

Systematic review of universal family prevention programs: analysis in terms of efficacy, retention and adherence

Revisión sistemática de programas de prevención familiar universal: análisis en términos de eficacia, retención y adherencia

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Abstract

Adherence is an important aspect of the effectiveness of family interventions for universal drug prevention. Some approaches suggest adherence assessments should be improved because they are partial and do not take into account all dimensions. The objective of the study is to analyze adherence and retention measures used in family intervention programs for the prevention of substance use in young people aged 10-14 years. To this end, the literature was reviewed on universal programs which have obtained good preventive results. The information sources consulted are: PubMed, PsycINFO (EBSCO), PsycArticles (EBSCO), Social Work abstracts (EBSCO), CINAHL (EBSCO) SocIndex (EBSCO), Scopus, Academic Search Premier (EBSCO), SCIC-ISOC, Cochrane Database of Systematic Reviews, ERIC, ScienceDirect, Web of Science, Project Cork, Researchgate, and consultation with experts. The search results show 21 studies belonging to 6 family programs: Strengthening Families Program 10-14, Parents Who Care, Family Check-Up, Linking Lives Health, Prevention of Alcohol use in Students, and Örebro Prevention Program. The studies analyzed provide little information on the different elements involved in adherence. Retention and differential attribution are the data that appear most frequently, while other aspects such as active participation do not appear in the studies. The results are discussed and recommendations are made to improve the evaluation of adherence and retention in family prevention programs.

Keywords: Adherence; Retention; Family-based program; Prevention; Universal.

Resumen

La adherencia es un aspecto importante para la eficacia de las intervenciones familiares de prevención universal de drogas. Algunas aproximaciones sugieren mejorar las evaluaciones sobre adherencia, ya que resultan parciales y no tienen en cuenta todas sus dimensiones. El objetivo del estudio es analizar las medidas de adherencia y retención utilizadas en los programas de intervención familiar para la prevención del consumo en jóvenes de 10-14 años. Para ello se revisa la literatura sobre programas universales que han obtenido buenos resultados preventivos. Las fuentes de información consultadas son: PubMed, PsycINFO (EBSCO), PsycArticles (EBSCO), Social Work abstracts (EBSCO), CINAHL (EBSCO) SocIndex (EBSCO), Scopus, Academic Search Premier (EBSCO), SCIC-ISOC, Cochrane Database of Systematic Reviews, ERIC, ScienceDirect, Web of Science, Project Cork, Researchgate y consulta expertos. Los resultados de la búsqueda muestran 21 estudios que pertenecen a 6 programas familiares: Strengthening Families Programme 10-14, Parents Who Care, Family Check-Up, Linking Lives Health, Prevention of Alcohol use in Students y Örebro Prevention Program. Los estudios analizados aportan poca información sobre los diferentes elementos involucrados en la adherencia. La retención y la atracción diferencial son los datos que aparecen con mayor frecuencia, mientras que otros aspectos como la participación activa no aparecen en los estudios. Se discuten los resultados y se realizan recomendaciones para mejorar la evaluación de la adherencia y retención en los programas de prevención familiar.

Palabras clave: Adherencia; Retención; Programas familiares; Prevención; Universal.

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Given the increasing prevalence of drug use among the adolescent population, there is a need for family-based preventive interventions (Rial et al., 2019; Teixidó-Compañó et al., 2019). Probably one of the most important factors at individual and family levels to ensure sufficient levels of efficacy in preventive programs is adherence (Gottfredson et al., 2015). The concept of treatment adherence as a variable affecting the efficacy of preventive or psychosocial interventions has not yet been clearly defined (or not at least, as much as it has been in the field of health) and it is complicated to differentiate it from other constructs like retention (García del Castillo, García del Castillo-López & López-Sánchez, 2014; Gearing, Townsend, Elkins, El-Bassel & Osterberg, 2014). Retention is understood as the set of measures affecting the level of intervention attendance. In contrast, adherence to psychosocial treatments is considered more broadly to include elements such as the program's ability to make participants feel part of the intervention, and covers session attendance, active participation, and compliance with program guidelines (Gearing et al., 2014).

One of the reasons why preventive interventions do not achieve the results expected has to do with the difficulty of obtaining high levels of commitment and attendance from families (Al-Halabi-Díaz & Errasti, 2009; Axford, Lehtonen, Tobin, Kaoukji & Berry, 2012; Errasti et al., 2009). Improved adherence is a matter of concern to those responsible at technical and policy levels as it poses a threat to the validity and efficacy of interventions (Axford et al., 2012; Byrnes, Miller, Aalborg, Plasencia & Keagy, 2010; Gearing et al., 2014; Negreiros, 2013; Spoth & Redmond, 2002). Recent reviews of evidence-based programs do not address retention and adherence (Lloret, Espada, Cabrera & Burkhart, 2013). Several studies, however, suggest important implications for preventive outcomes (Al-Halabi-Díaz & Errasti, 2009; Gearing et al., 2014). For example, it is known that the trainers or technicians implementing the interventions and providing preventive content influence participant adherence. In this case, adherence is understood as loyalty to content, and this is related to participant satisfaction, compliance with intervention guidelines, and implementation quality (Byrnes et al., 2010; Orte, Ballester, Amer & Vives, 2014; Sexton & Turner, 2010). Programs with good results in process evaluations have higher adherence rates (Haevelmann et al., 2013), which improves the potential for prevention in health, quality of life, motivation, both for participants and professionals, and the efficient use of resources (Guyll, Spoth & Cornish, 2012).

The lack of adherence to preventive programs leads to a reduction in the expected results as well as having effects on other participants, who could thus partially lose motivation. Therefore, it not only affects the participating subjects, but also the program as a whole, reducing its cred-

ibility (Aarons, Hurlburt & Horwitz, 2011; Allen, Linnan & Emmons, 2012; Segrott et al., 2017). Besides leading to worse preventive results, non-adherence represents an unproductive use of resources aimed at prevention and may actually increase the problem given the lack of necessary care (Gearing et al., 2014). In recent years, some research has been published which aims to address related elements, such as barriers to participation and the involvement of families in preventive programs (Al-Halabi-Díaz & Errasti, 2009; Negreiros, 2013; Negreiros, Ballester, Valero, Carmo & da Gama, 2019). For example, adherence to universal preventive programs can be affected by phenomena such as the self-selection of the most motivated families, those with the best family functioning, leading to the exclusion in greater proportion of families with higher levels of risk (Rosenman, Goates & Hill, 2012).

How do we measure adherence to preventive treatment?

Based on the results of recent reviews on psychosocial interventions, we can understand adherence as a construct consisting of several measures which may be categorized as: 1) session attendance measures; 2) measures of active participation during the session; and 3) measures of task completion between sessions (Gearing et al., 2014). The different levels of participation and involvement vary throughout the intervention process, and to analyze them it is necessary to specify moments for assessment and concrete indicators (Bamberger, Coatsworth, Fosco & Ram, 2014). Currently, session attendance (retention) is one of the most frequent measures (Gearing et al., 2014), while measures of participants' behavioral and attitudinal aspects have received less attention (Bamberger et al., 2014). Measuring adherence based only on retention or attendance is insufficient, so it is necessary to complement this with other measures, such as recruitment, the level of intervention compliance, active and committed participation, or the application of motivational strategies.

The study of preventive adherence is important in explaining and improving a program's ability to produce behavioral changes (Gearing et al., 2014); however, there is a lack of consensus and systematization regarding how it should be investigated. The main objective of this research is therefore to explore how adherence and retention are reported and assessed in family universal prevention programs which are considered effective. The analysis of adherence measures provides an assessment standard and allows the detection of aspects which may be missing or in need of improvement and which contribute to the consolidation of the concept of adherence in universal prevention programs. To this end, we have carried out a systematic review of the literature and analyzed different aspects related to the adherence of the programs found.

Method

Inclusion and exclusion

To select the studies, inclusion and exclusion criteria were established, following the recommendations of Sánchez-Meca and Botella (2015) for carrying out systematic reviews and meta-analyses to provide an element of quality assurance in selection. The inclusion criteria applied were publications in scientific journals between 2007 and 2019, in Spanish or English, on evidence-based universal family prevention programs aimed at young people between 10 and 14 years of age. Similarly, they also had to report on the results in terms of substance use prevention (alcohol, tobacco or illicit drugs). Studies without a control group, of single cases, without clearly defined family component, or lacking data were excluded.

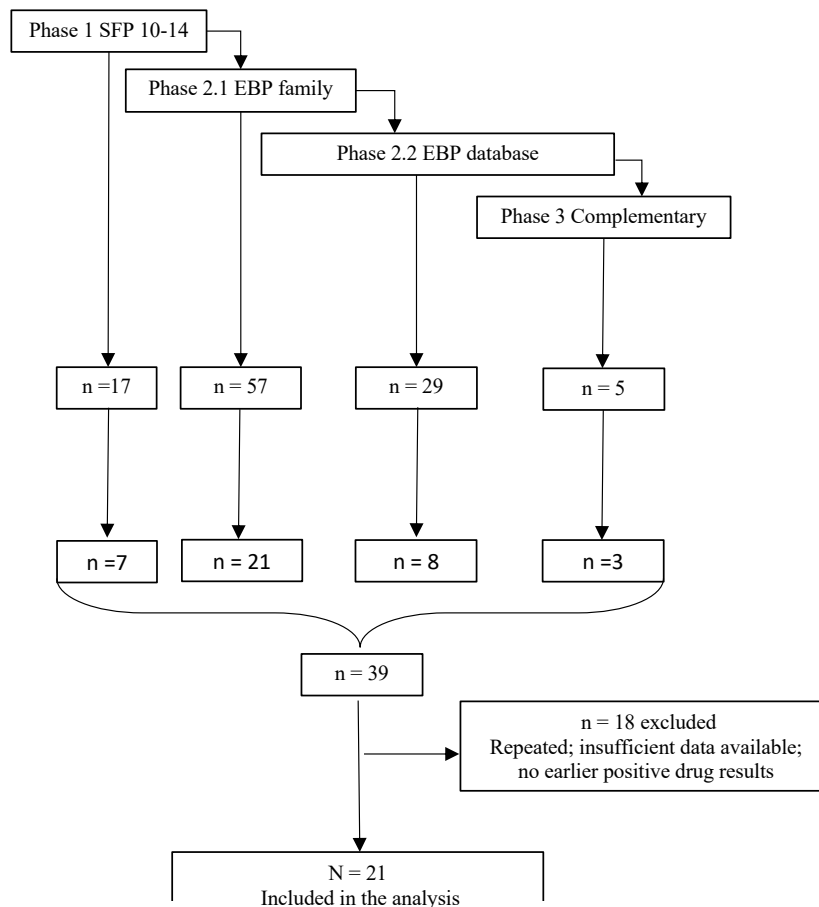
Search strategy

This systematic literature review was carried out between February 2018 and February 2019. The following databases were consulted: *PubMed*, *PsycINFO (EBSCO)*, *PsycArticles (EBSCO)*, *Social Work abstracts (EBSCO)*, *CINAHL (EBSCO)*, *SocIndex (EBSCO)*, *Scopus*, *Academic Search Premier (EBSCO)*, *SCIC-ISOC*, *Cochrane Database of Systematic Reviews*, *ERIC*, *Sci-*

enceDirect, *Web of Science* and *Project Cork*. The search was carried out in parallel by two of the study authors based on the PRISMA (Urrútia & Bonfill, 2010) protocol for preparing systematic reviews.

During the first phase, the search was focused on European experiences regarding the adaptation of the *Strengthening Families Program (SFP)* which had obtained positive drug prevention results. The key words used were: *Strengthening Families Program, SFP, 10-14*. We found 17 articles, of which only 7 met the inclusion criteria (see Figure 1).

Given the low number of studies with results on the universal SFP, it was decided to broaden the search in a second phase to include the other universal family prevention programs by consulting the same databases. The key words were: *prevention, universal, program, intervention, family-based*. As a result of this search, 57 articles were found and 21 were selected (see Figure 1). In this phase, the reference portals of Evidence-Based Practices (EBP) were also consulted: *Blueprints* (University of Colorado, Boulder), *Xchange* (European Monitoring Center for Drugs and Drug Addiction, EMCDDA) and *SAMHSA* (Substance Abuse and Mental Health Services Administration). Eight articles were selected from EBP databases. The search was supplemented



Note. Source: prepared by the authors.

Figure 1. Search phases and study selection flowchart

in the third phase by directly contacting ten authors and leading experts in the field of prevention through the *ResearchGate* portal for academic dissemination and by email. A total of 39 articles were analyzed in depth, of which 18 were excluded for various reasons (see Figure 1). Twenty-one studies were finally included in the review.

Analysis procedure

Once the 21 articles were selected, analysis was systematized by generating a table with the main descriptive characteristics of the articles (see Table 1). Second, data was collected on the effects or outcomes of prevention (see Table 2). In order to organize the data on longitudinal retention, it was necessary to group them according to the months at which follow-up assessment was carried out (see Tables 2 and 3). Retention scores were classified on finishing the intervention (post), at follow-ups of less than 12 months, follow-ups between 12 and 24 months, and follow-ups over 24 months.

Results

The 21 studies analyzed correspond to a total of 6 universal family prevention programs: *Strengthening Families Programme 10-14* (SFP 10-14), *Parents Who Care, Family Check-Up* (FCU), *Linking Lives Health, Prevention of Alcohol use in Students* (PAS), and *Örebro Prevention Program* (ÖPP) (see Table 1).

All of the studies analyzed presented some information regarding program retention or attrition. However, there was a lack of information on active participation or monitoring and the application of intervention guidelines. Regarding methodological quality, it is worth noting that of the total number of studies analyzed, 18 are randomized studies and 3 are quasi-experimental. Furthermore, they all include a control group and longitudinal assessment (see Table 1).

Taking into account only the data of the intervention groups, the following retention means were found: 86.1% at post-intervention, 78.9% for follow-ups under 12 months, 80.81% for follow-ups between 12 and 24 months, and 72% for follow-ups over 24 months (see Table 2). Table 3 shows the data regarding control-group retention. We found retention means of 90.7% post-intervention, 87.6% for follow-ups under 12 months, 78.1% for follow-ups between 12 and 24 months, and 70.5% for follow-ups over 24 months. The longest follow-up times were up to 21 years (Spath, Trudeau, Shin & Redmond, 2008a; Spath, Trudeau, Shin, Randall & Mason, 2018), and the shortest follow-ups three months (Coombes, Allen & Foxcroft, 2012). Some of the studies also report measures of retention depending on the treatment modality, as is the case with the comparisons by Koning et al. (2009), Spath et al. (2008a), and Spath, Randall, Trudeau, Shin and Redmond (2008b). Some stud-

ies report data separately for families, parents and young people, although this practice is not widespread, and most offer data on caregivers (parents), young people or families as a whole.

The lowest retention levels were found in the longest periods of longitudinal follow-up (more than 24 months), especially in the comparison groups (Koning et al., 2009; Koning, van den Eijnden, Verdurmen, Engels & Vollebergh, 2011, 2013; Spoth et al., 2008ab; Verdurmen, Koning, Vollebergh, van den Eijnden & Engels, 2014) (see Table 3).

With regard to program recruitment capacity, only some studies (Coombes et al., 2012; Haggerty, Skinner, MacKenzie & Catalano, 2007) report data to calculate this, and they show participation percentages with reference to the number of sessions attended. For example, Coombes et al. indicate that in 2012, 98% attended 5 or more sessions, 86% attended 6 or more sessions, and 66% attended 7 sessions. Similarly, Haggerty et al. (2007) point out that the average number of telephone sessions completed by parents was 9.6 and attendance in the face-to-face modality was an average of 4.6 sessions. In general, we found no assessment regarding the degree of in-session involvement or participation.

Almost all studies assessed differential attrition, finding differences between groups and between baseline conditions. What stands out is the differential probability of dropping out of the program during follow-up when young people use alcohol and other substances at baseline (Baldus et al., 2016; Bodin & Strandberg, 2011; Koning et al., 2011; Koutakis, Stattin & Kerr, 2008; Spoth et al., 2008b), when parents are indulgent (Koutakis et al., 2008) or there is a perception of risk, although the latter two are contradictory (Bröning et al., 2017; Spoth et al., 2008a). The other studies examined attrition in relation to retention rates at each follow-up (Guilamo-Ramos et al., 2010; Haggerty et al., 2007; Haggerty, Skinner, Catalano, Abbott & Crutchfield, 2015; Koning et al., 2009, 2011, 2013; Verdurmen et al., 2014).

Regarding factors related to the improvement of adherence and retention (see Table 4), we found that 4 of the 21 studies (19%) (Coombes et al., 2012; Haggerty et al., 2007, 2015; Riesch et al., 2011) mention providing help and means to promote program attendance (childcare services, transport tickets, mutually agreed hours, etc.). As regards incentives, 7 of the 21 studies (33.3%) (Baldus et al., 2016; Coombes et al., 2012; Haggerty et al., 2007, 2015; Riesch et al., 2011; Stormshak et al., 2011; Van Ryzin, Stormshak & Dishion, 2012) report incentives in the form of finance, benefits or various educational resources. Other aspects worth highlighting are individualized follow-ups, reminders and telephone calls to encourage participation. Of the 21 studies, 8 (38%) report that they used such strategies during the program. In relation to instructor train-

Table 1. *Descriptive data and main study results.*

Program name	Study aim	Sample	Intervention	Design	Main results
SFP 10-14 Baldus et al., 2016	Evaluate the effects of the German version of the SFP	SFP=147 Control=145	7 weekly sessions and 4 follow-up sessions.	Group-randomized trial with longitudinal analysis.	Positive results of SFP in lifetime prevalence in the 18-month follow-up.
SFP 10-14 Bröning et al., 2017	Verify the moderating risk hypothesis	SFP=147 Control=145	7 weekly sessions and 4 follow-up sessions.	Group-randomized trial with longitudinal analysis.	Small effects in high-risk children in favor of SFP for tobacco, alcohol and cannabis withdrawal.
SFP 10-14 Coombes et al., 2012	Examine the UK version of SFP 10-14	SFP: Parents: 26 Young people: 34 Control: Parents: 27 Young people: 35	7 weekly sessions and 4 follow-up sessions.	Ensayo aleatorizado por grupos con análisis longitudinal.	-
SFP 10-14 Foxcroft et al., 2017	Assess the effectiveness of the SFP adaptation	SFP= 223 Control= 229	7 weekly sessions and 4 follow-up sessions, without homework.	Group-randomized trial with longitudinal analysis.	No impact at 12 or 24 months follow-up on the results of substance abuse.
SFP 10-14 Riesch et al., 2011	Examine the effects by dose received	SFP=86 Control=81	7 weekly sessions without follow-up sessions.	Group-randomized trial with longitudinal analysis.	Good participation in full program. Contrary to expectations, the participants receiving partial intervention had low levels of consumption and no changes were observed at the end.
SFP10-14 Skärstrand et al., 2013	Report on the effects of the Swedish version of SFP 10–14	SFP=71 Control= 216	12 sessions in two parts (reinforcement sessions optional in second part).	Group-randomized trial with longitudinal analysis.	No significant differences in alcohol, tobacco, and illicit drug use.
SFP 10-14 Spath et al., 2008a; 2018.	Summarize the results of two universal prevention projects.	Study 1 SFP=238 PDFY ² =221 Study 2 SFP=137 LST=646	Study 1 SFP 7 weekly sessions and 4 follow-up sessions. PDFY 5 2-hour sessions focused on substance use risk and protection factors, including family management, parent-child bonding, and communication. Study 2 SFP 7 weekly sessions and 4 LST ³ 15 sessions of 40–45-minutes taught in class by teachers, with 5 follow-up sessions.	Group-randomized trial with longitudinal analysis.	Study 1 Participants in the 12th grade ISFP intervention condition reported significantly less narcotic abuse, and PDFY participants reported less abuse than controls, which was marginally significant; less lifetime narcotic abuse and barbiturate abuse than controls, but PDFY was not significantly different. Study 2 In the 11th grade assessment, significantly fewer LST + SFP 10–14 participants reported using nonprescription medications over their lifetime than controls; in 12th grade assessment, the difference between LST + SFP 10–14 participants and controls was marginally significant.
SFP 10-14 Spath et al., 2008b	Examine the moderate risk hypothesis.	SFP+LST= 543 LST=622 Control= 489	SFP 7 weekly sessions and 4 LST 15 sessions of 40–45-minutes taught by teachers in class, with 5 follow-up sessions.	Group-randomized trial with longitudinal analysis.	Significant effects of 12th grade intervention on the substance initiation index, onset of drunkenness, smoking onset and marijuana onset. High-risk group showed lower level of problematic use in all variables than the control risk group, with an exceptional frequency of drunkenness.

Parents Who Care Haggerty et al., 2007	Assess the impact of the intervention	PWC (African-American; AA)=163 PWC (European-American; EA)=168 PWC (in PA group)=118 PWC (self-administered SA)=107 Control=106	Format administered by parents and adolescents: seven sessions (2 to 2.5h/session). Self-Administered with Telephone Support (SA): video and video book activities during 10 weeks, with 62 key activities and 4 hours of additional training in telephone protocols.	Experimental design (2x3x4); baseline, follow-up at 12 and 24 months.	Statistically significant effects of interventions were detected in three of the outcomes examined: favorable attitudes on substance use, initiation of substance use or sex, and violent behavior.
PWC⁴ Haggerty et al., 2015	Assess the long-term effects of the Staying Connected with Your Teen in different forms of administration.	PWC (African-American; AA)=163 PWC (European-American; EA)=168 PWC (in PA group)=118 PWC (self-administered SA)=107 Control=106	Format administered by parents and adolescents: seven sessions (2 to 2.5 h/session). Self-Administered with Telephone Support (SA): Video and video book activities during 10 weeks, with 62 key activities and 4 hours of additional training in telephone protocols.	Experimental design (2x3x4); 6-year follow-up.	The overall significant effect of PA intervention on family stressors and frequency of drug use for blacks and whites is an important finding. These findings add evidence to the potential of relatively brief family interventions to influence outcomes years later. Direct effect of BP status on both family stressors and frequency of drug use 6 years after the intervention for young black and white people. Here, we examine only frequency of drug use.
FCU⁵ Van Ryzin et al., 2011	Assess the impact of FCU on adolescent behavior problems for 4 years (including transition to high school).	FCU= 385 Control= 207	Universal intervention (information on parenting), selected intervention (interview across three sessions, assessment and feedback using motivational interview principles) and additional support (each curriculum for parents).	Group-randomized trial. 4-year follow-up.	Lower rates of alcohol consumption. Effect size calculations were not appropriate for count-based data such as drinking.
FCU Stormshak et al. 2011	Assess the impact and effectiveness of FCU and related intervention services to reduce risky health behaviors and promote social adjustment among middle schoolers.	FCU= 385 Control= 207	Universal intervention (information on parenting), selected intervention (interview across three sessions, assessment and feedback using motivational interview principles) and additional support (each curriculum for parents).	Group-randomized trial. 4-year follow-up	Reduced increase of alcohol, tobacco, and marijuana use among high schoolers. Order of effect sizes: smoking, drinking, marijuana use.
FCU Fosco et al., 2013	Explore the association between effort control and other key behavioral outcomes.	FCU= 385 Control= 207	Universal intervention (information on parenting), selected intervention (interview across three sessions, assessment and feedback using motivational interview principles) and additional support (each curriculum for parents).).	Group-randomized trial. 4-year follow-up	Reduced risk of growth and use of alcohol, tobacco, and marijuana up to eighth grade. Self-regulation was linked to slower growth in smoking, drinking, and marijuana use in middle school years.
LLH⁶ Guilamo-Ramos et al., 2010	Assess the effectiveness of a complementary parent-based component to a school intervention to prevent cigarette smoking among Africans.	TNT ⁷ plus parent = 695 Control= 691	2 sessions with parents, 2 booster sessions and 2 booster calls.	Group-randomized trial. 15-month post-intervention follow-up	Likelihood of smoking cigarettes reduced by 42% for teens in the complementary parental condition compared to the TNT-only condition.

ÖPP* Bodin et al., 2011	Assess effectiveness.	1752 7th grade students (13–16 years) and 1314 parents.	Six short teacher and parent meetings: (20 minutes).	Quasi-experimental using controls paired with a pre-post, intent-to-treat design. Group randomized trial, with schools randomized to ÖPP or no intervention. Follow up at 12 and 30 months.	Significant reduction in drinking at 12 months, but this result was not maintained at 30 months.
ÖPP Koutakis et al., 2008	Assess effectiveness.	900 students (13-16 years) and their parents.	Parents received information by mail and during the six school meetings.	Quasi-experimental using controls paired with a pre-post, intent-to-treat design. Longitudinal follow-up at 2.5 years.	Involving parents proved to be an effective way to reduce underage drinking and crime.
PAS* Koning et al., 2009	Compare the prevention program based on parental intervention and student intervention.	Intervention with parents=689 Intervention students=771 Combination= 380 Control=779	Parental intervention (1 session); o student intervention (4 digital sessions); or both interventions combined.	Group-randomized trial. Follow-up at 10 and 22 months.	Follow-up 1: The combined student-parent intervention showed significant effects on excessive weekly drinking, weekly drinking, and frequency of drinking. Follow-up 2: the results were replicated, except for the effects on weekly alcohol use.
PAS Koning et al., 2011	Assessing the effects of the Dutch version of the ÖPP.	13–16 years Final sample (n)= 2937	(1) Six short sessions (20 minutes) with parents and (2) four digital lessons with students; (3) interventions 1 and 2 combined; and (4) the regular curriculum as a control condition.	Quasi-experimental. Follow-up at 34 months.	At 34 months follow-up, significant effects of combined PAS intervention (parents and students). Onset of excessive weekly drinking and weekly drinking was significantly reduced by 12.4% and 10.5%, respectively, in adolescents. No effects from separate interventions were found.
PAS Koning et al., 2013	Analyze the effectiveness of the PAS.	Parent intervention = 254 Student intervention = 291 Combined intervention = 193 Control= 326	Parental intervention (1 session); o student intervention (4 digital sessions); or both interventions combined.	Group-randomized trial. Follow-up at 50 months.	Combined intervention reduced prevalence of excessive weekend drinking and the amount of drinking in general.
PAS Verdurmen et al., 2004	Examine the impact and differential effects of moderators.	Parent intervention = 608 Student intervention = 675 Combined intervention = 812 Control= 935	Parental intervention (1 session); o student intervention (4 digital sessions); or both interventions combined.	Group-randomized trial. Follow-up at 22 months.	Combined intervention delayed onset of weekly drinking in the general adolescent population, and was particularly effective in delaying the onset of weekly excessive drinking in a higher-risk subsample.

Note. Source: prepared by the authors.

1 Strengthening Families Programme. 2 Preparing for the Drug Free Years. 3 Life Skills Training. 4 Parents Who Care. 5 Family Check-Up. 6 Linking Lives Health. 7 Towards No Tobacco. 8 Örebro Prevention Programme. 9 Prevention of Alcohol use in Students.

Table 2. *Intervention group retention measures and retention percentages.*

Program	References	Post	Follow ups		
			Under 12 months	12 - 24 months	Over 24 months
SFP 10-14	Baldus et al., 2016; Bröning et al., 2017	Families: 139 (94.5%)	6 months Families: 136 (92.5%)	18 months Families: 135 (91.8%)	
	Coombes et al., 2012	Parents: 23 (88.4%) Young people: 24 (70.5%)	3 months Parents: 23 (88.4%) Young people: 21 (61.7%)		
	Foxcroft et al., 2017			12 months Families: 203 (69%) 24 months Families: 160 (52%)	
	Riesch et al., 2011	Families: 66 (76.7%)	6 months Families: 66 (76.7%)		
	Skärstrand et al., 2013			12 months Young people: 320 (95.5%) 24 months Young people: 288 (87.8%)	48 months Young people: 283 (86.2%)
	Spoth et al., 2008a; Spoth et al., 2018 Study 1	SFP: 188 (78.9%) PDFY: 177 (80%)		12 months SFP: 161 (67.6%) PDFY: 155 (70%) 24 months SFP: 152 (63.8%) PDFY: 145 (65.6%)	32 months SFP: 152 (63.8%) PDFY: 144 (65.1%) 72 months SFP: 151 (63.8%) 48 months SFP: 151 (63.4%) PDFY: 149 (67.4%) A los 21 years SFP: 170 (71.4%) PDFY: 152 (68.7%)
	Spoth et al., 2008a; Spoth et al., 2008b Study 2	SFP+LST: 546 young people (94.7%) LST: 615 young people (95.2%)		12 months SFP+LST: 557 young people (96.7%) LST: 554 young people (85.7%) 24 months SFP+LST: 552 (95.8%) LST: 532 (82.3%)	32 months SFP+LST: 516 (89.5%) LST: 474 (67.1%) 48 months SFP+LST: 444 (77.1%) LST: 425 (65.7%)
PWC	Haggerty et al., 2007, 2015.	SA: 102 (96.2%) PA: 107 (90.6%)		12 months SA: 100 families (94.3%) PA: 107 families (90.6%) 24 months SA: 93 families (87.7%) PA: 109 families (92.3%)	
FCU	Van Ryzin et al., 2012; Stormshak et al., 2011; Fosco et al., 2013.		287 families (74.3%)		
LLV	Guilamo-Ramos et al., 2010			15 months 554 families (79.2%)	
ÖPP	Bodin et al., 2011			12 months 835 young people (93.5%)	30 months 798 young people (87.1%)
	Koutakis et al., 2008			12 months 317 young people (80.6%) 256 parents (75.5%) 24 months 339 young people (86.2%) 264 parents (77.8%)	
PAS	Koning et al., 2009, 2011, 2013; Verdurmen et al., 2014	689 parents (86%) 771 young people (81.8%) 698 combined (85.9%)	10 months 655 parents (81.7%) 730 young people (77.4%) 639 combined (78.6%)	22 months 608 parents (75.9%) 675 young people (71.6%) 588 combined (72.4%)	
		<i>M=86.1</i>	<i>M=78.9</i>	<i>M=80.81</i>	<i>M=72</i>

Note. Source: prepared by the authors.

Table 3. Comparison group retention measures and retention percentages.

Program	References	Post	Follow ups		
			Under 12 months	12 - 24 months	Over 24 months
SFP 10-14	Baldus et al., 2016 Bröning et al., 2017	Families: 137 (94.4%)	6 months Families: 132 (91%)	18 months Families: 127 (87.5%)	
	Coombes et al., 2012	Parents: 27 (100%) Young people: 35 (100%)	3 months Parents: 27 (100%) Young people: 35 (100%)		
	Foxcroft et al., 2017			12 months Families: 178 (78%) 24 months Families: 146 (65%)	
	Riesch et al., 2011	Families: 66 (81.4%)	6 months Families: 59 (72.8%)		
	Skärstrand et al., 2013			12 months Young people: 188 (97.4%) 24 months Young people: 177 (91.7%)	48 months Young people: 164 (84.9%)
	Spoth et al., 2008a Spoth et al., 2019 Study 1	Families: 186 (89.4%)		12 months Families: 156 (75%) 24 months Families: 141 (67.7%) 32 months Families: 151 (72.5%)	48 months Families: 157 (75.4%) 72 months Families: 157 (75.4%) A los 21 years Families: 161 (77.4%)
	Spoth et al., 2008ab Study 2	Young people: 491 (78.5%)		12 months Young people: 479 (76.6%) 24 months Young people: 460 (73.6%)	32 months Young people: 452 (72.3%) 48 months Young people: 343 (54.8%)
PWC	Haggerty et al., 2007, 2015.	Families: 105 (99%)		12 months 99 families (93.3%) 24 months 101 families (95.2%)	
FCU	Van Ryzin et al., 2012; Stormshak et al., 2011; Fosco et al., 2013.		172 families (83%)		
LLV	Guilamo-Ramos et al., 2010			15 months 542 families (78.4%)	
ÖPP	Bodin et al., 2011			12 months 778 young people (92.8%)	30 months 750 young people (87.3%)
	Koutakis et al., 2008			12 months 336 young people (80.3%) 268 parents (85.8%) 24 months 366 young people (87.5%)	
PAS	Koning et al., 2009, 2011, 2013; Verdurmen et al., 2014	779 controls (83.3%)	10 months 747 controls (79.8%)	22 months 699 controls (74.7%)	34 months 677 controls (72.4%) 50 months 326 controls (34.8%)
		<i>M</i> = 90.7	<i>M</i> =87.6	<i>M</i> = 78.1	<i>M</i> =70.5

Note. Source: prepared by the authors.

ing, all programs report carrying out specific training, with the exception of two studies that make no reference to the training of professionals (Koning et al., 2011; Van Ryzin et al., 2012). Training ranges from three and a half hours in length (Verdurmen et al., 2014), to several days (Coombes et al., 2012; Koutakis et al., 2008), and up to one week (Fosco, Frank, Stormshak & Dishion, 2013; Stormshak et al., 2011). However, none of the studies, except that of Coombes et al. (2012), refers to the characteristics that the instructor must have to make participants feel part of the program and promote adherence. In addition, it was found that 15 studies work with structured and manualized content (71.4%), with some materials being adapted (Bröning et al., 2017; Foxcroft, Callen, Davies & Okulicz-Kozaryn, 2017; Koning et al., 2009; Skärstrand, Sundell & Andréasson, 2014). Regarding venue, all of the studies were implemented in the school environment, with only some of the comparison modalities carried out in other contexts (Haggerty et al., 2007, 2015; Riesch et al., 2011).

Discussion and conclusions

The effective universal family prevention programs analyzed show good retention capacity, in both the short and long term, and also meet the highest standards of methodological quality (randomized studies, control groups, and longitudinal follow-ups). However, the analysis of preventive efficacy requires the study of different levels of adherence in terms of session attendance and involvement within between sessions (Gearing et al., 2014). In general terms, it appears that there is no standard procedure to report these aspects (Bamberger et al., 2014; Gearing et al., 2014).

Regarding the data on adherence from attendance figures, the programs analyzed mostly provide session attendance measures, reporting high retention rates in longitudinal follow-ups, especially in the experimental groups. However, these data are not disaggregated by type of participant (caregivers, young people, or families) or by treatment modality (face-to-face, online, etc.), which also does

Table 4. Factors related to improving adherence and retention.

Program	Reference	Attendance aid	Financial and other incentives	Snacks	Telephone reminders	Instructor training	Manual
SFP 10-14	Baldus et al., 2016		x	x		x	x
	Bröning et al., 2017			x		x	x adapted
	Coombes et al., 2012	x	x	x	x	3 days	x
	Foxcroft et al., 2017					X	x adapted
	Riesch et al., 2011	x	x	x	x	X	
	Skärstrand et al., 2013					x (trainer and support)	x adapted
	Spoth et al., 2008a Spoth et al., 2019					x	
Spoth et al., 2008b					3 days	x	
PWC	Haggerty et al., 2007	x	x		x	20h	x
	Haggerty et al., 2015	x	x		x	x	x
FCU	Van Ryzin et al., 2012		x	x			x
	Stormshak et al., 2011		x	x		1 week and follow-ups	x
	Fosco et al., 2013					1 week and follow-ups	x
LLV	Guilamo-Ramos et al., 2010				x		x
ÖPP	Bodin et al., 2011					x	
	Koutakis et al., 2008					2 days	
PAS	Koning et al., 2009				x	x	x adapted from ÖPP
	Koning et al., 2011, 2013				x	x	
	Verdurmen et al., 2014				x	x (4 50-min sessions)	
	Koning et al., 2011						

Note. Source: prepared by the authors.

not allow the analysis of program recruitment capacity (few of them provide information on the number of invitations or sample available for recruitment).

The use of differential attribution measures is more widespread and provides relevant information for studying adherence, especially in the experimental groups. These results can be useful for improving the understanding of elements such as self-selection (Bröning et al., 2017; Rosenman et al., 2012; Spoth et al., 2008a) or like previous drug use (Baldus et al., 2016; Bodin et al., 2011; Koning et al., 2011; Koutakis et al., 2008; Spoth et al., 2008b), in terms of predicting early program dropout, especially in universal prevention.

The record of attendance is the most frequent measure because it is easy to collect and is usually done at the end of the intervention, so it is not very useful for introducing improvements or changes during program implementation (Gearing et al., 2014). While the same level of attendance to sessions could be observed, it was with different adherence patterns reflecting different results (Ballester, Valero, Orte & Amer, 2018).

Other measures, such as the quality of participation or the performance of prescribed tasks, are more difficult to assess and are therefore less frequently observed (Bamberger et al., 2014; Gearing et al., 2014). Quality of participation could be assessed by having external observers or trainers themselves register the quality of the contributions made to the session or the emotional bond between pro-

fessional and participants. This could also be done by the participants themselves. To assess the monitoring of behavioral guidelines with the aim of consolidating learning and generalizing it to participants' natural context or daily life, audits of tasks carried out can be implemented in the form of checklists, diaries or other tangible products (Gearing et al., 2014).

Non-adherence affects the efficacy of interventions and reduces the potential impact of universal family prevention programs (Bamberger et al., 2014; García-del-Castillo et al., 2014), especially when the program's participation requirement is high (Negreiros, 2013), or when the perception of risk is low, as is the case with universal prevention (Bröning et al., 2017; Rosenman et al., 2012).

Among the main limitations of the study, we can highlight the impossibility of performing a meta-analysis due to the small sample sizes of the studies and the lack of information to make calculation of effect sizes possible. Another important limitation has to do with specific content since only universal family prevention programs which show positive results in reducing drug use were analyzed.

Regarding future recommendations, it should be noted that differences are observed when providing information on the inclusion of elements or factors which the literature recognizes as improving or increasing adherence and retention, such as loyalty to content, use of standardized manuals, incentives or snacks, instructor training, removal of logistical barriers, or reminders and participation

Table 5. *Recommendations for improving adherence.*

Recruitment	<ul style="list-style-type: none"> - Involvement of institutions recognized by families and dissemination of programs through them. - Collaboration with recognized people or community leaders. - Involvement of technicians and mediators who already work with families, for example, organizing information sessions with these technicians. - Collaboration of parents involved in previous applications in information sessions for recruitment. - Presentation of the programs highlighting their benefits. - Ensure the time lapse between briefing and first session is minimal.
Retention	<ul style="list-style-type: none"> - Implement the programs in controlled environments, accessible and non-stigmatized spaces. - Hold sessions with families at appropriate times and of reasonable length. - Offer guarantees of confidentiality and session privacy. - Organize family follow-up between sessions to ensure their participation and attendance. - Offer support services to families for the care of smaller children not participating in the program.
Implementation	<ul style="list-style-type: none"> - Suitable training of trainers in content, leadership skills and group dynamics. - Adhesion/adherence to the program structure, content and methodology. - Training sessions to reinforce trainers. - Training team stability throughout the application. - Creation of a pleasant environment for the development of sessions with families. - Integrating parents' ideas. - Promoting active listening. - Encouragement of interaction and participation to guarantee everyone learns. - Promote mutual support between families, highlighting strengths of the group. - Implementation of reminder sessions to reinforce learning. - Encourage and ensure that families implement program practice on a daily basis. - Respond to participants' own concerns, needs and difficulties.

Note. Source: prepared by the authors based on PNSD (2016) and Negreiros et al. (2019).

monitoring (Al-Halabi-Diaz & Errasti, 2009; Byrnes et al., 2010; Haavelmann et al., 2013; Kumpfer, 2008; Negreiros et al., 2019; Sexton & Turner, 2010; Orte et al., 2014). For this reason, it is recommended that those programs which include any of these measures report the necessary data on the number of follow-ups or telephone reminders, the number of attendance aids, incentives, instructor training, etc., in order to assess their impact on the results, adherence and participation (Schwalbe & Gearing, 2012).

In addition, the literature indicates that adherence increases if the program is stimulating and meets the subjective needs of the participants; therefore, it must be based on proven dynamics and processes (Gearing et al., 2014; Plan Nacional Sobre Drogas, 2016). Given that commitment and involvement in the program is a dynamic factor which changes over time (Bamberger et al., 2014), the level of participation needs to be measured across the different sessions and also between sessions (Gearing et al., 2014).

Following the recommendations for future studies presented in the Plan Nacional sobre Drogas (2016) and the results of similar reviews (in Negreiros et al., 2019), we propose some actions to achieve the adherence of families participating in the programs. These recommendations go beyond adherence as face-to-face participation and include proposals for good practice related to attracting or recruiting families, as well as aspects of program implementation (see Table 5).

There are many reasons for seeking to improve adherence to preventive programs and the way this construct is reported. The main practical contribution of this review is the provision of a framework of reference for good practice and a guide for establishing a standard for the assessment of adherence to universal family prevention programs.

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Conflict of interests

The authors declare that there is no conflict of interest.

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