

## The role of health status and social relationships on mental well-being over the life course

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The impact of health status, particularly chronic diseases and disability, on mental health is significant. Dixon et al (2001) found that self-perceptions of physical functioning and general health were related to more severe symptoms and poorer functioning in individuals with severe mental illness. Wan et al (2021) further emphasized the link between mental illness and physical health, particularly in the context of chronic disease management. Stigmatization is a common issue for those with disabilities and chronic diseases, including mental disorders (Papadopoulos et al., 2013). Social relationships serve as a critical determinant of mental well-being, providing essential emotional, physical, and economic support (henceforth labelled as social support). The quality of social interactions, especially in the context of the family, can either enhance or hinder psychological health, with positive relationships fostering security and resilience, while negative dynamics may lead to stress and emotional distress (Crandall et al, 2020). Verhaak et al (2005) highlighted the role of social/relationship problems in the risk of mental disorder in chronically ill patients. All these studies collectively underscore the complex interplay between health status, family and social relationships, and mental health.

In the present study, we expect that health status, measured by the presence of chronic diseases and levels of disability, will influence mental well-being at different stages of life, with social interactions and accessibility acting as mediators. Well-documented is that enhancing health and social interactions help increase general well-being (Al-Ajlani et al., 2019). We also underscore the role of spatial accessibility in the well-being of people with disabilities, as spatial barriers can exacerbate exclusion and limit social interactions (Schreuer et al., 2019; Chen et al., 2024; Trani et al., 2020). However, research remains limited on how health status, social contacts, and accessibility jointly influence mental well-being, particularly across different stages of the life course and during major life transitions, as life events can exacerbate existing health and emotional challenges (An et al, 2024). Understanding how these factors affect well-being at different life stages is therefore essential, as policies aimed at enhancing well-being will need to be tailored to specific population groups. For younger individuals, variables related to social interactions—such as the frequency of social interactions, living arrangements, family formation trends, family support and parenting styles—are expected to play a more relevant role in shaping mental well-being. In contrast, health status becomes increasingly important at older ages, consistent with the rising prevalence of health problems with age (Suzman et al., 2015). Nevertheless, severe health problems at younger ages are likely to have a larger impact on individual's well-being, both economically and mentally (Pawlowski et al., 2011; Piazza et al., 2007). In such cases, the level of social support is also key, as both men and women with higher social support experience slower mental declines when facing disabilities compared to those with lower social support (Aitken et al., 2017). For instance, Pinquart (2003) found that, overall, married older adults reported lower levels of loneliness than unmarried older adults. However, for the latter, contact with siblings, friends, and neighbours was more important in preventing loneliness than it did for married individuals. Similarly, divorced and widowed older adults benefited more from contact with their adult children, suggesting that for married older adults, most needs for intimacy, closeness, and sharing are satisfied by the spouse. In other words, mental health can be significantly influenced by social interaction, with positive connections enhancing well-being, while mental health challenges may reduce social engagement, leading individuals to withdraw or experience difficulties in interpersonal interactions, increasing the risk of isolation (Trani et al., 2020).

Regarding gender differences, women are, on average more likely to be affected by mental health disorders than men (Kessler et al., 2007; Thornicroft et al., 2017). Additionally, family relationships tend to be stronger determinants of well-being for women compared to men (van der Meer, 2014). Among older women, they are more likely than older men to receive support from their children after a divorce or the loss of a spouse (Pinquart, 2003). While prior studies have acknowledged the impact of general health status and social relationships on mental well-being, our study explores how these factors interact to affect mental health in specific health conditions, taking into account, as well, spatial accessibility. We will examine how particular chronic illnesses, along with related activity limitations and disabilities, impact mental health, with the intermediary effects of social support and accessibility, focusing on how these interactions vary across the life

course. This approach enhances our understanding of mental health determinants and may guide more tailored policy intervention.

## Data and method

Data come from the Spanish Survey on Disability, Personal Autonomy, and Dependency Situations (Disability Survey for short) in 2020. This nationally-representative survey provides data on households with at least one person experiencing a disability, the type and level of disability experienced, the associated health problems, and any discrimination suffered due to the disability. Furthermore, it offers information on the household's sociodemographic characteristics, economic expenditures related to the disability, and specific information about primary caregivers and their needs. In this study, the primary outcome variable is the mental health status of individuals with disabilities. Mental health status is measured as a bivariate categorical variable: no diagnosis of chronic depression or anxiety and diagnosis of chronic depression and/or anxiety.

Disability is assessed in three ways: number of disabilities, severity (mild/moderate or severe/disabling) and type (vision, hearing, communication, learning, mobility, self-care, domestic life, and interpersonal relationships). Individuals who are blind or deaf are categorized as having severe disabilities in the corresponding dimensions.

Regarding the independent/mediating variables, we consider three:

- 1) Chronic conditions are measured as the number of health issues (from none to 4+ out of 26). Chronic conditions are linked to poorer mental health by contributing to social isolation and reduced engagement in work and leisure activities and exacerbate disability severity (Stein et al., 2006; Hsieh et al., 2020).
- 2) Limited social interaction is measured based on (i) whether individuals have not met with family, friends, or neighbours in the past 12 months, and (ii) for those who have met, whether they perceive the quality of contact as inadequate.
- 3) Difficulties in accessibility are defined as whether individuals experience any difficulty functioning within their home and surroundings, accessing public buildings, navigating the nearby urban environment, or using transportation. The presence of stairs in the household unit is used as a variable that explain these difficulties, but it is exogenous to mental health status.

To explore the complex relationships between the outcome variable mental health and the independent/mediating variables, as well as between the latter variables we use Structural Equation Models (SEM). SEM treats measurement errors, considers observable and latent variables, and facilitates the modelling of causal relationships, allowing researchers to specify how different variables directly and indirectly interrelate.

The statistical model was defined based on our theoretical framework, in which the number of chronic conditions, disability, limitations in social interaction, and accessibility difficulties may affect the mental health of adults with disabilities. Moreover, disability also influences accessibility and social interaction, while accessibility in turn affects social interaction. Conversely, mental health may also influence social interaction. As an exogenous variable in the model, we use the presence of elevators in the dwelling as an instrument for accessibility. Finally, we control for education, marital status, employment status, a wealth index based on housing characteristics, and household composition. All analyses are stratified by sex. Finally, we also control for education, marital status, employment status, wealth index based on housing characteristics, and household composition. All analyses are stratified by sex.

## Preliminary Results

### *Bivariate associations*

Control variables: About 29% of women with disabilities are diagnosed with either chronic anxiety and/or depression. Among men, it's 19%. The proportion of individuals with disability who have chronic anxiety and/or depression is higher between the ages of 45 and 89 (Figure 1). Although a significant proportion of individuals with disabilities are married, under the separated and divorced the proportion diagnosed with anxiety and depression is highest (respectively 37% and 41% versus 24%). Regarding household composition, while just 24% of those living as a couple without children are diagnosed with either chronic anxiety and/or depression, among women this was 31% (the highest among all categories) while among men it was just 17% (full results will be shown in full paper).

Regarding the independent/mediating variables, the proportion of people with depression or anxiety is lowest among those who met with family, friends or neighbours in the last 12 months, and when the quality of contact is rated as adequate (Figure 2a). Additionally, individuals who report no difficulties with accessibility

and mobility due to their disability show lower levels of mental health problems (Figure 2b). People with difficulties in accessibility and travel also showed higher prevalence of anxiety or depression. Lastly, a positive association is observed between the number of chronic conditions and mental health problems among individuals with disabilities (Figure 2c). Clear sex differences are evident in each figure.

Figure 1: % of individuals with mental health conditions by age groups and sex. Spain, individuals aged 20+ years with disabilities

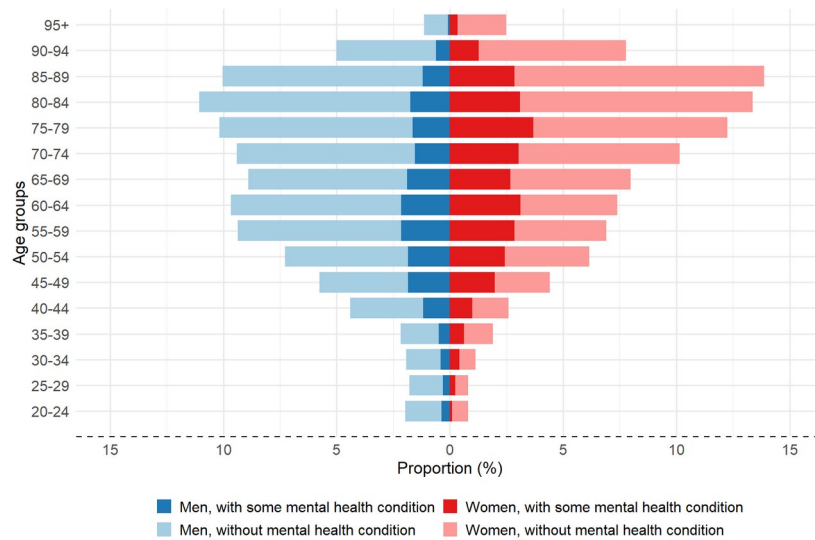
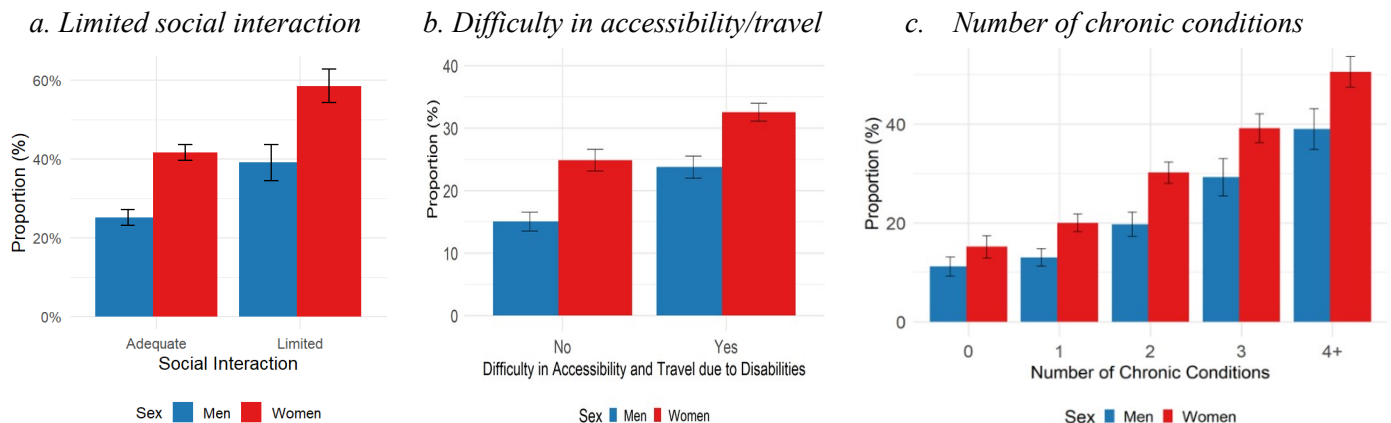


Figure 2: % of individuals with mental health conditions by social interaction, difficulties in accessibility and number of chronic conditions. Spain, individuals aged 20+ years with disabilities



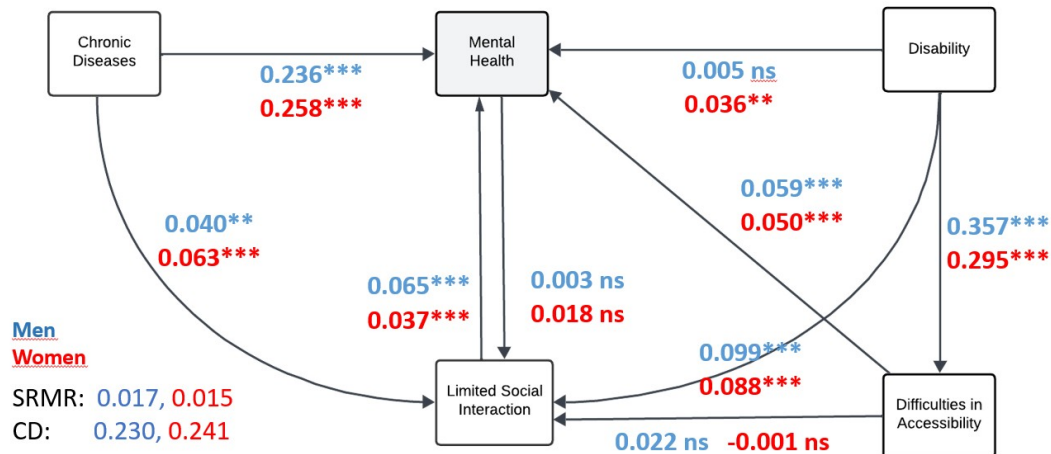
SEM model results

Figure 3 illustrates the associations between mental health and the independent/mediating variables analysed in this study. Mental health is negatively affected by chronic conditions, and in the case of women, also directly by disability, suggesting that poorer physical health directly impacts psychological well-being. For both sexes, positive effects on mental health are associated with both social interaction (i.e., a negative association indicates that greater social interaction corresponds to fewer mental health problems) and accessibility, highlighting the importance of social and environmental resources for mental well-being. In contrast, mental health does not appear to influence levels of social interaction.

We repeated the same SEM analysis using disability severity as the independent variable; however, it showed no direct effect on mental health. The other results remained largely unchanged (detailed results will be presented in the full paper). Similarly, we conducted the analysis for each type of disability. Results indicated that mental health was poorest among individuals with personal-related disabilities, primarily due to direct effects, whereas indirect effects played a more significant role in other disability types. Individuals with hearing impairments exhibited the lowest levels of mental health problems.



Figure 3 SEM coefficients of mental health and its path dependencies with number of disabilities, social interaction, accessibility, and travel. For Spain and by sex.



Note: Red lines refer to women and blue lines to men.

### Some concluding remarks

The study highlights a strong link between disability, chronic conditions, and poor mental health among Spanish adults, where the role of social interactions and difficulties in accessibility are relevant as mediators in this relationships. Women with disabilities are more likely than men to experience anxiety and depression (direct effect). Mental health worsens with an increasing number of chronic conditions, although not greater disability severity (results not shown here). Poor mental health is also more prevalent among individuals with low socioeconomic status and is associated with living as a couple without children (women) and alone (men), reduced family contact, limited social activity. Challenges related to accessibility and mobility further exacerbate mental health problems. These findings underscore the need for integrated health and social support systems tailored to sex, age, and disability status.

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