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CLINICAL PSYCHIATRY

Early Detection of Depression Using the Zung Self-Rating Depression Scale

LUZ N. COLÓN DE MARTÍ, MD*; FRANCISCO S. GUZMÁN YUNQUÉ, MD*;
LUZ M. GUEVARA-RAMOS, MD*

Objective. Compare the findings of the application of the Zung self-rating depression scale to spanish community during the NDSD on three consecutive years (1993, 1994, 1995).

Method. 630 adults in a spanish community filled out the Zung-Self Rating Depression Scale (spanish translation) during the NDSD in october 1993, 1994, 1995. The responders were oriented regarding the results and clinical implications. Scale results were entered on epi-info 6.0 for statistical analysis.

Results. The obtained data shows a female preponderance in all samples. The groups found with SDS compatible with severe to extreme depression were 9.2%, 9.3 and 11.3% for the respective years.

Symptoms more significantly reported by the responders with a SDS of 50 or more were psychomotor retardation, confusion and anhedonia. Suicidal ideations were reported in 17.8% (1993), 15.5% (1994) and 20.7% (1995) of the sample.

Conclusion. Despite the limitations of this study the results suggest that the Zung self-rating depression scale can be helpful in the early detection of depression in patients seen in their initial evaluation by the primary care physician. It's usefulness with spanish speaking communities at other clinical settings should be assessed more extensively. *Keywords: Zung, Depression scale, Spanish community.*

I t is been said that more than 11 million american (about one in 20) experience depression every year(1). It affects twice as many women as men. Studies with both anglo and hispanic clinical or community samples have consistently reported a higher rate of depressive symptoms and disorders in women than in men (2,3,4). The Diagnostic and Statistical Manual of Mental Disorders (4th edition) reports high mortality up to 15% of individuals with major depression(5). Lifetime risk for major depressive disorder in community samples has varied from 10-25% for women and from 5-12% for men(5). The reason for the higher rates in women are not clear but are believed to involved hormonal, genetic, interpersonal gender and social factors(2,6,7).

Culture can influence the experience, seriousness and communication of symptoms of depression(5). So it's

important for the health professionals to be alert to ethnic and cultural specificity in it's presenting complains.

Clinically, depression is recognized through symptoms that fall into specific categories (affective or mood-related symptoms, somatic symptoms, psychomotor and psychological/cognitive symptoms)(6,8). The application of strict criteria over a specific period of time can facilitate the diagnosis of depression.

Depressive symptoms are seen in approximately 15% of patients over 65 years old(9). Depression is also more common among individuals with medical illness that it is in the general population(10). In 1984 an epidemiological survey of the lifetime and six months prevalence rate of several psychiatric disorders was conducted in Puerto Rico. The study was funded and followed the same NIMH, ECA (Epidemiologic Catchment Area) methodology(11). The lifetime prevalence for Major depression episode and Dysthymia in that study was 4.6% and 4.7% respectively and compares to the National ECA data(11).

Between 70-90% of individuals with depression turn to a primary-care physician for help(12). Some studies suggest that primary-care and other physicians diagnose

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only proximately 33-50% of patients with major depressive disorder an treat only approximately 33% with bipolar disorder(13). But many patients are unaware of their depression or cannot describe their sensations sufficiently for the physician to recognize them as symptoms of depression(14). The National Depression Screening Day (NDSD) program was inaugurated on 1991 as part of the mental illness awareness week. It has the purpose of increasing recognition of depression in the general population. Screened subjects would be made more aware of their depression status and, if indicated, could easily be linked to appropriate evaluation and treatment(15). Programs like this would serve to illustrate how simple scales, may be used as a tool, not only for psychiatrists, but also to primary physicians to help in the detection and early treatment of depression. These early interventions will also help to address our concern about children and adolescents who have family history of depression and are 2 to 3 times more at risk to suffer it.

Depression brings financial impact to our society with it's high medical, social and economic costs. If we can identify early enough to onset of depression; we'll probably reduced unnecessary testing and follow-up studies, hospitalization, use of unneeded and even potentially dangerous prescriptions of medication for supposed ailments(14,16).

There are several standardized psychiatric tests that can facilitate the primary practitioners role in doing early the diagnosis of depression. Among these, we have the Zung Self-Rating Depression Scale (SDS)(17), which is known for its easy application, high sensitivity to depression and significant contribution to the accuracy of the diagnosis by the physician(16).

This scale was published for the first time in 1965 and eventually was used in many studies done in U.S. and other countries(18-22). Even though this scale was designed to be used in psychiatric research is so easily administered that it has become of common use in the general practice of medicine. This issue is important if we consider that in Puerto Rico, as in many other mainland communities, there is research evidence to support that many patients in need of mental health services goes to non psychiatric physicians for mental health treatment(23,24).

This scale can estimate the degree from none to an extreme severity of depressive state. It cannot differentiate between types of depressive disorders. Depression is defined as a disorder which is characterized by a group of particular symptoms and complex symptomatology. These symptoms involved four areas: somatic, psychological, psychomotor and mood. The scale is composed of 20 characteristics related to the depressive disorder. The

final score as obtained; is converted to the self-rating depression scale-index (SDS-index or "EAD-index"(22) for its spanish term: "Escala de Autoevaluación de Depresión"(8)). The SDS-index is calculated by dividing the gross score obtained by each subject by 80 and then multiplying by 100 ((gross score/80)x100). According to this scale, depressed subjects are divided into three categories: mildly depressed (SDS between 50 and 59), moderately depressed (SDS between 60 and 69), and severely to extremely depressed (SDS over 70). The purpose of this paper is to compare the findings of the use of the Zung Self-Rating Depression Scale at a spanish speaking site during the NDSD on three consecutive years (1993, 1994, 1995).

Method

We offered the opportunity to an adult population that were interested in filling out the Zung Self-Rating Depression Scale (spanish translation) at our location site: lobby of a metropolitan university hospital, as part of the activities of the National Depression Screening Day during the Mental Health Awareness Week in October 1993, 1994 and 1995. The population that uses this facility includes professionals from different health-related disciplines and adults that come to this medical center from different towns to receive different medical/clinical services or that accompany patients or relatives who receive these services.

The people who where interested in participating received a general orientation regarding the use of the scale. They also received an orientation on how to fill it out. The responders were oriented regarding the results and implications for the need of a more detailed evaluation and need of mental health services depending upon their SDS score. Scale results were entered on epi-info 6.0, along with answers of each participant to each item in the scale, for purpose of statistical analysis. Frequencies of variables of interest (sex, age, and every symptom measured by the scale), and the presence (or absence) and severity of depression were determined based on the SDS index. A bivariate analysis was performed in order to determine any possible significant relationship between selected variables. This article summarizes the analysis of the first two variables and the results concerning presence or absence of depression in the study samples.

Results

Zung Self-Rating Depression Scale for three consecutive years (1993, 1994, 1995) were analyzed. They consisted of 178, 302, and 150 questionnaires for

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each year respectively. For each subject, age and sex data were collected. The mean ages for each sample were 39±13 yrs (n=174), 39±13 yrs (n=281), and 41±13 yrs (n=124) for 1993, 1994 and 1995 respectively, after eliminating from each sample those subjects who did not report their age. Subjects on each sample were divided into four age groups (0-25 yrs, 26-40 yrs, 41-65 yrs, over 65 yrs). Distribution percents of age groups for each

Table 1. Percentage of Subjects on Each Sample by Age Group

Age Group	1993	1994	1995
0-25 yrs	4.6	4.3	5.6
26-40 yrs	63.8	64.8	58.9
41-65 yrs	30.5	27.0	30.6
>65 yrs	1.1	3.9	4.8

sample are shown on table I.

The sex distribution was also analyzed after eliminating those questionnaires were sex was not reported. For the 1993 sample the sex distribution was 20.1% male and 79.9% female (n=174), for the 1994 sample it was 29.8% male and 70.2% female (n=285), and for 1995 it was 23.8% male and 76.2% female (n=126). This data shows a female preponderance in all the samples (see table ii). These results are similar to those found by Magruder, et al., who used a much larger sample consisting of 5,367 subjects.(15) In their sample the sex distribution was of 33.9% male subjects and 66.1% female subjects.

Table 2. Percent Distribution of Sample Population by Sex and Year

Sex	1993 (n=174)	1994 (n=285)	1995 (n=126)
Female	79.9	70.2	76.2
Male	20.1	29.8	23.8

Subjects on each sample group were divided according to their SDS-index (Self-Rating Depression Scale Index) (8). On the 1993 sample, 21.3% of the subjects obtained a SDS compatible with mild depression, 19.5% had an SDS compatible with moderate depression, and 9.2% were found to be severely to extremely depressed. For 1994, 23.5% of depressed subjects obtained a SDS compatible with mild depression, 12.1% with moderate depression, and 9.3% with severe to extreme depression. For the 1995 sample, 23.4% obtained a SDS compatible with mild depression, 21.8% with a moderate depression, and 11.3% with severe to extreme depression (see table III). On the Magruder, et al. study, 23.4% of all subjects obtained a SDS below 50, 23.3% scored in the 50 to 59 SDS range, 30.7% were moderately depressed and 22.6% were found to be severely depressed.(15)

Table 3. Percent Distribution of Depressed Patients by Year and Severity of Depression Using the SDS-Index

Year	Mild Depression	Moderate Depression	Severe/extreme Depression
1993	21.3	19.5	9.2
1994	23.5	12.1	9.3
1995	23.4	21.8	11.3

Symptoms which were significantly more reported by subjects with a SDS of 50 or more were as follows for 1993, 1994, and 1995 respectively: depressed mood (37.8%, 48.8%, 42.5%), insomnia (45.6%, 47.3%, 49.4%), increased heart rate (28.9%, 31.8%, 31.0%), anergy (46.7%, 49.6%, 43.7%), psychomotor retardation (80.0%, 76.7%, 72.4%), confusion (81.1%, 82.2%, 83.9%), hopelessness (44.4%, 38.0%, 44.8%), anhedonia (72.2%, 65.9%, 63.2%),and worthlessness (53.3%, 53.5%, 40.2%). Suicidal ideation was reported in 17.8%, 15.5%, 20.7% for each sample respectively.

On bivariate analysis, no significant relationship was found between severity of depression and sex in any of the three samples.

Discussion

In this report we have tried to assess the presence of depression based on results on the Zung Self-Rating Depression Scale (17), on three samples of subjects who participated during the National Depression Screening Day for the years 1993, 1994, and 1995. We collected data on age and sex. The smallest sample was that of 1995 which consisted of 150 subjects, in contrast with the 1993 and 1994 samples (178 and 302 respectively).

Although a female preponderance was found in all the three samples analyzed (79.9%, 70.2%, and 76.2% for 1993, 1994 and 1995 respectively), no significant relationship was found between sex and severity of depression, based on results of the bivariate analysis. The highest percent of the subjects on each sample were between 26 and 40 yrs old, with a mean age of 39 yrs for the 1993 and 1994 samples, and 41 yrs for the 1995 sample. Symptoms found to be present more frequently in subjects with an SDS-index of 50 or more were depressed mood, insomnia, increased heart rate, anergy, psychomotor retardation, confusion, hopelessness, anhedonia, worthlessness, and suicidal ideation. A significant relationship was found between age and severity of depression for the 1993 and 1994 samples. This relationship was not present in the 1995 sample, which could be due to the small sample size, or to random factors associated with the subjects in the sample, or

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other factors which were not measured in this study.

In 1993 the group with higher SDS-index (with scores in the 70 and above SDS range) were women (93.8%) between 45 and 65 years old. For 1994, the severe-extreme depression group was found to be composed mostly by women (76.9%), within a wider range of age (21 to 65 years old). Male subjects with severe-extreme depression represented a 23.1% of this group, and were mostly between 45 and 65 years of age. For the 1995 sample, the severe-extreme depression group was found to be composed of women (92.9%) between 21 to 65 years old. Our findings were compatible with other reports which show a female preponderance among study populations of depressed subjects, including the Magruder, et al. study (2,5,10,15,3,6,4).

Epidemiological studies done in Puerto Rico suggest that the needers of mental health services used the non-psychiatric physicians as the main provider of these services. The 1994 NDSD survey found that only 38% of the sample choose a psychiatrist as a provider(26). Since the Zung Self-Rating Depression Scale is being described as with easy application, high sensitivity to depression and significant contribution to the accuracy of the diagnosis, we suggest that it be used as part of the initial evaluation of patients seen by the primary care physician. Its usefulness with spanish speaking communities at other USA clinics should be assessed.

Early identification of the onset of depression, will probably reduce unnecessary testings, studies, hospitalization, use of unneeded and even potentially dangerous medications. (16). The goals of diagnosing and treating the depressed patients are not limited to reduce and remit the symptoms, but also to prevent relapses, recurrences; to improve the quality of life and medical status. The achievement of these goals will allow us to reduce mortality, reduce the impairment of the patients social-vocational-family functions and health care costs(16,25). In addition we can reduce the burden of it's psychological and cognitive effects as well as its negative impact on their compliance in the treatment of other medical conditions.

Identifying high-risk patients and intervening early in these cases, can reduce the financial impact to our society taking in consideration it's high medical, social and economic cost(27,16). Patients that will merit greater attention and could benefit from the use of this scale are those in which we can identify among others the following factors: stressful/adverse life events; ongoing psychosocial difficulties, bereavement, history of affective disorders in their family or themselves, history of substance and/or alcohol abuse; history of suicide in the family and suicide attempts; frequent somatic complains; history of irritability with intact cognitive functions, etc. These patients should be carefully evaluated since they could benefit from the therapeutic modalities that are available today. In this way our early interventions are going to be more cost effective.

Resumen

Objetivo. Comparar los hallazgos obtenidos de la utilización de la escala en español: Zung Self-Rating Depression Scale (SDS) durante el Día Nacional de Detección de Depresión de tres años consecutivos (1993, 94, 95) en una muestra de comunidad en Puerto Rico.

Método. 630 adultos en esta comunidad llenaron la Escala Zung Self-Rating Depression Scale en español durante el día nacional de detección de depresión en Puerto Rico durante el 1993, 1994 y 1995. Los adultos fueron orientados en cuanto a la puntuación obtenida y servicios recomendados.

Resultados. Se desprende de los resultados una preponderancia del sexo femenino. El 9.2%,9.3% y 11% obtuvo una puntuación compatible con una depresión severa a extrema para los años correspondientes. Los síntomas que fueron reportados más significativamente en el grupo con puntuación de 50 ó más, fueron retardación psicomotora, confusión y anhedonía. Ideación suicida fue encontrado en el 17.8% (1993), 15.5% (1994) y 20.7% (1995) de la muestra.

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