



Attitudes of adolescents regarding health: evaluation of a school-based health promotion program in Seville, Spain

Actitudes de adolescentes hacia la salud: evaluación de un programa escolar de promoción de la salud en Sevilla, España

Lima Serrano, Marta¹; Neves de Jesus, Saul²; Lima Rodríguez, Joaquín Salvador³

¹BA in Social and Cultural Anthropology. Certificate in Advanced Nursing Studies. Assistant Professor of Nursing, Universidad de Sevilla, Spain. mlima@us.es

²BA in Psychology. PhD in Educational Psychology. Tenured Professor of Psychology, Universidad de Algarve, Portugal. snjesus@ualg.pt

³BA in Social and Cultural Anthropology. PhD in Nursing. Tenured Professor of Nursing, Universidad de Sevilla, Spain. joaquinlima@us.es

ABSTRACT The study examined differences in attitudes regarding health within students in their fourth year of mandatory secondary school in Seville, Spain. The students were divided into two groups according to their participation in the “Forma Joven” health promotion program. A descriptive and bivariate analysis was conducted. As there were no significant differences in the socio-demographic characteristics of the two groups, the groups were considered homogeneous. Attitudes were also similar in both groups. Statistically significant differences were only found in the level of danger assigned to two of the thirteen transit situations explored: “not using a seatbelt” and “entering a vehicle when the driver has been drinking,” with the lower level of risk corresponding to the group of students participating in the program. These findings are consistent with the results of previous studies and invites reflection upon the effectiveness of such programs. In the case of the “Forma Joven” program, the ineffectiveness could be attributable to a lack of systematization in the program’s implementation. In the future, interventions to increase the effectiveness of the program should be proposed.

KEY WORDS: Health Promotion; Adolescents; Program Evaluation; Risk Behavior; Attitude to Health.

RESUMEN Se examinaron diferencias en las actitudes hacia la salud en el alumnado de cuarto año de educación secundaria obligatoria de Sevilla, el cual fue dividido en dos grupos en función de su participación en el programa “Forma Joven” de promoción de la salud. Se realizó un análisis descriptivo y bivariante. No se observaron diferencias significativas en las características sociodemográficas de los dos grupos, considerándose homogéneos. Las actitudes también fueron similares en ambos; únicamente se encontraron diferencias estadísticas en el grado de peligrosidad asignado a dos de las trece situaciones viales expuestas: “no usar el cinturón de seguridad” e “ir en un vehículo cuando el conductor ha bebido,” siendo menor el asignado por los participantes en el programa. Esto coincide con lo verificado en trabajos previos e invita a reflexionar sobre la falta de efectividad de este tipo de programas. En el caso del programa “Forma Joven” podría atribuirse a una deficiente sistematización en su implementación. Sería recomendable proponer intervenciones para aumentar su efectividad.

PALABRAS CLAVE: Promoción de la salud; Adolescentes; Evaluación de Programas; Conducta de Riesgo; Actitud Frente a la Salud.

INTRODUCTION

Traffic accidents were the leading cause of death in the age group of 15 to 24-year-olds in Andalusia (Spain) in 2001 (1). In terms of the number of victims involved, for each fatality approximately 6 other people were severely wounded and 29 suffered less serious injuries. A higher incidence of accidents is associated with the consumption of alcohol and other drugs (2). The consumption of addictive substances also has a high cost of disease in social and economic terms (3-5). In Andalusia, a research study conducted in 2006 involving 11 to 17-year-old adolescents revealed that the average age of initiation of tobacco and alcohol consumption was 13.5 years, and that 36.2% of the population studied had consumed tobacco and 57.6% alcohol. Consumption of illegal substances was lower: 8.5% had at one time consumed cannabis and about 1% had consumed other drugs (6).

In terms of sexual behaviors, 20% of Andalusian adolescents between 11 and 17 years of age did not use condoms during sex whereas 5.2% did not use any contraceptive method. Two and a half percent of adolescent girls had had at least one pregnancy, with 15-16 years being the age of highest risk (7). A growing trend has been observed in the voluntary termination of pregnancy (8). AIDS was the third leading cause of death in 2001 for young people aged 25 to 34 years, although infection had occurred several years before death (1).

Obesity is considered the epidemic of the 21st century (9). In 2003, the prevalence of overweight between people aged 16 to 24 was 15.4% and that of obesity was 3.1% (10).

All of these situations are linked to relational and behavioral aspects and their reduction requires strategies for health promotion and risk prevention involving different sectors (1).

Most health promotion programs at schools are focused on a specific problem (drug consumption, pregnancy prevention, sexually transmitted diseases, etc.), frequently as a product of uncoordinated, fragmented and inefficient initiatives. Programs should be implemented with a more comprehensive focus, centering on the positive development of children and adolescents in

order to generate cognitive, personal, emotional, moral and social competencies that allow for the "empowerment" of these population groups and their positive contribution to the community (11-13).

During the 2001-2002 academic year, the program "Forma Joven" was started in order to promote the health of youth and prevent risk behaviors. Based in an intersectoral approach, the main goal of the program was to establish points of service in places frequented by adolescents, in particular high schools, with the target population being adolescents enrolled in their first to fourth year of compulsory secondary education (3). During the 2009-2010 academic year, there were 778 "Forma Joven" program locations in Andalusia, 41 in the capital city of Seville and 113 in the province of Seville (14,15). In these locations a series of health promotion and education activities were developed by a team of health and education professionals, usually made up of a nurse from a primary care center and a counselor from the institution of secondary education, joined by other social agents and youth acting as mediators.

The main areas of intervention of the program are: lifestyle (balanced diet and physical activity, addictive consumption, road safety), sexuality and relationships, mental health, peer interaction and violence prevention (1). The team proposes primarily extracurricular activities, the central activity being individual or group counseling for youth who, by appointment and anonymously, pose their questions and receive information and advice. If a special problem is identified, follow-up is carried out and if need be the student may be referred to other institutions. Counseling is held on a weekly, biweekly or monthly basis, depending on the school and the volume of the demand. The rest of the activities primarily consist of workshops with defined groups (for example, a group of students in their fourth year of compulsory secondary education), addressing topics related to the main areas of intervention, in accordance the needs identified. An expository and participatory methodology is used, and, sometimes, the issue is previously addressed by peer tutors.

Health campaigns and contests, among other activities, are also organized, with the frequent participation of social actors such as youth or women's delegations from the local government,

nongovernmental organizations in the area, centers for drug addiction, the police force, the civil guard, etc. These activities are not usually evaluated; if they are, it is by way of the assessments or satisfaction surveys of the peer tutors, who are asked about the experience, their suggestions for improvement, etc. Although there is a record of data collection which would allow for a monitoring and evaluation process, no evaluations have been carried regarding the impact of the program "Forma Joven" on the health of participants (1). An evaluation of the effect or impact of a program allows for the examination of the improvements achieved within the population as a result of the intervention (16). In the case of the "Forma Joven" program, this would mean youth developing health-promoting attitudes and behaviors towards the major risks they face.

The objective of this work was to ascertain the attitudes towards food, sexuality, addictive substances and road safety of adolescents in their fourth year of compulsory secondary education in the urban area of Seville, Spain, and to determine whether there are differences in the attitudes of students who were part of the intervention group – participants in the program "Forma Joven" – and those of students who were part of the control group and therefore did not participate in the program.

MATERIALS AND METHODS

An evaluative, quasi-experimental and post-intervention design was used to analyze the effects of the "Forma Joven" program, including an intervention group that had been part of the program and a control group that had not been part of it (17). With the program under evaluation already running, its impact could be assessed by comparing the participating students with a control group, attempting to control statistically for certain variables that could influence the acquisition of risk behaviors (18). Measures were taken to perform an "internal control" or group pairing so that the groups were as similar as possible to each other (19).

Considering the way in which the program is carried out, it was assumed that the student group receiving the greatest effect was made up of those

in their fourth year of compulsory secondary education. The study population was composed of 15 to 17-year-old adolescents enrolled in secondary schools in the capital city of Seville. The sample was taken from the 50 state-run institutions (20), 38 of which participated in the program (15). Eight institutions were selected, four from the intervention group and four from the control group. The following inclusion criteria were established:

- Heterogeneity: the presence of the "Forma Joven" program in the schools included in the intervention group, or the absence of the program in the control group.
- Homogeneity: state-run high-schools; fourth-year students in compulsory secondary education; the institutions of both groups should belong to the same geographical area, considering neighborhood distribution.

In the case of the schools in the intervention group, the conditions established were that the program had to have been implemented at least two academic years prior to the start of the research study and that there had to be records monitoring the process. The institutes located outside the urban area and those whose authorities refused to participate were excluded. The sample was obtained randomly using cluster sampling, choosing a fourth-year group from each school. The initial sample included 166 adolescents, from whom the information was collected. After the exclusion of those whose participation was inadequate, due to inconsistency in their responses or incompleteness of responses (less than 75%), the final distribution included 73 adolescents in the intervention group and 73 in the control group (N = 146).

The independent variable was the presence or absence of the program in the schools. Attitudes toward food, sexuality, addictive substances and road safety were the dependent variables explored.

According to the risk and protective factors for the acquisition of risk behaviors that were identified in the literature, it was decided to control for the following variables: age, sex/gender, educational level of parents, perceived socioeconomic status and family dynamics (21-25).

As no validated instrument consistent with the objective of the study was found, a questionnaire of our own elaboration was used, which

was created by taking into consideration both the theoretical framework and previously validated questionnaires (26-28). The survey was pilot tested on 22 adolescents with similar characteristics to the participants in order to analyze the appropriateness, understandability, length, and possible existence of fatigue. The final instrument included 85 items, divided into five subscales. The first three assessed dichotomically (agreement/disagreement) attitudes toward food (such as "fast food allows for better use of time"), sexuality (such as "I prefer sexual intercourse involving penetration, even though I could get a disease") and addictive substances ("people who drink are more interesting").

Based on the consideration that the perception of risk, defined as the degree to which a behavior is attributed to an alleged health hazard, is involved in the adoption of behaviors (29,30), two four-point Likert scales were constructed in order to study the degree of risk assigned to the consumption of addictive substances as well as the degree of risk assigned to specific road safety situations (for example, "entering a vehicle when the driver has been drinking").

To control group homogeneity, five questions were included on socio-demographic characteristics and the Apgar family test for the study of family function was used (31).

The study was approved by the Universidad de Sevilla Experimentation Committee. Anonymity, information confidentiality and data protection were guaranteed by requesting informed consent from participants, who were considered competent to provide such consent given the type of study and their age.

Data collection was conducted between May and June 2009, following the indications of the study *Health Behaviour in School-Aged Children*, which state that: students should complete the questionnaire themselves, anonymity should be guaranteed, and questionnaires should be conducted within the school setting by duly trained personnel. Therefore, the questionnaire was provided to students by a researcher who explained to them the nature of the study and how to complete the questionnaire. Students then completed the surveys, which were self-administered.

A descriptive analysis of the research study variables and a bivariate analysis to compare the groups were performed. The Pearson Chi² test was

used (χ^2) to assess the statistical significance of differences in proportion ($p < 0.05$), to check the homogeneity of the groups in relation to the controlled variables and to identify differences in terms of the independent variable (presence/absence of the program in the high school). The effect size was measured through the contingency coefficient ($r\phi$): low, $r\phi = 0.1$; medium, $r\phi = 0.3$; high $r\phi = 0.5$. Missing data was not included in the analysis. The statistical program SPSS 17.0 was used.

RESULTS

When testing group homogeneity, there were no statistically significant differences in the distribution of sociodemographic variables or in the family function of the participants; thus, they were considered homogeneous (Table 1). In order to compare the variables "level of education attained by the father" and "level of education attained by the mother," the "none" category was eliminated (the expected frequency was less than 5%), and within the variable "perception of the family economy" the categories "we have economic problems at home" and "we manage, but we barely make it to the end of the month" were grouped together.

There were no statistically significant differences between the intervention group and the control group in any of the analyzed attitudes regarding food, sexuality, and addictive substances.

In both groups, the majority of the attitudes analyzed were positive. However, with regard to food consumption, the fact that more than half of the students felt that "fast food allows for better use of time" was highlighted as negative. Furthermore, there was an important percentage of students those who thought it fine to eat sweets or baked goods daily, as well as who stated that "when someone is on a diet it is normal to skip a meal" (Table 2).

Regarding sexuality no statistically significant differences were found; however, a trend in some of the items was found. Surprisingly, the percentage of agreement in the students belonging to the intervention group was higher regarding the following statements: "my boyfriend/girlfriend does not like to use condoms," "I prefer sexual intercourse

Table 1. Sociodemographic characteristics of adolescents participating in the study, by intervention and control group. Percentages and absolute frequency. Seville, 2009.

Variables	Intervention group (n = 73)		Control group (n = 73)		χ^2 (df, N) ^a	p-value
	n	%	n	%		
YEAR OF BIRTH						
1991	4	5.5	8	11	2.26 (2, 145)	0.322
1992	17	23.3	21	28.8		
1993	51	69.9	44	60.3		
No Information provided	1	1.3	0	0.0		
SEX						
Female	38	52.1	36	49.3	0.11 (1, 146)	0.741
Male	35	47.9	37	50.7		
EDUCATION ATTAINED BY MOTHER						
None	3	4.1	2	2.7	0.50 (2, 122)	0.778
Primary	28	38.4	30	41.1		
Secondary	22	31.5	19	26.1		
University	12	16.4	10	13.7		
No information provided	7	9.6	12	16.4		
EDUCATION ATTAINED BY FATHER						
None	2	2.7	3	4.1	1.21 (2, 123)	0.547
Primary	25	34.3	28	38.4		
Secondary	19	26.0	18	24.7		
University	14	19.2	9	12.3		
No information provided	13	17.8	15	20.5		
PERCEPTION OF THE FAMILY ECONOMY						
We are doing pretty well	41	56.1	43	58.9	0.11 (1, 146)	0.738
We manage, but we barely make it to the end of the month	27	37.0	29	39.7		
We have economic problems	5	6.9	1	1.4		
FAMILY FUNCTIONALITY						
Functional	57	78.1	55	75.3	0.59 (1, 145)	0.808
Dysfunctional	16	21.9	17	23.3		
No information provided	0	0.0	1	1.4		

Source: Own elaboration from data collected in the research study.

^a χ^2 was calculated without including missing data.
df = Degrees of freedom.

without a condom, even if I risk getting a disease," "I prefer sexual intercourse involving penetration, even though I could get a disease."

With respect to attitudes regarding sexuality, in both groups, the fact that an important number of students thought that "using condoms is uncomfortable because they reduce sensitivity" or that "men are responsible for protection" was highlighted as negative.

Regarding the consumption of addictive substances, the significant number of adolescents who felt that "smoking is trendy" was highlighted as negative whereas the fact that the tobacco consumption of others bothered most of the adolescents was highlighted as positive. In the case of alcohol intake, the number of students having favorable – and therefore negative – attitudes toward consumption was greater. Of these, the

Table 2. Degree of agreement with attitudes toward food consumption in the study participants, by intervention and control group. Percentages and absolute frequency. Seville, 2009.

Attitudes	Intervention group (n = 73)		Control group (n = 73)		χ^2 (df, N) ^a	p-value
	n	%	n	%		
Food prepared at home is better than food prepared at hamburger or pizza places	66	90.4	66	90.4	0.07 (1, 145)	0.791
Fast food allows for better use of time	35	47.9	43	58.9	1.55 (1, 145)	0.214
For healthy eating, I should have a varied diet (fruits, vegetables, meat, fish, eggs, dairy products)	70	95.9	72	98.6	*	0.310
It is important to have at least three meals a day	67	91.8	68	93.2	0.10 (1, 146)	0.754
It is essential to have breakfast before going to class	62	84.9	67	91.8	1.66 (1, 146)	0.197
I think it is fine to eat sweets or baked goods daily	16	21.9	12	16.7	0.08 (1, 144)	0.400
It is alright to eat snack foods	10	13.7	7	9.6	0.55 (1, 145)	0.457
The best way to lose weight is to be on a strict diet	24	32.9	20	27.4	0.45 (1, 143)	0.503
The thinner a person, the healthier he/she is	10	13.7	5	6.8	1.86 (1, 146)	0.173
When someone is on a diet it is normal to skip a meal	27	37.0	22	30.1	0.58 (1, 144)	0.447

Source: Own elaboration from data obtained in the research study.

^a χ^2 was calculated without including missing data.

*50% of the cells have an expected frequency of less than 5. Fisher's exact test was used.

df = Degrees of freedom.

following attitudes stand out: "alcohol makes you feel good," "it helps you make friends," and "it is trendy." Only a small percentage was bothered by the alcohol consumption of others (Table 4).

Regarding the use of tranquilizers, the percentages of favorable attitudes toward consumption were lower. The percentage of students who felt that "they make you feel good" was highlighted as negative, as was the fact that only 28.8% of the adolescents were bothered by their consumption. Regarding hashish consumption, the percentages of students with attitudes such as "it makes you feel good" and "it is trendy" were highlighted as negative as well as

the low percentage of students bothered by its consumption (Table 5).

Regarding cocaine, 9.6% of the intervention group and 17.8% of the control group ($p=0.114$) stated that "it was trendy" and 41.1% of the intervention group and 37.7% of the control group were bothered by its consumption. Regarding other substances, 1.4% of the intervention group and 8.2% of the control group ($p=0.058$) thought that consuming hallucinogens was trendy and only 35.6% of the intervention group and 38.6% of the control group were bothered by their use, while 43.8% of the intervention group and 35.6% of the control group were bothered by ecstasy use.

Table 3. Degree of agreement with attitudes toward sexuality in the study participants, by intervention and control group. Percentages and absolute frequency. Seville, 2009.

Attitudes	Intervention group (n = 73)		Control group (n = 73)		χ^2 (df, N) ^a	p-value
	n	%	n	%		
It is very difficult to get pregnant the first time	10	13.7	6	8.2	1.12 (1, 146)	0.289
There's no chance of pregnancy if there was no orgasm	7	9.6	6	8.2	0.84 (1, 146)	0.771
The withdrawal method is effective in preventing pregnancy	14	19.2	9	12.3	1.29 (1, 146)	0.256
Using a condom is good for my health	69	94.5	69	94.5	---	---
Using a condom is uncomfortable because it reduces sensitivity	24	32.9	24	32.9	---	---
The woman should be the one to ask that a condom be used	10	13.7	10	13.7	---	---
Men are responsible for protection	26	35.6	31	42.5	0.84 (1, 145)	0.339
My boyfriend/girlfriend does not like to use condoms	14	19.2	7	10.6	2.78 (1, 132)	0.096
I prefer sexual intercourse without a condom, even if I risk getting a disease	6	8.2	1	1.4	*	0.058
I worry more about pregnancy than STDs	15	20.5	9	12.3	1.80 (1, 146)	0.180
I would abstain from sexual intercourse for fear of getting an infection	18	24.7	21	29.6	0.44 (1, 144)	0.507
I prefer sexual intercourse involving penetration, even though I could get a disease	13	17.8	6	8.3	2.86 (1, 145)	0.091

Source: Own elaboration from data collected in the research study.

^a χ^2 was calculated without including missing data.

*50% of the cells have an expected frequency of less than 5. Fisher's exact test was used.

df = Degrees of freedom. STD = sexually transmitted disease.

Substances mostly considered "not at all" or "a bit" dangerous were tranquilizers, tobacco, alcohol and hashish. Other illegal drugs (such as cocaine, ecstasy and hallucinogens) were considered "fairly" or "very" dangerous by most participants (Table 6).

The road situations considered as "not at all" or "a bit" dangerous were the following: not wearing a helmet when biking, crossing the street

where it is prohibited to do so, driving on a badly maintained road, and traveling with a driver who is talking on a cell phone (Table 7). Statistically, the only significant difference noted between the two groups was the degree of risk assigned to two of the thirteen road situations explored: not wearing a seat belt ($p=0.002$; $r\phi=0.25$), and entering a vehicle when the driver has been drinking ($p=0.028$;

Table 4. Degree of agreement with attitudes toward tobacco and alcohol consumption, by intervention and control group. Percentages and absolute frequencies. Seville, 2009.

Attitudes	Tobacco				χ^2 (df, N) ^a	p-value	Alcohol				χ^2 (df, N) ^a	p-value
	Intervention group (n = 73)		Control group (n = 73)				Intervention group (n = 73)		Control group (n = 73)			
	n	%	n	%			n	%	n	%		
It makes you feel good	13	17.8	12	16.4	0.03 (1, 145)	0.856	22	30.1	24	32.9	0.13 (1, 146)	0.772
It helps you make friends	9	12.3	10	13.7	0.06 (1, 146)	0.806	13	17.8	16	21.9	0.39 (1, 146)	0.534
People who consume it are more interesting	2	2.7	2	2.7	*	0.690	5	5.5	2	2.7	*	0.340
It has its advantages	4	5.5	3	4.1	*	0.484	12	16.4	12	16.4	---	---
Almost everybody does it	36	49.3	35	47.9	0.03 (1, 146)	0.868	43	58.9	52	71.2	2.44 (1, 146)	0.118
It is trendy	29	39.7	25	34.2	0.60 (1, 145)	0.453	34	46.6	32	43.8	0.11 (1, 146)	0.739
It bothers me when others consume it	48	65.8	55	75.3	1.62 (1, 146)	0.204	14	19.2	11	15.1	0.44 (1, 144)	0.509

Source: Own elaboration from the data obtained in the research study.

^a χ^2 was calculated without including missing data.

*50% of the cells have an expected frequency of less than 5. Fisher's exact test was used.

df = Degrees of freedom.

Table 5. Degree of agreement with attitudes towards tranquilizers and hashish in the study participants, by intervention and control group. Percentages and absolute frequencies. Seville, 2009.

Attitudes	Tranquilizers				χ^2 (df, N) ^a	p-value	Hashish				χ^2 (df, N) ^a	p-value
	Intervention group (n = 73)		Control group (n = 73)				Intervention group (n = 73)		Control group (n = 73)			
	n	%	n	%			n	%	n	%		
It makes you feel good	11	15.1	9	12.3	0.23 (1, 146)	0.630	11	15.1	14	19.2	0.43 (1, 146)	0.510
It helps you make friends	0	0.0	2	2.7	*	0.248	3	4.1	3	4.1	---	---
People who consume it are more interesting	0	0.0	0	0.0	---	---	1	1.4	2	2.7	*	0.500
It has its advantages	6	8.2	5	6.8	1.00 (1, 146)	0.754	4	5.5	4	5.5	---	---
Almost everybody does it	1	1.4	1	1.4	---	---	12	16.4	8	1.0	1.92 (1, 146)	0.336
It is trendy	3	4.1	4	5.5	*	0.500	18	24.7	17	23.3	0.38 (1, 146)	0.846
It bothers me when others consume it	21	28.8	21	28.8	---	---	26	35.9	25	34.2	0.30 (1, 146)	0.862

Source: Own elaboration from data obtained in the research study.

^a χ^2 was calculated without including missing data.

*50% of the cells have an expected frequency of less than 5. Fisher's exact test was used.

df = Degrees of freedom.

Table 6. Degree of dangerousness assigned to addictive substances by the study participants, by intervention and control group. Percentages and absolute frequencies. Seville, 2009.

Addictive Substances	Degree of dangerousness								χ^2 (df, N)	p-value
	Intervention group (n = 73)				Control group (n = 73)					
	Not at all – a bit		Fairly - very		Not at all – a bit		Fairly - very			
	n	%	n	%	n	%	n	%		
Tobacco	25	34.2	48	65.8	18	24.7	55	75.3	1.62 (1, 146)	0.204
Alcohol	21	28.7	52	71.3	20	27.4	53	72.6	0.03 (1, 146)	0.854
Tranquilizers	28	38.2	45	61.8	24	32.8	49	67.2	0.48 (1, 146)	0.489
Hashish or marijuana	11	15.1	62	84.9	6	8.2	67	91.8	1.66 (1, 146)	0.197
Cocaine powder	3	4.1	70	95.9	1	1.4	72	98.6	*	0.310
Ecstasy	3	4.1	70	95.5	1	1.4	72	98.6	*	0.310
Hallucinogens	3	4.1	70	95.9	1	1.4	72	98.6	*	0.310

Source: Own elaboration from data obtained in the research study.

*50% of the cells have an expected frequency of less than 5. Fisher's exact test was used.
df = Degrees of freedom.

$r\phi=0.19$). There was also a trend observed in the item "not wearing a helmet when riding a motorcycle" ($p=0.060$). The degree of danger assigned was lower in the intervention group.

DISCUSSION

The results show that participants, in general, had favorable attitudes towards the adoption of healthy behaviors regarding food, sexuality, substance abuse and road safety. However, in relation to food, a large percentage of students showed positive opinions towards the daily consumption of candy or pastries and skipping meals while dieting. Previous studies suggest an increasing trend in the consumption of sweets in the Spanish school-aged population (32,33).

Regarding sexuality, unfavorable attitudes toward condom use were observed, intercourse was highly valued as an expression of sexuality, and sexist attitudes were also observed. This could indicate the existence of a masculine pattern in the participants' attitude toward sexuality (34).

Most addictive substances were considered "trendy." Alcohol showed the highest percentage of agreement with attitudes of acceptance. A similar research study conducted in Barcelona (35) also demonstrated a high percentage of attitudes of acceptance towards alcohol. In that study, 30.6% answered affirmatively when asked if alcohol made them feel happier, 52.2% felt that alcohol made parties more fun and 68.2% considered that it was alright to advertise alcoholic beverages. Moreover, these attitudes relate to the findings of previous studies, which concluded that alcohol is the substance most consumed among adolescents from Andalusia and Spain, much more consumed other drugs. Thus, in 2008, 81.2% of secondary school students aged 14 to 18 years had consumed alcoholic beverages at some point in their lives (29). In Andalusia, in 2006, 57.6% of students between 11 and 17 years of age had consumed alcoholic beverages (8).

Despite the fact that most of students surveyed were bothered by others smoking tobacco, the results of this item were not very encouraging regarding substances such as alcohol and other

Table 7. Degree of danger assigned by the participants to situations related to road safety, by intervention and control group. Percentages and absolute frequencies. Seville, 2009.

Road situations	Degree of danger								χ^2 (df, N) ^a	p-value
	Intervention group (n = 73)				Control group (n = 73)					
	Not at all – a bit		Fairly - very		Not at all – a bit		Fairly - very			
	n	%	n	%	n	%	n	%		
Not wearing a helmet when riding a bicycle	54	74.0	19	26.0	54	74.0	19	26.0	---	---
Crossing the street where it is prohibited to do so	42	57.5	31	42.5	35	47.9	38	52.1	1.35 (1, 146)	0.246
Not using a seat belt	9	12.3*	64	87.7	0	0.0*	73	100.0	**	0.002
Not wearing a helmet when riding a motorcycle	4	5.5	69	94.5	0	0.0	73	100.0	**	0.060
Traveling with a driver who is talking on a cell phone	14	19.2	59	80.8	10	13.7	63	86.3	0.80 (1, 146)	0.372
Driving while talking on a cell phone	13	17.8	60	80.8	6	8.2	67	91.8	3.00 (1, 146)	0.085
Exceeding the speed limit	11	15.1	62	84.9	7	9.6	66	90.4	1.01 (1, 146)	0.314
Entering a vehicle when the driver has been drinking	5	6.9***	68	93.1	0	0.0***	73	100.0	**	0.028
Traveling in a vehicle when the driver has smoked hashish	5	6.8	68	93.2	6	8.2	67	91.8	0.10 (1, 146)	0.754
Traveling in a vehicle when the driver has consumed drugs	4	5.5	69	94.5	1	1.4	72	98.6	**	0.183
Driving a vehicle after consuming alcohol	3	4.1	70	95.9	1	1.4	72	98.6	**	0.310
Riding in a poorly maintained vehicle	7	9.6	65	89.0	9	12.3	64	87.7	0.25 (1, 145)	0.616
Traveling on a badly maintained road	18	27.4	54	74.0	15	20.5	58	79.5	0.41 (1, 145)	0.523

Source: Own elaboration from data obtained in the research study.

^a χ^2 was calculated without including missing data.

* $p < 0,01$

**50% of the table cells have an expected frequency of less than 5. Fisher's exact test was used.

*** $p < 0,05$

df = Degrees of freedom.

drugs. This may reflect a high degree of acceptance of the consumption of these substances among the study participants.

The study found that hashish and legal drugs were the substances considered least dangerous. On the other hand, illegal drugs were considered

dangerous by the majority. This result is similar to the findings of a study by Nebot *et al.* (35), except in the case of hashish, which was largely considered very or moderately dangerous in that study (92.1%). The degree of risk assigned to addictive substances or the perception of risk regarding their consumption is indicated as a risk factor for their use (29,30), reflected in the fact that legal drugs and hashish are the substances most commonly consumed among youth in Andalusia and Spain. This situation could be similar to the road situations considered less dangerous by the study participants, such as not wearing a helmet when riding a bicycle or crossing the street where it is prohibited to do so.

In the homogeneity tests no significant differences in sociodemographic characteristics and family dynamics were found. Trends were observed that differentiated some of the studied attitudes by group, sometimes in favor of the intervention group and sometimes in favor of the control group, but statistically significant differences were only observed in the perceived risk of two of the thirteen road safety risk situations explored, which did not reach a medium effect size ($r\phi=0.3$). These differences could perhaps be related to the existence of other confounding variables which are not considered in this study. In general, at schools, even if the program "Forma Joven" is not present, other types of interventions are carried out. In the case of traffic accident prevention, social institutions such as the Association for the Study of Spinal Cord Injury (*Asociación para el Estudio de la Lesión Medular Espinal*) or other institutions such as the Traffic Civil Guard often visit schools. The investigation included "naturally formed" populations and in some of the schools belonging to the control group these issues may have been addressed, helping to improve the students' perception of risk. It would be interesting in future studies to explore the degree of implementation of health promotion interventions in schools to improve the understanding of these results.

Programs for health promotion and prevention of risk behaviors often do not significantly influence attitudes (19,35,36). Although families and peer groups are considered primary agents in the socialization of healthy lifestyles (37) and working with these groups is part of the principles

and actions of the "Forma Joven" program, during the planning interviews held within our study, we observed that in the schools implementing the program there was no participation of parents or mediators.

Fernandez *et al.* (38) conducted a systematic review to identify the key characteristics of effective prevention programs for adolescents, highlighting as important the elements and contents to be addressed, the methodology to be used (mainly active), the presence of peer mediators and families, the number and type of sessions, and a rigorous evaluation pre-and post-intervention to reflect the positive effects. However, these elements were not found in a systematic way in the schools within our study that carry out the "Forma Joven" program.

This opens a debate regarding the influence of these situations on the results of the study and the impact of the program. It could be argued that there is a gap between the principles and actions proposed by the program "Forma Joven" and the reality observed in the studied schools in terms of the activities carried out and the social agents involved, which could be related to a lack of systematization during the implementation process.

The study was conducted post-exposure, as the program had been underway for a few years; therefore, no prior information on students' attitudes was available. For this reason, a control group was included in the study, and some variables that could be influencing attitudes were controlled for statistically (17-19). Furthermore, the intervention and control groups were matched by geographical area, educational level and type of school in which they had been enrolled. In subsequent studies it would be advisable to use a larger sample size and supplement the study with qualitative methodology in order to inquire into the discourses of those involved in the program (professionals, families and adolescents). Such inquiries could help to understand the difficulties involved in program implementation, proposals for improvement and opportunities for promoting adolescent health (41), so as to generate interventions that promote the positive development of adolescents, contributing to overcoming the weaknesses of the program and increasing its effectiveness.

The study has met the bioethical principles of beneficence, nonmaleficence, autonomy and

justice. The latter can be infringed in community trials, when applying an intervention or program in a discriminatory way to a subgroup of the population, despite its potential benefits for the whole population (17,40). Previously, the participating schools had voluntarily decided whether or not to participate in the "Forma Joven" program without interfering in its implementation.

BIBLIOGRAPHIC REFERENCES

- Dirección General de Salud Pública y Participación. Guía Forma Joven. Sevilla: Consejería de Salud de la Junta de Andalucía; 2004.
- Olavarría L, Borrajo J, Herrera C, Muriel R, González, MJ, Gordillo P, et al. Plan Integral de Atención a la Accidentabilidad 2007-2012 [Internet]. Sevilla: Junta de Andalucía, Consejería de Salud; 2007 [cited 14 Jun 2011]. Available from: http://www.juntadeandalucia.es/salud/sites/csalud/galerias/documentos/c_1_c_6_planes_estrategias/plan_accidentabilidad/plan_accidentabilidad.pdf.
- Medina-Mora ME, Natera G, Borges G. Del siglo XX al tercer milenio. Las adicciones y la salud pública: drogas, alcohol y sociedad. *Salud Mental*. 2001;24(4):3-19.
- Schulden JD, Thomas YF, Compton WM. Substance abuse in the United States: findings from recent epidemiologic studies. *Current Psychiatry Reports*. 2009;11(5):353-359.
- Saban A, Flisher AJ. The association between psychopathology and substance use in young people: a review of the literature. *Journal of Psychoactive Drugs*. 2010;42(1):37-47.
- Moreno Rodríguez C, Muñoz Tinoco V, Pérez Moreno PJ, Sánchez Queija I, Granado Alcón MC, Ramos Valverde P, et al. Desarrollo adolescente y salud. Resultados del estudio HBSC-2006 con chicos y chicas españoles de 11 a 17 años. A World Health Organization crossnational study [Internet]. Madrid: Ministerio de Sanidad y Consumo; 2006 [cited 14 Jun 2011]. Available from: http://www.msps.es/profesionales/saludPublica/prevPromocion/promocion/saludJovenes/estudioHBSC/nacional_hbsc.htm.
- Escuela Andaluza de Salud Pública. Forma Joven: una estrategia de salud para adolescentes y jóvenes de Andalucía [Internet]. Granada: Escuela Andaluza de Salud Pública; 2008 [cited 14 de Jun 2011]. Available from: <http://mago.easp.es/forma-joven/download/RESUMENWEB2.pdf>
- Consejería de Salud. Interrupción voluntaria de embarazo en Andalucía 1999-2008 Internet. Sevilla: Junta de Andalucía [cited 14 Jun 2011]. Available from: http://www.juntadeandalucia.es/salud/sites/csalud/contenidos/Informacion_general/p_7_informacion_estadistica_sanitaria/estadisticas_ive?perfil=orgdesplegar=/temas_es/P_7_INFóRmACIoN_Y_ESTADÍSTICAS_SANITARIAS/idioma=escontenido=/sites/csalud/contenidos/Informacion_general/p_7_informacion_estadistica_sanitaria/estadisticas_ive.
- World Health Organization. Diet, nutrition and the prevention of chronic diseases [Internet]. Geneva: WHO; 2003 [cited 14 Jun 2011] (WHO Technical Report Series No. 916). Available from: http://whqlibdoc.who.int/trs/who_trs_916.pdf.
- Consejería de Salud. Plan para la promoción de la actividad física y la alimentación equilibrada [Internet]. Sevilla: Junta de Andalucía, Consejería de Salud [cited 14 Jun 2011]. Available from: http://www.juntadeandalucia.es/salud/sites/csalud/galerias/documentos/c_1_c_6_planes_estrategias/plan_alimentacion_equilibrada/Plan_actividad_fisica.pdf.
- Oliva A, Hernando A, Parra A, Pertegal MA, Ríos M, Antolín A. La promoción del desarrollo adolescente: recursos y estrategias de intervención. Sevilla: Junta de Andalucía, Consejería de Salud; 2008.
- Pertegal MA, Oliva A, Hernando A. Los programas escolares como promotores del desarrollo positivo adolescente. *Cultura y Educación*. 2010;22(1):53-66.

13. Carvalho SR. Promoción de la salud, "empowerment" y educación: una reflexión crítica como contribución a la reforma sanitaria. *Salud Colectiva*. 2008;4(3):335-347.
14. Evolución de la participación en Forma Joven 2001-2010 [Internet]. Sevilla: Junta de Andalucía, Forma Joven [cited 14 Jun 2011]. Available from: http://www.formajoven.org/AdminFJ/doc_cifras_datos/201151714826231.pdf.
15. Listado de puntos Forma Joven [Internet]. Sevilla: Junta de Andalucía, Forma Joven [cited 14 Jun 2011]. Available from: <http://www.formajoven.org/pfj/PuntosFormaJoven.aspx?provincia=41>.
16. Fernández-Ballesteros R. Evaluación de programas. Una guía práctica en ámbitos sociales, educativos y de salud. 2a ed. Madrid: Síntesis; 1996.
17. Cea MA. Metodología cuantitativa, estrategias y técnicas de investigación social. 3a ed. Madrid: Síntesis; 2009.
18. Ramos P, Oliva A, Moreno C, Lorence B, Jiménez AM, Jiménez L, et al. Los programas escolares para la prevención del consumo de sustancias: Análisis de las claves que determinan su eficacia. Sevilla: Consejería para la Igualdad y Bienestar Social, Universidad de Sevilla; 2010.
19. Jiménez-Iglesias A, Moreno C, Oliva A, Ramos P. Una aproximación a la evaluación de la eficacia de un programa de prevención de drogo-dependencias en Educación Secundaria en Andalucía. *Adicciones*. 2010;22(3):253-265.
20. Red de centros docentes [Internet]. Sevilla: Junta de Andalucía, Consejería de Educación [cited 14 Jun 2011]. Available from: http://www.juntadeandalucia.es/educacion/vscripts/centros/listado_int.asp
21. Álvarez-Cienfuegos A, Egea F. Aspectos psicológicos de la violencia en la adolescencia. *Revista de Estudios de Juventud*. 2003;62:37-44.
22. Elzo J. Los valores en la adolescencia. *Cuadernos de Pedagogía*. 2006;359:18-23.
23. Bartolomé Gutierrez R, Rechea Alberola C. Violencia y conducta antisocial. In: Congreso "Ser adolescente hoy": libro de ponencias. Madrid: Fundación de Ayuda contra la Drogadicción, Ministerio de Trabajo y Asuntos Sociales; 2005. p. 213-224.
24. D'Acromont M, Van der Linden M. Adolescent impulsivity: Findings from a community sample. *Journal of Youth and Adolescence*. 2005;34:427-435.
25. Anderson NLR, Nyamathi A, McAvoy JA, Conde F, Conerly C. Perceptions about risk for HIV/AIDS among adolescents in juvenile detention. *Western Journal of Nursing Research*. 2001;23(4):336-359.
26. Suárez JC, Navarro FJ, Serra A, Armas A, Aranceta J. Nivel de conocimientos, actitudes y hábitos sobre alimentación y nutrición en escolares de las Palmas de Gran Canaria. *Revista Española de Nutrición Comunitaria*. 2002;8(1-2):7-18.
27. Villalbí JR, Nebot M, Ballestín M. Las sustancias adictivas: tabaco, alcohol y drogas no institucionalizadas. *Medicina Clínica*. 1995;104:784-788.
28. López F, Moral J. Validación de una escala de autoeficacia para la prevención del SIDA en adolescentes. *Salud Pública de México*. 2001;43:421-432.
29. Observatorio Español de Drogas. Encuesta Estatal sobre uso de drogas en Enseñanzas Secundarias (ESTUDES) [Internet]. Madrid: Ministerio de Sanidad, Política Social e Igualdad; 2009 [cited 14 Jun 2011]. Available from: <http://www.pnsd.msc.es/Categoria2/observa/estudios/home.htm>.
30. Becoña E. Los adolescentes y el consumo de drogas. *Papeles del Psicólogo*. 2000;77:25-32.
31. Bellón JA, Delgado A, Luna JD, Lardelli P. Validez y fiabilidad del cuestionario de función familiar Apgar-familiar. *Atención Primaria*. 1996;18(6):289-295.
32. Vázquez C, Cos A, Martínez P, Jaunsolo MA, Román E, Gómez C, et al. Consumo de alimentos y estado nutricional de los escolares de la Comunidad de Madrid (CAENPE): metodología general y consumo global de alimentos. *Nutrición Hospitalaria*. 1995;10(1):40-48.
33. Casado MR, Casado I, Díaz GJ. La alimentación de los escolares de trece años del municipio de Zaragoza. *Revista Española de Salud Pública*. 1999;73(4):501-510.
34. Oliva A, Serra L, Vallejo R. Patrones de comportamiento sexual y contraceptivo en la adolescencia. *Infancia y Aprendizaje*. 1997;77:19-34.
35. Nebot M, Garcia-Continente X, Pérez A, Ariza C, Espelt A, Pasarín M, et al. Informe FRESC 2008. Taules exhaustives de 4t d'ESO. Barcelona: Agència de Salut Pública de Barcelona; 2010.
36. Fernández S, Nebot M, Jané M. Evaluación de la efectividad de los programas escolares de prevención del consumo de tabaco, alcohol y cannabis:

¿qué nos dicen los metaanálisis? Revista Española de Salud Pública. 2002;76(3):175-187.

37. Faggiano F, Vigna-Taglianti FD, Versino E, Zambon A, Borraccino A, Lemma P. Prevención del consumo de drogas ilegales en las escuelas. (Revisión Cochrane traducida) [Internet]. La Biblioteca Cochrane Plus 2008 [cited 18 Jun 2010];(4). Oxford: Update Software Ltd. Available from: <http://www.update-software.com/BCP/BCPGetdocument.asp?SessionID=%20863738&documentId=CD003020>.

38. Castillo I, Balaguer I, García-Merita M, Valcárcel P. El papel de la familia y de los pares en el estilo de vida de los adolescentes. Encuentros en Psicología Social. 2004;2(1):20-26.

39. Minayo MCS. Interdisciplinariedad y pensamiento complejo en el área de la salud [Editorial]. Salud Colectiva. 2008;4(1):5-8.

40. Argimon JM. Métodos de investigación clínica y epidemiológica. 3a ed. Barcelona: Elsevier; 2004.

CITATION

Lima Serrano M, Neves de Jesus S, Lima Rodríguez JS. Attitudes of adolescents regarding health: evaluation of a school-based health promotion program in Seville, Spain. *Salud Colectiva*. 2012;8(1):47-60.

Received: 24 June 2011 | Revised: 19 October 2011 | Accepted: 14 November 2011



Content is licensed under a Creative Commons

Attribution — You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

Noncommercial — You may not use this work for commercial purposes.

The translation of this article is part of an interdepartmental collaboration between the Undergraduate Program in Sworn Translation Studies (English < > Spanish) and the Institute of Collective Health at the Universidad Nacional de Lanús. This article was translated by Bárbara Riccardi, reviewed by María Victoria Illas, and modified for publication by Vanessa Di Cecco.