Interventions to reduce alcohol consumption in adolescents: a systematic review
Intervenciones para disminuir el consumo de alcohol en adolescentes: una revisión sistemática

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ABSTRACT:
Objective: To synthesize and evaluate the scientific evidence available during the 2006-2016 period regarding interventions that have been made to reduce alcohol consumption among adolescents.

Materials and methods: a search was conducted in EBSCO, PubMed, Science Direct, Scielo Redalyc and Google academic, delineated to ten years, 61 articles were included that met the inclusion criteria. DeCS and mesh descriptors were used, using words keys for the search of the studies in Spanish and English and the boolean operators AND and OR.

Results: the level of evidence found was 2 (3%), 3 (3%), 4 (34.4%) and 5 (55.7%). 8.1% of the RCTs adhered to the CONSORT, 60.6% of the interventions were directed only to adolescents, the application scenario was 59% in school, while 34.4% received the intervention through multimedia elements and / or the Internet, at 74.1 % were given general knowledge about alcohol consumption, 18% mentioned having performed the intervention between 2 and 20 sessions, 31% followed up between 1 and 8 months after giving the treatment; 16.3% gave reinforcements and 95% of the studies showed decreased alcohol consumption among adolescents.

Conclusions: Interventions in adolescents regarding alcohol consumption are complex, due to the stage in which the study subject is. Analyzing the general panorama of the interventions over time allows to show the evolution of the approach to this phenomenon of interest for science.

Keywords: adolescents; intervention; alcohol consumption.

RESUMEN:
Objetivo: Sintetizar y valorar la evidencia científica disponible durante el período 2006-2016 respecto a las intervenciones que se han realizado para disminuir el consumo de alcohol en adolescentes.
INTRODUCCIÓN

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Materiales y métodos: Se realizó búsqueda en EBSCO, PubMed, Science Direct, Scielo Redalyc y Google académico, delimitada a diez años, se incluyeron 61 artículos que cumplieron con los criterios de inclusión. Se utilizaron descriptores DeCS y mesh, a partir del uso de palabras claves para la búsqueda de los estudios en español e inglés y los operadores boléanos AND y OR.

Resultados: El nivel de evidencia encontrado fue 2 (3%), 3 (3%), 4 (34.4%) y 5 (55.7%). El 8.1% de los ECA se apegaron al CONSORT, 60.6% de las intervenciones estuvieron dirigidas solo a adolescentes, el escenario de aplicación fue la escuela en un 59%, mientras que 34.4% recibió la intervención mediante elementos multimedia y/o internet, al 74.1% se le dio conocimientos generales acerca del consumo de alcohol, 18% mencionó haber realizado la intervención entre 2 y 20 sesiones, 31% dio seguimiento entre 1 y 8 meses después de entregar el tratamiento; 16.3% dio refuerzos y el 95% de los estudios arrojaron disminuir con sus intervenciones el consumo de alcohol en los adolescentes.

Conclusiones: Las intervenciones en adolescentes respecto al consumo de alcohol son complejas, por la etapa en la que se encuentra el sujeto de estudio. Analizar el panorama general de las intervenciones a través del tiempo permite evidenciar la evolución del abordaje a este fenómeno de interés para la ciencia.

Palabras clave: adolescentes; intervención; consumo de alcohol

Currently, the consumption of alcoholic beverages is a widespread habit, culturally accepted and normalized in the society in which the adolescents are being integrated by what they consider that the imitation of these social behaviors is appropriate. Addictions are a problem closely related in adolescence. For this reason it constitutes an international public health problem. (1)

In 2012, 5% of deaths in the world of young people between 15 and 29 years of age were attributable to alcohol consumption. Globally, 140 million people suffer from alcohol dependence. Globally, Europe is the region with the highest consumption of alcohol per capita, with some of its countries with particularly high consumption rates(2)

In Latin America, the World Health Organization (WHO) (3) in its annual report on world alcohol consumption in 2014 indicates that the main consumers are Chile (9.6 liters) and Argentina (9.3 liters), Mexico is in the tenth place by consuming 7.2 liters, which is above the international average of 6.4 liters per year.

The Pan American Health Organization (PAHO) (4) points out that on average, everyone in the world of 15 years or older drinks about 6.2 liters of pure alcohol annually.

Consumption of alcohol is established in adolescence, and the age of onset is becoming smaller at age, to later establish itself as an addiction in the individual, so to treat this problem when it has relatively little to have initiated increases the possibility of decreasing or well avoid consumption. (5-7) The use and abuse of alcohol among adolescents increasingly concerns various countries, as it reduces self-control of the individual and significantly increases risk behaviors, such as unprotected sex, therefore unwanted pregnancies and in addition high risk. It is one of the main causes of injuries, such as traffic accidents, violence, and premature deaths. Hence various health disciplines have been concerned with establishing interventions to address this problem that affects the individual in health, emotional and short-term and long-term financial resources (1,2,8)

Interventions have evolved over the years, from being delivered through paper, to various media integrating multimedia, currently the use of internet for interventions especially in adolescents is widely used for the impact it has on them, in spite of this
evolution the objective pursued by these interventions is the same, to avoid and/or to diminish the consumption of alcohol in adolescents.\textsuperscript{(9,10)}

Therefore, the present work aims to: Synthesize and evaluate the scientific evidence available during the 2006-2016 period regarding the interventions that have been made to reduce alcohol consumption in adolescents.

The methodology used was proposed by Mendes, Silveira and Galvao\textsuperscript{(11)}, which establish the following steps: 1) Identify the purpose of the research for literature search; 2) Define the strategy to carry out the literature search and the information to be extracted from each article. 3) Carry out the evaluation of the studies through the information of each article for selection; 4) Analyze selected search items; 5) Perform the discussion, interpretation, and conclusion of the information collected, and 6) Presentation of results obtained.

The level of evidence for each article was determined based on the classification proposed by Burns & Grove:\textsuperscript{(12)} 1. Systematic reviews of randomized controlled trials (RCTs); 2. Meta-analysis of RCTs and quasi-experimental studies; Integrative review of ECA and quasi-experimental studies, 4. Experimental study ECA, 5. Quasi-experimental study.

The search for articles was done in the following databases: EBSCO, PubMed, Science Direct, Scielo, Redalyc and Google academic. DeCS and mesh descriptors were used, based on the use of key words to search for studies related to the phenomenon of interest for the present systematic review (RS); such as: alcohol, intervention, adolescents, alcohol use, alcohol consumption, adolescents, teenagers, intervention and Boolean operators AND and OR, obtaining a total of 3,912 articles, of which 61 studies were selected for fulfilling the inclusion criteria. (Figure 1)

**Figure 1. Flow diagram for the inclusion of articles**

<table>
<thead>
<tr>
<th>Phase 1: Number of references identified from the search in databases (n=3912)</th>
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<tbody>
<tr>
<td>EBSCO (n=549)</td>
</tr>
<tr>
<td>PubMed (n=1202)</td>
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<tr>
<td>Science Direct (n=858)</td>
</tr>
<tr>
<td>Scielo (n=697)</td>
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<tr>
<td>Redalyc (n=570)</td>
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<tr>
<td>Google académico (n=36)</td>
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</tbody>
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<th>Phase 2: Number of articles for the full-text analysis (n=128)</th>
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<tbody>
<tr>
<td>Included articles</td>
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<tr>
<td>Quasi-experimental studies (n=34)</td>
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<tr>
<td>Experimental studies (n=21)</td>
</tr>
<tr>
<td>Meta-analysis randomized clinical trial (n=3)</td>
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<tr>
<td>Meta-analysis quasi-experimental studies (n=3)</td>
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<tr>
<th>Number of articles that analyzed title and abstract, eliminating duplicates in search. (n=1750)</th>
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<tr>
<td>Number of articles to meet the inclusion criteria. (n=61)</td>
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The criteria for the selection of the articles are described below, the time from January 1, 2006 to October 31, 2016 was delimited, in order to show the panorama over the last ten years regarding the interventions in adolescents who consume alcohol. The articles included correspond to investigations of disciplines in health, such as nursing, psychology and social work. Adolescence is the stage between 11 and 19 years, however, in many of the works have extended the age of 15 to 24 years, articles were included for adolescents and young people.

Works from Africa, Argentina, Belgium, Chile, Colombia, Cuba, Denmark, Spain, the United States, the Netherlands, Norway, Sweden and the Checay Republic of Mexico were included. The language of the selected studies was English and Spanish, complete texts that included the variables of interest for RS; the participants of the selected articles were adolescents consuming alcohol who participated in an intervention to treat their consumption.

The choice of article consisted of two phases, the first in the title review and the article summary, and in the second phase the entire article was analyzed. If the study fulfilled the criteria for inclusion in the RS, it was analyzed by three tables: 1. General characteristics of the study. 2. Bibliometric characteristics (level of evidence) 3. Methodological characteristics of the study.

RESULTS

The total of articles included in the SR were 61, 34 of them correspond to quasi-experimental studies (5-8, 14-43) 21 experimental studies (44-64) 3 Meta analysis of quasi-experimental studies (9,11,13) and 3 of ECA (10, 65, 66).

In relation to ECA, only 8.1% (f = 5) reported adhering to the CONSORT statement (Consolidated Standards of Reporting Trials) (20, 44, 52, 54, 60).

Regarding the target population of the interventions, 60.6% (f = 37) were directed to adolescents; 21.3% (f = 13) to adolescents and their parents; 8.1% (f = 5) to adolescents hospitalized in a health institution for the consequences of alcohol; 3.2% (f = 2) were applied in adolescents and youngsters and 1.6% (f = 1) only to parents or adolescents, parents and teachers.

Regarding the place where the studies were applied, 59% (f = 36) were in the school where the adolescents studied, 11.4% (f = 7) did it in the community; 3.2% (f = 2) applied it in the rural environment and 1.6% (f = 1) did it in the indigenous environment. While 24.5% (f = 15) did not report it.

The techniques by which the interventions were delivered in the studies, 34.4% (f = 21) were delivered through multimedia elements and / or internet (web games, social networks, software among others). The 21.3% (f = 13) were through traditional health education (lectures, classes, exhibitions, leaflets, among others); interventions with combined techniques were delivered to 21.3% (f = 13) of the studies; 14.7% (f = 9) were through short intervention programs such as counseling; 4.9% (f = 3) used peer support groups and 3.2% (f = 2) implemented a local politic in the community to restrict consumption.

The topic that was addressed in most studies included more than two topics in the intervention. 74.1% (f = 46) of the interventions included knowledge about alcohol.
consumption (generalities, risk factors, consequences among other contents). 26.2% (f = 16) aspects of motivation, 11.4% (f = 7) self-control, 9.8% (f = 6) self-efficacy; 8.1% (f = 5) solving problems, attitudes and social norms, 1.6% (f = 1) included life skills, suicide, values and personality. It is worth mentioning that some articles did not mention the theme that was addressed in his speech.

31.14% of the investigations reported giving the adolescents a brief intervention. Not all the articles mentioned the duration of the intervention, the results of those studies that indicated that: 18% (f = 11) reported between 2 and 20 sessions, without specifying whether they were given in days or weeks. 4.9% (f = 3) indicated 3, 14 and 20 days; 16.3% (f = 10) between 2 and 12 weeks, 6.5% (f = 4) between 1, 3, 6 and 18 months and 4.9% (f = 3) reported between 1 and 2 years.

Regarding follow-up, 31.1% (f = 19) specified it between 1, 2, 3, 6 and up to 8 months; 16.3% (f = 10) between 1, 2, 4, 5 and 10 years. Only 16.3% (f = 10) mentioned having performed a reinforcement after delivering the intervention and prior to the last follow-up, these were through parental supervision, telephone call, e-mail or cell phone message. 13.1% (f = 8) of the studies awarded a payment or incentive to participants. 9.8% (f = 6) of the studies had a qualitative component, with focus groups being the most used 4.9% (f = 3) among adolescents.

Regarding the impact of interventions on alcohol consumption, 95% (f = 58) of the studies showed a decrease in alcohol consumption, with statistical significance, however in their recommendations, most refer to the importance of follow-ups, reinforcements or strategies such as parents, peers or leaders within the intervention as well as the need for weekly or monthly self-reports by the study subjects.

In summary, 8.1% of the ECAS adhered to CONSORT, 60.6% of the interventions were directed only to adolescents, 59% of the application scenario was the school, 34.4% received the intervention through multimedia elements and / or the internet. In general, 74.1% received general knowledge about alcohol consumption, with regard to the duration of the intervention, 18% mentioned having performed between 2 and 20 sessions, 31% gave follow-up between 1 and 8 months after treatment; 16.3% gave reinforcements and 95% of the studies showed decreased alcohol consumption among adolescents.

**CONCLUSIONS**

The present work has allowed synthesizing and evaluating the available evidence, in Spanish and English, regarding interventions that have been made to reduce alcohol consumption in adolescents, published in the international literature between January 2006 and October 2016.

Interventions in adolescents are complex because of the stage of the study subject, their biological development is not over, the psychosocial aspect is of the utmost importance for individuals, such as peer acceptance; in addition the phenomenon of alcohol consumption is considered as the legal starting drug for the consumption of other illegal substances; the pressure of the near social group, imitation and curiosity are some of the reasons why the adolescents begin to consume alcohol.

Analyzing the general panorama of interventions over time makes it possible to highlight the evolution of the approach to this phenomenon of interest to science, not
just nursing. The impact of combined strategies such as traditional classroom education and the use of virtual platforms and / or the Internet, allows us to approach adolescents and treat alcohol use and abuse.

The intervention time is of utmost importance, since if the adolescent is not caught from the outset by the issue to be addressed and the strategies by which the intervention will be delivered, it is very likely that the treatment will not be concluded.

The prevalence of alcohol consumption worldwide is worrisome because of the widespread use and abuse of almost all adolescents, who have adopted alcohol consumption as part of their recreation and leisure activities, and the availability of alcohol addictive substance and the social acceptance of this harmful habit for health. As a result, consumption continues to rise and the age of onset is low, it is very important that from our disciplinary field we propose interventions that impact on the harmful consumption of adolescents and thus prevents complications.

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