

## **Diagnosed, identified, current and complete depression among patients attending primary care in southern Catalonia. Different aspects of the same concept**

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### **Abstract**

The aims of this study were to explore the prevalence and the conceptualizations of depression detected by the healthcare system, identified by the patient or classified/identified in the validated Goldberg's questionnaire in a community. We conducted a cross-sectional evaluation of 317 patients. The different types of depression diagnosed, identified, current or total were stratified by age and gender groups. The difference in the conceptualization of depression from the medical or ordinary people point of view indicate that depression care requires the understanding of the lifestyle, beliefs, attitudes, family and social networks of the people the physicians and nurses care for.

**Keywords:** diagnosed depression; depression identified; current depression; complete depression

### **Background**

According to the World Health Organization (WHO), depression will be the second most important medical disorder worldwide by the year 2020 (WHO, 2001). Available data indicate a rising prevalence of depression that varies considerably across countries, but also between urban and rural areas (Hidaka, 2012). Several studies have shown also that depression is more common among those being admitted to general hospitals or nursing homes (Wancata, Benda, Hajji, Lesch, & Muller, 1998; Wancata, Benda, Windhaber, & Nowotny, 2001). In the context of patients accessing primary health care services, the prevalence has shown varying between 10% and 50%, depending on the community studied and the type of diagnostic test used (sampling, definition and assessment of outcome) (Karlsson, Marttunen, Karlsson, Kaprio, & Hillevi, 2010). According to published reports, the lowest rates are reported in Asian and Southeast Asian countries (Chang et al., 2008) whereas Western countries typically report higher rates (Compton, Conway, Stinson, & Grant, 2006; Kessler, Merikangas, &

Wang, 2007; Peralta et al., 2006). A high prevalence of depressive symptoms was observed among adult women attending a Family Medicine Clinic in Mexico City (Peralta et al., 2006).

The percentage increased in the study in the U.S.A., which noted that 30-48% of the population meets the criteria for depressive disorders, and especially major depressive disorder, at some point in their life (Dwight, Dennis, & Lewis, 2007; Kessler et al., 2007). The results of others international studies undertaken in Uganda (Orley & Wing, 1979) reported a prevalence of 25.2%, and in the United Kingdom and Ireland the rates reached 17% and 12.8% respectively (Caldicott & Dean, 1997).

Among European countries, the SHARE study demonstrate that the prevalence varied consistently between countries (Sweden, Denmark, Netherlands, Germany, Austria, Switzerland, France, Italy, Spain and Greece) with a prevalence of all symptoms higher in the Latinethnolingual group of countries (Castro-Costa et al., 2007).

In Spain, with a prevalence of depression diagnosed or otherwise of 10%, there were nearly four million people with this disease (3,946,530 people) in 2001 and a more conservative estimate (a prevalence of 5%), would include almost two million people (Torres, 2006; Vazquez-Barquero et al., 1997). The Spanish areas with the highest percentages have been found in Andalusia with a prevalence of 42.0%, in Soria (34.2%), in Galicia (33.6%), in Navarra (23.8%) and in Formentera (21.4%) (Montero et al., 2004). Regarding community-based studies, the highest percentages have been found in the study by Chocrón et al (1995) in Gerona with a prevalence of 38.8% (Chocrón, Vilalta, Legazpi, Auquer, & Franch, 1995), the study by Vazquez-Barquero (1997) with 31.5% in four urban areas in Cantabria (Vazquez-Barquero et al., 1997) and the study by Fernandez (1997) with 34.7% in a health centre in Granada (Fernández, 1997).

Despite the development of clinical guidelines by professional bodies, policymakers and other organizations, evidence suggests that a high proportion of the population with mental disorders remains underdiagnosed and undertreated, especially among nursing home residents with cognitive impairment (Volicer, Frijters, & Van Der Steen, 2011). Moreover, previous studies use the term "hidden psychiatric morbidity" for patients with psychiatric disorders that are not correctly identified (Ayuso Mateos,

2004). The most common additional problem is anxiety (Fournier, Cyranowski, Rucci, Cassano, & Frank, 2012; Segal, J., & Teasdale, 2006; Torres, 2006).

Gender differences in depression prevalence have been widely documented, with women experiencing major depression about twice as often as men (Essau, Lewinsohn, Seeley, & Sasagawa, 2010; Kessler, 2003). The lifetime risk of major depression in women is about 20% to 26%, compared to about 8% to 12% for men. This risk is regardless of race or ethnicity (Torres, 2006). On the other hand, since the average life expectancy of both men and women is steadily increasing, the presence of depressive symptoms in seniors represents an important rising Health concern (Beekman et al., 1995). Deteriorating health of seniors (chronic health conditions) can lead to greater emotional strain on an individual that could precipitate the development of depression (Fiest, Currie, Williams, & Wang, 2011; Golden et al., 2008).

Methodological differences between studies preclude firm conclusions about cross-cultural and geographical variation. In addition to clinical guidelines used by clinicians, people's concepts of depression offer also rich complex and diverse perspectives that enhance professional views and may lead to a greater understanding of uptake and acceptance of care for depression.

## **Method**

### ***Design and sample***

A cross-sectional study stratified by age and sex was performed using computerized healthcare records belonging to the Catalan health system between November and December 2007. The data were collected from patients at a primary care center in southern Catalonia (Terres de l'Ebre). The sample size, calculated with a confidence interval of 95%, with an expected ratio of 0.25 and an accuracy of 0.05, was 317 participants.

Telephone surveys using Goldberg's questionnaire (Goldberg, Bridges, Duncan-Jones, & Grayson, 1988) were conducted, using a systematic sampling where non-responses were substituted so that we obtained data for a total of 317 participants (Montesó, 2009). Goldberg Scale has been already validated in Spain (Monton, Perez Echeverria,

Campos, Garcia Campayo, & Lobo, 1993). As shown in Table 1, the test consists of two subscales - one for detecting anxiety and one for detecting depression. Both scales consist of 9 questions, but the last 5 are only formulated if the first 4 compulsory questions are answered. It is a simple scale with good sensitivity (83.1%), specificity (81.2%) and a positive-predictive value (PPV) of 95.3%. The study was conducted in accordance with the "Ethical principles for medical research involving human subjects" of the Helsinki Declaration and was approved by the Scientific Committee of the Hospital de Tortosa Verge de la Cinta (Spain). Informed consents were obtained over the phone following institutional protocol.

### **Analysis**

Depression and anxiety subscales were scored as previously described (Goldberg et al., 1988). The final data, stratified by age and sex groups, were analyzed in order to determine the prevalence in each group. The different types of depression (diagnosed, identified, current or total) were also analyzed. "Diagnosed depression" was defined as depression recognized (diagnosed) by the health system, "identified depression" was defined as depression recognized or identified by the individual concerned throughout his/her life, "current depression (or Goldberg's)" was defined as depression identified by a test at a given time and "total depression" was defined as the total of diagnosed and identified depression. Statistical analysis was performed using SPSS 15.0 for Windows. Non-parametric statistical tests were used because they are recommended when the sample size is less than 15. The Mann-Whitney's U test for interval data and the Pearson chi-square ( $\chi^2$ ) test for nominal data were computed to compare the groups in terms of demographic and clinical variables at baseline.

### **Results**

The gender distribution of the randomly selected 317 patients of the study consisted of 157 women (49.5%) and 160 men (50.5%). The age distribution was as follows: 48 younger than 25 years (15.1%), 126 patients between 25 and 45 years (39.7%), 76 between 45 and 55 years (24%) and 67 patients aged 65 and older (21%). Fifty-seven point seven percent of the patients in the study presented depression, of which 39% were male and 77% were female (Table 2; global depression; n=185). Fifty-three

percent of depressions are not diagnosed (54% in men and 52% in women). Forty-seven percent of depressions are not identified (46% in men and 48% in women). The reason for this underdiagnosis is that the symptoms are not recognized by the patient or by the doctors.

Diagnosed depression, defined as a depression one that has been diagnosed by the Medical health system or that has been notified by the patient, has been identified in 27.7% of the patients (Table 2; 18.4% men, 37.5% women;  $p \leq 0.001$ ). Most people who have not been previously diagnosed with depression, or for whom Goldberg's test does not show depression, did not recognize the symptoms of depression in the past or in Goldberg's test. However, administration of the questionnaire showed that a total of 30.6% of the patients identified as positive self-items containing the depression scale. Of these patients 40% are women and 21.2% are men (data not shown). Total depression is the total diagnosed and identified depression, which as mentioned above amounts to 57.7% (185), of whom 39.3% (63) are men and 77.7% (122) are women (Table 2; global depression).

Goldberg or current depression has been identified in 46.7% of the patients and was defined as one that has tested positive on the scale of anxiety-depression Goldberg (EADG) we manage. Of these patients, 53.5% are women and 40% are men (Table 2; current depression;  $p \leq 0.001$ ). However, if we take into account those who have had a previous depressive episode, this figure rises to 57.7%. A higher percentage of patients have been identified with current depression as compared to those identified with diagnosed depression (46.7% versus 27.7%) and the difference is especially higher for men (40.0% versus 18.4%) than for women (53.5% versus 37.5%). A striking result of gender analysis is that depression is diagnosed by the health system in women twice as often as in men ( $p \leq 0.05$ ). This is also the case for self-diagnoses of depression (identified depression), where women are twice more likely to diagnose themselves with depression than are men. A gender difference in current depression is measured by a test at one point in time and does not require identification of the person or professionals.

Moreover, in current depression or depression measured by Goldberg test, older patients suffer most from depression. Depression is highest for the group under 21 years old, and then increases with age (Table 3;  $p \leq 0.001$ ). The rate of depression for women remains stable for all age groups and increases for those over 65 years old. In men, the group of patients older than 65 years stands out from the others. The rate of depression is higher for women for all age groups. Men over 65 years old have more depression than other age groups (Table 3;  $p \leq 0.005$ ). This age group experiences retirement, physical and psychological changes as well as loneliness and affect older men to a greater extent.

As observed in the Table 4, a higher level of academic studies decreases depression, especially among women. Sixty-two point eight percent of depressive patients have primary school education, 46.9% have secondary school level education and only 31.80% have a university education. Women who do not work outside the home have higher levels of depression than those who do (75% versus 61%), although the difference is not very high.

## Discussion

### **High rate of depression in our community, more especially in women than in men.**

In our study, women are diagnosed with depression twice as often as men. In the literature, it is estimated that 8-12% of men and 18-25% of women will suffer a major depression in their lifetime (Torres, 2006). Gender differences in depression measured using a test at a particular point in time, is the type of depression that is least influenced by the gender biases found in diagnosis or screening for depression. Several risk factors which might account for gender differences in the prevalence of depression have been studied such as: hormones (Freeman et al., 2004; Gibbs, Lee, & Kulkarni, 2012; Schmidt & Rubinow, 2009; Shors & Leuner, 2003; Unsal, Tozun, & Ayranci, 2011), socialization in coping style, in the frequency and reactions to stressful life events (G. W. Brown & T. Harris, 1978; De la Garza, 2006; Hammen, 2005) or both of them (Gibbs et al., 2012; Judd, Hickey, & Bryant, 2012; Kessler, 2003). However others studies have also suggested that there may actually be no gender difference (Carrasco, 2006; Cova-Solar, 2005; Pérez, 2006). These researchers have suggested that women may seek

help more often than men, or report their symptoms differently, leading to them being diagnosed more often than men. However, other studies have refuted these claims (Bleichmar, 1991.; Essau et al., 2010; Mas, Desviat, & Cabrera, 1993; Uddin et al., 2010).

The biological hypotheses have raised the possibility of X-linked gene transmission and female endocrine physiology responsible for the higher rate of depression, but have not shown sufficient evidence for either of them (Barral, 2001; Matud, Guerrero, & Matías, 2006). Among the works with hypotheses based on bioneuropsychic causes, the theory advocated is the more classical hormonal activation-inhibition phase of estrogen and progesterone cycles. Ezcurra et al (2006) argue that the changes in mood or behavior that some women present during the menstrual cycle have been linked to steroid hormones fluctuations (Ezcurra, González-Pinto, & Gutierrez, 2006).

### **Depression observed in the community survey is much greater than is diagnosed.**

The prevalence of current depression in our population is high when compared to other studies (Roca Bennasar, Baca Baldomero, & Cervera Enguix, 2007; Vázquez-Barquero & Torres, 2005). The same percentage applies to identify depression. It is not easy to discuss depression, since it may be a depression "labeled" by the healthcare system, identified by the patient but not classified, identified in a validated test or a combination of all these. The percentage increases as we include different perspectives (diagnosed depression, identified depression, depression validated by a test or determined by any of these). In general the clinical profile may explain the misdiagnosis and mismanagement of depression since the most common depressive symptoms were moderate insomnia, impact on work and activities, psychic anxiety symptoms, general somatic symptoms, gastrointestinal symptoms, somatic anxiety and genital symptoms (Roca Bennasar et al., 2007; Sheehan, 2004).

The rate of depression is very high for both genders, but 50% are underdiagnosed. The rate for women is higher than for men in all types of depression. The literature reported that depression is higher among patients with chronic diseases compared to the general population (Fiest et al., 2011; Patten et al., 2011; Rifel, Svab, Pavlic, King, & Nazareth, 2010). These facts argue that depression is associated with mortality and is

linked to chronic diseases, smoking, limited physical exercise and functional alterations associated with it. This highlights the importance of diagnosing depression as its detection reduces the mortality from all the causes mentioned above.

So, focusing more on recognizing and treating depression may be important in improving the quality of life for many people in social health social centres, which is where they undertook their research (Volicer et al., 2011).

### **Gender differences in depression begin in adolescence, increase in adulthood and subsequently decline.**

In the literature, gender differences in depression begin in adolescence and reached their zenith in the group aged 25-45 years old, in which the percentage of depression is twice as high for women. In this study, gender differences in depression are evident for the group with depression aged 16-25 years old, in which it is 13% higher for women, as well as the studies showing inequalities from puberty (Cova-Solar, 2005; Matud, 2004; Nolen-Hoeksema, Girgus, & Seligman, 1991). They maintain that "inequalities already experienced" are the reason behind the increase in depression in adolescents. For these authors, the differences begin at puberty but are clearly observable in adolescents aged 15-18 years old, then stabilize and fall from late adulthood, with depression declining among women from age 55 onwards. Depression in women does not decrease with age, as it slightly increases beyond 65 years old. In community research, the average age of depression for women is 48 years old.

Depression in old age also increases for García Campayo and Lou (2006), and especially for men, since it is the age group with the most depression (García Campayo & Lou, 2006). It seems that we are approaching a society with a greater life expectancy and poorer mental health. In high school, women have a higher prevalence of depressive disorders, eating disorders, and emotional adjustment disorders than men. Men present more disruptive behavior (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993).

In our study, depression among those under 25 years old is significant (43.8%), as it is higher than among those aged 25-45 years old (38.9%) and almost at the level of those aged 45-55 years old (49.7%). The gender difference increases to 50% at in the 25-45

years old age range, and then gradually declines. For the group aged 45-65 years old, the difference is 12% higher in women and in the age group 65 years old and over, it is higher by 4%. It is probably due to the fact that gender differences are greater in adulthood, which is when women and men experience major differences in gender status (Matud et al., 2006). The group aged 25-45 years old perhaps experiences the most inequalities in both the family and professional sphere, as the difference between the sexes is really important. Women in this age group have difficulties in combinin paid work with domestic work, and still do not receive adequate recognition at work. The level of depression among men this age group is half that for women.

### **Depressions are underdiagnosed and the percentage is higher in men.**

Depression is underdiagnosed and underidentified in men and women, but the percentage is higher in men principally for cultural and social reasons (G. Brown & T. Harris, 1978). This is observed in diagnosed and identified depressions as these are the depressions where gender biases are most evident, as the individuals concerned catalogue the presence or absence of depression themselves. When depression is measured by an objective measure of scale like the Goldberg test, gender bias is reduced. According to the study by (Hogg, 2011), it is necessary to educate people against the stigma which may involve the diagnosis of depression. Gender stereotypes embedded in our culture also make it difficult to recognize mental illness in men, and especially depression features associated with it (dependence, passivity, lack of firmness or assertiveness, great need emotional support, worthlessness, helplessness incompetence). In this regard, different studies add that "recognition is difficult and even harder to show publicly, because it does not correspond to the masculine ideals of success in our society" (Carrasco, 2006; Cova-Solar, 2005; Pérez, 2006). In a review of studies linking depression with female gender, Warren and collaborators supports the hypothesis that depression is more unacceptable for men than for women, because it does not fit the masculine stereotype (Warren, 1994).

### **Higher levels of education and paid work are factors that protect against depression in women.**

As previously described in the literature, undertaking rewarding paid work is important in decreasing depression. In our study, women who do not work outside the home have higher levels of depression than those who do (75% versus 61%), although the difference is not very high. These results confirm those observed in the literature where levels of depression among housewives appear to be very high (Friedan, 1974) and appear to be related to the fact that their life chances are restricted to their roles as homemaker, wife and mother. It is most common in disadvantaged social classes (Ruiz & Verdú, 2004). According to the study of Gomez (2004), by performing two roles, one may provide protection from the harmful effect of the other. However, it is important to provide institutional support for women to combine the two roles and dispense with the idea that the two roles must be performed perfectly, or in men, the idea that they should perform better than women, be successful and work long hours to feel important (Gómez, 2004).

Depression is more prevalent among lower income groups (Seculi, Fuste, & Brugulat, 2001). Poorer health for women in all age groups, lower income groups and with lower levels of education, the unemployed of both sexes and lower income groups are those with the most significant stress factors (Hammen, 2005). Social factors are a strong determinant for depression in women (G. W. Brown & T. Harris, 1978; Sánchez, 1998).

### **Implications for mental health care**

The results of this study are in line with the literature but also suggest that the depression is frequently underdiagnosed. The conceptualization of depression from the medical or ordinary people point of view may be completely different. If individuals not always recognize the symptoms, non-psychiatric physicians of primary care health also frequently under-diagnose and under-treat depression.

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**Table 1. Goldberg's depression questionnaire 2007-2008**

**Gender:**

- Age at onset of malaise:

**Age:**

Age depression diagnosed:

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**ANXIETY SCALE**

(Score one point for each "Yes")

1. Have you felt keyed up, on edge?
  2. Have you been worrying a lot?
  3. Have you been irritable?
  4. Have you had difficulty relaxing?
- (If "Yes" to two of the above, go on to ask :)
5. Have you been sleeping poorly?
  6. Have you had headaches or neck aches?
  7. Have you had any of the following: trembling, tingling, dizzy spells, sweating, frequency, diarrhoea?
  8. Have you been worried about your health?
  9. Have you had difficulty falling asleep?

**TOTAL ANXIETY=**

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**DEPRESSION SCALE**

(Score one point for each "Yes")

1. Have you had low energy?
  2. Have you had loss of interests?
  3. Have you lost confidence in yourself?
  4. Have you felt hopeless?
- (If "Yes" to ANY question, go on to ask:)
5. Have you had difficulty concentrating?
-

- 
- 6. Have you lost weight (due to poor appetite)?
  - 7. Have you been waking early?
  - 8. Have you felt slowed up?
  - 9. Have you tended to feel worse in the mornings?

**TOTAL DEPRESSION=**

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**Interpretation:** Anxiety scale: 4 or more affirmatives responses. Depression scale: 2 or more affirmatives responses.

**Table 2. Results of diagnosed, identified, current and global depression by gender in total of 317 individuals**

	<b>Diagnosed Depression</b>	<b>Identified Depression</b>	<b>Global Depression</b>	<b>Current Depression</b>
	(n=317)	(n=317)	(n=317)	(n=317)
<b>Men (n=160)</b>	29 (18.4%)	34 (21.2%)	63 (39.3%)	64 (40.0%)
<b>Mujeres (n=157)</b>	59 (37.5%)	63 (40.1%)	122 (77.7%)	84 (53.5%)
<b>Total (n=317)</b>	88 (27.7%)	97 (30.6%)	185 (57.7%)	148 (46.7%)

**Table 3. Results of depression according to gender and age groups (years) in a total a 148 individuals**

<b>Depression</b>	<b>Hasta 25a</b>	<b>25-45a</b>	<b>45-65a</b>	<b>65 y más</b>	<b>Total</b>	<b>P-value<sup>a</sup></b>
<b>Women</b>	12	33	20	19	84	p= 0,684

Diagnosed, identified, current and complete depression among patients attending primary care in southern Catalonia. Different aspects of the same concept

	50%	50,8%	52,6%	63,3%	100%	
<b>Men</b>	9	16	17	22	64	p= 0,011
	37,5%	26,2%	44,7%	59,5%	100%	
<b>TOTAL</b>	21	49	37	41	148	
	14,1%	33,1%	25%	27,7%	100%	

**Table 4. Education level and housework variables**

		P-Value
<b>Educational level</b>		
<b>Primary school</b>	54/86 (62.8%)	0.018
<b>Secondary school</b>	23/49 (46.9%)	
<b>University</b>	7/22 (31.80%)	
<b>Place of work</b>		
<b>Women not working outside the home</b>	43 (75%)	0.047
<b>Women working outside the home</b>	61 (61%)	