A 1-year follow-up evaluation of a sexual-health education program for Spanish adolescents compared with a well-established program

Alexandra Morales, José P. Espada, Mireia Orgilés

Department of Health Psychology, Miguel Hernández University, Elche, Spain

Correspondence: Alexandra Morales, Department of Health Psychology, Miguel Hernández University, Elche 03202, Spain. Tel: +34 965222071, Fax: +34 96658904, e-mail: alexandra.moraless@umh.es

Background: Competencies for adolescents with a healthy sexuality (COMPAS) is the only school-based sexual health promotion program in Spain that has been found to be as effective as an evidence-based intervention (¡Cuídate!) in the short term. This study’s aim was to compare data from a 12-month follow-up evaluation on the effects of COMPAS on adolescents’ sexual risks (knowledge, attitudes, perceived norms, sexual risk perception and intentions) and sexual behaviours (age of the first sex, consistent condom use and multiple partners) with an evidence-based intervention (¡Cuídate!) and a control group. Methods: Eighteen schools from five provinces of Spain were randomly assigned to one of three conditions: COMPAS, ¡Cuídate! and a control group. The adolescents (N=1563; 34% attrition) were evaluated 1 week before and after the program, and 1 year post-program implementation. Results: We found that the COMPAS program was as effective as ¡Cuídate!, the evidence-based program, in increasing the adolescents’ knowledge about sexually transmitted infections and in fostering favourable attitudes about condom use and people living with HIV/AIDS. COMPAS was more effective than ¡Cuídate! in increasing the adolescents’ perceptions of their peer’s consistent condom use and the age delay of their first vaginal intercourse. However, it was less effective in maintaining the adolescents’ intentions to use condoms and in delaying the age of their first oral sex experience. Conclusion: COMPAS was as effective as ¡Cuídate! in reducing sexual risk among adolescents.

Introduction

Twenty-six per cent of the students in Spain between the ages of 15 and 18 years who are sexually active report not having used a condom during their most recent sexual encounter. Unprotected sex is the main route of human immunodeficiency virus (HIV) transmission in Spain. Spanish youths initiate sexual activity at 15 years of age on average and increasingly earlier, which lengthens their exposure period to sexually transmitted infections (STIs) and unintended pregnancies. An early sexual debut (earlier than 15 years) is associated with having multiple sexual partners and increasing the risk of having sex under the influence of alcohol.

Interventions promoting the sexual health and reduction of sexual risk in youths have been found to be effective. The Centers for Disease Control and Prevention (CDC) recommends the comparison of new interventions with others also found to be effective. Randomized controlled studies on the effectiveness of HIV prevention and long-term evaluations are scarce in Spain. Randomized controlled studies are needed to evaluate the long-term effectiveness of programs promoting the sexual health of Spanish youths. Of the 14 studies identified in a review of similar...
school-based programs, only 6 included a control group; of these 6 studies, 2 evaluated the long-term effectiveness of the programs.13,14

Competencias para adolescentes con una sexualidad saludable (COMPAS) (Competencies for adolescents with a healthy sexuality),15 a protocol used to prevent HIV transmission among adolescents, is based on skills development. The short-term effectiveness of COMPAS in promoting the sexual health of adolescents was examined in 832 students from 15 secondary schools across 5 geographical areas of Spain. In this controlled study, COMPAS was more effective than a control group in increasing the adolescents’ knowledge about HIV, improving their attitudes about HIV and people living with it and promoting positive attitudes about condom use, despite barriers to its use.14 The program’s short-term effectiveness also was evaluated in accordance with the type of program facilitator: an expert or an expert with a peer. The study concluded that the contribution of peers as co-facilitators did not increase the effectiveness of COMPAS to promote a healthy attitude about sexuality in Spanish adolescents.14

In a recent cluster-randomized controlled study, in which 1563 adolescents from 18 schools across 5 Spanish provinces were involved, COMPAS was found to be more effective, short term, when compared with an evidence-based intervention (¡Cuídate!) and a control group.15 The ¡Cuídate! program16 was adapted to be culturally relevant for use with Spanish adolescents because it was considered the only high-quality program developed for the Latino population by the US Centers for Disease Control and Prevention.17 ¡Cuídate! was chosen as the comparison program in this study because its duration, theoretical framework and components were similar to the COMPAS program. When the short-term effects of COMPAS were compared to a control group, COMPAS was found to be as effective as ¡Cuídate! in promoting favourable attitudes about people living with HIV/AIDS and HIV testing. It also was more effective at increasing adolescents’ knowledge about STIs and their intention to engage in safe-sex behaviours.15

Short-term evaluations revealed that the COMPAS program increased adolescents’ knowledge of HIV and other STIs, perceptions of the risks associated with unprotected sex, self-efficacy, intentions to engage in safe-sex behaviours and favourable attitudes about HIV. Behavioural changes have not been identified since the program’s implementation because the studies have evaluated only its short-term effectiveness.13-15 According to Albarracín et al.,18 assessments that immediately follow interventions for sexual behaviour rarely show effects.

The present study’s aim was to examine the results of a 12-month follow up of a previous cohort16 to determine the long-term effectiveness of COMPAS in promoting healthy sexuality compared with ¡Cuídate!, an evidence-based intervention and a control group. We focused on behavioural outcomes, specifically multiple partners, consistent condom use and age of first sexual experience (vaginal sex, anal sex and oral sex). We also examined other psychosocial outcomes related to sexual risk, such as knowledge of HIV and STIs, attitudes about condom use, intentions to engage in safe sex, sexual risk perceptions and perception of peers’ condom use. We hypothesized that COMPAS would be at least as effective as ¡Cuídate! in reducing sexual risk behaviours 1 year post-intervention.

Methods

Study design and participants

Students enrolled in the ninth and tenth grades of Compulsory Secondary Education (aged 14–16) from five provinces in Spain were recruited to participate in a cluster-randomized controlled study in 2012–2013. Eighteen secondary schools were randomly assigned to three experimental conditions: (i) the COMPAS program, (ii) the ¡Cuídate! program and (iii) the control group. The consent of 97% of the adolescents (N = 1563) was obtained (figure 1).

A total of 1030 students (34% dropout rate) completed the 12-month follow-up survey between January and April 2013. At baseline, status sexual (being sexually active or not) and gender variables were unrelated to staying in the program across conditions. However, adolescents who dropped out were younger than those who remained in it (P = 0.001, OR = 0.59, CI: 0.50–0.69). There was no statistically significant difference in the loss of participants between the experimental conditions (P = 0.21). All of the adolescents who answered the baseline and 12-month follow-up assessments were included in the analyses.

Interventions

COMPAS program

COMPAS is based on social learning theory19 and the information-motivation-behavioural skills model.20 It consists of five 50-min sessions and has the following objectives: (i) to increase knowledge about HIV and STIs, and perception of risk; (ii) to positively influence attitudes, norms and behaviours related to HIV risk reduction; and (iii) to improve problem-solving skills related to unprotected sex, and social skills to negotiate condom use. Several articles provide detailed descriptions of the program and its components.13–15

¡Cuídate! program

¡Cuídate! was initially developed to reduce sexual risk among Latino adolescents (13–18 years) living in the USA.21 It is based on the Be Proud! Be Responsible! program, an evidence-based safe-sex curriculum,22 whose effectiveness in reducing high-risk sexual behaviours among African-American youth has been reported in several randomized controlled studies.8,23,24 The theoretical models underlying ¡Cuídate! are social cognitive theory and the theory of planned behavior.25–27 ¡Cuídate! consists of six sessions, each lasting 45 min. The objectives are to (i) influence behavioural and normative beliefs and (ii) improve self-efficacy, and negotiation skills related to HIV risk reduction, specifically abstinence and condom use.

Control group

The control group did not receive any interventions addressing sexual risk or health promotion.

Procedure

This study was approved by the research ethics committee of the Miguel Hernández University. A pilot study of ¡Cuídate! was conducted in order to ensure adaptation of the program to the Spanish culture (JP Espada et al., in preparation). In 2012, programs were implemented in the schools assigned to the two respective experimental conditions. The participants were assessed before the intervention, immediately after the intervention and 12 months post-intervention. Its pretest–post-test results have been published elsewhere.15 The evaluations were conducted in computer classrooms and the data were collected through an online survey using Google Forms. A member of the research team was present during the evaluation to remind participants of the importance of the evaluation, provide personal codes and answer questions. Participation in the study was voluntary. As an incentive, the researchers provided €30 gift vouchers to the participants who responded to both of the evaluations.
Measures

Sociodemographic variables

Variables with baseline differences were entered as covariates, i.e. sex, age and type of sexual experience. The socioeconomic status of the participants was measured using the Scale of Family Wealth.28

Behavioural measures

The following behaviours were assessed: (i) type of sexual experience (petting, vaginal sex, oral sex, anal sex and mutual masturbation) (yes/no), (ii) age at first vaginal intercourse, (iii) multiple partners in the past 6 months (have had two or more sexual partners in the last 6 months), (iv) use of condoms as a method of protection during sexual intercourse (yes/no), (v) frequency of condom use (range of percentage: 0–100) and (vi) consistent condom use (condom use in 100% of sexual encounters) (yes/no).

Psychosocial measures

Knowledge of HIV and other STIs

The index of knowledge about STIs for adolescents (ECI, for its Spanish acronym)29 measured the participants’ knowledge of HIV and other STIs. This instrument consists of 24 items divided into five subscales: (i) general knowledge about HIV, (ii) knowledge about condom use, (iii) knowledge of other routes of transmission, (iv) knowledge of prevention and (v) knowledge of other STIs. The scale’s responses are true, false and do not know. The instrument’s internal consistency is high (α = 0.88).

Attitude towards the relational aspects of HIV

The HIV Attitudes Scale for Adolescents (HIV-AS) measures adolescents’ attitudes related to HIV and AIDS,30 and consists of 12 items divided into 4 subscales: (i) attitude toward safe sex when faced with obstacles to it, (ii) attitude toward HIV testing, (iii) attitude toward condom use and (iv) attitude toward people living with HIV. Ratings ranging from 1 (definitely not) to 4 (definitely). The total possible score ranges between 4 and 16. The internal consistency of this instrument is 0.77.

Intention to engage in safe sex

The intention to engage in sexual behaviour in the next 12 months was assessed by five items, with ratings ranging from 1 (definitely not) to 5 (definitely). The scale consists of two factors: (i) condoms, including intention to seek condoms, use them when needed and negotiate condom use with a sexual partner (α = 0.80); and (ii) condom use under the influence of drugs, including alcohol and other drugs (non-alcohol) (α = 0.75). The reliability of both factors was acceptable.

Sexual risk perception

The perception of sexual risk was evaluated using three items related to the perceived risk of engaging in unprotected vaginal sex that could lead to HIV, other STIs or an unplanned pregnancy. An example of an item is ‘How much risk is there of transmitting HIV by engaging in vaginal sex without a condom?’ The average maximum total score is 4, on a scale from 1 (no risk at all) to 4 (a lot of risk). The internal consistency of the instrument was high (0.87), despite the small number of items.
Table 1 Baseline comparability of self-reported behaviours of 12-months follow-up participating students by intervention condition

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>COMPAS (n=400)</th>
<th>jCuı´date! (n=305)</th>
<th>CONTROL (n=321)</th>
<th>Total (N=1026)</th>
<th>P value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%) male</td>
<td>196 (49)</td>
<td>153 (50.2)</td>
<td>142 (47.4)</td>
<td>491 (47.8)</td>
<td>0.280</td>
</tr>
<tr>
<td>Mean age (SD), years</td>
<td>15.79 (0.79)</td>
<td>16 (0.95)</td>
<td>15.86 (0.91)</td>
<td>15.87 (0.88)</td>
<td>0.006</td>
</tr>
<tr>
<td>15 years old</td>
<td>164 (41)</td>
<td>110 (36.1)</td>
<td>134 (41.7)</td>
<td>408 (39.8)</td>
<td>0.016</td>
</tr>
<tr>
<td>16 years old</td>
<td>167 (41.8)</td>
<td>112 (36.7)</td>
<td>119 (37.1)</td>
<td>398 (38.8)</td>
<td></td>
</tr>
<tr>
<td>17 years old</td>
<td>68 (17.2)</td>
<td>83 (27.2)</td>
<td>68 (21.2)</td>
<td>220 (21.4)</td>
<td></td>
</tr>
<tr>
<td>N (%) who have married parents</td>
<td>296 (74)</td>
<td>234 (76.7)</td>
<td>244 (76)</td>
<td>774 (75.4)</td>
<td>0.679</td>
</tr>
<tr>
<td>N (%) family income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>120 (30)</td>
<td>105 (34.4)</td>
<td>102 (31.8)</td>
<td>327 (31.9)</td>
<td>0.268</td>
</tr>
<tr>
<td>Middle</td>
<td>247 (61.8)</td>
<td>180 (59)</td>
<td>184 (57.3)</td>
<td>611 (59.6)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>33 (8.2)</td>
<td>20 (6.6)</td>
<td>35 (10.9)</td>
<td>88 (8.5)</td>
<td></td>
</tr>
<tr>
<td>N (%) Heterosexual</td>
<td>379 (95.0)</td>
<td>291 (96.7)</td>
<td>300 (93.5)</td>
<td>970 (95.4)</td>
<td>0.127</td>
</tr>
<tr>
<td>N (%) sexually experienced</td>
<td>227 (57)</td>
<td>211 (69.6)</td>
<td>214 (66.7)</td>
<td>652 (63.8)</td>
<td>0.001</td>
</tr>
<tr>
<td>N (%) Experienced in sexual risk practices</td>
<td>169 (42.5)</td>
<td>148 (48.8)</td>
<td>153 (47.7)</td>
<td>470 (46)</td>
<td>0.187</td>
</tr>
<tr>
<td>Mean age (SD) first vaginal penetrative sex, years</td>
<td>15.23 (1.36)</td>
<td>14.96 (1.33)</td>
<td>15.05 (1.06)</td>
<td>15.61 (1.45)</td>
<td>0.171</td>
</tr>
<tr>
<td>Mean age (SD) first anal penetrative sex, years</td>
<td>15.89 (1.73)</td>
<td>15.68 (1.45)</td>
<td>15.15 (0.87)</td>
<td>15.61 (1.45)</td>
<td>0.222</td>
</tr>
<tr>
<td>Mean age (SD) first oral penetrative sex, years</td>
<td>15.14 (1.46)</td>
<td>15.36 (1.40)</td>
<td>14.97 (1.17)</td>
<td>15.14 (1.35)</td>
<td>0.135</td>
</tr>
<tr>
<td>No. (%) multiple partners in the past 6 months</td>
<td>44 (31.7)</td>
<td>42 (34.1)</td>
<td>38 (27.7)</td>
<td>124 (31.1)</td>
<td>0.528</td>
</tr>
<tr>
<td>Percentage of condom use (0–100) (SD)</td>
<td>86.58 (22)</td>
<td>87.93 (18)</td>
<td>82.83 (24)</td>
<td>85.90 (21)</td>
<td>0.172</td>
</tr>
<tr>
<td>No. (%) Consistent condom use</td>
<td>46.04 (50)</td>
<td>46.09 (50)</td>
<td>37.39 (48)</td>
<td>43.46 (49)</td>
<td>0.294</td>
</tr>
</tbody>
</table>

SD = Standard deviation.
*aSignificance tested using F test for continuous variables and χ2 test for categorical variables.
*bPetting, vaginal sex, oral sex, anal sex or mutual masturbation.
*cVaginal sex, anal sex and oral sex.

Perceived norms

The perceived norms of the participants were assessed by two items. The first item, requiring a dichotomous response, measures the participants' perception about condom use by their peers: 'Do you believe people of your age use condoms in their sexual relations?' The second item measures their perception of the frequency of condom use by their peers during sex: 'How often do you think your friends use condoms in their sexual relations?' A 4-point Likert-type scale was used with responses ranging from 1 (never) to 4 (always).

Statistical analysis

The interventions’ effects were analyzed from an intent-to-treat perspective; therefore, all participants were analyzed according to the experimental condition in which they were randomized, regardless of the level of treatment received or protocol adherence. The attrition rate was calculated using binary logistic regression and the relationship between the dropout rate and sociodemographic variables, such as age, sex and types of sexual experience, were determined. Descriptive data of the three conditions were calculated using GLM ANOVA. The effects of both programs, as measured by the outcome variables, were analyzed using generalized estimating equations (GEE), adjusting the values for baseline differences in sex, age and type of sexual experience. The school (i.e. the cluster) was the unit of randomization and the individual was the unit of analysis; therefore, the school was controlled for in all of the analyses. Analyses were performed using the SPSS v.22 program.

Results

Participants’ characteristics

Table 1 presents the characteristics of the adolescents assessed at the 12-month follow-up evaluation.

Effects of the interventions

Delayed sexual debut

Compared with the control group, the adolescents who received the COMPAS intervention had their first vaginal sex experience at an older age than those in the control group (from 15.05 to 15.23 years). The adolescents who received the jCuı´date! intervention delayed the age of their first oral sex experience, compared to the adolescents in the control group (from 14.97 to 15.36) (table 2). The adolescents in the COMPAS program showed a significant delay in the age of their first vaginal sex experience; however, the age of the first oral sex experience was older in the adolescents in the jCuı´date! program.

Consistent condom use

There was no significant effect of the two intervention conditions on the consistency of condom use, compared with the control group (table 2), Condom use was similar between the participants receiving the COMPAS intervention compared with those who received the jCuı´date! intervention (36 vs. 55%, respectively).

Multiple sexual partners

There was no significant effect of the interventions on the number of sexual partners reported by the participants, compared with the control group (table 2). The proportion of adolescents with multiple partners in the past 6 months was similar in the COMPAS and jCuı´date! conditions (33 vs. 34%, respectively).

Psychosocial outcomes

In comparing the effectiveness between the COMPAS program and the control group, 8 of the 20 variables were significant in a positive direction. Compared with the control group at the 12-month follow-up evaluation, the adolescents in the COMPAS program had significantly higher scores for knowledge about STIs (HIV, other STIs, such as gonorrhea, syphilis and vaginal herpes, condom use and routes of STI transmission). The COMPAS adolescents’ attitudes toward condom use, despite obstacles to its use and towards people living with HIV were significantly more favourable. They also perceived that their peers used condoms more consistently (table 3).

When comparing the effectiveness between jCuı´date! and the control group, 8 of the 20 variables were significant in a positive direction. Compared with the control group, the jCuı´date! students were more likely to have had significantly higher scores for knowledge about STIs 1 year after the intervention. The jCuı´date!
students’ attitudes towards condom use, despite obstacles to its use and people living with HIV were significantly more favourable. They also expressed a greater intention to engage in safe sex (table 3). In comparing the effects of both programs, there were no statistically significant differences in the psychosocial variables between the COMPAS and ¡Cuídate! adolescents.

**Discussion**

At the 12-month follow-up, adolescents in the COMPAS intervention had more knowledge about HIV, condom use, HIV transmission routes and other STIs. They had a more favourable attitude about condom use despite barriers to its use, and positive attitudes about people living with HIV. They perceived that their peers used condoms consistently and they engaged in vaginal sex at an older age than the control group.

Compared with the immediate results of COMPAS reported in previous studies,13,14 an increase in the adolescents’ perceptions of the consistent use of condoms by their peers and the delay in their age of onset of vaginal intercourse were observed 1 year post-implementation of the program. When comparing the pretest/post-test scores of COMPAS15 with the 12-month follow-up results, positive effects of the program persisted over time, compared with the control group. At an informational level, they included knowledge about HIV and other STIs, routes of HIV transmission and condom use, and at an attitudinal level, a positive attitude about condom use despite barriers to its use, and about people living with HIV. A few of the short-term effects of COMPAS15 were not maintained 1 year post-implementation. Compared with the immediate results of COMPAS 15 with the 12-month follow-up implementation, there were no differences between the COMPAS and control groups in the following areas: knowledge about the methods of protection from STIs, attitudes toward HIV testing and condom use, risk perception and the intention to protect themselves from high-risk sexual behaviour at the 12-month follow-up. These results suggest that the immediate effects of COMPAS on the attitudinal and knowledge variables were attenuated after 1 year; except for the adolescents’ perceptions of the consistent use of condoms by their peers, which was higher only 1 year post-intervention. These findings are consistent with the conclusions of Albarracin et al.18, who reported that the intervention’s effects on the knowledge...
and motivation variables were greater on a short-term basis, and decreased over time. Behavioural outcomes were included for the first time, in the 12-month follow-up evaluation. The COMPAS had a positive effect in delaying the age of first vaginal sex compared to the control group and the evidence-based intervention.

The ¡Cuidate! program positively affected the same variables as the COMPAS program. Unlike COMPAS, ¡Cuidate! had no significant effect on the age of first vaginal intercourse or the perceived risk associated with having unprotected sex that could lead to an STI or unwanted pregnancy, compared with the control group. However, ¡Cuidate! increased the adolescents’ intentions to engage in safe-sex behaviours and delayed the age of their first oral sex experience compared with the control group. These effects were not observed in the long-term evaluation of the COMPAS program. The results are consistent with previous studies in which follow-up evaluations found that ¡Cuidate! delayed the age of onset of sexual intercourse in Latino adolescents between 13 and 18 years of age in Philadelphia, USA;16 Denver, USA17 and Monterrey, México.33–34 There were no statistically significant differences in the psychosocial variables between COMPAS and ¡Cuidate!, which was similar to the short-term results of the comparison between the two programs in reducing sexual risk.15 However, the effects on the adolescents’ sexual behaviour differed between the two interventions after 1 year of implementation. The COMPAS intervention delayed the age of the first vaginal intercourse and ¡Cuidate! delayed the age of the first oral sex experience. Neither program intervention had a significant effect on the consistency of condom use or multiple sexual partners. The low percentage of sexually active participants engaging in sexual practices in which condom use is possible (46%) may have influenced these results. There is no evidence that the effects of COMPAS were weaker than ¡Cuidate! among the adolescents at the 1-year follow-up evaluation.

A limitation of the study is that it aimed to evaluate the effectiveness of interventions to reduce sexual risk among adolescents who, for the most part, were not sexually active. We considered the age of sexual initiation as an outcome and other psychosocial variables from theoretical models to predict health behaviours.19,20,27 The use of self-reports as the only source of evaluation is another limitation, although this method is widely used in trials. The use of a biological outcome, such as HIV or other STIs would have provided objective measures, and thus, improved the study. The dropout rate during the 12 months was relatively high (34%) and is explained by the fact that the high school dropout rate in Spain (26%) is one of the highest in Europe.15

Despite these limitations, the results of this study are relevant to clinical researchers and promoters of sex education in schools. This is the first cluster-randomized controlled trial conducted in Spain to compare the effectiveness of a school-based HIV prevention program with an evidence-based intervention after 12 months of implementation. The findings indicate that the COMPAS program was as effective as ¡Cuidate!, an evidence-based intervention, in increasing adolescents’ knowledge about STIs, their perception of sexual risk, and in promoting a more positive attitude about condoms when there are obstacles to their use and delaying the age of sexual initiation.

Given the limitations of school-based HIV prevention programs in Spain,10 this study has important implications for the design of efficacious interventions to reduce sexual risk among adolescents and for the long-term evaluation of new interventions. School programs to reduce sexual risk may delay the age of the sexual debut through information transmission and skills building to promote safe sex. Although COMPAS was effective in preventing early sexual behaviour, it would be interesting to test whether recall sessions—on participant’s knowledge about STIs and condom use, attitudes toward condoms and motivation to use condoms consistently in their sexual relationships—will improve the long-term effects of the COMPAS program.

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Conflicts of interest: The authors declare no conflicts of interest.

Key points

- This is the first study in Spain to evaluate the effects of a school-based HIV-prevention program in comparison with an evidence-based intervention and a control group in a 1-year follow-up.
- There is no evidence that the effects of COMPAS were weaker than ¡Cuidate! among the adolescents at the 1-year follow-up evaluation.
- The effects of COMPAS on knowledge and other motivational measures were reduced after 1 year, while behavioural changes and perceived norms were increased.
- The study’s results are relevant to clinical researchers and promoters of sex education in schools designed to reduce sexual risk among adolescents.
- Future research should analyze the benefits of recall sessions to maintain the effect of COMPAS on knowledge and other motivational measures after 1-year.

References

35 Felgueroso F, Gutiérrez-Domenech M, Jiménez MS. ¿Por qué el abandono escolar se ha mantenido tan elevado en España en las últimas dos décadas? El papel de la ley de educación (LOGSE) [Why dropout has remained so high in Spain in the last two decades? The role of the Education Act (LOGSE)]. FEDEA, 2013. Available at: http://www.fedea.net/documentos/pubs/ee/2013/02-2013.pdf (3 March 2014, date last accessed).