

**MEDICAL STUDENTS ACTING AS HEALTH EDUCATORS:  
THE INFLUENCE ON ADOLESCENTS' KNOWLEDGE ABOUT  
HIV/HEPATITIS B TRANSMISSION, AS WELL AS ATTITUDES, BELIEFS  
AND INTENTIONS TOWARDS CONDOM USE**



A minithesis submitted in partial fulfillment of the requirements  
for the degree of Masters in Public Health  
School of Public Health,  
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the influence on adolescents' knowledge about HIV/Hepatitis B transmission, as well  
as attitudes, beliefs and intentions towards condom use.

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**KEY WORDS**

Sexual health education

HIV

Adolescence

Condom use

Medical students

Effectiveness



## **ABSTRACT**

Medical students acting as health educators: the influence on adolescents' knowledge about HIV/Hepatitis B transmission, as well as attitudes, beliefs and intentions towards condom use

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The aim of this quasi-experimental study was to examine the impact of a health education intervention on knowledge about HIV/ Hepatitis B transmission, attitudes, beliefs and intentions towards condom use. Research has shown that small group discussion, single sex groups, age proximity of health educators, and HIV prevention integrated in the broader sexual health context, increase the effectiveness of health education with regard to safer sexual practices.

The sexual health education programme was designed by the Social Medicine Department of Thessaloniki's Aristotle University, and targeted to enhance safer sexual practices in adolescents. It was implemented in two urban high schools. Medical students acted as health educators. The intervention consisted of a two-hour discussion in small same sex groups of pupils, led by medical students.

A questionnaire was used before and after the intervention, to assess knowledge concerning HIV/Hepatitis B transmission and protection, as well as attitudes and intention towards condom use. Attitudes were assessed by beliefs about general and personal vulnerability to HIV/Hepatitis B, beliefs and subjective norms about condom use, and perceived control in condom use.

High school pupils recorded a high level of background knowledge (> 90%) about basic ways of HIV/Hepatitis B transmission and the protective role of condoms. In parallel, considerable misconceptions regarding transmission (toilets, insects, saliva) and protection (the pill, urination after sex) were prevalent in the adolescent population at baseline. A high score in intention to use condoms (>8 out of 10) but a low score of personal vulnerability (<9 out of 20) appeared in both sexes.

The intervention had a positive impact ( $p<0.03$ ) on correcting misconceptions about transmission related to social contact (handshake, and sharing clothes and dishes) in the boys. The question about transmission through saliva had significantly more correct answers ( $p<0.01$ ) after the intervention in both sexes. The intervention influenced also positively ( $p<0.03$ ) both sexes in clarifying the misconceptions about protection from HIV/Hepatitis B through contraceptive pills and urination after sexual intercourse.

General vulnerability to HIV/Hepatitis B and beliefs about condom use had significantly higher scores in both sexes, ( $p\leq 0.001$ ), after the intervention. Perceived control and subjective norms improved significantly ( $p<0.003$ ) only in the girls.

The sexual health intervention, based on a sound theoretical basis and effective methods, positively influenced knowledge regarding HIV/Hepatitis B transmission and protection, and attitudes towards condom use. It could be used for the development of sexual health education programmes in other Greek urban communities.

**November 2006**

## DECLARATION

I declare that *Medical students acting as health educators: the impact on adolescents' knowledge about HIV/Hepatitis B transmission, as well as attitudes, beliefs and intentions towards condom use* is my own work, that it has not submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Evniki Kavaka



November 2006

Signed: .....

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**To professor David Sanders  
Without his active support  
I would have never finished this thesis.**



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## ***Chapter 1 – Introduction/Background***

Talking about sex is a taboo in Greek society, especially amongst the members of a family (Kreatsas, 2003). Although unintended pregnancy, hepatitis B and HIV/AIDS and other sexual transmitted infections (STIs) are still important issues influencing adolescents' health (HCIDC, 2003), sexual health education is not included in the school curriculum. Greek adolescents' information about sexual life, as Kreatsas mentions, comes mainly from their friends, their mother or television.

A multidisciplinary health team based in the Department of Social Medicine of Aristotle's University in Thessaloniki have designed and implemented sexual health education programmes in high schools. I have been a member of the coordinating team from the beginning of this programme, and was responsible for the training of the medical student health educators for the last three years.

The aim of the programme was twofold: on one hand to give the opportunity to medical students to learn about health promotion by participating in a health education intervention, and on the other to design an effective sexual health education programme that could be implemented in the local secondary education setting.

Medical students participate in the training programme on a voluntary basis at least for one academic year in order to act as health educators. The training programme consists of improving knowledge about HIV, STIs, and reproductive health, familiarizing the students with basic principles of health education, and training in communication skills. Experiential learning methods - based mainly on the "learning by doing" approach - have been used in order to prepare the students to cope with

their role as health educators, in the weekly meetings during the academic year.

Medical students have the opportunity to attend an intervention led by an experienced health educator, and to be supervised in another one. At the end of the academic year, medical students are equipped to participate as health educators in a school-based sexual health education intervention.

The intervention is implemented in two urban high schools every year targeting the 15 to 18 year old students. Every high school student therefore participates in the intervention project for three years consecutively. The health education intervention is intended to promote condom use as a safer sexual practice that protects from HIV/ Hepatitis B transmission as well as from unintended pregnancies.

This study specifically, examine the impact on knowledge about HIV/ Hepatitis B transmission with the main focus being on the effect of the intervention in terms of influencing common myths about HIV/AIDS transmission, and on the attitudes and intention towards condom use.

The assessment of the impact of this innovative health education programme will be of significant value to the academic community of the Aristotelian Medical School, supporting the introduction of experiential training methods and community-based health promotion issues in the Medical School's curriculum.

## ***Chapter 2 - Literature review***

### **I) Sexual health issues**

Three major health problems, HIV/AIDS, STIs and unintended pregnancy, are associated with teenagers' sexual behavior. These three topics are among the six behavioral categories accounting for 70% of adolescent morbidity and mortality, according to Center of Disease Control and Prevention (Kann et al, 1995). Young people (10 to 24 years old) are estimated to account for up to 60% of all new HIV infections worldwide. A substantial fraction also of the 20 to 30 years old population has been infected during adolescence (UNAIDS, 1997). Although the proportion of 13-24 years old people infected with HIV in Greece is low, estimated to be 7,1% of the reported HIV infections, there is a significant increase – in comparison with previous years - in the number of the reported cases as well as in the number and the proportion of HIV infected girls. (HCIDC, 2005)

In addition, among all sexually active people, teenagers in United States have the highest rates of sexually transmitted infection (STI) of any age group, according to the report of the U.S. Department of Health and Human Services (1990). Teenage pregnancy is also a major problem in other western industrialized countries. The Van Lancker report on sexual and reproductive health in Europe conclude that sexual education in Europe is unsatisfactory, contributes to an increased number of unplanned teenage pregnancies and a high number of abortions (Hagele, 2005). According to data from the Alan Guttmacher Institute focused on research and education in sexual and reproductive health worldwide 21% of the 7 million annual

pregnancies in Western Europe end in abortions (Hagele, 2005). The Van Lancker report also mentions that family planning does not form part of health policy in Greece and Spain.

## **II) Sexual health education at school**

Since many adolescents can be reached easily through schools, many sexual health education programmes are school-based. A general conclusion is that school health education programmes consistently improve targeted health knowledge, attitudes and skills and inconsistently improve targeted health behaviours (Tones, Tilford & Robinson, 2001).

Walker et al (2003) mention that school sex education is seen on the one hand as a means of tackling current public health concerns such as teenage pregnancy, HIV and other sexually transmitted infections and on the other as contributing to positive sexual health. Sexual health education programmes used to be focused either on unintended pregnancy or on HIV/AIDS. The aim of the programmes focused on unintended pregnancies was to promote oral contraception use whereas the aim of the ones focused on HIV/AIDs was to increase condom use and delay the first sexual intercourse. As a result, adolescents received conflicting messages: contraceptive pills, as the most effective method to prevent pregnancy on one hand and condom use to prevent HIV/STIs transmission on the other. Furthermore, Katz and Finger (2002) mention, as an outcome of the evaluation of sex education and HIV prevention programmes, that “HIV programmes were more likely to show an increase in the use of condoms, while sex education programs had more impact on the use of

contraception”. There is a trend lately in sexual health education to refer to all three topics related to sexual health (HIV, STIs and pregnancy) at the same time (Coleman and Ford, 1996).

A UNAIDS position paper (1997) on HIV/AIDS prevention in the school setting suggests that education to prevent HIV/AIDS should be integrated into education about reproductive health, life skills, alcohol/substance use, and other important health issues. In their review on the evaluation of HIV programmes, Coleman and Ford (1996) came to the same conclusion, namely the incorporation of HIV interventions into the broader spectrum of promoting “sexual health”. UNAIDS (1997) pointed out that it “is important for young people to learn how to cope with the complex demands of relationships, how to develop safer practices and how to relate with people living with HIV and AIDS”.

A review of the peer-reviewed published studies on the effectiveness of condoms in preventing STIs (Holmes, Levine & Weaver, 2004) concluded that condom promotion represents an important component of comprehensive HIV and STIs prevention strategies. They concluded that condom use promotion has to be a central component of sexual health education programmes since it prevents HIV, other STIs and unintended pregnancy.

### **III) Components of successful sexual health education programmes**

Kirby et al (1994) review the results of 23 school-based programmes published in professional journals, in terms of the impact on sexual behaviour, and concluded that effective programmes provide basic accurate information through

experiential activities. In those programmes, pupils were involved in activities such as small group discussions, games or simulations, role-playing, verbal feedback, coaching and interviewing parents.

According to Coleman and Ford (1996), in an extensive literature review, the main factors associated with the effectiveness of intervention programmes on HIV prevention are group discussion or role play methods, peer education, humour and single sex groups.

Few et al (1996) summarised young people's expressed needs about sex education as including a guarantee of confidentiality, opportunities for both single sex and mixed group teaching, a variety of learning methods and humour. Oakley et al (1995) also suggested that many young people want practical information and help to avoid unwanted pregnancy and sexually transmitted diseases rather than didactic approaches emphasizing anatomical or moral aspects of sexual behaviour.

Kirby in the British Medical Journal editorial (1995) commented on the findings of United States and United Kingdom studies evaluating sexual health education programmes, and concluded that effective programmes share the following nine characteristics: narrow focus on reducing specific risky behaviour, theoretical grounding in specific theories (social learning, social influence and reasoned action), at least 14 hours of small group instructions, variety of interactive teaching methods, activities to detect risks of unprotected sex and how to avoid them, reinforcement of individual values, opportunities to increase confidence, and effective training for individuals implementing the programme.

Health educators are an important component of an effective health education

programme, and more so in the case of sex education programmes. A message is more likely to be accepted, if it is delivered by someone who has similarities with the audience (Downie et al, 1996). Some of the educators' methods in effective programmes include the use of familiar language of the targeted population and taking into account the cultural and social context that resonate with people's personal experiences (Van de Ven & Aggleton, 1999).

#### **IV) Medical students as health educators**

Medical students have been used successfully as health educators in several health education projects. (Yosefy et al, 1998; Doyle, 1999). Reed and Jernstedt (2000) mention that medical students are likely to be seen by both children and teachers as experts on health information. They are closer in age than many other adults that the children regularly come into contact with (age proximity), which is a characteristic of a successful health educator. Several pilot university projects involve medical students in sexual health education at schools (Haven & Stolz, 1989; Cohen & Cohen, 1991; Schenker & Greenblat, 1993; Sunwoo et al, 1995). They provide anonymity and confidentiality by being an out of school agent, an important issue for adolescents participating in sexual health education programmes (Sunwoo et al, 1995: Few et al, 1996).

Health education programmes implemented by medical students proved to be successful in improving knowledge and modifying attitudes in several health issues (Yosefy et al, 1998; Reed and Jernstedt, 2000). Sexual health education programs led by medical students influenced positively knowledge, and modified beliefs and

intention towards condom use (Cohen & Cohen, 1991; Mellanby et al, 1995; Sunwoo et al, 1995)

#### **V) Evaluation of sexual health education programmes**

Several indicators have been used for the evaluation of HIV intervention programmes. Behavioral change in condom use, increased awareness and knowledge about HIV/STI, impact on the incidence of STIs, and birth rates as well as delay of sexual intercourse are the main evaluation indicators (Kirby et al, 1994; Grassly et al, 2001). Van de Ven & Aggleton (1999) pointed out that standard outcome measures determining that an HIV/AIDS education programme has been successful are: knowledge, attitudes, beliefs, intentions, behavioral skills and behaviours. Behavioral change in condom use and increased knowledge about HIV/STI are usually assessed before and after the sexual health intervention. The impact on the incidence of STIs, birth rates and delay of sexual intercourse are measured by using health data either from public health services or surveys.

Surveys from 40 countries indicate that 50 per cent of young people have serious misconceptions about how HIV/AIDS is transmitted (Unicef, UNAIDS & WHO, 2002). According to DiClemente, Zorn and Temoshok (1986), and Trezza (1994) knowledge gaps and misattributions regarding the relative risk of sexual behaviours are associated with lack of behaviour change. In a matched internal and external control study, Mellanby et al (1995) found that the level of teenagers' understanding of human sexuality limited their ability to make informed decisions. DiClemente, Zorn and Temoshok (1986) concluded that there is a need for school health education to overcome misconceptions about HIV/AIDS. Trezza (1994)



indicated that psychologists must develop programmes that help students discount irrational HIV risks and take more account of real ones.

Some important factors influencing condom use have been found to be the following: Knowledge and misconceptions about HIV/STIs' transmission, beliefs, attitudes and intention towards condom use, condom use skill and negotiation skills (Conner and Sparks, 1996; De Wit, Victoir and Van de Bergh, 1997). Knowledge is not enough to lead adolescents to safer sexual practices: even those who do have high levels of knowledge about HIV/AIDS and how to prevent it, continue to engage in high-risk sex (Campbell, 2004). Findings in the literature on HIV/STI prevention confirm the importance of attitudes, norms, self-efficacy and barriers to condom use as mediators of behavioral change (Basen-Enguist et al, 1999). In a longitudinal study attempting to assess the degree to which health beliefs would predict consistency of condom use, Sheeran and Abrahams (1996) found that perceived severity of HIV/AIDS and perceived effectiveness of condoms were uniformly high among Scottish adolescents, and were therefore unlikely to discriminate between degrees of condom use. Perceived behavioural control was found to make a small but significant contribution to the predictions of intention to use condoms and actual condom use (Conner & Sparks, 1996). Data from several studies show that women and older teenagers reported less consistent condom use (Sheeran & Abraham, 1996).

## **VI) Effectiveness of sexual health interventions**

A great number of studies worldwide proved sexual health education to be effective in increasing knowledge on HIV and STIs (Mellanby et al, 1995: Oakley et

al, 1995: Sunwoo et al,1995: Grassly et al, 2001) and in influencing adolescents' attitudes and beliefs regarding HIV/STIs (Kirby et al 1994, Kirby 1995, Swain & McNamara 1997, Grassly 2001). Kirby (1995) showed that sex education in the schools has a modest but important impact on sexual behaviour.

Evidence suggests that both general and specific sex education programmes, can increase the use of condoms and other forms of contraception (Sundoo et al, 1995; Kirby, 1995; Grassly et al, 2001). The AIDS prevention for adolescents in school programme, developed by Walter and her colleagues (1993), was based on the health belief model and the social cognitive theory. An experimental study in four New York schools designed to evaluate this programme found that it resulted in increased condom use among all sexually experienced youths.

Schaalma et al (1993) point out that adolescents who use condoms have more positive attitudes towards them. Personally handling a condom while discussing with the educator how to deal with the major obstacles to condom use resulted in a higher condom acceptance and a more positive global attitude towards condom use (de Wit, Victoir, and Van de Bergh, 1993). Conner & Sparks (1996) highlight that behaviour towards condom use is mainly influenced by intentions.

In an extensive literature review, Coleman and Ford (1996) conclude that there is a need for more follow-ups not only to record behavioural changes but to also test the sustainability of such changes. Sunwoo et al (1995) suggests that longer term (than three months) follow up studies are necessary to evaluate the efficacy on sexual practices.

### ***Chapter 3 - Research design and methodology***

This is a quasi-experimental study referring to a health education intervention in two urban high schools. The quasi-experimental study design is suitable in social contexts (Tones et al, 1991), and especially in the case of our programme, where randomisation was not feasible because of the cross contamination in the school population. The group of pupils involved in the programme acted as its own control, a design that Tones et al (1991) calls “single group time series”.

#### **I) Sample**

Two high schools were selected in the wider Thessaloniki metropolitan area. The inclusion criterium was the school’s population being representative of the Greek urban middle class population (General Secretariat of National Statistical Service of Greece, 2005). The exclusion criterium for the selection of the schools was the existence of other interventions related to sexual health.

All fourth grade high school pupils (15-16 years old) of the two high schools who were present on the day of the intervention were invited to participate. No students refused to participate in the intervention. Thirty-five out of 102 pupils in school A and 14 out of 92 pupils in school B were absent either at the day of the implementation of the pre or the post intervention questionnaire. As a result there were 145 post-intervention questionnaires that were paired with pre-intervention questionnaires. One of the students filled the questionnaire before and after the intervention but was absent at the day of intervention. The final sample consisted of 144 pupils.

**II) The intervention** was delivered by a group of 11 medical students (6 male and 5 female), who completed a training program that consisted of improving knowledge about HIV, STIs, and reproductive health, basic principles of health education, and communication skills. The students visited the schools, for a two-hour open discussion targeting the needs of the pupils in a friendly and comfortable environment. Each of them coordinated the discussion in a small group (5-7) of pupils of the same sex, answering the pupils' questions in any topic concerning sexual life. Games and humor were used to create a relaxed atmosphere and every pupil was given the opportunity to participate in the discussion.

Medical students were given a written protocol, which mentioned three games that they could use, pictures of the male and female genital system and a handful of condoms. They promoted condom use as the only method that protects both from HIV/Hepatitis B and unintended pregnancy. They did not suggest abstinence or faithfulness as protective methods. They chose the appropriate time in the discussion with their group to demonstrate the proper use of condoms (opening the package and unrolling them). They then asked the pupils to get involved by doing the same and encouraged them to have a physical interaction by playing with the condom, including testing their elasticity.

### **III) Procedure**

The medical students' led sexual health education intervention, aiming to increase knowledge and clarify misconceptions of the adolescents about transmission of HIV/STIs and influence attitudes, beliefs and intentions towards condom use

approved by the Secondary School Division and the Parents Association. The protocol of the study was approved by Ethical Committee of UWC.

The medical students portray the purpose and the method of the intervention and the implementation of the questionnaires, and they inform the pupils that the participation to the intervention is voluntary, and they are free to refuse or stop at any time to respond to the questionnaire.

Three visits were conducted in every school: the first for the implementation of the questionnaire one week before the intervention, the second for the intervention itself, and the third for the implementation of the follow up questionnaire, two months after the intervention.

Pupils were asked to fill in the questionnaires individually and anonymously. The pupils were sitting at the same desk, but away from each other, the instructions were read to them, they completed the questionnaire for 15 minutes and finally they put it in a box. A code number, consisting of the last two letters of students' first name, the day and month of their birth day, was used to pair every student's pre and post intervention questionnaire. Anonymity and the absence of teachers assured confidentiality. The implementation of the questionnaire followed the same rules in all classes.

**IV) The questionnaire** (appendix 1) is based on the Theory of Planned Behaviour and the Health Belief Model (Conner and Sparks, 1996) and was designed and piloted by the research team of the Laboratory of Hygiene & Social Medicine of the Thessaloniki University (Gavana et al, 2002). It consists of items referring to socio-demographic data (gender, age, parental education, number and age of

siblings), previous sexual experience and the number of sexual partners.

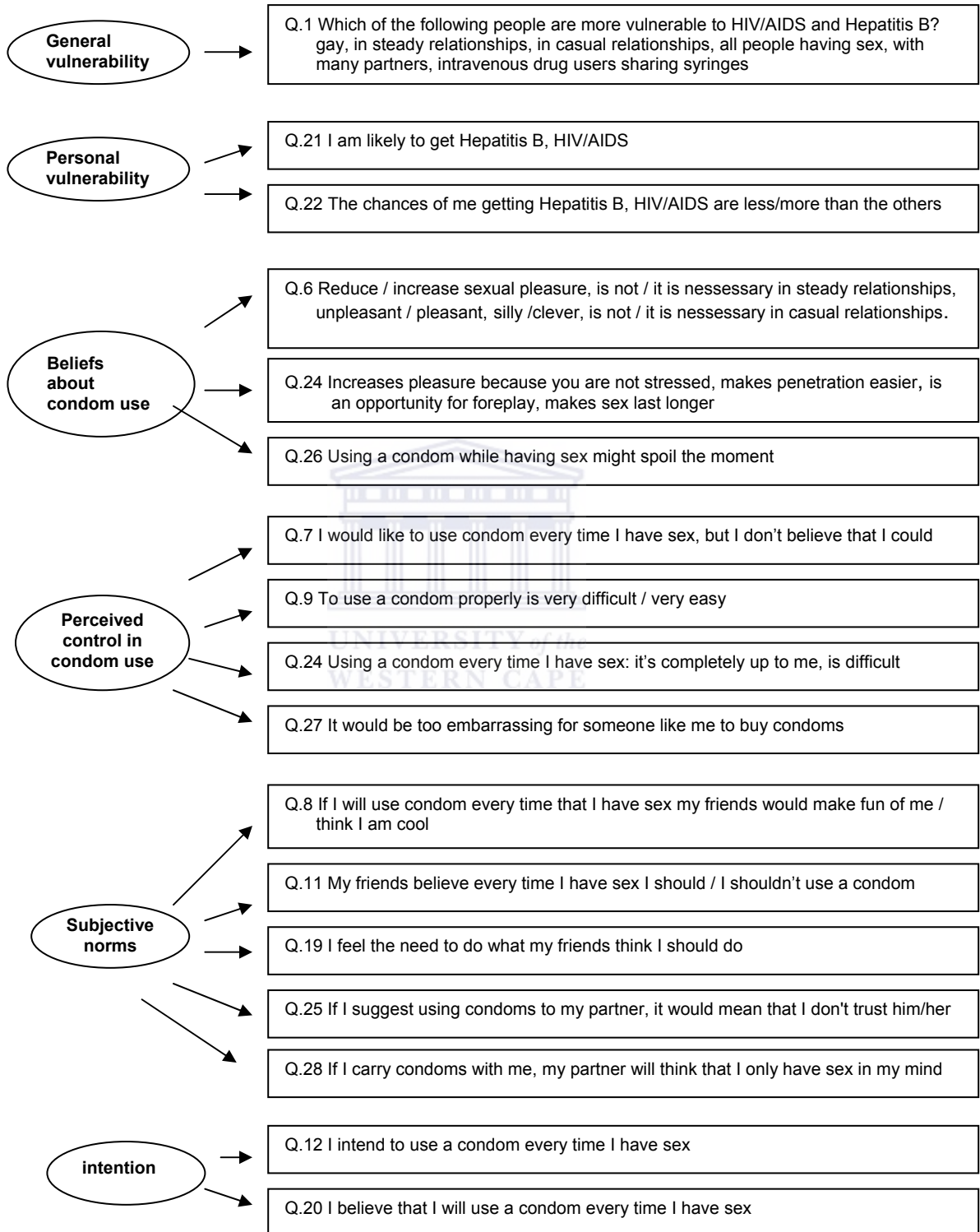
Three items assess knowledge on HIV/AIDS and Hepatitis B transmission (blood transfusion, razors and needles). One item assesses knowledge about the protection from HIV infection with condoms, and two the protection from Hepatitis B (condom and vaccine). Misconceptions about HIV and Hepatitis B transmission are tested by 8 true or false items (saliva, handshake, toilets, insects, food or water, cloths, dishes or cutlery, and kisses). Six items test the misconceptions about protection from HIV/AIDS (urinate after sexual intercourse, steady relationship, contraceptive pills, hanging out with HIV positive people, vaccine, there is no protection) and the same misconceptions about protection from Hepatitis B (except vaccine). The answers to knowledge and misconception questions can be true, false or don't know.

Attitudes are assessed by:

- a) Beliefs about vulnerability to HIV and Hepatitis B (6 items assess general vulnerability, 2 personal vulnerability to HIV, and 2 personal vulnerability to Hepatitis B).
- b) Beliefs about condom use (10 items)
- c) Perceived control in condom use (5 items) and
- d) Subjective norms (5 items)

Attitudes are scored on a 5-point bipolar Likert scale ranging from 1 (=very negative) to 5 (=very positive). Finally two questions assessing the intention to use condoms are scored on the same scale. Figure 1 depicts the questions and the items constituted the attitudes and the intention categories.

**Figure 1.**



#### **V) Reliability, validity and generalisability.**

Reliability of the questionnaire was enhanced by using a structured questionnaire and by following the same guidelines concerning the classroom environment, the duration and supervision during the implementation of the questionnaire. Internal validity was strengthened by choosing schools with no other known sexual health intervention during the time of the study, so we can assume that the intervention produced the observed outcomes. However, it is possible that other events such as a peer becoming pregnant or HIV-positive may have occurred during the time of the study that might have influenced students' behaviours. Contamination of the study sample was not possible because the design of the study was a before-after study and only students who were exposed to the intervention and who were present for both the pre and post-intervention assessments were included in the study. The results of the study apply to the two urban schools sampled. Although the schools were chosen to represent typical urban and sub-urban areas of a Greek city according to socio-demographic characteristics, since the schools were not randomly selected from all urban schools in Greece, the results can not be confidently generalised to apply to students from other urban schools. The findings can not be generalised to students from rural schools because the socio-demographic characteristics of those students are different which might affect the impact of the intervention in those schools.



## **VI) Data analysis**

Data editing and analysis were accomplished with SPSS 11.5 for Windows statistical program. All variables tested for their normality in distribution with the Kolmogorov-Smirnov test.

The questions referring to knowledge and misconceptions were recoded, so the wrong answer was coded as "0", "Don't know" was coded as "1" and the right answer was coded as "2". As a result, the higher the score the more correct the answer. Descriptive cross tabulation gave the percentages for the right and wrong answers for male and female pupils and within gender differences were tested for statistical significance. The differences between the before and after variables, were tested by the Wilcoxon paired test.

The responses to the questions referring to attitudes were recoded, when necessary, so that the higher score indicated the positive attitude towards condom use in all cases.

Two new variables for each of the 6 categories related to attitudes (personal and general vulnerability, beliefs, norms, control and intention) were computed, one for the items before and one for the items after the intervention accordingly. The new variables were also tested for normality. Paired t-test and Wilcoxon paired test were used appropriately, depending on the normality of the variables. For significance testing both p-values and confidence interval were used. For reasons of brevity only p-values were used in the presentation of the results.

## ***Chapter 4 - Results: Presentation and Discussion***

### **I. Characteristics of the sample**

The population of the fourth grade high school pupils is 144, 66 in school A and 78 in school B. Gender distribution is similar in the population of the schools. There is a greater proportion of males in school A but the differences between the two schools were not statistically significant.

Education level is the main proxy criterion for social class classification used in Greece. A higher proportion of the fathers of high school pupils compared to mothers had 9 or less years of education in both schools. A higher percentage of mothers, in comparison with fathers, had more than 12 years of education in both schools. No statistically significant difference was found in parental education level between the schools.

Eleven boys and six girls reported previous sexual experience. Seven of the boys mentioned one partner; two mentioned two partners and one three. Four of the girls reported one partner, one two, and one four partners. All but one of the pupils reported their first sexual intercourse between 15 to 16 years old, namely in the current year. Seven of the questionnaires of the boys appeared inconsistent concerning whether they have had sex or not, the age of the first sexual intercourse, and the number of partners. The questionnaires of those boys were categorized as sexually inexperienced. The difference in reported sexual experience is not statistically significant between genders as well as between the populations of the schools.

**Table1. Characteristics of pupils that participated in the intervention**

	School A n=66		School B n=78		Total n=144
	n	%	n	%	
<b>Male</b>	34	51.5	39	50	73 (50.7%)
<b>Female</b>	32	48.5	39	50	71 (49.3%)
<b>Mother education</b>					
≤9 years	13	19.7	11	14.1	24 (16.7%)
12 years	26	39.4	33	42.3	59 (41%)
>12 years	27	40.9	34	43.6	61 (42.4%)
<b>Father education</b>					
≤9 years	16	24.2	13	16.6	29 (20.1%)
12 years	27	40.9	36	46.2	63 (43.8%)
>12 years	23	34.8	29	37.2	52 (36.1%)
<b>Reported sexual experience</b>					
male	7	15.2	4	8.7	11 (11.9%)
female	4	7.1	2	4,3	6 (5.9%)

## II. Results

### a. Knowledge about HIV and Hepatitis B transmission

The level of knowledge about HIV and Hepatitis B transmission through blood transfusion, and sharing needles was high in the responses before the intervention for both sexes (Table 2). The percentage of correct answers for blood transfusion was 93.2 in the responses of the boys and 90.3 in the girls. After the intervention the percentage increased to 97.3 for the boys and 97.2 for the girls. The difference was not statistically significant for boys ( $p=0.18$ ) but was for girls ( $p=0.052$ ). 97.3% of the boys and 97.2 % answered correctly that sharing needles is a way of HIV and Hepatitis transmission. The percentages increased to 98.6 for both

sexes but the difference was not statistically significant. No wrong answer appeared to the sharing needles after variable neither in the girls nor in the boys.

About one third of the pupils (37% of the boys and 29.2% of the girls) gave a wrong answer or did not know if infection transmission occurs through sharing razors before the intervention. There was a statistically significant improvement in the responses after the intervention for both sexes (p=0.013 for the boys and p=0.053 for the girls).

**Table 2. Knowledge about HIV/AIDS and Hepatitis B transmission**

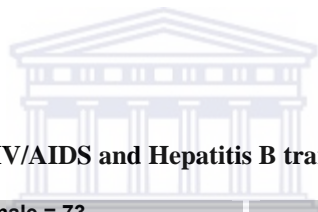
		male = 73				female=71			
		correct %	wrong %	ignore %	p	correct %	wrong %	ignore %	p
<b>Blood transfusion</b>	<b>Before</b>	93.2	0	6.8	ns	90.3	6.9	2.8	0.052
	<b>after</b>	97.3	0	2.7		97.1	0	2.9	
<b>Sharing needles</b>	<b>Before</b>	97.3	0	2.7	ns	97.2	1.4	1.4	ns
	<b>after</b>	98.6	0	1.4		98.6	0	1.4	
<b>Sharing razors</b>	<b>Before</b>	63	17.8	19.2	0.013	70.8	15.3	13.9	0.053
	<b>after</b>	82.2	11	6.8		85.7	8.6	5.7	

Although pupils seem to know the basic ways of HIV and Hepatitis B transmission, a lot of misconceptions still exist in high school populations.

About half of the pupils of both sexes believed that you can get HIV and Hepatitis B from the toilets (50.7% for both sexes) and insects (43.8% for the boys and 46% for the girls). One third of them (35.6% of the boys and 36.2% of the girls) were not sure whether you could get the infection if you kiss somebody who is infected or not. In the variables referring to toilets and kissing the percentages of correct answers increased after the intervention but neither was statistically

significant. In the variable referring to insects there were more (in numbers) wrong answers after the intervention than before but this was not statistically significant.

Table 3 presents the results for the misconceptions where the differences in the responses before and after the intervention were statistically significant. Around one third of the pupils believe that you can get the infection through sharing dishes, food and even sharing clothes and sheets. The intervention seems to be more effective for the boys than the girls in the rest of the responses. The misconception with the highest level of correct answers was handshake. There were no wrong answers in girls before or after the intervention and no wrong answer for the boys after the intervention.



**Table 3. Misconceptions about HIV/AIDS and Hepatitis B transmission**

		male = 73				Female = 71			
		correct %	wrong %	ignore %	p	correct %	wrong %	ignore %	p
<b>Saliva</b>	<b>Before</b>	46.6	35.6	17.8	0.000	58.3	25	18.7	0.013
	<b>after</b>	76.7	12.3	11		70	15.7	14.3	
<b>Shaking hand</b>	<b>Before</b>	87.7	2.7	9.6	0.005	95.8	0	4.2	ns
	<b>after</b>	100	0	0		95.7	0	4.3	
<b>Clothes</b>	<b>Before</b>	76.7	8.2	15.1	0.039	66.7	5.6	27.9	ns
	<b>after</b>	87.7	1.4	11		75.7	5.7	18.6	
<b>Dishes</b>	<b>Before</b>	60.3	17.8	21.9	0.010	61.1	8.3	30.6	ns
	<b>after</b>	78.1	9.6	12.3		64.3	8.6	27.1	

**b. Knowledge and misconceptions on HIV and Hepatitis B protection**

The vast majority of the pupils consider condom use as a method to protect oneself from HIV/AIDS infection (Table 4). More than 20% of pupils did not know that condoms protect against Hepatitis B infection before the intervention. The scores of correct answers were higher after the intervention for both boys and girls but the difference was only statistically significant for girls ( $p=0.004$ ) and more girls answered correctly than boys ( $p=0.047$ )

About half of the pupils (49.3% of the girls and 44.4% of the boys) didn't know that vaccination protects from Hepatitis B before the intervention. The intervention didn't change this score.

**Table 4. Knowledge about protection from HIV/AIDS and Hepatitis B**

		Male = 73				Female = 71			
		correct %	wrong %	ignore %	p	correct %	Wrong %	ignore %	p
Condom HIV/AIDS	Before	93.2	6.8	0	0.046	95.8	2.8	1.4	ns
	after	98.6	1.4	0		100	0	0	
Condom HepB	Before	75	9.7	15.3	ns	78.9	8.5	12.7	0.004
	after	87.5	8.3	4.2		94.2	0	5.8	
Hepatitis B vaccine	Before	55.6	16.7	27.8	ns	56.9	20.8	22.2	ns
	after	50.7	18.3	31		45.6	27.9	26.5	

The most prevalent misconceptions about protection from HIV/AIDS among the pupils before the intervention were that “you could be protected if you are in a steady relationship” or if “you are vaccinated” (table 5). There was a significant

improvement in the responses of the boys after the intervention.

A high percentage of both sexes believed that “urination after sexual intercourse” was protective before the intervention. The intervention influenced positively both sexes in clarifying the misconceptions about protection from HIV through contraceptive pills and urination after sexual intercourse. The intervention significantly decreased the misconception that it is possible to be infected by hanging out with HIV positive people only in the girls. After the intervention, a significantly greater proportion of both boys and girls correctly answered that the “pill” and “avoiding hanging out with HIV positive people” are not protective with a larger change among girls.

**Table 5. Misconceptions about protection from HIV/AIDS**

		male = 73				Female = 71			
		correct %	wrong %	ignore %	p	correct %	wrong %	ignore %	p
Urinate after sexual intercourse	Before	46.6	6,8	46,6	0.036	29.2	4.2	66.7	0.013
	after	66.7	5.6	27.8		50.7	5.8	43.5	
Steady relationship	Before	32.9	53.4	13.7	0.032	50	37.5	12.5	ns
	after	51.4	40.3	8.3		49.3	42	8.7	
Contraceptive pills	Before	56.9	25	18.1	0.037	65.3	15.3	19.4	0.010
	after	73.6	22.2	4.2		84.1	5.8	10.1	
Avoiding hanging out with HIV+	Before	71.2	17.8	11	ns	80.6	5.6	13.9	0.008
	after	75	19.4	5.6		92.8	1.4	5.8	
Vaccination	Before	37	39.7	23.3	0.032	34.7	30.6	34.7	ns
	after	52.8	33.3	13.9		44.9	24.6	30.4	

The same trend appeared in the correction of misconceptions about protection from Hepatitis B by urination after intercourse, using the pill, and avoiding hanging out with Hepatitis B positive people (Table 6). There was an increase in the percentage of correct answers for both sexes in the variable “steady relationship” but the difference was not statistically significant.

After the intervention, girls had more correct answers than the boys to the “pill” and “avoiding hanging out with Hepatitis B positive people” variables. The difference was statistically significant.

**Table 6. Misconceptions about protection from Hepatitis B**

		male = 73				Female = 71			
		correct %	wrong %	ignore %	p	correct %	wrong %	ignore %	p
Urinate after sexual intercourse	Before	37.5	9.7	52.8	0.036	15.7	2.9	81.4	0.001
	after	63.9	11.1	25		51.5	8.8	39.7	
Contraceptive pills	Before	47.1	22.9	30	0.010	46.5	9.9	43.7	0.001
	after	73.6	18.1	8.3		76.5	4.4	19.1	
Avoid hanging out with HIV+	Before	59.7	13.9	26.4	ns	69	4.2	26.8	0.003
	after	72.2	16.7	11.1		87	2.9	10.1	

### c. Attitudes towards condom use

Recognition of **personal vulnerability** to HIV and Hepatitis B had a low mean score for both sexes (8.8 for boys and 8.2 for girls - maximum score 20) before the intervention. There was no statistically significant difference after the intervention. In **general vulnerability** the trend appears to be similar in boys and



girls and the difference before and after the intervention was positive and significant.

Table 7 presents the mean scores for each variable referring to attitudes and intention before and after the intervention and the statistical significance of the difference.

Mean score of the variable referring to **beliefs** is positive to condom use before the intervention (32.4 for boys and 34 for girls - maximum score 50) and the increase after the intervention was significant for both sexes. Girls' responses after the intervention gave a mean score significantly higher than boys. There was not a significant difference in the scores between boys and girls before the intervention.

The mean score of **perceived control** in condom use was high (18.6 for boys and 17.8 for girls - maximum score 25). The responses after the intervention had a mean score significantly higher only for girls. There was significant difference between sexes after the intervention (girls present higher score than boys) but not before.

The mean score for the **subjective norms** variance was 19 for boys and 20.8 for girls (maximum score 25) before the intervention, and significantly higher in girls than boys both before and after the intervention in favour of the girls. There was a significantly higher score in girls after the intervention compared to before the intervention.

The mean score for the **intention** to use condoms was high (8.1 for boys and 9 for girls – maximum score 10). There was no significant difference in the mean scores after the intervention for girls or boys compared to before the intervention. Girls had a significantly higher score than boys both before and after the intervention.

**Table 7. Attitudes towards condom use**

	Maximum Score		Male = 68		Female = 69	
			Mean	p	mean	p
<b>Personal vulnerability</b>	<b>20</b>	<b>Before</b>	8.8	ns	8.2	ns
		<b>after</b>	8.9		8.3	
<b>General vulnerability</b>	<b>30</b>	<b>Before</b>	20.6	0.000	20.5	0.001
		<b>after</b>	21.9		22	
<b>Beliefs</b>	<b>50</b>	<b>Before</b>	32.4	0.001	34	0.001
		<b>after</b>	34.5		36.6	
<b>Perceived control</b>	<b>25</b>	<b>Before</b>	18.6	ns	17.8	0.001
		<b>after</b>	18.7		19.9	
<b>Subjective norms</b>	<b>25</b>	<b>Before</b>	19	ns	20.8	0.003
		<b>after</b>	18.6		21.7	
<b>Intention</b>	<b>10</b>	<b>Before</b>	8.1	ns	9	ns
		<b>after</b>	8.4		9.3	

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### III. Discussion

The similarity of the school populations enables merging the data from the two sites to evaluate the impact of the intervention.

The phenomenon of Greek men to exaggerate about their sexual behaviour was reported also in other countries (Kirby et al, 1994), in addition with the fact that the girls underreport their actual behaviour.

High school pupils in the study schools had such a high level of knowledge about basic ways of HIV and Hepatitis B transmission before the intervention that there was no significant increase after the intervention. On the contrary a relatively

low percentage of students knew that “sharing razors” can transmit HIV and HepB before the intervention and the percentage who answered correctly improved significantly after the intervention, resulting in an overall higher level of knowledge.

The intervention was successful in dispelling misconceptions about transmission, which are related to social contact. Handshake and hanging out were not considered to be ways of transmission after the intervention to the vast majority of pupils, especially for the girls. The knowledge about kissing didn’t improve after the intervention, although most of the pupils end up with the knowledge that you cannot be infected through saliva.

On the other hand the intervention failed to influence basic misconceptions such as transmission through toilets and insects and had a moderate modification in misconceptions referring to sharing clothes and dishes. The fact that the intervention had no influence on the “toilets and insects” issues could be attributed to the nature of the intervention. The only issue that medical students had to include in the conversations with pupils was that condom use was the most appropriate protective method for teenagers. If the pupils did not ask about other modes of transmission, the medical students did not discuss them.

Despite the high level of knowledge before the intervention, there was a significant increase in the proportion of boys who knew that condoms protect against HIV and of the proportion of girls who knew that condoms protect against Hepatitis B infection. The post-intervention improvement of knowledge about protection through condom use, along with the clarification of misconceptions about “urination” and “taking the pill”, are expected to endorse the consistent use of condom as

protective method.

The findings of the study on improving knowledge and clarifying misconceptions about HIV/Hepatitis B transmission and protection are a common place in many school sexual health interventions. The improvements in knowledge about HIV transmission and protection are confirmed by two major reviews, Oakley's et al (1994) and Grassly's (2001), for the studies published from 1982 to 1994 and from 1998 onwards, respectively.

An interesting finding is the considerably high percentage of pupils who believe that there is a vaccine protecting them from HIV, whereas they don't know the existing vaccine for Hepatitis B. There was no great influence of the intervention on these beliefs.

The sharing of razors was a practice that has been cited (Chin, 2000) as a partial cause for the dissemination of Hepatitis B infection between family members. Knowledge about transmission of Hepatitis B through sharing razors is a very important issue but wasn't influenced by the intervention. The same applies for vaccination against Hepatitis B. Vaccination against Hepatitis B was included in the compulsory national scheme in 1998 (Greek Health Ministry, 1998). As a result, the pupils of our sample are probably not sufficiently immunised, as they grew up in an earlier period. Lack of knowledge and insufficient vaccination status classify the adolescents of the study in a high-risk group for Hepatitis B infection.

It is remarkable to note that the improvement of knowledge goes in parallel with improvements in beliefs about condom use in the boys, as well as beliefs and perceived control in the girls. Oakley's et al (1994) and Grassly's (2001) reviews

detect improvements in beliefs and reduction in barriers to condom use after the intervention. The improvement could be connected with the close contact and familiarization with condoms during the intervention, and with the fact that the message promoted by medical students was that condom use is also a woman's issue.

The influence of the intervention on girls' perceived control to use condoms is in line with the findings of a sexual health intervention that was included of a condom use activity and proved to be particularly empowering for women (Elkins et al, 1998). De Wit et al (1993) found higher condom acceptance and a more positive global attitude towards condom use after an intervention that included condom handling and discussion with health educators.

The low scores for personal vulnerability are in accordance with theories in health psychology, which mention people's tendency to underestimate the extent to which they are personally vulnerable to health problems (Sheeran & Abraham, 1996). Although the intervention didn't influence personal vulnerability, it appears to have increased knowledge about which categories of people are vulnerable.

The positive modification in the "norms" category in the female population was a surprise. There is no reason to expect influences in norms from a minimal intervention like the one of the study.

The intention scores were too high for both sexes to give space for significant improvement. The high scores in intention to use condoms as well as the low perceived susceptibility to HIV and Hepatitis B, could be connected with the fact that the vast majority of the pupils have no sexual experience. These two issues, as well as the norms beliefs and attitudes of teenagers, should be explored further through

qualitative methods. There is a need for further research about the teenagers' attitudes and actual behaviours in the Greek context, given the lack of national programmes on sexual and reproductive health.

The positive influence of the intervention could be attributed to the main characteristics of the programme - namely small single sex group discussion, proximity in the age of educators, relaxed atmosphere and games, non-didactic methods, skills training. All of these are considered by many researchers (Kirby et al 1994, Coleman and Ford, 1996, Few et al, 1996) to be important components of effective sexual health programmes.

The positive outcomes in the issues of condom use could be connected with the central point of the sexual health programme of this study, which is the promotion of condom use as the most appropriate way of protection for adolescents. Adolescent sexual behavior, as Kirby (1995) mentions in a British Medical Journal editorial, is strongly affected by hormones and physical desire, among other factors. As a result, behaviour modification is difficult and abstinence-only programmes don't manage to influence the delay of sexual activity (Katz & Fisher, 2002).

The influence of the intervention appears to be different on boys and girls, a finding also detected in Elkins et al (1998) study. Guidelines for the design of effective sexual health intervention (Coleman & Ford, 1996, UNAIDS position paper, 1997) suggest that the intervention have to address women's special needs, and be tailored to both sexes.

The narrow focus of the intervention on a specific risky behavior (no condom use), which is a component of effective programmes (Kirby, 1995, Katz & Fisher,

2002), can also explain the positive results on knowledge about protection and beliefs about condom use.

#### **IV. Study limitations**

The basic limitation of the study is the lack of a control group. It was not feasible to involve other schools as controls, mainly because of difficulties in cooperation with the teachers. We avoid randomisation in the same school because of the risk of contamination.

Furthermore, the conditions in the classroom were not always ideal concerning the implementation of the questionnaire and the privacy in the group discussion. More specifically, the fact that the pupils were sitting in the same desk, even though they have instructions to sit far from each other, might have influenced the answers to the questions, especially those referring to their sexual experience. In addition, the overpopulation in some small size classrooms impeded the flow of discussion within the pupils' teams.

It would be useful to administer a follow up questionnaire one year after the intervention to determine the long-term effect. It would also be useful to add a question about the actual condom use for the sexually experienced pupils.

## ***Chapter 5 - Conclusions and recommendations***

The study shows that theory-based interventions have the possibility to positively influence knowledge on HIV/Hepatitis B and attitudes about condom use.

Medical students - acting as health educators - can improve knowledge about HIV transmission, clarify misconceptions, and modify beliefs regarding condom use.

Small same sex group discussion in a relaxed atmosphere, and an intervention addressing the needs of the adolescent population are potentially effective methods in sexual health education. Furthermore, the study suggests that effectiveness of the intervention could be increased if they are tailored to both genders.

Focus on a specific behaviour and skills training add value to the design of a sexual health programme.

Greece is entering the phase of developing sexual and reproductive health programmes at schools. The effectiveness of the programmes could be substantially increased if they are theory-based and implemented in collaboration with medical students.



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**APPENDIX 1  
QUESTIONNAIRE**

Medical School – Laboratory of Hygiene – A.U.TH.  
Hellenic Medical Student’s International Committee - A.U.TH.

**2005-06**

**Code**

\_ \_ \_ \_ \_

(the 2 last letters of their name, birth day and month)

**Grade:** A 1    B 2    C 3

**SOCIOECONOMIC AND FAMILY CHARACTERISTICS**

SEX OF RESPONDENT    MALE 1                      FEMALE 2                      Year of birth \_\_\_\_\_

Brothers                       brothers’ ages \_\_, \_\_, \_\_  
Sisters                       brothers’ ages \_\_, \_\_, \_\_

**Parents education:**

	<u><b>Mother</b></u>		<u><b>Father</b></u>
Primary	<input type="checkbox"/> 1	Primary	<input type="checkbox"/> 1
Secondary	<input type="checkbox"/> 2	Secondary	<input type="checkbox"/> 2
Lyceum	<input type="checkbox"/> 3	Lyceum	<input type="checkbox"/> 3
University/TEI	<input type="checkbox"/> 4	University/TEI	<input type="checkbox"/> 4
Other define _____	<input type="checkbox"/> 5	Other define _____	<input type="checkbox"/> 5

**1) Which of the following people are more vulnerable to HIV/AIDS and Hepatitis B?**

- |   |                |   |   |   |                  |
|---|----------------|---|---|---|------------------|
| <b>1. gay</b>                                     | not at all...1 | 2 | 3 | 4 | 5...very much so |
| <b>2. in steady relationships</b>                 | not at all...1 | 2 | 3 | 4 | 5...very much so |
| <b>3. in casual relationships</b>                 | not at all...1 | 2 | 3 | 4 | 5...very much so |
| <b>4. all people having sex</b>                   | not at all...1 | 2 | 3 | 4 | 5...very much so |
| <b>5. with many partners</b>                      | not at all...1 | 2 | 3 | 4 | 5...very much so |
| <b>6. intravenous drug users sharing syringes</b> | not at all...1 | 2 | 3 | 4 | 5...very much so |

**2) A person with HIV always looks emaciated or unhealthy in some way:**

YES 1    NO 2    Don't know 3

**3) What has been the most important source of information for you on Hepatitis B transmission and prevention? \_\_\_\_\_**

**4) What has been the most important source of information for you on HIV/AIDS transmission and prevention? \_\_\_\_\_**

**5) HIV/AIDS and Hepatitis B are transmitted through:**

- |                  |                                |                               |                                       |
|------------------|--------------------------------|-------------------------------|---------------------------------------|
| 1. Saliva        | YES <input type="checkbox"/> 1 | NO <input type="checkbox"/> 2 | Don't know <input type="checkbox"/> 3 |
| 2. Handshaking   | YES <input type="checkbox"/> 1 | NO <input type="checkbox"/> 2 | Don't know <input type="checkbox"/> 3 |
| 3. Toilets       | YES <input type="checkbox"/> 1 | NO <input type="checkbox"/> 2 | Don't know <input type="checkbox"/> 3 |
| 4. Insects       | YES <input type="checkbox"/> 1 | NO <input type="checkbox"/> 2 | Don't know <input type="checkbox"/> 3 |
| 5. Food or water | YES <input type="checkbox"/> 1 | NO <input type="checkbox"/> 2 | Don't know <input type="checkbox"/> 3 |

- |                               |     |                          |   |    |                          |   |            |                          |   |
|-------------------------------|-----|--------------------------|---|----|--------------------------|---|------------|--------------------------|---|
| 6. Blood transfusion          | YES | <input type="checkbox"/> | 1 | NO | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 7. Razors                     | YES | <input type="checkbox"/> | 1 | NO | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 8. Towels, sheets, or clothes | YES | <input type="checkbox"/> | 1 | NO | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 9. Dishes or cutlery          | YES | <input type="checkbox"/> | 1 | NO | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 10. Syringes or needles       | YES | <input type="checkbox"/> | 1 | NO | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 11. Kissing                   | YES | <input type="checkbox"/> | 1 | NO | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |

**6) To use condom every time that you have sex:**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| reduce sexual pleasure ...                   | 1 | 2 | 3 | 4 | 5... increase sexual pleasure             |
| is not necessary in steady relationships ... | 1 | 2 | 3 | 4 | 5... is necessary in steady relationships |
| unpleasant...                                | 1 | 2 | 3 | 4 | 5... pleasant                             |
| silly...                                     | 1 | 2 | 3 | 4 | 5... clever                               |
| is not necessary in casual relationships ... | 1 | 2 | 3 | 4 | 5... is necessary in casual relationships |

**7) I would like to use condom every time I have sex, but I don't believe that I could disagree...1 2 3 4 5...agree**

**8) If I will use condom every time that I have sex my friends would: make fun of me... 1 2 3 4 5...think I am cool**

**9) To use a condom properly is very difficult...1 2 3 4 5...very easy**

**10) In order to protect oneself from HIV/AIDS should:**

- |   |      |                          |   |       |                          |   |            |                          |   |
|---|------|--------------------------|---|-------|--------------------------|---|------------|--------------------------|---|
| 1. Not have sex                               | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 2. use always condoms                         | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 3. urinate after sexual intercourse           | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 4. have a steady relationship                 | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 5. take the pill                              | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 6. avoid hanging out with HIV positive people | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 7. be vaccinated                              | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 8. one cannot be protected from HIV/AIDS      | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |

**11) My friends believe every time I have sex**

- I shouldn't use a condom ...1 2 3 4 5... I should use a condom

**12) I intend to use a condom every time I have sex disagree...1 2 3 4 5...agree**

**13) In order to protect oneself from Hepatitis B should:**

- |  |      |                          |   |       |                          |   |            |                          |   |
|--|------|--------------------------|---|-------|--------------------------|---|------------|--------------------------|---|
| 1. Not have sex  | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 2. use always condoms                                      | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 3. urinate after sexual intercourse                        | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 4. have a steady relationship                              | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 5. take the pill   | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 6. avoid hanging out with people infected with Hepatitis B | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 7. be vaccinated   | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |
| 8. one cannot be protected from Hepatitis B                | True | <input type="checkbox"/> | 1 | False | <input type="checkbox"/> | 2 | Don't know | <input type="checkbox"/> | 3 |

14) Have you ever had sexual intercourse? Yes 1 No 2

If Yes: 1.1. How old were you at the time you first had sex \_\_\_\_\_

1.2. How many people have you had sexual intercourse with? \_\_\_\_\_

15) A woman's ovulating days (i.e. the days she can become pregnant) are:

1) In the middle of the menstrual cycle YES 1 NO 2 Don't know 3

2) The days around the 14<sup>th</sup> day before the next menstrual cycle  
YES 1 NO 2 Don't know 3

3) The days around the 14<sup>th</sup> day after the current menstrual cycle  
YES 1 NO 2 Don't know 3

16) Which of the following methods are an effective way of:

	avoid pregnancy			protecting against HIV/AIDS and Hepatitis B		
1. Condoms	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3
2. IUD(intrauterine devices)	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3
3. Periodic abstinence/rhythm	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3
4. Contraceptive Pills	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3
5. Diaphragm	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3	YES <input type="checkbox"/> 1	NO <input type="checkbox"/> 2	Don't know <input type="checkbox"/> 3

17) Withdrawal (i.e. a man can pull out of a woman before climax) is an effective way to avoid pregnancy

disagree...1 2 3 4 5...agree

18) One can easily find out the days when pregnancy is most likely to occur.

disagree...1 2 3 4 5...agree

19) I feel the need to do what my friends think I should do

not at all...1 2 3 4 5...very much so

20) I believe that I will use a condom every time I have sex

disagree...1 2 3 4 5...agree

21) I am likely to get:

Hepatitis B not at all...1 2 3 4 5...very much so

HIV/AIDS not at all...1 2 3 4 5...very much so

22) The chances of me getting:

Hepatitis B are less than the others...1 2 3 4 5...more than the others

HIV/AIDS are less than the others...1 2 3 4 5...more than the others



**23) Would you accept an HIV-positive student to :**

- |  |                           |   |   |   |             |
|--|---------------------------|---|---|---|-------------|
| <b>1. Come to your school</b>                | with great difficulty...1 | 2 | 3 | 4 | 5... easily |
| <b>2. Be in your classroom</b>               | with great difficulty...1 | 2 | 3 | 4 | 5... easily |
| <b>3. To play with you (e.g. basketball)</b> | with great difficulty...1 | 2 | 3 | 4 | 5... easily |
| <b>4. Hug you</b>                            | with great difficulty...1 | 2 | 3 | 4 | 5... easily |
| <b>5. Eat with you</b>                       | with great difficulty...1 | 2 | 3 | 4 | 5... easily |

**24) Using a condom every time I have sex:**

- |  |              |   |   |   |           |
|--|--------------|---|---|---|-----------|
| <b>it's completely up to me</b>                        | disagree...1 | 2 | 3 | 4 | 5...agree |
| <b>is difficult</b>                                    | disagree...1 | 2 | 3 | 4 | 5...agree |
| <b>increases pleasure because you are not stressed</b> | disagree...1 | 2 | 3 | 4 | 5...agree |
| <b>makes penetration easier</b>                        | disagree...1 | 2 | 3 | 4 | 5...agree |
| <b>is an opportunity for foreplay</b>                  | disagree...1 | 2 | 3 | 4 | 5...agree |
| <b>makes sex last longer</b>                           | disagree...1 | 2 | 3 | 4 | 5...agree |

**25) If I suggest using condoms to my partner, it would mean that I don't trust him/her:**

disagree...1 2 3 4 5...agree

**26) Using a condom while having sex might spoil the moment**

disagree...1 2 3 4 5...agree

**27) It would be too embarrassing for someone like me to buy condoms**

not at all...1 2 3 4 5...very much so

**28) If I carry condoms with me, my partner will think that I only have sex in my mind**

disagree...1 2 3 4 5...agree

WESTERN CAPE