



Social welfare of workers affected by a chronic lung disease

Bienestar social en los trabajadores afectados por una enfermedad pulmonar crónica

Adela Reig-Botella , Miguel Clemente 

Universidad de A Coruña

Abstract

We try to verify if there are variables of social welfare able to differentiate chronically ill patients affected by asbestos poisoning from healthy people. We used the scale of Hahn, Cella, Bode and Hanharan, developed to measure the social welfare. After reviewing the literature we intend to verify first the psychometric properties of the previously mentioned scale by using a sample of patients affected, 110, as well as a comparison group of 70 people matched by age and gender blocks, who have been employees of the largest Spanish naval organization. The results indicate a very high reliability of the instrument, and a high concurrent validity of the questionnaire SCL-90. Next an Anova is performed obtaining that, contrary to expectations from the literature, only a variation occurs in three variables: negative social companionship, limitations, and satisfaction. This research opens the possibility for future research studying the age variable as a mediator of social welfare. Finally, the limitations of the study and possible future projects are discussed.

Keywords: asbestos; chronic diseases; lung cancer; occupational health; quality of life

Resumen

Se pretende verificar si existen variables de bienestar social capaces de diferenciar pacientes crónicos afectados por intoxicación por amianto de personas sanas. Se utiliza la escala de Hahn, Cella, Bode y Hanharan, desarrollada para medir el bienestar social. Después de revisar la literatura, en primer lugar se verifican las propiedades psicométricas de la escala previamente mencionada utilizando una muestra de pacientes afectados, 110, así como un grupo de comparación de 70 personas emparejadas por bloques de edad y sexo, que han sido empleados de la mayor Organización naval española, Navantia. Los resultados indican una fiabilidad muy alta del instrumento y una alta validez concurrente del cuestionario SCL-90-R. Luego se realiza una Anova obteniendo que, contrariamente a las expectativas de la literatura, solo se produce una variación en tres variables: compañerismo social negativo, limitaciones y satisfacción. Esta investigación abre la posibilidad de futuras investigaciones que estudien la variable edad como mediador del bienestar social. Finalmente, se discuten las limitaciones del estudio y posibles proyectos futuros.

Palabras clave: amianto; enfermedades crónicas; cáncer de pulmón; salud ocupacional; calidad de vida

The research about measures of social well-being in populations with chronically ill patients has been very low, as Hahn, Cella, Bode and Hanharan (2010) said. These

authors proposed a questionnaire that allows distinguishing various dimensions of the concept, as it is shown later on. The work done by Hahn et al. (2010) was carried out with

cancer patients, although it seems to be also applicable to other chronically ill patients, and this is one of the objectives of this research.

Once the disease is contracted and developed, the problem focuses on the quality of life that may make the people affected from a psychosocial perspective. The progress of recent years allows us to understand the meaning of the term, more concrete and operational, and to determine how to evaluate and how to plan actions to improve the lives of real people (Veenhoven, 1996, 1997). As indicated by Schalock and Verdugo (2002), quality of life includes the basic living conditions (food, shelter and security) and what enriches life (social inclusion, leisure and community activities). From the 70's, the assessment of Quality of Life (QoL) grew, with a coherent theoretical framework, established methods and various applications. In recent years, the assessment of QoL became useful to determine the impact of illnesses/diseases and many interventions (Ribeiro, Pereira, Freire, Oliveira, Casotti, and Boery, 2017). QoL represents a broader concept, specifically related to the perception and satisfaction of the individual with own life, which is probably more in accordance with the concept of health (Pinto, Fumincelli, Mazzo, Caldeira, Martins, and Comfort, 2017).

There have been two basic approaches to quality of life: the one that conceives it as a unitary entity, and the one that considers it as a construct composed of a series of factors. Felce and Perry (1995) found different conceptual models of Quality of Life. To classic conceptualizations already proposed by Borthwick-Duffy in 1992, they added another one focused on personal values. The idea that personal values determine the perceived quality of life is sustained by several researchers (Kahneman, Diener and Schwarz, 1999; Parmenter and Donnelly, 1997). It identifies two key areas: the objective and the subjective dimension (the ranking of the individual on different aspects of their existence). Multiple studies highlight the importance of the second dimension (Brantley, Huebner and Nagle 2002; Burleigh, Farber and Guillard, 1998; Reid and Renwick, 2001).

According to Veenhoven (1996) the objective quality of life is the extent to which the living conditions of people reach observable criteria of a good life (see also Oleson, 1990; Vreeke, Mah and Doyle, 1998). The subjective quality of life refers to the degree to which people value their own lives (Oleson, 1990). The subjective perception of quality of life has received special attention from researchers, especially the psychological processes that underlie (Casas, 1991; Felce and Perry, 1995; Oleson, 1990; Veenhoven, 1996), distinguishing two processes: one cognitive, that involves judgments about the quality of life, and other emotional, connected to emotions. The first is more established in time, and the second is more changeable (Casullo and Castro, 2000; Diener, 1984).

Social and cultural variables have been explored (Contini, 2001; Veenhoven, 1996). It is the relationship

between the two measures, both objective and subjective, which has most interested the researchers (García, 2005).

In summary, we could say that the concept of quality of life can provide the framework for research, evaluation and quality improvement. The importance of the concept of quality of life lies on the fact that it is considered a sensitizing notion that gives us a sense of reference and guidance from an individual perspective, focusing on the person and their environment; a conceptual framework for evaluating quality results, a social construct that guides the implementation of improvement strategies and criteria to evaluate the effectiveness of these strategies.

Although there have been other symptomatology dealt with, at a greatest extent, in the literature, there is also research focused on the consequences of suffering from asthma for occupational reasons. For example, Lowery, Henneberger, Rosiello, Sama, Preusse and Milton (2007) developed a longitudinal study, specifically investigating the quality of life. Similarly, the study by Piirila, Keskinen, Luukkonen, Salo, Tuppurainen and Nordman (2005) has referred to patients with diisocyanate-induced asthma. And some studies, like the one by Ward, Javitz, Smith and Wham (2002) had already highlighted how the condition of chronic respiratory diseases for those affected means a very important loss of earnings due to occupational reasons.

Specifically related to the investigation of asbestos poisoning, the work by Maurel et al. (2009), whose components are the self-styled National Network of previous exposure to asbestos, is of great importance. This group developed the so-called "asbestos survey" (APEXS), trying to determine changes in psychological variables of the affected individuals. Sometimes the literature has not addressed the effects of asbestos in itself, but a central topic in this effect, such as the consequences of suffering from asthma due to occupational reasons (Ward et al., 2002; Piirila et al., 2005; Lowery et al., 2007).

Much has been done to reduce stress, and stress has been measured by the SCL-90 indicators, specifically by the anxiety one (Kabatzzinn et al., 1992). Another of the classics for those who have used the SCL-90 measure has been the amount of posttraumatic stress (Mikulincer, Florian, and Weller, 1993; Davidson et al., 1997).

Closer to our research, Drossman, Leserman, Li, Mitchell, Zagami and Patrick (1991) have referred to how the forms used by patients with chronic diseases to deal with the disease have a more negative perception of their well-being and their health, and their anxiety levels are much higher. And Hyphantis et al. (2009) studied people with cancer, glaucoma, or rheumatic disorders.

The shipbuilding industry has been one of the most affected by the use of asbestos. Ferrol (Spain) is now one of Europe's industrial cities with the largest number of patients with asbestos compared to its number of inhabitants.

This research intends first to verify if the questionnaire of Hahn, Cella, Bode and Hanrahan has sufficient

psychometric properties to be used in Spanish samples, specifically in chronically ill patients with problems resulting from asbestos poisoning. We try to verify the reliability of this questionnaire, and its validity when correlated with the symptom scale SCL 90, Derogatis. We hope to verify that the questionnaire of Hahn, Cella, Bode and Hanrahan has adequate reliability, and that the validity of the form can be verified, that negative correlations between the scales of positive social well-being (especially satisfaction) and the existence of psychosomatic symptoms can be obtained, and positive correlations between the scales of negative well-being and the existence of psychosomatic symptoms. And if this question is verified, secondly we try to determine if the dimensions of the mentioned scale allows differentiating the subjects of both groups.

Method

Participants

In this study 180 people participated, with 110 chronically ill patients suffering from respiratory diseases resulting from asbestos poisoning, and 70 healthy individuals, matched by age blocks in proportion to the group of people affected by the disease. All were male, with an average age of 67 years, most of them already retired. All were shipyard workers in the area of Ferrol (Spain). It is an incidental non-probability sampling.

Instruments

To carry out the research we used two instruments. The first is the questionnaire of Hahn et al. (2010). It consists of eight dimensions, although some of them refer to the positive or negative pole of the same concept, that is why they really are six dimensions: instrumental support, informational support, emotional support (positive or negative), social companionship (positive and negative), limitations, and satisfaction. On the other hand, there are 3 types of scales that relate to the support (instrumental, informational and emotional). In view of our subsequent analysis we will consider each of the eight scales individually.

The second instrument is the questionnaire Derogatis SCL-90-R (the Spanish adaptation and measure by González de Rivera -Derogatis, 2002-). This test allows identifying and evaluating the following main dimensions: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and a global severity index (GSI).

Procedure

We performed a translation and adaptation of the test of Hand et al. (2010), previously testing it in a small group, via amendments to verify that they understood all the questions. We used the same scale of response used by the authors mentioned.

The aforementioned scale was part of an ampler questionnaire, where firstly demographic data were requested, then the questionnaire of Hand et al. (2010) was included, and later on the Derogatis SCL-90 was included as well. Contact with the affected by the disease was made through the participation of their associations. The comparison sample was obtained with the participation of the Spanish state-owned shipyard, Navantia. The same company also facilitated contact with the retired workers not affected. The questionnaire was attached to a consent form that explained the purpose of the study, specifying the task for the participants, assuring anonymity, and reporting how to contact researchers to answer any questions or exercise their rights to delete the information provided. No subjects contacted refused to participate. Once the information was collected, it was coded and analyzed with SPSS statistical software. The adaptation and translation of the scale can be obtained from the authors.

Results

To determine the reliability of the scale by Hand et al. (2010), the test "alpha" Cronbach was used. We calculated first the descriptive statistics found for the two subsamples (Table 1).

Table 1
Reliability of the questionnaire of social well-being. Cronbach's Alpha Coefficients

	Group	Cronbach's Alpha
Instrumental support	Control	.96
	Affected	.97
Informative support	Control	.94
	Affected	.95
Positive emotional support	Control	.97
	Affected	.97
Negative emotional support	Control	.89
	Affected	.86
Positive social companionship	Control	.96
	Affected	.94
Negative social companionship	Control	.89
	Affected	.82
Limitations	Control	.97
	Affected	.94
Satisfaction	Control	.88
	Affected	.93

One can see how, in the dimensions of instrumental support, informational support, emotional support, positive and negative, positive social companionship and limitations, the average scores for the two subsamples are very similar (although this result must be qualified in terms of standard deviations). And how in negative social companionship and in satisfaction is where there seem to be the biggest differences.

The results show how all the correlations found are very high, demonstrating a high reliability (Table 2). The lowest correlation is .861 so that it can be said that the scale is

reliable in the Spanish population, and for both the sub-sample of chronically ill patients, as in the sub-sample comparison of healthy people. The overall average reliability for the subsample of subjects not affected was

.931 and for the subsample of those affected was .922. The overall average reliability was .926. Once the reliability issue was verified, we determined the validity of the scale, establishing the correlation with the SCL-90 test.

Table 2
Correlations between social well-being and symptomatology

	Instrumental support	Informative support	Positive emotional support	Negative emotional support	Positive social companionship	Negative social companionship	Limitations	Satisfaction
Somatization	.255**	.158	.177*	.339**	.215**	.414**	.310**	-.348**
Obsession, Compulsion	.264**	.137	.167*	.378**	.196*	.382**	.180*	-.361**
Interpersonal Sensitivity	.270**	.092	.111	.366**	.197*	.315**	.002	-.421**
Depression	.300**	.235**	.207*	.314**	.278**	.365**	.139	-.445**
Anxiety	.257**	.138	.149	.339**	.213**	.421**	.180*	-.433**
Hostility	.034	-.100	-.104	.394**	-.036	.411**	.199*	-.276**
Phobic Anxiety	.308**	.232**	.237**	.260**	.286**	.333**	.077	-.458**
Paranoid Ideation	.328**	.182*	.230**	.308**	.322**	.308**	.014	-.426**
Psychoticism	.286**	.150	.174*	.353**	.214**	.391**	.130	-.411**
GSI	.182	.056	.073	.415**	.084	.485**	.312**	-.304**

Notes: GSI = Global Severity Index
p* < .05, *p* < .01

The results show how many significant correlations were found, many of them even for statistical significance or less than .001. It specifically outlines how the dimensions of social well-being of negative emotional support, negative social companionship and satisfaction significantly correlate with all dimensions of the symptom scale, in the case of the first two negative, and the third positively. The instrumental support also correlates with all the areas of the symptom scales, except for GSI global dimension, an issue that also occurs in the case of positive social companionship. The social well-being dimension that shows lower levels of significant correlations with the scale of symptoms is the informative support. In any event, significant correlations between the two tests usually occur.

Table 3
Statistics of the social well-being dimensions

Dimension		M	SD
Instrumental support	Control	3.386	1.314
	Affected	3.491	1.169
Informative support	Control	3.499	1.040
	Affected	3.442	1.317
Positive emotional support	Control	3.740	1.079
	Affected	3.774	1.039
Negative emotional support	Control	2.244	.904
	Affected	2.394	1.091
Positive social companionship	Control	3.319	1.152
	Affected	3.298	1.155
Negative social companionship	Control	1.875	.810
	Affected	2.269	1.160
Limitations	Control	2.941	1.365
	Affected	3.069	1.239
Satisfaction	Control	4.288	.848
	Affected	3.751	1.086

**p* < .05, ** < .01

Once the date of reliability and validity of the scale of social well-being are verified, we applied a t test of mean differences between the two groups (affected and unaffected). The results of the means and standards deviations must be observed in Table 3. The t-test verify how only significant differences in three dimensions are obtained: negative social companionship, limitations, and satisfaction (Table 4).

Table 4
T-test comparison group of chronically ill vs. health people in the dimensions of social well-being

Dimensions	t	df	M dif.	SE dif.
Instrumental support	-.574	170	-.105	.183
Informative support	.351	168.04	.057	.162
Positive emotional support	-.508	157	-.073	.144
Negative emotional support	-1.442	164	-.150	.104
Positive social companionship	.130	176	.020	.159
Negative social companionship	-	163	-.393	.118
Limitations	3.313**			
Satisfaction	-2.420*	153	-.254	.104
	4.783**	169.788	.537	.112

p* < .05, *p* < .01

Discussion

The scale by Hand et al. (2010) has a very high reliability in its application not only to people affected by asbestos poisoning but also to a sub-sample comparison of unaffected individuals. While the questionnaire tested is specifically designed for people with chronic disease, it is equally valid when applied to healthy people.

In addition to having a high reliability, the above scale has an adequate validity, as demonstrated in the results of its correlation with the scale of symptoms SCL-90. It is remarkable how, within the Derogatis scale, the subscales of negative emotional support, negative social companionship and satisfaction are particularly susceptible to verify the validity of the instrument.

And finally, contrary to expectations, not all dimensions of social well-being are useful in order to differentiate individuals affected by chronic disease compared to those healthy ones, but only the negative social companionship, limitations, and satisfaction.

The data found in this research lead to similar conclusions derived from work on respiratory diseases, such as the ones by Piirila et al. (2005); or Ward et al. (2002). It is also consistent with work related to quality of life in general or various chronic diseases, such as the one by Hees et al. (2010); by Gadalla (2008); or by Lowery et al. (2007), for example. But, on the other hand, they show that, perhaps due to chronic respiratory disease appearing at an advanced age, no differences are found in a wide range of dimensions that make up the social well-being.

This last fact opens the possibility for future research studying the age variable as a mediator of social well-being. Moreover, although this research has the limitation of having been made with a small sample, this, in regard to the affected subjects, comprises about 50% of the members of the population. On the other hand, we underline the difficulty of obtaining information of subjects that, in some cases, have deceased at the time of attending the information gathering session. The statistics found, although the sample size, are very consistent and significant, demonstrating the strength of the results. Moreover, the fact that the authors creators of the selected scale have obtained good results from it in its application to cancer patients, and that we have done it in the case of patients poisoned by asbestos, although future research will be necessary about other people affected by chronic illnesses, allows us to create future expectations about the usefulness of the scale for any chronic disease.

References

- Arostegui, I. (1998). *Evaluación de la calidad de vida en personas adultas con retraso mental en la comunidad autónoma del País Vasco*. Bilbao: Universidad de Deusto.
- Brantley, A.; Huebner, E. S. & Nagle, R.J. (2002). Multidimensional life satisfaction reports of adolescents with mild mental disabilities. *Mental Retardation*, 40, 321-329. [https://doi.org/10.1352/0047-665\(2002\)040<0321:MLSROA>2.0CO;2](https://doi.org/10.1352/0047-665(2002)040<0321:MLSROA>2.0CO;2)
- Campbell, A. (1981). *The Sense of Well-Being in America: Recent Patterns and Trends*. New York: McGraw-Hill.
- Campbell, A. (1981). *The Sense of Well-Being in America: Recent Patterns and Trends*. New York: McGraw-Hill.
- Casullo, M.M. & Castro, A. (2000). Evaluación del bienestar psicológico en estudiantes adolescentes argentinos. *Revista de Psicología*, 18(1), 35-68. <https://revistas.pucp.edu.pe/index.php/psicologia/article/view/6840>
- Contini, N. (2001). Hacia un cambio de paradigma. De la Psicopatología al Bienestar Psicológico. *Acta Psiquiátrica y Psicológica de América Latina*. 47(4), 306-315.
- Davidson, R.J.T.; Book, S.W.; Colket, J.T.; Tupler, L.A.; Roth, S.; David, D.; Hertzberg, M.; Mellman, T.; Beckham, J.C.; Smith, R.D.; Davison, R.M.; Katz, R.; Feldman, R.E. (1997). Assessment of a New Self-Rating scale for posttraumatic stress disorder. *Psychological Medicine*, 27 (1), 153-160. <https://doi.org/10.1017/S0033291796004229>
- Derogatis, L.R. (2002). *SCL-90: Manual*. Madrid: TEA Ediciones.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542-575. <https://doi.org/10.1037//0033-2909.95.3.542>
- Drossman, D.A.; Leserman, J.; Li, Z.M.; Mitchell, C.M.; Zagami, E.A. & Patrick, D.L. (1991). The Rating form of IBD patient concerns. A new measure of health-status. *Psychosomatic Medicine*, 53(6), 701-712.
- Felce, D. & Perry, J. (1995). Quality of life: It's Definition and Measurement. *Research in Developmental Disabilities*, 16(1), 51-74. [https://doi.org/10.1016/0891-4222\(94\)00028-8](https://doi.org/10.1016/0891-4222(94)00028-8)
- García, J. L. (2005) (Ed.): *La economía social en España. Criterios y Propuestas*. Madrid: Fundación ONCE.
- Hahn, E.A.; Cella, D.; Bode, R.K. & Hanrahan, R.T. (2010). Measuring Social Well-Being in People with Chronic Illness. *Social Indicators Research*, 96, 381-401. <https://doi.org/10.1007/s11205-009-9484-z>
- Hyphantis, T.; Tomenson, B.; Paika, V.; Almyroudi, A.; Pappa, C.; Tsifetaki, N.; Voulgari, P.V.; Drosos, A.A.; Pavlidis, N. & Creed, F. (2009). Somatization is associated with physical health-related quality of life independent of anxiety and depression in cancer, glaucoma and rheumatological disorders. *Quality of Life Research*, 18(8), 1029-1042. <https://doi.org/10.1007/s11136-009-9527-6>
- Kabatzzinn, J.; Massion, A.O.; Kristeller, J.; Peterson, L.G.; Fletcher, K.E.; Pbert, L.; ... Santorelli, S.F. (1992). Effectiveness of a mediation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry*, 149(7), 936-943. <https://doi.org/10.1176/ajp.149.7.936>
- Kahneman, D.; Diener, E. & Schwarz, N. (Eds.). (1999). *Well-being: The foundations of hedonic psychology*. New York: Russell Sage Foundation.
- Lowery, E.P.; Henneberger, P.K.; Rosiello, R.; Sama, S.R.; Preusse, P. & Milton, D.K. (2007). Quality of Life of Adults with Workplace Exacerbation of Asthma. *Quality of Life Research*, 16(10), 1605-1613. <https://doi.org/10.1007/s11136-007-9274-5>

- Maurel, M.; Stoufflet, A.; Thorel, L.; Berna, V.; Gislard, A.; Letourneux, M.; Paireon, J.C. & Paris, C. (2009). Fear Associated with Cancer Distress in the Asbestos Post-Exposure Survey (APEXS). *American Journal of Industrial Medicine*, 52(4), 288-296. <https://doi.org/10.1002/ajim.20672>
- Mikulincer, M.; Florian, V. & Weller, A. (1993). Attachment styles, coping strategies, and posttraumatic psychological distress. The impact of the Gulf-War in Israel. *Journal of Personality and Social Psychology*, 64(5), 817-826. <https://doi.org/10.1037//0022-3514.64.5.817>
- Oleson, M. (1990), Subjectively Perceived Quality of Life. *Journal of Nursing Scholarship*, 22, 187-190.
- Parmenter, T.R. & Donnelly, M. (1997). An Analysis of the dimensions of quality of life. In R.I. Brown (Ed.), *Quality of Life for people with disabilities: Models, research and practice (2nd Edition)*. Cheltenham, U.K.: Stanley Thornes.
- Piirila, P.L.; Keskinen, H.M.; Luukkonen, R.; Salo, S.P.; Tuppurainen, M. & Nordman, H. (2005). Work, unemployment and life satisfaction among patients with diisocyanate induced asthma. A prospective study. *Journal of Occupational Health*, 47(2), 112-118. <https://doi.org/10.1539/joh.47.112>
- Pinto, S., Fumincelli, L., Mazzo, A., Caldeira, S., & Martins, J.C. (2017). Comfort, Well-Being and Quality of Life: Discussion of the Differences and Similarities among the Concepts. *Porto Biomedical Journal*, 2(1), 6-12. <https://doi.org/10.1016/j.pbj.2016.11.003>
- Reid, D. T. & Renwick, R. M. (2001). Relating familial stress to the psychosocial adjustment of adolescents with Duchenne muscular dystrophy. *International Journal of Rehabilitation Research*, 24, 83-93.
- Ribeiro, I.J.S., Pereira, R., Freire, I., Oliveira, B., Casotti, C., & Boery, E. (2017). Stress and Quality of Life among University Students: A Systematic Literature Review. *Health Professions Education*, 17, 1-22. <https://doi.org/10.1016/j.hpe.2017.03.002>
- Schalock, R.L. & Verdugo, M.A. (2002). *The concept of quality of life in human services: A handbook for human service practitioners*. Washington, DC: American Association on Mental Retardation.
- Veenhoven, R. (1996). Happy life expectancy: a comprehensive measure of quality-of-life in nations. *Social Indicators Research*, 39, 1-58. <https://doi.org/10.1007/BF00300831>
- Veenhoven, R. (1997). Progrès dans la compréhension du bonheur. *Revue Québécoise de psychologie*, 18, 29-47.
- Vreeke, M. S.; Mah, D. T. & Doyle, C. M. (1998). Report of the Electrolytic Industries for the Year 1997. *Journal of Electrochemical Society*, 145(10), 3668-3696. <https://doi.org/10.1149/1.1838858>
- Ward, M.M.; Javitz, H.S.; Smith, W.M. & Wham, M.A. (2002). Lost income and work limitations in persons with chronic respiratory disorders. *Journal of Clinical Epidemiology*, 55(3), 260-268. [https://doi.org/10.1016/S0895-4356\(01\)00468-1](https://doi.org/10.1016/S0895-4356(01)00468-1)
- Weisshaar, E.; Radulescu, M.; Soder, S.; Apfelbacher, C.J.; Bock, M.; Grundmann, J.U.; Albrecht, U. & Diepgen, T.L. (2007). Secondary individual prevention of occupational skin diseases in health care workers, cleaners and kitchen employees: aims, experiences and descriptive results. *International Archives of Occupational and Environmental Health*, 80(6), 477-484. <https://doi.org/10.1007/s00420-006-0154-z>

Fecha de recepción: 22 de febrero de 2018.

Fecha de revisión: 18 de mayo de 2018.

Fecha de aceptación: 21 de mayo de 2018.

Fecha de publicación: 1 de julio de 2018.