

## Stressful events, spirituality, and alcohol consumption in participants of the 12-Step AA Program

Linda Azucena Rodríguez Puente<sup>1</sup>  
Margaritta Antonia Villar Luis<sup>2</sup>  
María Magdalena Alonso Castillo<sup>3</sup>  
Luz Patricia Díaz Heredia<sup>4</sup>  
Javier Álvarez Bermúdez<sup>3</sup>  
Nora Angélica Armendáriz García<sup>3</sup>  
Raúl Adrán Castillo Vargas<sup>1</sup>

**Abstract** *This work sought to determine the association between stressful events, spirituality, program participation and alcohol consumption in participants of the AA 12-step program. The study used a descriptive correlation and predictive method. The population was comprised by members from AA, Mexico. A simple random sampling by clusters was performed, the sample consisted of 72 AA participants with 95% CI. The Spiritual Perspective Scale and the Social Readjustment Rating Scale were used. Stressful events are negatively and significantly related to alcohol consumption ( $r_s = -0.316$ ,  $p = 0.007$ ), this indicates that the higher the number of stressors, the lower the number of days without alcohol consumption; participation in the program was positively and significantly related to alcohol consumption ( $r_s = 0.776$ ,  $p = 0.001$ ), which indicates that greater years of participation means greater number of days without alcohol consumption. Spirituality showed no significant relationship ( $p > 0.05$ ), there is also a significant effect of participation in the program and age on alcohol consumption ( $R^2 = 65.2\%$ ,  $p = 0.001$ ). Participation in the AA program is related to and has an effect on the number of days without alcohol consumption.*

**Key words** *Spirituality, Stress, Alcohol consumption, Alcoholics Anonymous*

<sup>1</sup> Universidad Autónoma de Coahuila. Blvd. V. Carranza s/n, Col. República Oriente. 25280 Saltillo Coah México. México  
lrpuente88@hotmail.com

<sup>2</sup> Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo. Ribeirão Preto SP Brasil.

<sup>3</sup> Facultad de Enfermería, Universidad Autónoma de Nuevo León. San Nicolás de los Garza NL México.

<sup>4</sup> Universidad Nacional de Colombia. Bogotá Colombia.

## Introduction

Excessive alcohol consumption and dependence is an important public health problem because of its physical, psychological, and social repercussions. In 2014, reports showed that approximately 3.3-million people died due to causes related with alcohol in the world, including 320,000 young individuals from 15 to 29 years of age. According to these figures, harmful use of alcohol is responsible for 5.9% of the global mortality, as well as for 4.5% of the global burden of morbidity expressed as loss of disability-adjusted life years and occupies the first place of the risk factors of premature death and disability in the population from 15 to 49 years of age<sup>1,2</sup>.

In 2011, 6% of the population in Mexico developed alcohol dependence, equivalent to 4.9-million people from 12 to 65 years of age, of which 10.8% corresponds to men and 1.8% to women. Likewise, alcohol dependence affects 4.1% of adolescents and 6.6% of adults and it is noted that a shorter distance exists between adolescent men and women (3 men per each woman), which is observed between adult men and women (7 men per each woman)<sup>3</sup>.

People with alcohol dependence require medical and psychosocial treatment, as well as comprehensive care for their disease, which is why many of them seek help in primary care centers. However, care responses for this problem by the healthcare sector over time, added to the lack of care services for patients with alcohol dependence who wish to abandon the behavior motivated by diverse reasons, are – undoubtedly – factors that have contributed to the growth and expansion of the Alcoholics Anonymous (AA) Group in Mexico and the world<sup>1,4,5</sup>.

Alcoholics Anonymous has proven to be a very helpful resource in the recovery and achievement of sobriety through its 12-step program. It is highlighted as a construct that supports the AA recovery process, the relationship of attending meetings and the level of participation in AA groups and it is indicated that greater involvement with the 12-step program, yields better recovery prognosis<sup>6</sup>. It has been observed that these groups provide tools and action strategies in each of the 12 steps of the program, which favor increased self-esteem, spirituality and give social support to its members<sup>6</sup>; these factors favor management of stressful life events that can be confronted by the individual with alcohol dependence and with this encourage non-consumption of alcohol of its members.

Stressful events are occurrences, facts, or happenings that can cause stress and have the potential to trigger consumption of substances, like alcohol. However, emotional, cognitive, or behavioral responses produced as consequence of the stressful events depend on the cognitive assessment made by the individuals, on their personal characteristics and on the modulating variables<sup>7</sup>.

Studies conducted in AA indicate that the stressful events experienced by the people participating in the AA program play an important role in the maintenance of sobriety and in the amount of time without alcohol consumption, these stressful events include health problems, grief for the loss of a loved one, divorce, conflicts in interpersonal relationships, and lack of social acceptance<sup>8,9</sup>.

Another aspect documented is that stressful events are associated with spirituality and that these have an effect on increased anguish in people with low spiritual level<sup>10</sup>. On the contrary, spirituality has been related positively with coping with stressful life events and is associated negatively with alcohol consumption<sup>11</sup>.

In this sense, the concept of spirituality plays an important role in sobriety and recovery from alcohol dependence and it is noted that it is related with long periods of abstinence<sup>12,13</sup>. Spirituality has been defined as the personal perspective and behaviors that express sense of belonging to a transcendent dimension or to something bigger than oneself. From this spiritual perspective, concepts, like “praying” and “Supreme Being” are significant for the construction of this construct<sup>14</sup>.

Thus, within the AA program, great importance is attributed to the concept of spirituality<sup>15</sup>. In its program, AA assumes that excessive alcohol consumption and dependence is an illness of the spirit, which is why the 12 guiding steps of AA are linked to spirituality and highlight principles, like prayer, meditation, and acceptance of a higher power.

Currently, AA groups have become one of the most effective treatment options for individuals to recover from alcohol dependence, manage to remain abstaining and, thereby, achieve well-being. Nevertheless, current scientific evidence is limited regarding the process people follow to achieve alcohol abstinence and avoid relapses<sup>6,14,15</sup>.

The need to study from the nursing perspective the phenomenon of alcohol dependence and the determining factors of abstinence and prevention of relapses is a relevant area due to

its implications for the design of professional interventions based on scientific evidence. Interventions must be focused on the promotion of resources and protection skills, like spirituality, that help in the successful coping with stressful events to avoid alcohol consumption in dependent individuals who are in treatment.

Nursing professionals must know the role of the AA groups in the recovery of alcohol-dependent individuals, as well as the 12-step program, with the goal of achieving the biopsychosocial wellbeing of the subjects and their families. Additionally, the need is highlighted for a holistic and multidisciplinary focus for the preventive and therapeutic approach of this population, given the complexity and multi-causality of this phenomenon.

Based on the aforementioned, the purpose of this study was to determine the association among stressful events, spirituality, participation in the program, and alcohol consumption in participants of the 12-step AA program.

## Method

This was a descriptive correlational and predictive study with quantitative approach. The population was comprised by approximately 350 AA members from three municipalities in the metropolitan area of Monterrey, Nuevo León, Mexico. Simple random sampling by clusters (AA groups) was performed. A sample was calculated for a linear regression test with a correlation coefficient of  $R^2 = 0.652$  with 95% CI, an estimation limit of 0.04, power of 90, and considering 5% non-response rate.

### Participants

The sample was made up of 72 adults, 68 men (94.4%) and 4 women belonging to AA groups. In relation to sociodemographic data, the mean age of the participants was 49.9 ( $SD = 14.64$ ) years of age, 32% were married, 31.9% had studied up to high school, most worked (68.1%), and the Catholic religion prevailed by 72.2%.

### Measurements

A file was used for personal data and history of alcohol consumption (FPDHAC), along with two instruments:

**Alcohol consumption.** The FPDHAC is divided into three sections, one related with personal

data; the second section inquires on the history of alcohol consumption (age of consumption onset, amount of beverages ingested, age upon entry to AA, amount of days without alcohol consumption, number of relapses, and number of years in the program) and the third section asks about prevalence (global, lapsic, current, and instantaneous) of alcohol consumption.

**Spirituality.** The Spiritual Perspective Scale (SPS)<sup>12</sup>, developed and translated into Spanish by Reed, measures self-awareness, a sense of connection with a higher being, or the existence of a supreme purpose. The instrument is based on the conceptualization of spirituality as a human experience particularly relevant during the late phases of life's development of life and during moments during which conscience of mortality increases.

The scale consists of 10 statements scored in a range from 1 to 6 for a total score of 60. The first four questions correspond to the subscale of spiritual practices and are answered with the following criteria: 1) Never, 2) Less than once a year, 3) More or less once a year, 4) More or less once a month, 5) More or less once a week, and 6) More or less once per day. The questions from 5 to 10 correspond to the subscale of spiritual beliefs and are answered in the following manner: 1) Extremely disagree, 2) Disagree, 3) Disagree more than agree, 4) Agree more than disagree, 5) Agree, and 6) Extremely agree. Indices for the scale were obtained, where a higher score means a higher spirituality index.

The scale has reported a Cronbach's alpha of 0.89 in Mexican population<sup>16</sup>. Likewise, a factor analysis by principal components and Varimax rotation were performed to validate this scale in AA population, which showed an explained variance of 83.69%.

**Stressful events.** The Social Readjustment Rating Scale (SRRS)<sup>17</sup> was used, validated for Mexican population<sup>18</sup> to measure the social adjustment required or the level of stress associated with various life events during the last year. This scale has 43 items; each life event is assigned a value that reflects the relative amount of stress caused by the events, the values range from a maximum of 100 (death of spouse) to a minimum of 11 (minor infraction with the law) and the values of each event occurring during a year will be added; in case an event has occurred more than once during the last year, the value is multiplied by the number of occurrences. Indices for the scale were obtained, where a higher score means a higher stress index. This instrument has

reported a Cronbach's alpha of 0.78 in Mexican population<sup>19</sup>.

### Data collection procedure

As an approach strategy, the study invited AA members from different groups from the metropolitan area of Monterrey, Mexico to share their experiences with nursing students from the Faculty of Nursing at UANL. Thereafter, a meeting was held in the offices of the Mexican Alcoholics Anonymous Central General Services A.C. to speak about the access health care staff have to conduct studies in AA groups, where it was informed that AA is open to participate with health professionals as long as their anonymity is respected. However, because each group is independent, it was necessary to request authorization in each of the groups individually, some of which refused to participate.

To begin implementing this study, approval was obtained from the Commission on Research Ethics and the Research Commission at the Faculty of Nursing in Universidad Autónoma de Nuevo León.

A visit was made to each of the AA centers randomly selected through the random numbers table to request authorization from each group and from its members; they were explained the aim of the study and those accepting to participate were given the informed consent. Then, they were given a sealed envelope with the instruments and they proceeded to fill out the questionnaires, reinforcing the confidential nature and anonymity of the information. Lastly, they were asked, once completely filling out, to deposit the sealed envelope without identification into a sealed box in the area in front of the physical space where each group meets. Upon their depositing the envelope with the instruments, the participants were thanked for their time and information provided.

### Data analysis

Inferential and descriptive statistics was used. The descriptive analysis of the continuous and categorical variables was performed through frequencies, proportions, and central tendency and variability measurements and inferential statistics for the objectives. The Kolmogorov-Smirnov goodness-of-fit test was carried out with Lilliefors correction to determine normality in the distribution of continuous variables; because the variables did not show normality, the Spear-

man Correlation Coefficient test, Mann Whitney U, and a multiple linear regression model with crosstabs were used.

### Results

The average age for starting alcohol consumption in the participants was 15.0 years ( $SD = 3.25$ ); 25% of the participants have consumed alcohol during the last year and 9.7% consumed it during the last month; the average number of beverages they consume or consumed was 18.8 dosages per consumption occasion ( $SD = 6.5$ ). With respect to age upon entering AA, the average was 33.6 years ( $SD = 9.38$ ), the average number of relapses was 2.67 ( $SD = 7.47$ ) and the median of years of participation in the program was 17.03 years ( $SD = 12.01$ ).

The average number of stressful events was 15.53 ( $SD = 11.92$ ); stressful events occurring most frequently were death of a close relative (41.7%), undergoing changes in their personal habits (50%), and their living conditions changed (45.8%).

The spirituality index showed an average of 81.47 ( $SD = 18.65$ ). In relation to spiritual practices, it was observed that most of the participants (59.7%) prays in private or meditates more or less once daily and according to the spiritual beliefs, most of the participants (52.8%) agreed strongly that their spiritual beliefs had influenced their lives.

To answer the principal purpose of this study, the results are shown in Tables 1 and 2. The data revealed that stressful events are related negatively with alcohol consumption ( $r_s = -0.316$ ,  $p = 0.007$ ), which indicates that a higher index of stressful events yields lower amount of days without alcohol consumption. Meanwhile, participation in the program is related positively with alcohol consumption ( $r_s = 0.776$ ,  $p = 0.001$ ), indicating that a higher number of years of participation in the program means a higher amount of days without alcohol consumption in the participants. On the contrary, spirituality showed no significant relationship with the amount of days without alcohol consumption ( $p > 0.05$ ) (Table 1).

Additionally, positive and significant relationship was found between the program and high levels of spirituality ( $r_s = 0.295$ ,  $p = 0.012$ ) and negative relationship with index of stressful events ( $r_s = -0.340$ ,  $p = 0.003$ ), which indicates that a greater number of years participating in

the program means a higher spirituality index and lower indices of stress.

A multiple linear regression model was conducted, considering stressful events, spirituality, participation in the program, and age as independent variables and alcohol consumption (amount of days without consumption) as dependent variable; the model resulted significant ( $F_{(1,71)} = 64.75, p = 0.001$ ). This model explains 65.2% of the variance explained. The variables maintained in the model and which affected alcohol consumption were participation in the program and age. Considering that alcohol consumption is expressed in amount of days without alcohol consumption, this indicates that the number of days without alcohol consumption in AA participants is explained by the number of years participating in the program and by age (Table 2).

**Table 1.** Relationship among participation in the 12-step program, spirituality, stress, and the amount of days without alcohol consumption, Monterrey, NL, Mexico, 2016.

Variables	Amount of days without alcohol consumption
Spirituality	.221 .062
Stress	-.316 .007*
Participation in the program	.776 .001**

\* $< .010$  \*\* $< .001$

## Discussion

The principal aim of this study was to determine the association among stressful events, spirituality, and participation in the program and the amount of days without alcohol consumption in participants of the 12-step AA program. It was found that stressful events relate negatively and significantly with the amount of days without consumption. This agrees with that reported with prior studies conducted in AA indicating that stressful events relate negatively with maintenance of sobriety and positively with the behavior of alcohol consumption<sup>8,9</sup>. However, this differs with that found in another study, which reports that stressful events are not related with years of sobriety of AA members<sup>20</sup>.

It is likely that in this study stressful events related negatively with the amount of days without alcohol consumption, given that the stressful events found most frequently were losses, like death of a very close loved one or loss of the spouse due to divorce; these are events of greater negative impact on the lives of these individuals. Given that although the immediate responses to the loss, like grief, sadness, nervousness, and pain are normal, it is probable that the alcohol-dependent person is not yet prepared for healthy coping, has not completed the 12-step AA program, or has not reached the stage of sharing the message and it may be difficult to confront in a healthy manner these stressful events and resolve their consequences in the emotional, physical, and social levels, which implies a significant loss.

Regarding spirituality, no significant relationship was found with alcohol consumption. This differs from that reported in different studies that indicate that spirituality relates with the amount of days of sobriety in alcohol-dependent individ-

**Table 2.** Multiple linear regression model for the effect of the variables on the amount of days without alcohol consumption, Monterrey, NL, Mexico, 2016.

Source of variation	SC	gl	MC	F	p
Regression	868499527.4	2	434249763.7	64.75	.001**
Residual	462697920.4	69	6705766.9		
$R^2 = 65.2\%$					
Model ( $n = 72$ )	Coefficients			Sig	
	B	EE	$\beta$	t	p
(Constant)	-3528.18	1241.39	-	-2.84	.006*
Participation in the program	179.99	40.22	.500	4.47	.001**
Age	105.57	33.01	.357	3.19	.002*

\* $< .010$  \*\* $< .001$

uals in recovery process<sup>13-15</sup>. Although the participants had high spiritual level, it is possible that no significant relationship was noted with alcohol consumption because the study sample was small and only 25% of the subjects had drunk alcohol during the last year. However, it was observed that the spirituality indices are higher in those who did not consume alcohol during the last year. This may be because the 12-step AA program is primarily based on the conception of a "Supreme Being" and promotes spirituality in 11 of its steps.

Likewise, it was noted that participation in the program is related and has positive and significant effect on alcohol consumption. The AA groups and their 12-step program have become one of the most important options to treat the problem of alcoholism. It has been observed that adherence or affiliation to AA can be beneficial to people enduring this problem and it is highlighted that attending the meetings in AA groups favors sobriety in its members and it has been indicated that greater participation in the 12-step program leads to better recovery prognosis<sup>14,15</sup>.

It should be mentioned that literature is scarce in addressing stressful events, spirituality, participation in the program, and their association with alcohol consumption in AA population, besides the evidence focusing on stressful events is antique, which is why this study provides updated scientific evidence regarding these variables. It is

also important to indicate that no studies have been conducted in Mexico in this population by nursing staff.

It is worth mentioning that one of the principal limitations to carry out this study was the difficult access to AA groups and the poor participation by its members, which limited sample size.

## Conclusion

Stressful events related negatively with the amount of days without alcohol consumption, stressful events are greater in those who consumed alcohol during the last year than in those who do not consume alcohol. Spirituality is higher in participants who did not consume alcohol during the last year, but did not relate significantly with alcohol consumption. Participation in the program relates and has positive and significant effect on the amount of days without alcohol consumption.

Due to the aforementioned, comparative studies are recommended between alcohol-dependent individuals who are untreated and those attending AA groups, as well as with those under other treatments, given that it is necessary to broaden efforts to develop scientific knowledge on the recovery process of alcohol-dependent individuals.



## Collaborations

LAR Puente worked on the conception, article definition, on the research and methodology, on data analysis and interpretation, and on writing the article. MAV Luis worked on data analysis and interpretation and on the writing and critical revision of the article. MMA Castillo worked on the conception and definition and on the critical revision of the article and on the methodology. LP Diaz and JA Bermúdez worked on the methodology and critical revision of the article. NAA García worked on data analysis and interpretation and on the methodology. RAC Vargas worked on writing the article and on the critical revision.

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