PsiqueMag
Revista Científica Digital de Psicología
https://doi.org/10.18050/psiquemag

Universidad César Vallejo

Psychometric Properties of the Zarit overload Scale in formal and informal caregivers of people with schizophrenia

Propiedades psicométricas de la Escala de Sobrecarga de Zarit en cuidadores formales e informales de personas con esquizofrenia

Carlos Marchena Cárdenas I INSM "Honorio Delgado-Hideyo Noguchi", Perú
Mauro Merma Paricahua I INSM "Honorio Delgado-Hideyo Noguchi", Perú
Gladys Rosales Gabino I INSM "Honorio Delgado-Hideyo Noguchi", Perú

Fecha de recepción: 10.06.2022
Fecha de aprobación: 18.01.2023
Fecha de publicación: 27.07.2023

Cómo citar: Marchena, C., Merma, M., Rosales, G. (2023). Psychometric Properties of the Zarit overload Scale in formal and informal caregivers of people with schizophrenia. *Psiquemag 12* (2), e120206.
https://doi.org/10.18050/psiquemag.v12i2.2389

Abstract

The psychometric properties of the Zarit Caregiver Scale applied to formal and informal caregivers of people with schizophrenia in Peru were evaluated. The internal validity of the Abbreviated Zarit Scale (EZA) was evaluated using the Kuder-Richarson 21 coefficient and a value similar to the EZ scale was obtained (coefficient = ,856).The KMO adequacy measure indicates that there is a high correlation between the items (,816) as well as Bartlett's sphericity test (p<,001). A single factor explains 54.77% of the total variability of the data. In informal caregivers, the reliability of the EZ obtained high internal consistency (Cronbach's alpha coefficient=,908; Spearman-Brown coefficient=,895). The EZ applied to formal and informal caregivers obtained adequate reliability. The EZA with a coefficient of ,879 sensitivity of 88.2% and specificity of 92.3% proved to be a recommendable instrument for assessing overload.

Keywords: psychometric properties, burden, caregiver, schizophrenia.

Resumen

Se evaluaron las propiedades psicométricas de la Escala de Cuidador de Zarit (EZ) aplicada a cuidadores formales e informales de personas con esquizofrenia en el Perú. Se evaluó la validez interna de la escala de Zarit Abreviada (EZA) mediante el coeficiente de Kuder- Richarson 21 y se obtuvo un valor similar a la escala EZ (coeficiente= ,856). La medida de adecuación KMO evidenció elevada correlación entre los ítems (,816) lo mismo que la prueba de esfericidad de Bartlett (p< ,001). Un sólo factor explica el 54,77% de la variabilidad total de los datos. En cuidadores informales la fiabilidad de la EZ obtuvo elevada consistencia interna (Coeficiente alfa de Cronbach= ,908; Coeficiente de Spearman- Brown=,895). La EZ aplicada a cuidadores formales e informales obtuvo adecuada confiabilidad. La EZA con un coeficiente de ,879 sensibilidad de 88,2% y especificidad de 92,3% resultó ser un instrumento recomendable para evaluar la sobrecarga.

Palabras clave: propiedades psicométricas, sobrecarga, cuidador, esquizofrenia.

INTRODUCCIÓN

In Peru, there is a scarce number of standardized tests for the evaluation of many psychological constructs regarding intelligence, affectivity, personality, etc. For this reason, foreign tests, standardized for other cultural and socioeconomic contexts, are used. Many of the psychometric instruments were initially constructed in English and then translated and applied.

The Zarit scale is an instrument applied in various latitudes and in a number of diagnoses and predominantly in people affected by senile dementia (Ribé et al., 2018; Yu Yu et al., 2019; Ehsan et al., 2018; Cerquera et al., 2012; Tsai et al., 2021; Crespo & Rivas, 2015; Tartaglini et al, 2019) however, most people with schizophrenia require the support of informal (family members) or formal (hired staff) caregivers who can look after their health.

According to the World Health Organization (2016), schizophrenia is a severe mental disorder characterized by distortions of perception, thought and emotions, the latter in the form of blunting or inadequacy of emotions.

In general, it can be noted that with time in schizophrenia, awareness of the disease and intellectual performance are affected by cognitive deficits. The disorder compromises the essential functions that give the normal person the experience of his or her individuality, uniqueness and self-control; in addition, the person with schizophrenia believes that his or her innermost thoughts, feelings and actions are known or shared by others and may have delusional ideas about the existence of natural or supernatural forces capable of influencing, often bizarrely, his or her actions and thoughts; therefore, people diagnosed with schizophrenia are more vulnerable and less autonomous, requiring the caregivers above.

It is estimated that schizophrenia affects more than 21 million people worldwide. It is more common in men (12 million) than in women (9 million). Also, men generally develop schizophrenia at a younger age. More than 50% of people with schizophrenia are not receiving appropriate care. 90% of untreated schizophrenics live in developing countries (WHO, 2016).

It is common that, for economic, cultural and social reasons, the care of the person with schizophrenia falls on immediate family members. This care affects the health of family caregivers, putting them at greater risk for emotional stress and various illnesses, both physical and mental. This situation generates exhaustion and a decrease in their quality of life. Several studies show that informal caregivers of people with schizophrenia have high self-perceived levels of emotional burden. Although the level of self-perceived burden is high in this group, its value changes between regions, suggesting that there are multiple factors related to the geographical, social and cultural environment which affect the self-perception of the level of burden. There are several factors related to caregiver burden, both objective and subjective factors; among them, the intensity and type of schizophrenic illness symptomatology, kinship of the family caregiver, educational level, ages of the patient and caregiver, and length of illness (Ling et al., 2015).

To develop an integrative conceptual framework of the concept of family burden both in its quantitative and qualitative aspects, as well as subjective and objective factors, Martinez et al. (2009) consider different theoretical bases: systemic theory, role theory and stress theory. The perception of the severity of the burden has been related to patient characteristics, the intensity of symptoms, the degree of disability associated with the disease, age, sex, duration of the disease, number of hospitalizations and the emotional ties between the patient and the caregiver, as well as the personal characteristics of the caregiver, the characteristics and dynamics of the family. Factors such as the availability of social support networks, socio-health norms, employment policies, and the structure of health services also play a role, putting a greater burden on families, especially female caregivers.

In our reality, the caregiver burden has been described in a limited way. Likewise, our cultural characteristics mean that the results of many studies carried out in other realities, especially in the United States and Europe, cannot be extrapolated. The magnitude of the problem needs to be adequately evaluated. Families in Latin American countries provide direct support to sick people more frequently than in other realities, which makes them more vulnerable to the problems described.

In a study of Validation of the Zarit Burden Interview in informal primary caregivers of patients diagnosed with mental illness, Flores et al. (2019) evaluated 235 informal primary caregivers applying a 22-item Zarit Burden Interview and the 36-item Health Status Questionnaire (SF-36) obtained adequate internal consistency with Cronbach's alpha of,89, with a significant sample adequacy index, KMO of,893 in a three-factor structure: impact of caregiving, interpersonal relationships and self-efficacy expectations with alpha values of,86 to,60; explaining 5,.7 % of the variance. The internal consistency of the Zarit Burden interview can be considered adequate.

Rondón (2006) states that mental illness is a cause of great personal suffering for those who suffer from it and for the people around them. In a country where psychiatric care is not available in several regions and where private insurance is not required by law to cover such care, mental illness quickly impoverishes the family. On the other hand, the lack of a community-based care and rehabilitation system forces patients with severe symptoms, which significantly hinder family interaction, to live and remain at home all day, resulting in family rejection, discrimination and exclusion of the patient and the family caregiver, with serious consequences for the mental health of the caregiver.

The INSM "HD-HN" (2015) refers to some families who choose to abandon their schizophrenics in the streets or in hospital centres. In this sense, it is clear that the responsibility for the care of these people with schizophrenia lies not only with health professionals and the State but also with society, communities and families.

In Peru, Law No. 29889 protects the rights of people with Mental Health problems. It promotes the creation of protected homes for people with mental disorders who do not have sufficient family support (Ministry of Health-MINSA, 2018).

The Protected Homes Support staff is made up of 08 nursing technicians (accompanying staff) and kitchen staff; they develop a function of constant monitoring of the protected home resident, administering the prescribed medication, planning and executing activities of daily living that favour the development and well-being of the resident, and performing a follow-up process of the resident's progress. Due to the characteristics of the work they perform and the residents in their care, they are identified as formal caregivers (Correa, 2015).

In Peru, as of 2019, four sheltered homes were opened in the cities of Lima, Loreto and Moquegua, where formal caregivers work; examining the burden they bear in caring for patients diagnosed with schizophrenia requires simple and effective measurement instruments. Given the problem of lack of such instruments, the authors set out to evaluate the psychometric properties (validity and reliability) of the Zarit Caregiver Burden Interview (EZ) for formal and informal caregivers, measuring the overload expressed by those evaluated and to compare the findings with results reported in other parts of the world.

METHOD

Design

Descriptive, observational, cross-sectional, cross-sectional psychometric study with test-retest measurements (Hernández-Sampieri & Mendoza, 2018), Manterola et al. (2019).

Participants

The population consisted of N = 209 caregivers of people with schizophrenia, 59 formal caregivers from community mental health centres in the cities of Lima, Loreto and Tacna and 150 informal caregivers, relatives of patients of the National Institute of Mental Health "Honorio Delgado-Hideyo Noguchi".

The sampling was probabilistic of simple random type (Martinez, 2012) of adults of both sexes from the health above facilities who signed informed consent in 2019, having caregiver overload as the main measurement variable.

Procedure

Authorization was obtained from the Research Ethics Committee of the INSM "HD-HN" and from the households of the 3 cities where the study was conducted. Subsequently, the researchers went to Loreto and Moquegua to administer the instrument twice in each city for the application of the test and retest. Two sociodemographic

sheets were applied for formal and informal caregivers. The caregivers were evaluated using the EZ Zarit (Caregiver Burden Interview).

The selection method was by simple random sampling from the personnel records of the mentioned institutions. The main variable was formal and informal caregiver overload, using a confidence level of 95% and a relative error of 5%.

Instrument

The EZA was administered and consisted of 22 items in three dimensions: Impact of Caregiving on the Caregiver (items 1 to 12), Interpersonal Relationship (items 13 to 18), and Self-Efficacy Expectations (items 19 to 22). A widely used instrument with reliable psychometric properties and high indicators of internal consistency (Cronbach's alpha coefficients greater than .9 and Spearman-Brown coefficients greater than .8).

For the present study, two pre-coded sociodemographic cards were developed, one for formal caregivers and the other for informal caregivers. The Zarit Caregiver Burden Scale was administered to formal and informal caregivers of persons with schizophrenia.

Data Analysis

Data were processed with SPPP V 25; descriptive statistics were used to explain quantitative variables, central tendency, and dispersion (mean and SD), describing frequencies and cumulative percentages. The reliability of the scale, recommended for the assessment of caregiver burden in patients with schizophrenia, is evaluated.

RESULTS

Descriptive analysis

The sociodemographic survey and the EZ were applied to 59 formal caregivers working as hired in sheltered homes for people diagnosed with schizophrenia in the departments of Loreto (29), Moquegua (4) and Lima (26). The 79.7% were female; the ages ranged between 24 and 61 years with an average of 37 ± 8 years; the majority had higher technical education (89.8%), completed secondary school (6.8%) and higher university education (3.4%). Slightly more than half of the formal caregivers live in a marital union (57.6%). 20.5% have no children, and the majority live with a partner and children (40.7%).

The 150 informal caregivers evaluated with the Zarit scale were predominantly young women of middle to advanced adulthood, with caregiving tasks shared by several family members and even neighbours and friends.

The Zarit EZ applied to formal and informal caregivers of people with schizophrenia obtained the following psychometric findings:

Table 1

Informal caregivers of patients with schizophrenia. Reliability of the Zarit Overload Scale. Outpatient Services of the INSM "HD-HN

Zarit Caregiver Overload Scale	Number of items	Cronbach's alpha coefficient	Spearman-Brown Coefficient
Overload	22	0,908	0,895
Impact of caregiving on the caregiver	12	0,869	0,88
Interpersonal relationship	6	0,701	0,598
Self-Efficacy Expectation	4	0,626	0,758

Table 1 shows that the scale with 22 items achieved a high internal consistency (Cronbach's alpha coefficient=.908 (Spearman-Brown coefficient=.895). In the Self-efficacy Expectation dimension, a relatively low Cronbach's alpha coefficient (.626) was found, but still acceptable (Spearman-Brown coefficient=.758). In the Interpersonal Relationship dimension, Cronbach's alpha coefficient was above 70%; however, the Spearman-Brown coefficient was less than 60%. The dimension Impact of caregiving on the caregiver reached a high internal consistency (Cronbach's alpha coefficient = .869 obtained in the dimension Impact of caregiving on the caregiver (Spearman-Brown coefficient = .88).

Regarding the reliability of the Zarit scale, which has three subscales (Impact of caregiving on the caregiver, Interpersonal relationship and Self-efficacy expectation) and can be evaluated in the complete and abbreviated modalities, the internal consistency of the Abbreviated Zarit Scale (EZA) was examined for both the formal and informal caregiver, applying the Kuder-Richardson coefficient 21 and a value very similar to the EZ scale was obtained (coefficient=.879). The reduced Zarit scale (EZA) showed a sensitivity of 88.2% and specificity of 93.3%.

The evaluation carried out in our setting with formal caregivers took place in 4 sheltered homes, located one in Lima, two in Iquitos and one in Moquegua, since at the time of the study, they were the only ones authorized, and there was little service available for people with schizophrenia, which made it impossible to obtain greater psychometric properties of the test.

Table 2

Zarit test and retest scores of formal caregivers of people with schizophrenia.

Zarit Scale Scores		Media	Standard deviation	Minimum	Maximum	Coefficient of Concordance
Total score	Test	45,33	7,13	32	62	0,697
	Retest	45,21	9,95	32	76	
Impact of caregiving on the caregiver	Test	23,87	4,31	16	35	0,700
	Retest	22,97	5,39	16	38	
Interpersonal relationship	Test	10,79	2,26	6	16	0,323
	Retest	12,23	3,38	8	24	
Expectation of self-efficacy	Test	10,67	2,22	4	15	0,533
	Retest	10,00	2,32	6	15	

Table 2 indicates that in the test-retest concordance, there is a direct linear trend, although with dispersed total scores.

The average score in the retest decreased in the full scale and the subscales, with the exception of the Interpersonal Relationship subscale, which increased slightly.

The Spearman's coefficient of concordance between the test and retest applied to formal caregivers shows that the concordance is relatively low (r=.697). As for the subscales Impact of caregiving on the caregiver (r=.70), Interpersonal relationship (r=.323) and Expectation of self-efficacy (r=.533), the concordance is low.

The evaluation of internal consistency in the first application of the Scale (Test) produces a Cronbach's alpha coefficient of .774. When applied a second time (Retest), the internal consistency increases (Cronbach's alpha coefficient of .883). The simplified version, with fewer items, facilitated the Exploratory Factor Analysis (EFA).

The EZ items of informal caregivers are significantly correlated (X2=1372.54; p=.000). The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO=0.895) showed high correlation between items.

Table 3

Principal components factor analysis of the Zarit Abbreviated Informal Caregiver Overload Scale for Persons with Schizophrenia.

Reduced Zarit Scale (EZA)	Factor
2. You feel that because of the time you spend with your family member, you no longer have enough time for yourself.	0,610
3. You feel tense when you have to take care of your family member and also attend to other responsibilities.	0,798
6. You feel that the current situation is negatively affecting your relationship with friends and other family members.	0,715
9. You feel overwhelmed when you have to be at your family member's bedside.	0,800
10. You feel that your health has suffered as a result of caring for your family member.	0,827
17. You feel that you have lost control over your life since your family member's illness manifested itself.	0,783
22. In general, you feel very overburdened by having to take care of your family member.	0,790

Table 4

Discriminant validity of the Zarit abbreviated informal caregiver overload scale for people with schizophrenia.

Zarit Scale (EZA)	Observed		
	Overload intense	Absence of overload	
Intense overload	75	5	Positive predictive value 93.8%
Absence of overload	10	60	Negative predictive value 87.5%
	Sensitivity 88.2%%	Specificity 92.3%	Youden Index 80.5%

Table 4 shows that the reduced Zarit scale (EZA) presented a sensitivity of 88.2% and specificity of 92.3%, with a positive predictive value of 93.8 and a negative predictive value of 66.7%.

The area under the ROC (Receiver et al.) curve obtained was 963, and the cut-off point was 16.5, demonstrating maximum sensitivity and specificity; thus, the abbreviated version was useful in our study. The positive predictive value of the shortened scale is 93.8%, and the negative predictive value is 85.7%, and the Youden index is 80.5%.

DISCUSSION

Applications of the Zarit in people with schizophrenia are scarce in the world, and caregiver burnout of patients with schizophrenia is evidenced to a greater extent among informal caregivers in various countries (Alexander et al., 2016; Ehsan et al., 2018; Inogbo et al., 2017) which we also found as a collateral finding in our study.

The main drawback of the EZ is its length; however, in Brazil, (Borghetti et al., 2015) applied it to caregivers of older adults and found that the instrument presented appropriate reliability with a Cronbach's alpha of 936.

Similarly, in Mexico, although not in a sample of people with schizophrenia but of informal primary caregivers of children with a chronic degenerative disease, Montero et al. (2014) applied the Zarit (22 items) and the Caregiver burden interview, CBI, adapted to Spanish and found three factors that explain 50% of the variance with a Cronbach's alpha of,84; the model had a good fit with values equal to or higher than,90.

Pablo et al. (2016), in the study with caregivers of patients with heart failure in Mexico, applied the EZ of 22 reagents, obtaining a Cronbach's alpha α = 907. The Kaiser Meyer Olkin test yielded a score of 854 (adequate sampling), while Bartlett's test of sphericity was statistically significant with a p<.000.

Regarding factor analysis, Albarracín et al. (2016) in Bucaramanga (Colombia) analyzed the factor structure of the Zarit Overload Scale: in 100 informal caregivers located through the AFE, four factors explained 68.35% of the total variance, obtaining a high level of reliability for the Total Scale (α =,88) demonstrate that the Zarit is a multidimensional and reliable instrument to measure overload in informal primary caregivers of older adults, but that they did not report clinical pathology as the one we examined in our study.

In Chile (Breinbauer et al., 2009) validated the EZ in its original and abbreviated versions, obtained high internal consistency (Cronbach alpha of .87) and concluded that the original and abbreviated Zarit burden scales are valid for assessing caregiver burden in prostrate adult patients, but without comprehension difficulties or schizophrenia as in our study.

In Spain, the abbreviated form, the "Abbreviated Zarit Scale for Palliative Care" (EZA), consists of only 7 items from the original EZ. It does not distinguish "light overload" from "no overload". Its usefulness lies in the fact that it can be used for screening studies of intense caregiver burden.

The application of the simplified version of the Zarit resulted in similar values and acceptable reliability not only in our study but also in others, such as in China, where sufficient psychometric consistency was found when examining 10 short versions of the Zarit Burden Interview (ZBI) applied to people with schizophrenia. The Chinese version of the ZBI obtained acceptable internal consistency with a McDonald's coefficient of 89 (Yu Yu et al., 2018).

Raising the number of samples increases the reliability; however, because of the results of the present study, it is not imperative for further studies to increase the number of EZ test takers but only to use the abbreviated version (ZBI).

By enabling the AFE, although it is not recommended in the present study to perform the Confirmatory Factor Analysis (CFA), the psychometric properties were specified since the application of the simplified version of the Zarit resulted in similar values and acceptable reliability not only in the present research but in other studies such as in China where they found sufficient psychometric consistency when examining 10 short versions of the Zarit Burden Interview (ZBI) applied to people with schizophrenia.

A psychometric measurement through the AFC was not conducted because of the limited number of persons served in the existing

fledgling sheltered homes; however, the prolixity of previous applications of the EZ as well as the ZBI does not limit the psychometric results reported, as the underpinning theory of burnout, as well as the dimensions of the test, have been clearly established; therefore, they are not limiting for measuring quality of fit. (Hair et al., 2019) Estimating a sample size requires measuring the dispersion of Daros (standard deviation) from previous studies (Talavera et al., 2011).

Obtaining in the reduced Zarit scale (EZA) a sensitivity of 88.2% and specificity of 92.3% allows us to weigh the probabilities: in the first case, of positive values and the second of probable negative values; likewise, the establishment of the cut-off point of 16.5 with optimal results, contributes to the usefulness of the instrument in the localities evaluated, reducing costs and biases in its application.

The academic interest in analyzing the psychometric properties of assessment instruments can also be observed in various studies; for example, in Portugal (Vasconcelos-Raposo et al., 2020) applied the AFC in a distress scale for caregivers in primary care nurses; in Spain (Blanco et al., 2019) studied the psychometric properties of self-efficacy scale in non-professional caregivers. Cuellar-Flores and Dresch (2012) investigated the validity of the Duke-UNK-11 functional social support questionnaire in caregivers.

Thus, the issue that concerns us is very topical, and we hope that it will be the subject of new studies that will contribute to the finding of effective measurement instruments to improve support for caregivers in the noble purpose of helping those who require it, whether they are family members or users with some or other health disturbance.

Having an abbreviated instrument to detect caregiver overload in our environment becomes relevant at this juncture for several reasons, such as the following:

Recent studies show a significant positive association of caregiver overload as a risk factor with anxiety symptoms (Del Pino-Casado et al., 2021).

The MINSA of Peru reports that in 2021, the attention of 1'300,000 was linked to mental health in most cases of depression and anxiety as progress in the policy of opening health facilities for psychological and psychiatric care initiated in 2015. By 2021, 52 sheltered homes were opened where people with schizophrenia are cared for, all with the work of formal caregivers (MINSA, 2022).

The critical socioeconomic situation in the context of the COVID-19 pandemic demands the best use of scarce resources; likewise, greater knowledge of the psychological state of caregivers can improve their interventions and care for people with schizophrenia.

A limitation of the study is that the small sample size, with few formal caregivers, limited certain psychometric measurements, such as the fact that only a PFA was performed and not a CFA; also, the Principal Components (PC) extraction method was developed and not the Common Factors (CF) method, which uses shared variance estimates, a relevant measurement in the validation of self-administered questionnaires.

On the other hand, the advent of the COVID-19 epidemic and the respective confinement limited the possibilities of analyzing the information collected.

CONCLUSIONS

The psychometric properties of the EZ that were applied to formal and informal caregivers of people with schizophrenia is a reliable instrument.

The psychometric analysis of the Zarit responded favourably to an AFE rather than to an AFC due to the small number of caregivers assessed.

The EZ applied to informal caregivers of people with schizophrenia is reliable because of its high internal consistency (Cronbach's alpha coefficient = .908).

The EZA with only 7 items, applied to informal caregivers of people with schizophrenia, is reliable, achieving high internal consistency (Cronbach's alpha coefficient = .908), and the AFE suggests construct validity. The EZA can be used as a screening instrument in the care work of the new community homes in Peru.

ACKNOWLEDGMENTS

The author is grateful for the support provided by the directors of the health institutions and the participants.

FUNDING

National Institute of Mental Health "Honorio Delgado-Hideyo Noguchi".

AUTHORS ROLES

CMC, MMP, GRG: Conception of the design, drafting of the manuscript, analysis and interpretation of the results, and review.

COMPETING INTERESTS

The authors declare under oath that they have no conflict of interest in the preparation of this article.

REFERENCES

Albarracín, A., Cerquera, A., & Pabón, D. (2016). Escala de sobrecarga del cuidador Zarit: Estructura factorial en cuidadores informales de Bucaramanga. *Revista de Psicologia-Universidad de Antioquia., 8*(2), 87-99. https://revistas.udea.edu.co/index.php/psicologia/article/view/327888/20784934

Alexander, G., Bebee, C., Chen, K., Vignes, R., Dixon, B., Escoffery, Jackson, M. (2016). Burden of caregivers of adult patients with schizophrenia in a predominantly African ancestry population. *Qual Life Res, 25*(2), 393-400. doi: https://pubmed.ncbi.nlm.nih.gov/26205769/

Blanco, V., Vasquez, F., Guisande, M., Sanchez, M., & Otero, P. (2019). Propiedades Psicometricas de la Escala de Autoeficacia Generalizada en Cuidadores no Profesionales. *Revista iberoamericana de Diagnostico y Evaluacion, 3*(52), 115-127. https://www.redalyc.org/journal/4596/459661296010/html/

Borghetti, D., Aires, M., Lais, F., & Girardi, L. (2015). Adaptation and validation of the Caregiver Burden Inventory for use with caregivers of elderly individuals. *Rev. Latino-Am. Enfermagem, 23*(1), 130-8. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4376041/pdf/0104-1169-rlae-23-01-00130.pdf

Breinbauer, H., Vásquez, H., Mayanz, C., Guerra, C., & Millán, T. (2009). Validación en Chile de la Escala de Sobrecarga del Cuidador de Zarit en sus versiones original y abreviada. *Rev Méd Chile, 137*(5), 657-665. Obtenido de http://dx.doi.org/10.4067/S0034-98872009000500009

Cerquera, A., Granados, F., & Buitrago, A. (2012). sobrecarga en cuidadores de pacientes con demencia tipo alzheimer. *Psychologia. Avances de la disciplina, 6*(1), 35-45. https://www.redalyc.org/articulo.oa?id=297225770002

Correa, D. (2015). *Nivel de sobrecarga de los familiares cuidadores de pacientes con esquizofrenia que asisten a un servicio de salud-2014.* [Tesis de Licenciatura. Universidad Nacional Mayor de San Marcos]. Repositorio UNMSM. http://cybertesis.unmsm.edu.pe/bitstream/handle/20.500.12672/4177/Correa_ld.pdf?sequence=1&isAllowed=y

Crespo, M., & Rivas, M. (2015). La evaluacion de la carga del cuidador: Una revision mas alla de la escala de Zarit. *Clínica y Salud, 26*(1), 9-15. https://scielo.isciii.es/pdf/clinsa/v26n1/v26n1a02.pdf

Cuellar-Flores, I., & Dresch, V. (2012). Validación del cuestionario de Apoyo Social Funcional Duke-UNK-11 en personas cuidadoras. *RIDEP, 1*(34), 89-101. https://www.aidep.org/03_ridep/R34/r34art4res.pdf

Del Pino-Casado, R., Priego, E., López, C., & Orgeta, V. (2021). Subjective caregiver burden and anxiety in informal caregivers: A systematic review and meta-analysis. *Plos One, 16*(3). https://doi.org/10.1371/journal.pone.0247143

Ehsan, N., Johar, N., Saleem, T., Khan, M., & Ghauri, S. (2018). Negative repercussions of caregiving burden: Poor psychological well-being and depression. *Revista de Ciencias Médicas de Pakistán en línea, 34*(6), 1452-1456. https://www.researchgate.net/publication/328785066_Negative_repercussions_of_caregiving_burden_Poor_psychological_well-being_and_depression

Flores, M., Galindo O., Jimenes J., Rivera L. & Gonzales, E. (2019). Validación de la Entrevista de Carga de Zarit en cuidadores primarios informales de pacientes con diagnóstico de enfermedades mentales. *Rev. Psicología y Salud, Vol. 29,* (1): 17-24. https://psicologiaysalud.uv.mx/index.php/psicysalud/article/view/2564/4459

Hair, J., Black, W., Babin, B., & Anderson, R. (2019). *Multivariate Data Analysis* (8va ed.). Pearson New Edition

Hernández-Sampieri, R., & Mendoza, C. (2018). *Metodología de la Investigación: Las rutas Cuantitativa, Cualitativa y Mixta.* (1 ed.). McGraw-Hill Education. https://d1wqtxts1xzle7.cloudfront.net/64591365/Metodolog%C3%ADa_de_la_investigaci%C3%B3n._Rutas_cuantitativa__cualitativa_y_mixta-libre.pdf?1601784484=&response-content-disposition=inline%3B+filename%3DMETODOLOGIA_DE_LA_INVESTIGACION_LAS_RUTA.pdf&Expires=

Inogbo, C., Olotu, S., James, B., & Nna, E. (2017). Burden of care amongst caregivers who are first degree relatives of patients with schizophrenia. *The Pan African medical journal, Vol. 28,* (284). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6011007/pdf/PAMJ-28-284.pdf

Instituto Nacional de Salud Mental Honorio Delgado Hideyo Noguchi (INSM HD-HN). (2015) *Estigma y discriminación son causas más frecuentes que violan la dignidad y derechos de las personas afectadas en su salud mental.* http://www.insm.gob.pe/oficinas/comunicaciones/notasdeprensa/2015/051.html

Ling, Alipázaga, Osada, & León, F. (2015). Nivel de sobrecarga emocional en familiares cuidadores de personas con esquizofrenia en un hospital público de Lambayeque-Perú. *Revista de Neuro-Psiquiatría, Vol. 78,* (4) https://revistas.upch.edu.pe/index.php/RNP/article/view/2652?articlesBySameAuthorPage=1

Manterola, C., Quiroz, G., Salazar, P., & García, N. (2019). Metodologia de los tipos y diseños de estudio mas frecuentemente utilizados en investigación clínica. *Revista Medica Clínica las Condes, 30*(1), 36-49. https://doi.org/10.1016/j.rmclc.2018.11.005

Martínez, C. (2012). *Estadistica y Muestreo* (13a ed.). Ecoe- Ediciones. http://ies-booklick.s3.amazonaws.com/162672822278 1-Estadistica-MuestreoCiro1-198.pdf

Martínez, A., Nadal, S., Beperet, M., Mendióroz, P., & Psicost, G. (2009). Sobrecarga de los cuidadores familiares de pacientes con esquizofrenia: factores determinantes. *Anales Del Sistema Sanitario De Navarra, 23*(1), 101–110. https://recyt.fecyt.es/index.php/ASSN/article/view/6419

Ministerio de Salud (MINSA). (13 de enero de 2022). Minsa: Más de 300 mil casos de depresión fueron atendidos durante el 2021 https://www.gob.pe/institucion/minsa/noticias/575899-minsa-mas-de-300-mil-casos-de-depresion-fueron-atendidos-durante-el-2021

Ministerio de Salud (MINSA). (2018). Norma Técnica de Salud de Hogares Protegidos. Año 2018. Resolución Ministerial 701/2018 de 25 de julio. *El Peruano.* http://bvs.minsa.gob.pe/local/MINSA/4499.pdf

Montero, Jurado, Valencia, Méndez, & Mora. (2014). Escala de Carga del Cuidador de Zarit: Evidencia de Validez en México. https://www.seom.org/seomcms/images/stories/recursos/PSICO_VOL11N1_WART6.pdf

Organización Mundial de la Salud. (2016). *Manual de Codificación CIE-10-Es Diagnósticos.* Unidad Técnica de Codificación CIE-10-ES. Ministerio de Sanidad, Servicios Sociales e Igualdad. https://www.mscbs.gob.es/estadEstudios/estadisticas/normalizacion/CIE10/UT_MANUAL_DIAG_2016_prov1.pdf

Pablo, R., Domínguez B., Peláez, V., Rincón, S. & Orea, A. (2016). Propiedades Psicométricas de la Escala de Carga Zarit para Cuidadores de Pacientes con Insuficiencia Cardíaca. *Rev. científica y profesional de la Asociación Latinoamericana para la Formación y la Enseñanza de la Psicología – ALFEPSI.* https://integracion-academica.org/attachments/article/123/Integracion%20Academica%20en%20Psicologia%20V4N11.pdf#page=97

Ribé, J., Pérez, C., Muros R. y Nofuentes, C. (2018). *Consideraciones acerca de la interpretación de la escala de Zarit en cuidadores de pacientes con esquizofrenia.* Barcelona, España https://www.sciencedirect.com/science/article/pii/S0212656717306704?via%3Dihub

Rondón, M. (2006). Salud Mental un problema de salud pública en el Perú. *Revista Peruana de Medicina Experimental y Salud Pública. 23* (4). http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1726-46342006000400001

Talavera, J., Rivas-Ruiz, R., & Bernal-Rosales, L. (2011). Investigación clínica V. Tamaño de Muestra. *Revista Médica del Instituto Mexicano del Seguro Social, 49*(5), 517-522. https://www.redalyc.org/pdf/4577/457745504009.pdf

Tartaglini, M., Feldberg, C., Hermida, P. & Heisecke, S.L (2019). Escala de sobrecarga del cuidador de Zarit: análisis de sus propiedades psicométricas en cuidadores familiares residentes en Buenos Aires, Argentina. *Rev. Neurología.* https://www.sciencedirect.com/science/article/abs/pii/S1853002819300862

Tsai, C.-F., Hwang, W.-S., Lee, J.-J., Wang, W.-F., Huang, L.-C., Huang, L.-K., Lee, W.-J., Sung, P.-S., Liu, Y.-C., Hsu, C.-C., & Fuh, J.-L. (2021). Predictors of caregiver burden in aged caregivers of demented older patients. https://doi.org/10.1186/s12877-021-02007-1

Vasconcelos-Raposo, J., Pires, L., Monteiro, M. J., & Teixeira, C. M. (2020). Análise Factorial Confirmatória da Escala de Sofrimento para Cuidadores em Enfermeiros Portugueses nos Cuidados de Saúde Primários. *Revista Iberoamericana de Diagnóstico y Evaluación-e Avaliação Psicológica, 4*(57), 177-190. https://www.redalyc.org/journal/4596/459664769014/459664769014.pdf

Yu, Y., Liu, Z.-W., Zhou, W., Zhao, M., Qiu, D., Li, Y.-L., & Xiao, S.-Y. (2019). Punto de corte de la Zarit Burden Interview en la predicción de depresión y ansiedad. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation 28*(9), 2525–2533 https://doi.org/10.1007/s11136-019-02208-7

Yu, Y., Liu, Z.-W., Zhou, W., Chen, X.-C., Zhang, X.-Y., Hu, M., & Xiao, S.-Y. (2018). Assessment of Burden Among Family Caregivers of Schizophrenia: Psychometric Testing for Short-Form Zarit Burden Interviews. *Original research article, 19 December.* https://www.frontiersin.org/articles/10.3389/fpsyg.2018.02539/full