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# Predisposing, enabling, and need factors of service utilization in the elderly with mental health problems

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ABSTRACT

**Background:** Empirical data on the use of services due to mental health problems in older adults in Europe is lacking. The objective of this study is to identify factors associated with service utilization in the elderly.

**Methods:** As part of the MentDis_ICF65+ study, N = 3,142 people aged 65–84 living in the community in six European and associated countries were interviewed. Based on Andersen's behavioral model predisposing, enabling, and need factors were analyzed with logistic regression analyses.

**Results:** Overall, 7% of elderly and 11% of those with a mental disorder had used a service due to mental health problems in the last 12 months. Factors significantly associated with underuse were male sex, lower education, living in the London catchment area, higher functional impairment and more comorbid mental disorders. The most frequently reported barrier to service use was personal beliefs, e.g. "I can deal with my problem on my own" (90%).

**Conclusion:** Underutilization of mental health services among older people in the European community is common and interventions are needed to achieve an adequate use of services.

**Key words:** aging, services, epidemiology

## Introduction

By 2050, over 25% of the total population in high income countries will be aged 65 years or over (UN, 2010). To date, epidemiological studies investigating the prevalence of mental illness in older adults have generated inconsistent findings (Alonso *et al.*, 2004, Scott *et al.*, 2010) and most did not use an age-sensitive diagnostic approach (Colenda *et al.*, 2010). One recent survey, which used an age-appropriate version of the Composite International Diagnostic Interview (CIDI) – the CIDI65+ (Wittchen *et al.*, 2014) – found that one in three people in Europe had experienced a

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mental disorder within the last year and that nearly one in four were currently suffering from a mental disorder (Andreas *et al.*, 2016).

Research on service utilization due to mental health problems in older people has found very low rates ranging between 7–8% for the entire sample, between 33–52% for those with psychological distress or a formal diagnosis of any mental disorder, and between 28–34% for those with major depressive and anxiety disorders (Garido *et al.*, 2011; Han *et al.*, 2011; Gonçalves *et al.*, 2014; Wang *et al.*, 2005). Some studies suggest that service utilization varies between age groups (Wang *et al.*, 2005; Cooper *et al.*, 2010), with older adults: (1) significantly less likely than younger or middle-aged adults to receive outpatient specialty healthcare or counseling and psychotherapy (Cooper *et al.*, 2010; Han *et al.*, 2011), and (2) significantly more likely to receive prescription medication (Cooper *et al.*, 2010; Han *et al.*, 2011). A recent systematic review of health service use by elderly patients with depressive symptoms (Luppa *et al.*, 2012) revealed a wide range in number of General Practitioner (GP) visits (48% to 83%) as well as mental health treatments: 5–37% of older depressive patients had been treated by psychiatrists and between 1% and 29% had received psychotherapy. Use of antidepressant (AD) medication ranged from 9 to 77%, the majority of studies reporting AD medication rates of 20% and 45% (Luppa *et al.*, 2012). Moreover, older adults frequently receive antipsychotic medication (Shah *et al.*, 2011), which is associated with a risk for the development of a neuroleptic malignant syndrome (NMS; Belvederri Murri *et al.*, 2015).

To achieve adequate access to mental health services in underserved populations, it is important to identify barriers and facilitators to service utilization. According to the Behavioral Model (Andersen, 2008), people's use of health services depends on their predisposition to use services (e.g. gender, education, and health beliefs), factors that enable or impede use (e.g. financial, family resources, and access to care), and their need for care (e.g. symptom severity) (Andersen, 2008).

A number of studies investigating predictors of mental health service use in the elderly report heterogeneous findings. Some studies found that service utilization is lower in older age (Crabb and Hunsley, 2006), in males (Garido *et al.*, 2011; Han *et al.*, 2011; Barry *et al.*, 2012), and in those with lower educational attainment (Garido *et al.*, 2011; Han *et al.*, 2011; Barry *et al.*, 2012). With regard to enabling factors, associations with socio-economic status (Hoeck *et al.*, 2011; Byers *et al.*, 2012), and marital status (Han *et al.*, 2011; Byers *et al.*, 2012; Veerbeek *et al.*, 2013) have been inconsistent. Further, with regard to evaluated need factors some studies found lower use of services by people with mood and anxiety disorders (Scott *et al.*, 2010; Byers *et al.*, 2012), while others found higher use of services by people with depression (Han *et al.*, 2011; Barry *et al.*, 2012), anxiety and substance use disorders (Garido *et al.*, 2011), and in patients with physical comorbidity (Garido *et al.*, 2011; Han *et al.*, 2011). Moreover, lower perceived need, low motivation, and lower self-care abilities are need factors that have been found to be associated with non-use of services for mental health problems in older people (Mackenzie *et al.*, 2010; Garido *et al.*, 2011; Byers *et al.*, 2012).

In addition, the question arises as to which barriers stop people from accessing health services for mental health problems. Three types of perceived barriers have previously been identified: Practical barriers, personal beliefs, and stigma (e.g. Weissman, 2001; Thompson *et al.*, 2004; Sareen *et al.*, 2007). The most commonly reported barriers in previous studies were personal beliefs (e.g. "I should not need help"), practical barriers (e.g. costs and distance to services) (Brenes *et al.*, 2015), and self-sufficiency beliefs (including a desire to handle problems on one's own) (Mackenzie *et al.*, 2010). However, barriers to service use in older adults have rarely been investigated and findings may differ across countries depending on the nature of the healthcare system.

This study aims to provide representative and reliable descriptive data on the frequency of mental health service utilization in older people aged between 65 and 84 years in catchment areas of six European and associated countries, using a standardized, age-sensitive interview. It aims to examine predisposing, enabling, and need factors of mental health service utilization, according to Anderson's Behavioral Model. Further, the aim is to identify barriers to mental health service utilization in older adults. Specifically, this study examines the following research questions:

1. What is the frequency of service utilization of community-dwelling elderly due to mental health problems in the past 12 months?
2. Which predisposing, enabling, and need factors predict service utilization in the elderly?
3. Which barriers hinder elderly to utilize health services for mental health problems?

## Methods

The MentDis_ICF65+ study is a representative stepwise cross-sectional survey. Catchment areas of six European and associated countries were


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selected to be balanced according to geographical and socio-economic population distribution in Europe. The design is described in detail elsewhere (Andreas *et al.*, 2013)

## Sample

A random sample of N = 16,758 older men and women (65–84 years) living in selected catchment community areas of each participating country (at least 500 participants from each country), stratified by age and gender, was drawn from population registries in Hamburg (Germany) and Ferrara (Italy), and from postal addresses of market research companies in Madrid (Spain), Geneva (Switzerland), London/Canterbury (England), and Jerusalem (Israel).

In the majority of study centres (Ferrara, Geneva, Jerusalem, London, and Madrid), a written invitation letter was followed up with a phone call to ask potential participants if they were willing to take part in the study. Ethics regulations in Hamburg stipulated that people had to write back to show their interest in taking part; no phone call was allowed. The response rate varied between countries, ranging from 11% in Hamburg (Germany), to 17% in Madrid (Spain), 19% in Ferrara (Italy), 21% in London/Canterbury (England), 26% in Jerusalem (Israel), and 31% in Geneva (Switzerland); this resulted in a final total sample of N = 3,142 participants. The overall response rate in our study of 20% is comparable to previous studies' with similar recruitment procedures (Keeter *et al.*, 2006).

Inclusion criteria for the participants were ability to provide informed consent, living in the predefined catchment area at the beginning of the cross-sectional study and being aged between 65 and 84 years old. Exclusion criteria were severe cognitive impairment as assessed with the Mini-Mental State Examination, Mini cut-off score > 18) (13), and insufficient level of corresponding language. The recruitment and consent procedure was approved by research ethics committees in all six participating countries (Andreas *et al.*, 2013).

## Measures

### Assessment of mental disorders

Computer-assisted face-to-face interviews with an adapted, age-appropriate version of the Composite International Diagnostic Interview (CIDI65+, Wittchen *et al.*, 2014) were conducted by trained lay interviewers with household residents between January and October 2011.

An age-appropriate, computerized version of the fully structured lay interview CIDI (Wittchen and Pfister, 1997), the CIDI65+, was developed by the study group (Wittchen *et al.*, 2014) for the use in the elderly population to diagnose Axis I mental disorders according to the Diagnostic and Statistical Manual of Mental Disorders (DSM) version IV criteria (APA, 2000). The CIDI was adapted to the social, cognitive, and psychological abilities and needs of older adults and evaluates the syndrome domains of Axis I mental disorders (Wittchen *et al.*, 2014). The interview covers a wide range of mental health problems such as anxiety disorders, affective disorders, psychotic symptoms, obsessive–compulsive disorder, substance abuse, somatoform disorders, and acute and post-traumatic stress disorders. Cognitive impairment, somatic morbidity, and differential diagnoses for mental disorders due to general medical conditions were also assessed. The CIDI65+ included also additional incorporated self-report measures on quality of life (short form of WHOQoL-Bref) and level of functioning (WHODAS-II). The English paper–and-pencil version was translated into German, Spanish, Hebrew, Italian, and French with a back–translation and then computerized. The adopted CIDI65+ has shown good psychometric properties (Wittchen *et al.*, 2014).

### Assessment of service utilization

Service utilization was assessed as part of a section in the adapted standardized CIDI65+ interview. Respondents were asked about their use of health services within the last 12 months prior to the interview due to mental health problems, including type and amount of services received. The section was adapted to make it applicable to the various health services in the six different countries. In the analyses, services were summarized into broader categories including GP visits, inpatient, outpatient, and other mental health services, including community psychiatric nurses and social workers. Furthermore, items were dichotomized for further analysis, i.e. service use versus no service use. Analyses were restricted to any mental disorder in the last 12 months, excluding nicotine dependence or abuse.

### Assessment of barriers to service utilization

In addition, barriers to service utilization were assessed using an adopted self-report list (Sareen *et al.*, 2007). Respondents were asked to indicate the types of barriers they perceived to using services for mental health problems: "Why did you not seek any help for your mental health problem(s)?" Participants had the possibility to select all barriers from a set list that applied to them, including personal beliefs (e.g. "I can deal with my problems


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or symptoms on my own"), practical barriers (e.g. "I did not get an appointment (in time)"), and stigma ("I was afraid to ask for help or of what others would think about my problem").

### Statistical analysis

In line with Andersen's (2008) Behavioral Model, predisposing, enabling, and need factors were analyzed in multinomial logistic regression. For the survey analyses, post-stratification weights were used to restore the age and gender distribution of the sample for each country (i.e. male/ female gender and two age groups: 65-74 and older than 74 years). Differences were tested using odds ratios (OR) and 95% confidence limits. Interaction terms of sex and age were added and kept in the model if significant. The interaction effect was tested using adjusted Wald tests and orthogonal polynomial contrasts in the level values using also Wald tests. All analyses were computed using Stata 12.1 (Statacorp, 2011). Furthermore, descriptive analyses were conducted to analyze barriers of service utilization.

## Results

### Descriptive sociodemographic and health characteristics of service use in the elderly

The sociodemographic and mental health characteristics of our sample for 12-months frequency and type of health service utilization are described in Tables 1, 2, and 3. Overall, the descriptive analyses show that 7% of the MentDis_ICF65+ sample had used health services for mental health problems in the past 12 months. Of those service users, 83.6% had used a mental health outpatient service, 67.3% had visited their GP, 10.5% had had inpatient care, and 15.9% had used another type of mental health service (see Table 1).

### Type of mental disorder

Only 10.7% of older adults who had experienced any mental disorder in the last 12 months (excluding nicotine dependence or abuse) used a service for mental health problems in that time period (see Table 1). Service use among older people with depressive and anxiety disorders (14.9% and 10.57%, respectively) was higher than in those with substance-related disorders (6.6%). Among those with no classifiable mental disorder (according to CIDI65+ diagnostic criteria) 5.2% had used any services due to mental health problems (see Tables 1, 2, and 3).

#### Type of intervention

Medication was the most frequent intervention (70.7%) for service users. Other interventions included a longer discussion (20 minutes) of problems with a doctor or therapist (56.6%), a brief discussion (10 min) of problems with a doctor or therapist (28.3%), and group sessions (5.7%).

### Association of service use with predisposing, enabling, and need factors

The results of the logistic regression analysis are displayed in Table 4. Significant predisposing factors associated with no service use for mental health problems in the past 12 months were male sex (female OR = 1.69, 95%–CI 1.43; 1.99], $p < 0.001$) and higher education (years of schooling OR = 1.06, 95%–CI [1.01.; 1.11], $p = 0.015$). A significant enabling factor was study center (i.e. geographical location), with lower levels of service utilization among those living in London/Canterbury (London/Canterbury OR = 0.09, 95%–CI [0.05; 0.16], $p < 0.001$; reference category: Hamburg). Significant need factors were higher functional impairment (WHODAS-II OR = 1.07, 95%–CI [1.03; 1.11], $p = 0.002$) and comorbidity (number of comorbid mental disorders OR = 1.55, 95%–CI [1.29; 1.86], $p < 0.001$). All other variables in the model were not significantly associated with service use in the past 12 months (see Table 4).

### Barriers of service utilization

The most frequently reported barriers to service utilization in the elderly were personal beliefs (89.9%). Practical barriers (2.8%), stigma-related barriers (2%), and other reasons 5.4% were rarely cited (see Table 5). With regard to personal beliefs, the most frequently named item was "I can deal with my problems or symptoms on my own," which was endorsed by 60% of participants, followed by the item "The problem or symptom will get better on its own" which was endorsed by 15.6%. Personal belief barriers were more frequently reported by those with no mental disorder (60.2%) compared with those with a mental disorder (29.6%). In addition, personal belief barriers were numerically higher in the younger age group (age group 65–69 years: 26.2%, 80–84 years: 16.5%) (Table 5).

## Discussion

This study found that service utilization for mental health problems assessed with an age-appropriate, reliable, and standardized interview in a sample of


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**Table 1.** Predisposing factors of 12-months utilization of health services due to mental health problems and type of services used (N = 3,142) in community-dwelling European elderly

| | 12-MONTHS SERVICE UTILIZATION | | SERVICE USED DUE TO MENTAL HEALTH PROBLEM | | | |
|---|---|---|---|---|---|---|
| | | | | TYPE OF SERVICE | | |
| | NO (N = 2,920) | YES (N = 222) | GP VISIT (N = 148) | INPATIENT (N = 23) | OUTPATIENT (N = 184) | OTHER (N = 35) |
| Age, N (%) | | | | | | |
| 65–69 | 847 (92.27) | 71 (7.73) | 38 (17.12) | 7 (3.15) | 61 (27.48) | 11 (4.95) |
| 70–74 | 724 (90.84) | 73 (9.16) | 44 (19.82) | 9 (4.05) | 63 (28.38) | 7 (3.15) |
| 75–79 | 793 (94.52) | 46 (5.48) | 39 (17.75) | 5 (2.25) | 33 (14.87) | 13 (5.86) |
| 80–84 | 556 (94.56) | 32 (5.44) | 27 (12.16) | 2 (0.90) | 27 (12.16) | 4 (1.80) |
| Gender, N (%) | | | | | | |
| Male | 1,480 (95.48) | 70 (4.52) | 42 (18.92) | 5 (2.25) | 59 (26.58) | 8 (3.60) |
| Female | 1,440 (90.45) | 152 (9.55) | 106 (47.75) | 18 (8.11) | 125 (56.31) | 27 (12.16) |
| Education | | | | | | |
| Years of schooling, M (SD) | 9.8 (3.07) | 9.69 (3.12) | 9.00 (3.07) | 9.29 (3.06) | 9.74(3.14) | 8.73 (2.99) |
| Health satisfaction | | | | | | |
| WHOQoL-Bref, M (SD) | 3.58 (0.95) | 3.11 (0.99) | 3.17 (0.97) | 2.85 (0.82) | 3.17 (0.99) | 2.76 (0.87) |

*Note:* WHOQoL-Bref = WHO Quality of Life BREF; M = mean, SD = standard deviation.

**Table 2.** Enabling factors of 12-months utilization of health services due to mental health problems and type of services used (N = 3,142) in community-dwelling European elderly

| | 12-MONTHS SERVICE UTILIZATION | | SERVICE USED DUE TO MENTAL HEALTH PROBLEM | | | |
|---|---|---|---|---|---|---|
| | | | | TYPE OF SERVICE | | |
| | NO (N = 2,920) | YES (N = 222) | GP VISIT (N = 148) | INPATIENT (N = 23) | OUTPATIENT (N = 184) | OTHER (N = 35) |
| Financial situation, N (%) | | | | | | |
| Very good | 330 (92.70) | 26 (7.30) | 10 (4.50) | 1 (0.45) | 23 (10.36) | 5 (2.25) |
| Good | 1,293 (94.24) | 79 (5.76) | 65 (29.28) | 6 (2.70) | 71 (31.98) | 6 (2.70) |
| Just enough | 1,057 (92.31) | 88 (7.69) | 47 (21.17) | 11 (4.95) | 70 (31.53) | 13 (5.86) |
| Poor | 240 (89.22) | 29 (10.78) | 26 (11.71) | 5 (2.25) | 20 (9.01) | 11 (4.95) |
| Marital status, N (%) | | | | | | |
| Married | 1,803 (94.15) | 112 (5.85) | 79 (35.59) | 9 (4.05) | 91 (40.99) | 16 (7.21) |
| Separated/divorced/ widowed | 980 (90.57) | 102 (9.43) | 66 (29.73) | 13 (5.86) | 87 (39.19) | 17 (7.66) |
| Never been married/other | 134 (94.37) | 8 (5.63) | 3 (1.35) | 1 (0.45) | 6 (2.70) | 2 (0.90) |
| Satisfaction with health access | | | | | | |
| WHOQoL-Bref, M (SD) | 3.95 (0.88) | 3.68 (1.03) | 3.70 (1.02) | 3.77 (0.82) | 3.72 (1.04) | 3.88 (0.93) |
| Satisfaction with transport | | | | | | |
| WHOQoL-Bref, M (SD) | 4.05(0.89) | 3.75(1.05) | 3.86 (1.06) | 3.57 (1.09) | 3.81 (1.06) | 3.63 (1.10) |
| Study center, N (%) | | | | | | |
| Geneva | 478 (91.92) | 42 (8.08) | 17 (7.66) | 1 (0.45) | 39 (17.57) | 3 (1.35) |
| Hamburg | 460 (90.02) | 51 (9.98) | 27 (12.16) | 6 (2.70) | 41 (18.47) | 8 (3.60) |
| Ferrara | 481 (92.86) | 37 (7.14) | 28 (12.61) | 3 (1.35) | 33 (14.86) | 3 (1.35) |
| Madrid | 520 (93.69) | 35 (6.31) | 29 (13.06) | 6 (2.70) | 27 (12.16) | 13 (5.86) |
| London | 488 (98.39) | 8 (1.61) | 17 (7.66) | 2 (0.90) | 4 (1.80) | 2 (0.90) |
| Jerusalem | 493 (90.96) | 49 (9.04) | 30 (13.51) | 5 (2.25) | 40 (18.02) | 6 (2.70) |

*Note:* WHOQoL-Bref = WHO Quality of Life BREF; M = mean, SD = standard deviation.


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**Table 3.** Need factors of 12-months utilization of health services due to mental health problems and type of services used (N = 3,142) in community-dwelling European elderly

| | 12-MONTHS SERVICE UTILIZATION | | SERVICE USED DUE TO MENTAL HEALTH PROBLEM | | | |
|---|---|---|---|---|---|---|
| | | | | TYPE OF SERVICE | | |
| | NO (N = 2,920) | YES (N = 222) | GP VISIT (N = 148) | INPATIENT (N = 23) | OUTPATIENT (N = 184) | OTHER (N = 35) |
| Functional impairment | | | | | | |
| WHODAS-II, M (SD) | 17.18 (6.45) | 21.72 (8.42) | 21.05 (8.83) | 23.09 (2.48) | 20.82 (6.97) | 25.84 (9.54) |
| 12-months mental disorders | | | | | | |
| Any mental disorder | | | | | | |
| Yes | 949 (89.28) | 114 (10.72) | 92 (41.44) | 12 (5.41) | 96 (43.24) | 22 (9.91) |
| No | 1,971 (94.81) | 108 (5.19) | 56 (25.23) | 11 (4.95) | 88 (39.64) | 13 (5.86) |
| Any anxiety disorder | | | | | | |
| Yes | 440 (89.43) | 52 (10.57) | 52 (23.42) | 7 (3.15) | 43 (19.37) | 6 (2.70) |
| No | 2,480 (93.58) | 170 (6.42) | 96 (43.24) | 16 (7.21) | 141 (63.51) | 29 (13.06) |
| Any depressive disorder | | | | | | |
| Yes | 394 (85.10) | 69 (14.90) | 87 (39.19) | 7 (3.15) | 61 (27.48) | 12 (5.41) |
| No | 2,526 (94.29) | 153 (5.71) | 61 (27.48) | 16 (7.21) | 123 (55.41) | 23 (10.36) |
| Any substance-related disorder | | | | | | |
| Yes | 142 (93.42) | 10 (6.58) | 4 (1.80) | 1 (0.45) | 7 (3.15) | 1 (0.45) |
| No | 2,778 (92.91) | 212 (7.09) | 144 (64.86) | 22 (9.91) | 177 (79.73) | 34 (15.32) |
| Comorbidity | | | | | | |
| Number of comorbid disorders, M (SD) | 0.43 (0.73) | 0.81 (1.02) | 1.07 (1.10) | 0.97 (1.18) | 0.81 (1.02) | 0.97 (0.93) |
| Physical health | | | | | | |
| Number of physical illnesses, M (SD) | 2.38 (1.89) | 3.43 (2.67) | 3.12 (2.10) | 3.59 (2.48) | 3.39 (2.26) | 3.96 (2.54) |

*Note:* WHODAS II = WHO Disability Assessment Schedule; M = mean, SD = standard deviation.

European community-dwelling elderly is low with only 7%. These findings are comparable to previous epidemiological studies in the elderly population in the USA and Australia (Garido *et al*., 2011; Gonçalves *et al*., 2014) and also similar to a large European study in the adult age population (Alonso *et al*., 2004). It is particularly noteworthy that even among those with a 12-month DSM-IV diagnosis of a mental disorder, only 11% reported service use in the past 12 months and that service rates use did not differ substantially by type of diagnosis. While these low rates may partly be attributable to the higher item-thresholds for service use in our study, low utilization may also be associated with attitudes of older people toward services, including perception of symptom severity, a desire to solve problems independently, or a lack of knowledge about available services. Furthermore, among those with no classifiable mental disorder about 5% also used services. These may be at least partly identified as "sub threshold" cases, which do not fulfill all required diagnostic criteria for a mental disorder, but suffer from symptom distress or are in remission, and hence perceive a need for treatment.

The most frequently contacted health providers for mental health problems in our sample were mental health outpatient services (83%) and GPs (67%), while inpatient and other type of services were very rarely used. Previous studies found that GPs are the most frequently contacted health provider of older people (Gonçalves *et al*., 2014). However, as Gonçalves and colleagues (2014) noted, GPs may lack time and training to properly identify and address mental health problems, especially in older people. In line with a number of previous studies (Cooper *et al*., 2010; Han *et al*., 2011), this study also found that the most frequently received intervention was psychopharmacological medication (71%), followed by a consultation with doctor or therapist (57% and 28%, respectively). For example, Han *et al*. (2011) also found that most frequent types of treatment for older adults living in the community were prescription medication followed by outpatient services. However, this may be considered problematic as this does not comply with current treatment guidelines for example for depression or anxiety disorders (e.g. NICE


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**Table 4.** The association of predisposing, enabling, and need factors with mental health service use (in the last 12 months) in European community-dwelling elderly (N = 3,011)

| | 12-months mental health service use | | |
|---|---|---|---|
| Variables in regression model | No (N = 2,920) | Yes (N = 222) | Odds ratio (95%-CI) |
| Predisposing factors | | | |
| Age, N (%) | | | |
| 65–69 | 847 (92.27) | 71 (7.73) | REF |
| 70–74 | 724 (90.84) | 73 (9.16) | 1.27 (0.93–1.72) |
| 75–79 | 793 (94.52) | 46 (5.48) | 0.66 (0.42–1.05) |
| 80–84 | 556 (94.56) | 32 (5.44) | 0.77 (0.50–1.18) |
| Gender, N (%) | | | |
| Male | 1,480 (95.48) | 70 (4.52) | REF |
| Female | 1,440 (90.45) | 152 (9.55) | 1.69 (1.43–1.99)* |
| Education in years, M (SD) | | | |
| Years of schooling | 9.8 (3.07) | 9.69 (3.12) | 1.06 (1.01–1.11)* |
| Health satisfaction, M (SD) | | | |
| WHOQoL-Bref | 3.58 (0.95) | 3.11 (0.99) | 0.95 (0.76–1.18) |
| Enabling factors | | | |
| Financial situation, N (%) | | | |
| Very good | 330 (92.70) | 26 (7.30) | REF |
| Good | 1,293 (94.24) | 79 (5.76) | 1.15 (0.77–1.72) |
| Just enough | 1,057 (92.31) | 88 (7.69) | 0.77 (0.38–1.55) |
| Poor | 240 (89.22) | 29 (10.78) | 0.77 (0.27–2.17) |
| Marital status, N (%) | | | |
| Married | 1,803 (94.15) | 112 (5.85) | REF |
| Separated/divorced/ widowed | 980 (90.57) | 102 (9.43) | 1.13 (0.77–1.65) |
| Never been married/other | 134 (94.37) | 8 (5.63) | 0.97 (0.50–1.88) |
| Satisfaction with health access | | | |
| WHOQoL-Bref, M (SD) | 3.95 (0.88) | 3.68 (1.03) | 0.94 (0.78–1.13) |
| Satisfaction with transport | | | |
| WHOQoL-Bref, M (SD) | 4.05 (0.89) | 3.75 (1.05) | 0.94 (0.78–1.13) |
| Study center, N (%) | | | |
| Hamburg | 460 (90.02) | 51 (9.98) | REF |
| Geneva | 478 (91.92) | 42 (8.08) | 0.99 (0.62–1.59) |
| Ferrara | 481 (92.86) | 37 (7.14) | 0.87 (0.60–1.26) |
| Madrid | 520 (93.69) | 35 (6.31) | 0.89 (0.65–1.20) |
| London | 488 (98.39) | 8 (1.61) | 0.09 (0.05–0.16)* |
| Jerusalem | 493 (90.96) | 49 (9.04) | 0.60 (0.33–1.08) |
| Need factors | | | |
| Functional impairment | | | |
| WHODAS-II, M (SD) | 17.18 (6.45) | 21.72 (8.42) | 1.07 (1.03–1.11)* |
| Comorbidity | | | |
| Number of comorbid disorders, M (SD) | 0.43 (0.73) | 0.81 (1.02) | 1.55 (1.29–1.86)* |
| Physical health | | | |
| Number of physical illnesses, M (SD) | 2.38 (1.89) | 3.43 (2.67) | 1.11 (0.93–1.32) |

*Note:* *Significant odds ratios. WHODAS II = WHO Disability Assessment Schedule, WHOQoL-Bref = WHO Quality of Life BREF; M = mean, SD = standard deviation; CI = confidence interval.

guidelines). Moreover, considering the risk of adverse side effects – including the development of NMS – the prescription of antipsychotic medication can pose a severe threat to older people's health (Belvederri Murri *et al.*, 2015). Thus, it has to be considered that even those in contact with services do not receive appropriate treatment or may even be potentially harmed (Dines *et al.*, 2014).

With regard to factors associated with service utilization for mental health problems in the past 12 months a number of significant predisposing, enabling, and need factors were identified: Elderly females were almost twice as likely to use services


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**Table 5.** Frequency of barriers to mental health service utilization in community-dwelling European elderly (N = 2,080)

| | | AGE (IN YEARS) | | | |
|---|---|---|---|---|---|
| ITEM | TOTAL N | 65–69 | 70–74 | 75–79 | 80–84 |
| Personal beliefs, N (%) | | | | | |
| Can deal with my problems or symptoms on my own | 699 (60.05) | 201 (17.27) | 168 (14.43) | 197 (16.92) | 133 (11.43) |
| Problem or symptom will get better on its own | 180 (15.56) | 54 (4.64) | 56 (4.81) | 40 (3.44) | 30 (2.58) |
| Didn't get around to it or didn't bother | 90 (7.73) | 25 (2.15) | 26 (2.23) | 24 (2.06) | 15 (1.29) |
| Did not believe that a doctor or treatment would help me or be useful | 76 (6.53) | 25 (2.15) | 15 (1.29) | 22 (2.98) | 14 (1.20) |
| **Total personal beliefs** | **1,045 (89.87)** | **305 (26.21)** | **265 (22.76)** | **283 (25.4)** | **192 (16.5)** |
| Practical barriers, n (%) | | | | | |
| Did not get an appointment (in time) | 2 (0.17) | 0 (0) | 0 (0) | 0 (0) | 2 (0.17) |
| Had to pay and could not afford it | 6 (0.52) | 1 (0.09) | 4 (0.34) | 0 (0) | 1 (0.09) |
| No access to doctor or doctor was unavailable | 6 (0.52) | 0 (0) | 1 (0.09) | 4 (0.34) | 1 (0) |
| Did not know where to go for help | 18 (1.55) | 7 (1.55) | 5 (0.43) | 4 (0.34) | 2 (0.17) |
| **Total practical barriers** | **32 (2.76)** | **6 (1.64)** | **10 (0.89)** | **8 (0.68)** | **6 (0.43)** |
| Stigma barriers, N (%) | | | | | |
| I was afraid to ask for help or of what others would think about my problem | 24 (2.06) | 9 (0.77) | 6 (0.52) | 7 (0.60) | 2 (0.17) |
| **Other reason**, N (%) | 63 (5.41) | 21 (1.80) | 13 (1.12) | 17 (1.46) | 12 (1.03) |

in the past 12 months as their male counterparts. This gender effect has been consistently observed in previous studies (Han *et al.*, 2011; Barry *et al.*, 2012), and seems plausible as older men generally show lower help seeking behavior and a stronger believe to effectively self-manage mental health issues. Furthermore, our finding of a weak, but significant association of service utilization with lower educational attainment has also been reported in previous epidemiological studies in the elderly population (Garido *et al.*, 2011; Han *et al.*, 2011; Barry *et al.*, 2012). With regard to enabling factors, service utilization was significantly lower in older people living in the London/Canterbury catchment area compared to those living in Hamburg. These may be at least partly attributable to differences in healthcare systems and access to services. Furthermore, in relation to need factors, higher functional impairment, and higher number of comorbid mental disorders were also significantly associated with service utilization in our elderly sample. A higher perceived need due to mental health problems has also been reported in previous studies (Mackenzie *et al.*, 2010; Byers *et al.*, 2012). Contrary to some previous studies physical conditions were not significantly associated with service use (Garido *et al.*, 2011; Han *et al.*, 2011). However, as we only investigated service use for mental health problems, the lack of association between physical illness and service use seems not surprising. At the same time, service users do report a higher number of physical illnesses, although the difference with non-users is not statistically significant. Hence, the type of disorder – mental or physical – may not be so relevant, but possibly the cumulative effect of the number of disorders and the associated functional impairment.

The analysis of perceived barriers to service utilization for mental health problems showed that our elderly participants most frequently reported personal beliefs, while practical, stigma, and other barriers were rarely named. The most frequently named personal beliefs were "I can deal with my problems or symptoms on my own" and "The problem or symptom will get better on its own". While it could be argued that practical barriers are operationalized in Andersen's behavioral model of service utilization as enabling factors, personal belief barriers do not appear to be sufficiently covered in the model. However, it is possible that negative beliefs like "I should be able to deal with my problem on my own" are additional non-enabling factors of service use in older people. Furthermore, several researchers have found that attitudes associated with help seeking behavior contribute to older adults' low utilization rates of mental health services. In particular, it has been reported that older adults feel responsible for solving problems on their own (Pepin *et al.*, 2009). Additionally, Griffiths *et al.* (2011) found


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that personal stigma is associated with a belief in the helpfulness of self-reliance in coping with depression in a national household survey in Australian adult population. Besides, an association of higher self-stigma and sociodemographic factors, such as lower income and education (Werner *et al.*, 2009), has also been found. Hence, a mediating or moderating role of stigma with predisposing, enabling, and need factors is also plausible. In addition, low rates of reported practical barriers in our sample, may also be explained by a lack of awareness of older people with belief barriers about the availability of access or transport to services from which they have not tried to seek help. Moreover, our finding of personal belief barriers decreasing with age has also been found in a recent study (Brenes *et al.*, 2015).

## Limitations

The study has a number of limitations. First, definitions for describing use of mental health services do not reflect the intensity nor the appropriateness of services. Second, the size of the sample in each country and catchment area was limited. Third, it is possible that service utilization was underreported and/or subject to recall bias. Furthermore, it can be difficult for older people in particular to differentiate between physical and mental health problems, because the prevalence of comorbid physical illness and use of medication increases with age and may cause or interfere with mental disorders (Roy-Byrne *et al.*, 2008; Gonçalves *et al.*, 2014). Unfortunately, further subgroup analyses, for example with diagnostic subgroups, were not possible due to the low percentages of service users. Moreover, due to the categorical diagnosis of mental disorders and the low number of service users in the sample no assessment of how different levels of disorders could influence service utilization in the elderly population was possible. Additionally, the cross-sectional study design does not allow us to draw causal conclusions. Finally, Andersen's behavioral model may need further extension and investigation with regard to the possible additional (mediating) role of personal belief barriers of service use.

## Conclusion and implications

Despite these limitations, this study shows that underutilization of services in older European community-dwelling people due to mental health problems is very common and that interventions are needed to improve access to appropriate services. Future research is needed with a more comprehensive data analysis, including an extension of the behavioral model with contextual variables and analyzing service utilization in older people prospectively, including health outcomes.

In order to increase access to services and reduce negative beliefs in this growing and vulnerable population, there is a need to promote literacy about mental health in old age in the general population and to provide adequate health and social care systems according to the recommendations of the WHO (WHO, 2016) and NICE guidelines (NICE, 2015). Professionals need to be able to adequately identify older people at risk for or already suffering from mental health problems and to be able to educate older people about mental health and explain and refer to adequate treatments (WHO, 2016).

## Conflict of interest

None.

## Description of authors' roles

J. Volkert, H. Schulz, and S. Andreas formulated the research questions. H. Schulz, S. Andreas, and K. Wegscheider, designed the study. J. Volkert, M.C. Dehoust, B. Ausín, A.-B. Santos-Olmo, C. Da Ronch, Y. Hershkovitz, A. Quirk, O. Rotenstein, and K. Weber were responsible for carrying it out, and S. Andreas, M. Härter, A. Canuto, M.J. Crawford, L. Grassi, M. Muñoz, A.Y. Shalev, and H.-U. Wittchen took responsibility for supervision. S. Sehner, A. Suling, J. Volkert, K. Wegscheider, and S. Strehle undertook programing of diagnostic procedures and statistical analyses. J. Volkert, S. Andreas, M. Härter, and H. Schulz wrote a first draft of the paper, all authors provided feedback, J. Volkert and H. Schulz finalized the manuscript.

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