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Resumen

Según la OMS la depresión mayor es la tercera causa de morbilidad en el mundo y afecta aproximadamente 151.2 millones de personas. Por otro lado se ha observado que hasta un 50% de pacientes oncológicos presentan depresión mayor, y esto es uno de los mayores contribuyentes para determinar la calidad de vida. Nuestro objetivo fue evaluar la prevalencia de depresión en la población de pacientes oncológicos de SOLCA con el Cuestionario de Salud del Paciente (PHQ-9) y encontrar una asociación en los niveles de angustia, en los niveles de apoyo interpersonal en paciente con y sin depresión. Para realizar este estudio visitamos al hospital de SOLCA, Quito, para obtener una muestra representativa de la población. Los pacientes fueron seleccionados al azar en un entorno de oncología ambulatoria. El PHQ -9, ECR y Termómetro de angustia fueron administrados en tabletas electrónicas. Se observó que los niveles bajos de apoyo interpersonal predijeron elevados niveles de depresión y angustia. Por otro lado se demostró que la educación superior, la edad avanzada y el empleo eran factores de protección para los síntomas depresivos.

Abstract

Objectives: To assess depression and distress among outpatients at a cancer hospital in Quito, Ecuador using the Patient Health Questionnaire (PHQ-9) and the Distress Thermometer and correlate level of personal support identified using measures from Experiences in Close Relationships (ECR) with the level of depression and distress.

Methods: Patients were randomly selected in an outpatient oncology setting. The PHQ-9, ECR and Distress Thermometer were administered on electronic tablets.

Results: Distress Thermometer scores and ECR-S scores of patients in an intimate relationship correlated with PHQ-9 scores. Low levels of personal support predicted elevated depression and distress. High education, older age and employment were protective factors for depressive symptoms.

Conclusions: Depression among cancer outpatients in Quito, Ecuador is effectively identified using the computer tablet-based screening instruments, PHQ-9 and the Distress Thermometer. Lack of interpersonal support is identified as a significant vulnerability factor for depression in this cancer population.

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Background

Major depression is among the more common diseases that contributes to global disease burden; it is often comorbid with other diseases and in cancer, affects up to 30% of patients (1). Depression is a key determinant of quality of life for cancer patients and predicts cancer progression and mortality (2).There is an association between perceived lack of social support and depression symptoms among Latina cancer patients; this is important, as the Latina culture places emphasis on family and interpersonal relationships (3) . The present study examines depression, distress, and social support among cancer patients at SOLCA hospital in Quito, Ecuador. SOLCA (Sociedad de Lucha Contra el Cáncer) is a cancer care center with a mixed private-public economic model. The ~90,000 outpatient visits at SOLCA in 2013 are representative of all socioeconomic classes and most geographic regions of Ecuador. This study examines depression and distress among cancer patients who receive care at SOLCA and assesses patients' degree of social support. We hypothesize that social support and distress would be correlated with the diagnosis of depression, suggesting that assessment of patients' experiences in close relationships and levels of distress could be used in a clinical setting to identify those at higher risk for depression. We further predicted that patients with lower socioeconomic status may be at higher risk for depression and distress.

Methods

The study population was SOLCA hospital outpatients with cancer. Participants were invited to participate while waiting for appointments or receiving ambulatory chemotherapy. Demographic information including ethnicity, place of residence, age, profession, education, and marital status was recorded. Three questionnaires were completed in Spanish using a survey instrument (polldaddy.com) on a tablet: 1) Patient Health Questionnaire (PHQ-9)(4) to assess severity of depression symptoms, 2) Distress Thermometer (5) to characterize level of distress, and 3) Experiences in Close Relationships assessment (ECR-S)(6) to measure social support from personal relationships. The distress thermometer consists of 5 scales: distress, anxiety, depression, anger, and "need for help", each scored out of 10 points. The ECR-S is designed specifically for those whose closest relationship is with a spouse or intimate partner. For patients without an intimate partner, an alternate (aECR-S) was developed. The aECR-S included six individually- validated items in which the concept of partner could be appropriately replaced with close friends (supplement). The data were synchronized daily to a secure cloud-based server.

Pearson's correlation coefficients were calculated to test the bivariate association among continuous variables; two sample independent student's t-tests were used to compare the mean of the outcome variables between different levels of categorical variables. Multiple variable linear regression models were conducted to examine how close relationships would predict depression level (PHQ9) after adjusting other covariates in the same models such as age, gender, urban/suburban location, education, employment status, psychiatric treatment status, and whether or not the tumor was breast cancer. Analyses were conducted using SAS

9.3 (Cary, NC, USA). Ethical approval from the University of Michigan and Ecuadorian authorities was granted for this study.

Results

Participants' Characteristics: Among the 300 total participants, 65% were female, 81% were of mixed- ancestry (*mestizo*), greater than the 71% national average (inec.gob.ec/estadisticas). The educational and socioeconomic background of participants was diverse; 30.7% of participants worked in the home and 51% were currently unemployed. Breast and gastric cancers were the first and second most frequent diagnoses in the study population.

Depression, Distress and Social Support Findings: Twenty-nine percent of study participants reported an elevated level of depression symptoms (defined as a score of 8 or more out of 27 on the PHQ-9). The meanPHQ-9 scores were 6.3 +/- 5.0 for women and 5.2 +/- 5.1 for men. Those with at least a university level education had significantly lower PHQ-9 scores ($p=0.001$) while participants who were unemployed had significantly higher PHQ-9 scores ($p=0.002$). Demographic factors such as gender, cancer type, residing outside of Quito, and marital status were not associated with depression scores (Table 2b).

The mean score on the Distress Thermometer was 17.0 +/- 12.0. Age was the only demographic factor significantly correlated with distress scores ($r= -0.13$, $p=0.02$). Distress thermometer scores were positively correlated with PHQ9 scores across the score distributions ($r=0.57$, $p<0.001$).

Among those with a partner, the ECR-S correlated significantly withPHQ-9 scores (r=-0.36, p<0.001) (Figure 1). There was no correlation between depression and social support among those without an intimate partner (Table 1a).

Figure 1 : Linear regression of PHQ9 scores of all participants in an intimate relationship versus ECR-S Scores (r=-0.36, p<0.001).

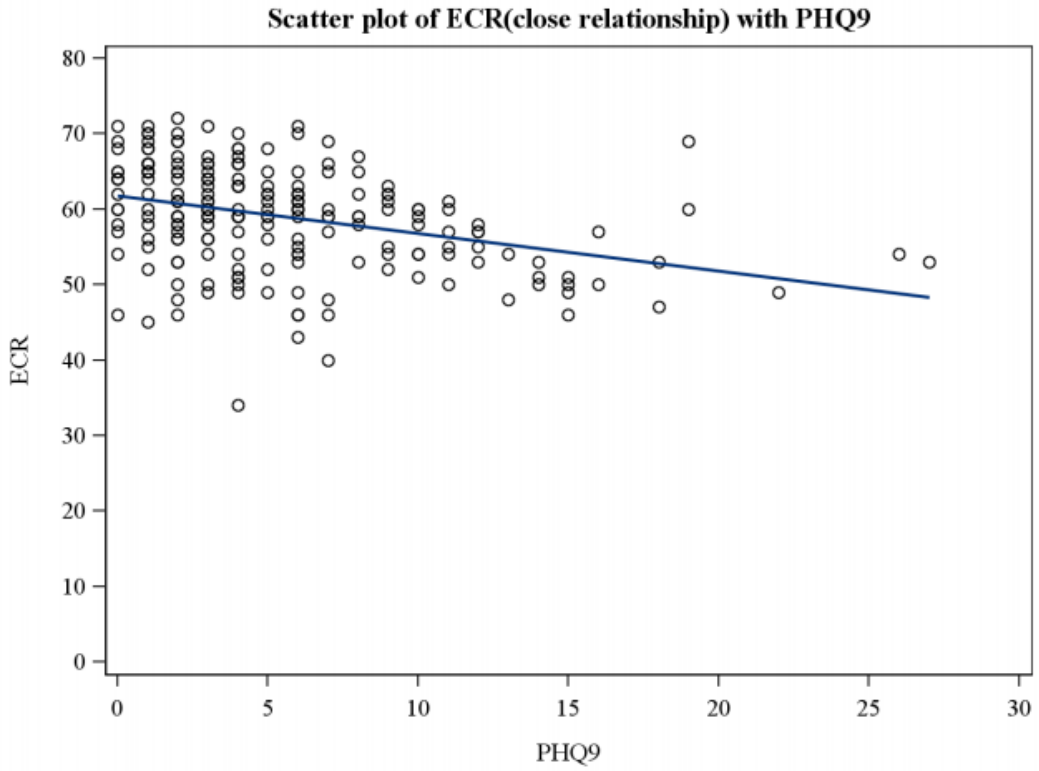

Table 1a: Analysis of Continuous Variables

Variable	DF	Correlation coefficient	P value
ECR-S score for single patients compared to PHQ-9 score	78	-0.06479	0.5731
ECR-S score for patients with a partner compared to PHQ-9 score	210	-0.35641	<0.0001

Distress Thermometer scores compared to PHQ-9 scores	293	0.56623	<0.0001

Discussion

Depression is common among cancer patients attending SOLCA and emotional distress and lack of social support are associated with increased depressive symptoms. The PHQ-9 and Distress Thermometer identified depressive symptoms and the ECR-S assessed social support, providing an estimate of vulnerability to depression. This study found that those lacking strong social support from their partners and those who are young, unemployed and/or lacking higher education are at risk for depression (Table 1b).

Table 1b: Analysis of bivariate variables

Correlation of male gender to elevated PHQ-9 score	0.0871
Correlation of increased age to elevated PHQ-9 score	0.0014
Correlation of residence's distance to Quito to elevated PHQ-9 score	0.7136
Correlation of university education to elevated PHQ-9 scores	0.0014
Correlation of employment to elevated PHQ-9 scores	0.0024
Correlation of psychological treatment to	0.1762

elevated PHQ-9 scores	
Correlation of breast cancer diagnosis to PHQ-9 scores	0.6630

Computer tablets proved to be an easy and secure medium for administering screening questionnaires at SOLCA. The majority of participants were eager to use the tablet and learned the technology within minutes. Patients who struggled were often symptomatic (i.e., in significant pain), geriatric or had low levels of education (itself associated with depression), but completed the surveys with coaching. The mobility of the device allowed patients privacy while participating in the screenings. Responses were automatically uploaded by PollDaddy, which removes the need for data entry, improving data security and accuracy. This study also demonstrated the utility of the PHQ-9, one of the most succinct depression measures available. Its feasibility has previously been established in primary care settings in Quito (7). A lower PHQ- 9 threshold of 8 (instead of the standard 10) was used because a lower diagnostic threshold has been found to improve PHQ-9sensitivity, which is important in Latin America where depression and depressive symptoms are often less likely to be acknowledged (7).

The Distress Thermometer is used routinely in many U.S. cancer centers (5). The strong correlation between the Distress Thermometer and PHQ-9 scores suggests that it works well in the Ecuadorian patient population. The Estimates of Close Relationships – Spanish (ECR-S) scores from patients in an intimate relationship correlated significantly with PHQ-9 scores (8). The shortened version of the ECR-S developed by the research team for patients without an intimate partner did not have a significant correlation with PHQ-9 scores, suggesting that further revisions are needed to adequately screen this population in Latin America.

Limitations

This study is limited to one institution, breast and gastric cancers were the two most common cancers in this study population.

Conclusions

Depression and distress are common among cancer patients; and greater distress and depression symptoms are reported among those without the support of an intimate partner. This suggests the importance of individual or group interventions to enhance support systems for patients. Depressive symptoms were higher among the less educated participants. Support groups are an opportunity for future research as they improve cancer outcomes (9) and many SOLCA patients formed informal support groups while receiving treatment.

Establishing effective, efficient tools for assessment of depression among cancer patients is crucial given the high rate and the well-established role of depression in cancer mortality (10) . This study demonstrates the utility of computer tablets in disseminating screening. The PHQ-9, Distress Thermometer, and ECR-S may be useful tools in the development of a consolidated screening tool. Further, this study demonstrated the value of assessing social support to predict depression risk.

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