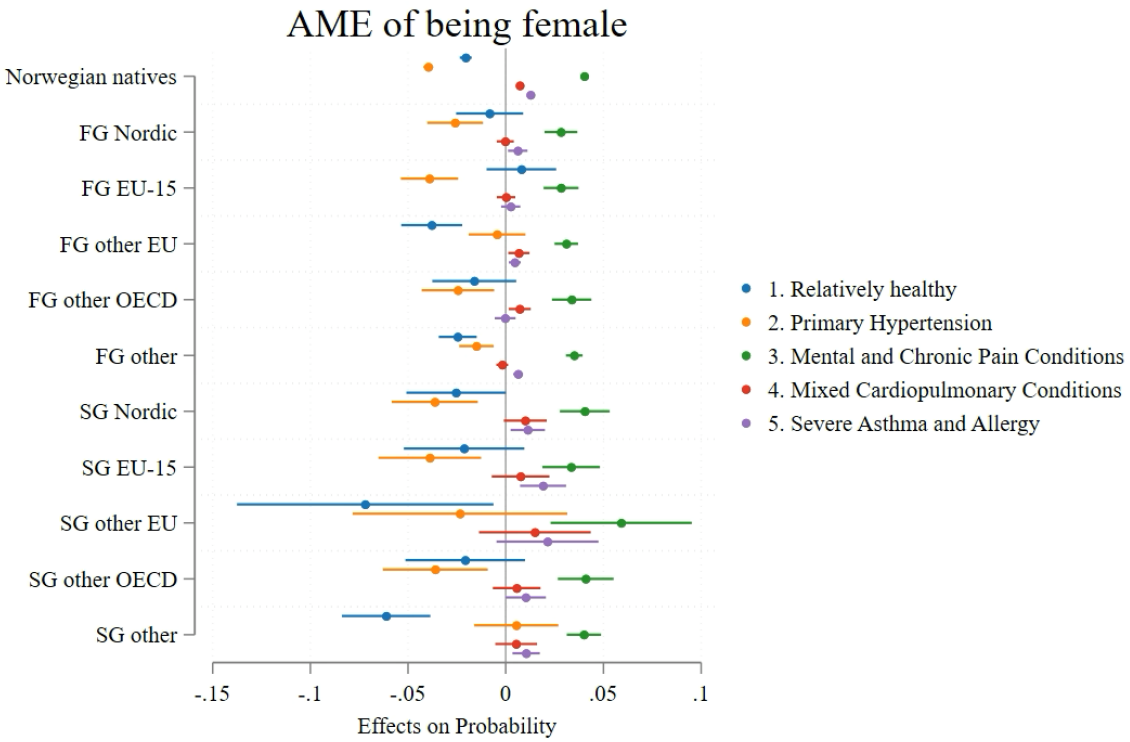
providing deeper insight into how migration background contributes to inequalities in women's health in Norway. These findings contribute to broader discussions on gendered health inequalities in aging and increasingly diverse European populations.

Figure 1: Average Marginal effects of being in different multimorbidity classes by nativity status relative to Norwegian natives (the baseline group)



Note: The models control for years since immigration, gender, number of kids, marital status, highest education and can be interpreted as differences in percentage points

Figure 2: Average Marginal effects of being in different multimorbidity classes by nativity status, including interaction terms with gender



Note: The models control for years since immigration, number of kids, marital status, highest education and can be interpreted as differences in percentage points.

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