



AMERICAN UNIVERSITY OF BEIRUT

FACTORS ASSOCIATED WITH STUDENTS'  
SUPPORT FOR SCHOOL-BASED  
REPRODUCTIVE HEALTH EDUCATION  
IN LEBANON

by  
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A thesis  
submitted in partial fulfillment of the requirements  
for the degree of Master of Sciences in Population Health  
to the Department of Epidemiology and Population Health  
of the Faculty of Health Sciences  
at the American University of Beirut


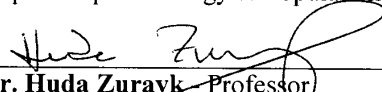
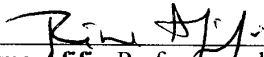

Beirut, Lebanon  
May, 2014

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Date of thesis defense: May 8, 2014



## ACKNOWLEDGEMENTS

This thesis made me realize how blessed I am to be surrounded by people whose care and support make everything possible. Foremost, I would like to express my sincere gratitude to my advisor Dr. Jocelyn DeJong for her guidance, support and persistent help. This thesis would not have been possible without her generous and constructive feedback. Dr. DeJong has showed me that no matter how overwhelmed one can be there is always a place for a kind warm smile. I owe a very important debt to Dr. Huda Zurayk for her priceless advising and motherly support during my thesis and throughout my time at the Faculty of Health Sciences. I also want to thank Mr. Khalil Asmar whose expertise in statistics has been essential for this thesis. I have greatly benefited from the long meetings he spent explaining to me new statistical methods with much patience. Dr. Lilian Ghandour was a mentor from whom I learned how to organize my workload and how to be meticulously critical of my own work. I would like to express my deepest appreciation to Dr. Monique Shaaya and Ms. Mitra Tauk whose doors are always open to provide students with advice, help and support when most needed. Last but not least, I am grateful to Dr. Rima Afifi who facilitated my obtaining of the data for this thesis and always made me try to surpass myself with her incisive questions, comments and suggestions.

Mrs. Ghada Feghali was kind enough to facilitate my access to public schools. I am grateful for her accompanying me early in the morning through many visits to schools and for her endless love and support. I would like to thank the Ministry of Education and Higher Education (MEHE) for allowing me to access four public schools. I thank the World Health Organization (WHO), the Ministry of Public Health (MPH) and the MEHE for the permission to use the data of the Global School Health Survey (GSHS) of 2011. Special thanks to Ms. Denise Assaf who kindly supplied me with reports relevant to my thesis topic. I also like to thank Mrs. Silva Kouyoumjian for the help she offered at many instances throughout my thesis journey. Her exemplary thesis in terms of structure and flow of ideas constituted a model and a source for many helpful references.

To all my family and friends I would like to express much love and appreciation. I would like to convey my honest gratitude to my dear brother Mohamad who taught me that unconditional love and kindness can exist in the real world. I send my deepest heartfelt thanks to Hiba, my sister for her honest everlasting friendship and for her endless struggling with the thesis outline. I owe a very important debt to my eldest sister Nadine with whom I stayed up for long nights each one of us working on her thesis. Her kindness, advice and encouragements were priceless to me throughout my life. I would also like to thank her husband Kassem for being the second supporting and loving brother he is. I am deeply and sincerely grateful to Dana Tlais, my best friend for her true sisterhood and her encouraging and trusting words that always kept me going and never failed to lift me up. Special thanks to Ziad Ghazzawi for the times we spent studying together at the library and for showing me how exemplary friends can be. Without the help and continuous support of my two beautiful colleagues and dear friends Josephine Bou Dagher and Myriam Abou Atme, being able to handle work and thesis would have been much harder.

There are not enough words to express my gratitude and admiration of my love Bassel Nazha. For the long hours he spent reviewing this thesis and sending me insightful comments no matter how saturated his schedule was, I am sincerely grateful. I want to thank him from the bottom of my heart for being my pillar, my companion and my friend.

# AN ABSTRACT OF THE THESIS OF

Farah Ghaleb Mouhanna for Master of Science  
Major: Population Health

Title: Factors Associated with Middle School Students' Support for School-based Reproductive Health Education in Lebanon

Reproductive Health (RH) education provision in schools is one of the key strategies to promote young people's sexual and RH through encouraging gender equality and empowerment of women and reducing maternal mortality by decreasing unintended pregnancy and unsafe abortion (UNESCO, 2009). Recently, in Lebanon, new HIV and RH topics were integrated into the national secondary school curriculum (UNAIDS, 2012). This curriculum however is not yet fully implemented at the school level. The Global School Health Survey (GSHS) is a school-based survey of students aged 13-15 years. It provides a nationally representative view of students' attitudes and behavior in both public and private schools concerning several topics through a self-administered questionnaire (WHO et al., 2007).

In this study, we have used a mixed method approach to examine the factors associated with middle school students' support for RHE or lack thereof. The quantitative phase of our study aimed at determining the prevalence of support for school-based RHE and the main factors associated with it among adolescents in grades 7-9 (11-16 years old) based on the most recent GSHS conducted in 2011 in Lebanon. The qualitative component complemented the quantitative phase of the study through in-depth interviews conducted with a convenience sample of middle school students in Lebanon. The aim of the qualitative phase was to elicit grade 7-9 students' understanding of and expectations about RHE and to explore their support or lack thereof for RHE among a sample of students from private and public schools in Lebanon.

The statistical analysis of the GSHS 2011 allowed us to identify trends differentiating students who support RHE from those who do not, after controlling for many variables. The variables included in the final model were related to socio-demographics, risky behaviors, preferences and previous exposure to RHE. In the qualitative phase of the study, the in-depth interviews revealed the lack of a clear, broad and common understanding of the term RHE among our sample of students. During these interviews, students reflected upon their opinions about RHE and their preferred sources for RHE. They also suggested some recommendations and expressed some of their concerns regarding the implementation of RHE in schools.

Despite its limitations, this study is one of the first one to our knowledge to aim at identifying trends differentiating students who support RHE from those who do not in Lebanon or the world. Findings from our study can have implications on informing both intervention planning and future research. One of our main recommendations concerns the need to expand the GSHS questionnaire to include questions assessing in details students' needs and expectations regarding in-school RHE. The integration of RHE within a comprehensive health promotion program in schools is also recommended. Since our findings are only limited to school-attending adolescents, RHE research and interventions should target out-of-school young people achieving by that universal coverage of all adolescents in Lebanon.



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## ABBREVIATIONS

AIDS: Acquired Immunodeficiency Syndrome

GSHS: Global School Health Survey

HIV: Human Immunodeficiency Virus

IRB: Institutional Review Board

KABP: Knowledge, Attitudes, Behaviors and Practices

MENA: Middle East and North Africa

NGO: Non-Governmental Organization

RH: Reproductive Health

RHE: Reproductive Health Education

SPSS: Statistical Package for the Social Sciences

STD: Sexually Transmitted Disease

STI: Sexually Transmitted Infection

STATA: Data Analysis and Statistical software

UNESCO: United Nations Educational, Scientific and Cultural Organization

WHO: World Health Organization

LAES: Lebanese Association for Educational Studies

MOSA: Lebanese Ministry of Social Affairs

## DEDICATION

Back when I was only 6 years old you dedicated your Bachelor Degree project to my Mother, my siblings and me. I used to contemplate my name in a book for the first time with all the pride there is in this world. It is time I give back to you a drop of the ocean of unconditional love you have surrounded us with.

As to you, my beautiful Queen, I dedicate all the hard time and sleepless nights I spent working on this thesis. You taught me how to pursue perfection and always challenge myself. Your warm smile, loving heart and encouraging words have always kept me going.

To my proud Father and Mother,



# CHAPTER I

## INTRODUCTION

“Children have the right to good quality health care – the best health care possible [...] and information to help them stay healthy”, states the article 24 of the UN Convention on the rights of the Child (United Nations, 1989). At the core of children and young people's preparation for the transition to adulthood lies one of humanity's great challenges; human sexuality and relationships (UNESCO 2009). Reproductive Health Education (RHE) programs introduced in schools providing to students accurate information about sexuality help eliminate misconceptions and enhance young people's positive attitudes (McCauley et al., 2004; UNESCO, 2009). Curricula-based sex and HIV programs targeting youth in settings including schools are indeed promising interventions to reduce sexual risky behaviors in adolescents (Kirby, 2007). Across countries, school-based RHE is associated with delayed sexual debut, more protected sexual relations along with lower rates of unwanted pregnancy and Sexually Transmitted Infections (STIs) (Speizer et al, 2003; ESART 2011). RHE in its comprehensive aspect does not only affect youth's sexual knowledge and behavior (ESART, 2011). It is also a means towards fighting stigma and discrimination through the promotion of global citizenry (UNAIDS, 2013a). In-school comprehensive RHE targets students' decision-making skills and values such as gender norms and discrimination. This is of particular importance in view of the effect these values can have on both women and men's health (International Sexuality and HIV Curriculum Working Group, 2009).

The Arab World is currently witnessing a phenomenal increase in proportion of youth, with over 65% of the population being under the age of 30 and around 20% aged between 15 and 29 years old (Dhillon, 2008; Mirkin, 2013). This phenomenon, referred to as the "youth bulge" in the literature, has been linked to significant high rates of unemployment among Arab youth ranging from 20 to 40% compared to a worldwide average of 10 to 20% (Dhillon, 2008; ESCWA, 2009; Khalifa, 2009). The high rates of unemployment, the increase in girls' school enrollment rates, the high costs of marriage and economic difficulties (among other factors) are contributing to the rise in the age of marriage and celibacy rates in all Arab countries (ESCWA, 2009; Rashad et al., 2003; Rashad et al., 2004). This however does not deny the fact that unmarried young people are engaging in sexual activity. The widening gap between the age of puberty and marriage indeed increases the likelihood of pre-marital sexual activity (DeJong et al., 2005). Unmarried young people may also engage in nonconventional forms of marriage usually practiced in secrecy as a "pretext or cover" for pre-marital sex (DeJong et al., 2005; Rashad et al., 2004). Nonetheless, DeJong believes that Arab societies are still reluctant to acknowledge the possibility of unmarried young people being sexually active (DeJong et al., 2005). A "policy of silence" surrounds Arab young people's RH and the discussion of sexual activity outside marriage is believed to be taboo (DeJong et al., 2005).

In Lebanon, 73.3% of male and 21.8% of unmarried female university students report having already had sexual relations, among whom 48% of males and 60% of females admit having had an unprotected sexual intercourse (Barbour and Salameh, 2009). These percentages may be underestimates of the true prevalence of young people's sexual activity particularly for females who may have been subjected to

social desirability bias. As is the case in other Arab countries, Lebanese societal norms have a higher tolerance for male sexual activity outside marriage compared to for females (DeJong, 2005). This is empirically supported by the observed increase in hymen repair operations done by Lebanese women who have engaged in pre-marital sexual relations (Usta 2000).

Recently, the Lebanese National AIDS Control program in collaboration with the Center for Education Development and Research (Lebanese Ministry of Education) succeeded in integrating new HIV and RH topics into different subject matters of the national secondary school curriculum. The changes, however, have not yet been fully implemented in schools (UNAIDS, 2012).

A systematic review of youth oriented RHE programs - based on written curricula and implemented in schools, clinics and community settings - summarized 83 evaluations from both developed and developing countries (Kirby et al., 2007). The study identified a group of characteristics of effective RHE programs (Kirby et al., 2007). The authors concluded that assessing the target youth group's needs and cultural norms is necessary to inform the development of any program before and throughout its implementation (Kirby et al., 2007). Engaging students to identify and address their opinions is a consistent theme in RHE literature (Wight, 1999; Eisenberg et al., 1997; Yu, 2010). Further, encouraging youth to participate in the decision-making process appears to be a precondition for promoting their health and enhancing their learning process (De Winter et al., 1999; Jensen et al., 2005).

The Global School Health Survey (GSHS) is a worldwide collaborative surveillance project aiming to assist countries to assess health protective and risk factors

among school attending adolescents aged 13-17 (WHO et. al, 2007). The GSHS has been conducted twice in Lebanon in 2005 and subsequently in 2011. The survey targeted Lebanese middle students of grades 7-9. In 2011, only 58% of students supported receiving in-class RHE. The percentage is significantly lower compared to other developing countries, where 78% to 93.9% of students did support such education (Benzaken et al., 2011; Chen et al., 2008; Ogunjimi et al., 2006; Orji et al., 2006 Nath, 2009; DeJong et al., 2007).

To our knowledge, no study was ever done assessing the characteristics that differentiate students who support RHE from those who do not. Our study has identified subgroups of students with different attitudes with regard to in-school RHE. Many studies have examined young people's expectations from RHE in term of the topics to be covered (Andrew et al., 2003; Eisenberg, 1997; Forrest, 2004). However no study has explored students' understanding of the term "RHE" in Lebanon or elsewhere, to our knowledge. This is important for two main reasons. First, the adopted definition of RHE may vary from one study to another yet it does not necessarily overlap with the participants' perceived definition of the term (Eisenberg, 2008). Second, students' definitions of RHE may reveal their perceived needs from such education. Assessing students' needs for in-school RHE and understanding their own definition of the term is not only necessary to inform future studies and interventions. It is also a human rights' responsibility since, according to the article 12 of the UN Convention on the rights of the Child (United Nations, 1989), children below the age of 18 years are entitled to a free expression of their views regarding matters that affect them.

## **A. Objectives of the Study**

### ***1. Phase 1: The Quantitative Analysis: GSHS 2011 Lebanon***

- To determine the prevalence of support for school-based RHE and the main factors associated with it among Lebanese adolescents in grades 7-9 (11-16 years old) based on the most recent Global School Health Survey conducted in 2011 in Lebanon.

### ***2. Phase 2: The Qualitative Study: Interviews with Selected Students***

- To elicit grade 7-9 students' understanding of and expectations about RHE among a sample of students from private and public schools in Lebanon.
- To explore grade 7-9 students' support or lack thereof for RHE among the same sample of students from private and public schools in Lebanon.

## **B. Structure of the Thesis**

This thesis is divided into seven chapters. The second chapter presents the results of a literature review conducted including the definition and importance RHE programs, particularly those implemented in schools. Also, findings of studies assessing parents' and teachers' attitudes towards such programs will be presented. The rationale behind the importance of involving students in the decision-making process will be explained. The final section of the chapter summarizes of the case of young people's Reproductive Health (RH) in Lebanon and the region as well as a brief presentation of Lebanese students' support for RH. The third chapter presents the methods used in the quantitative phase of the study (Data source, sampling, measures, analysis) while the fourth chapter summarizes the results obtained through data analysis. Chapter five

includes the methods adopted to conduct the qualitative phase of the study (pilot study, sampling, in-depth interviews, topic guide, transcription, analysis etc.) while chapter six summarizes the results of this phase. Chapter seven bridges the findings of both phases of the study along with the perceived limitations, strengths and recommendations for policy, intervention and research. Chapter eight summarizes all findings and recommendation in a brief conclusion.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### **A. Reproductive Health Education**

##### *1. Definition of Reproductive Health Education*

According to the definition of RH as agreed upon at the International Conference on Population and Development (ICPD) that took place in Cairo in 1994, RH care "includes sexual health" and it should aim at "the enhancement of life and personal relations, and not merely counseling and care related to reproduction and sexually transmitted diseases (STDs)" (United Nations, 1994). The adopted definition of RHE may vary from one study to another (Eisenberg, 2008). Even more, there is no agreement on the definition of the term "sexual act" itself among students especially between girls and boys (Bogart et al., 2000) let alone the terms "sexuality", "RH" and "RHE". The term "RHE" may be perceived to include a comprehensive social view of sexuality or to be only limited to reproduction and Sexually Transmitted Diseases (STDs). In this study, we will adopt the ICPD definition of the term "RHE" and we will use it interchangeably with "Sexual and Reproductive Health (SRH) education". In conservative societies such as Lebanon, the term RH may be preferred over SRH as it has a more attenuated nuance and a less explicit meaning considering the sensitivity of the topic of sexuality.

In order to improve people's understanding of RHE as recommended in the literature (Ogunjimi, 2006), it is important to first assess their own definition of the term. A quantitative study conducted in secondary schools in Nigeria showed a clear difference in the definition of "sex education" between students, teachers and parents

(Orji et al., 2003). While the majority of students (65%) defined sex education as "teaching students how to make love and have sex", only around 5% of both teachers and parents picked the choice and more than half of them answered "I don't know" (Orji et al., 2003). This shows that students' definition of RHE may reveal their need for such education. Many studies have examined young people's expectations from RHE in terms of the topics to be covered (Andrew et al., 2003; Eisenberg, 1997; Forrest, 2004). To our knowledge, only one study aimed at understanding students' definition of the term "sex education" (Orji et al., 2003). However, none was found to explore their understanding of the term "RHE" that can have a more or less comprehensive aspect.

## ***2. Characteristics of Effective RHE Programs***

A systematic review paper aiming at summarizing the evaluations of youth oriented RHE programs based on written curricula and implemented in schools, clinics and community settings was done on 83 evaluations in both developed and developing countries (Kirby et al., 2007). The programs evaluated targeted mainly pregnancy and STDs prevention without necessarily including other sexuality aspects such as relationships, gender role and developmental stages (Kirby et al., 2007). The study concluded that effective programs had 17 main characteristics that were grouped into 3 categories: (1) *Developing the Curricula*, (2) *Curricula Content* and (3) *Implementing the Curricula* (Kirby et al., 2007). A brief summary is described here after (Kirby et al., 2007):

- *Developing the Curricula* should begin with the setting of specified goals that respond to both the needs and assets of the target group in a socially acceptable and contextualized manner.



- *Curricula Content* addressed young people's psychological needs and protective factors affecting specific sexual behaviors in order to prevent STDs and/or pregnancy always taking into account their cultural context, age and sexual experience.
- *Implementation of the Curricula* should be done through trained educators with support of authorities, engaging youth when necessary and respecting the design written curriculum.

Based on the above cited characteristics of effective RHE programs, the importance of the assessment of the target youth group's needs and cultural norms in order to inform the development of any program before and throughout its implementation.

### ***3. Importance of RHE Programs on a world scale***

Also as stated in the UN Convention on the rights of the Child “Children have the right to good quality health care – the best health care possible [...] and information to help them stay healthy.” (Article 24) (United Nations, 1989). In 2012, 35.5 million people were living with HIV/AIDS worldwide and among them 2.1 million were adolescents ages 10 to 19 (WHO et al., 2013; UNAIDS, 2013b). Young people ages 20 to 24 and adolescents aged 10 to 19 remain a vulnerable population with regards to HIV infection (WHO et al., 2013). In the ten years period between 2001 and 2011, 27% of the new HIV worldwide infections occurred in young people ages 15 to 24 (UNAIDS 2013b; 2012b). HIV-related deaths among adolescents has increased by 50% between the years 2005 and 2012 as opposed to the 30% decrease in the global average of AIDS-related deaths (UNAIDS, 2013b).

Young people may be under or misinformed about RH from various sources such as the media, the internet and their peers (UNESCO, 2009). Young people need sexual and RH information and services adapted to their special biological and psychological needs and taking into account their high vulnerability to sexually transmitted infections and HIV/AIDS (Oraby, 2013).

As opposed to some people's misconception about RHE which assumes that it increases promiscuity (Yu, 2010), comprehensive sexuality education is not proven to increase sexual activity among unmarried young people. On the contrary, it has been shown that it provides accurate information and helps eliminate misconceptions and enhances young people's positive attitudes (McCauley et al., 2004; UNESCO, 2009). Young people who receive comprehensive sex education are less likely to be involved in early sexual activity and more likely to have protected sexual relations when they become sexually active (ESART, 2011). This is particularly important since the age at sexual debut is associated with many sexual risk factors such as increased number of sexual partners and recent sexual activity under the influence of alcohol (Sandfort et al., 2008).

A systematic review conducted by Kirby examining 83 research papers evaluating "Sex education" programs among which 18 were conducted in developing countries while the others were in developed countries (Kirby et al., 2007). These programs focus mainly on pregnancy and HIV/STI prevention among adolescents. The impact of such intervention was measured by the number of sexual behaviors including (1) initiation of sexual activity, (2) frequency of sex, (3) number of sexual partners, (4) condom use, (5) contraceptive use in general, (6) sexual risk-taking behavior, (7) reported pregnancy and STI rates. Curricula-based sex and HIV programs targeting

youth in settings including schools were shown to be promising interventions to reduce sexual risky behaviors in adolescents (Kirby et al., 2007). In particular, two thirds of the programs evaluated had a positive impact on one or more of the previously cited sexual behaviors, while one third of them were shown to have a positive impact on one or more sexual behavior (Kirby et al., 2007).

The generalizability of the conclusions driven to the developing countries can be questioned due to the unequal representativeness of the sample of studies included from developed and developing countries (65 from developed countries vs. 18 from developing countries) (Kirby et al., 2007). We assume that the lower number of Sex and HIV education intervention programs as well as the shortage of evaluation programs that meet the inclusion criteria set in the systematic review was the reason for its under-sampling of evaluation programs in developing countries. None of the studies included in the systematic review was conducted in an Arab country.

#### ***4. The Importance of Addressing Decision-making Skills and Gender Norms in RHE***

According to Soo-Hyang Choi, UNESCO Global Coordinator for AIDS, education is at the core of AIDS response as it is not only a protective factor against HIV infection but it can also be a means towards fighting stigma and discrimination through the promotion of global citizenry (UNAIDS, 2013a). RHE programs should not be limited to HIV but should deliver comprehensive sexuality education giving young people information on sexual and RH as well as on critical and decision-making skills to protect themselves throughout their lives (UNESCO et al., 2013).

Social norms such as gender inequality can have major repercussions on the health of both men and women. This can be explained by the fact that people's ability to

make choices regarding their sexual lives and to implement them is highly affected by gender norms (International Sexuality and HIV Curriculum Working Group, 2009). Many girls engage in sex, marriage and pregnancy unwilling and uninformed (International Sexuality and HIV Curriculum Working Group, 2009). Gender norms affect women's health. Women in a relationship with violent and controlling male have a higher risk of HIV infection (Dunkle et al., 2004). Women reporting coerced sexual initiation are less likely to be willing to confront an unfaithful partner, less likely to use contraception, at a higher risk of unwanted pregnancy and genital tract symptoms (Koenig et al., 2004; Jewkes et al., 2001). Previous studies have linked relationship power to safer sex decision making among which we cite a study that was done with sexually active female patients who are not attempting to become pregnant (n=388) at an urban community health clinic in Massachusetts (Pulerwitz et al., 2002). Controlling for socio-demographic and psychosocial variables, women having low levels of relationship power were found to be five times less likely to report condom use as compared to women with high levels of relationship power (Pulerwitz et al., 2002). This can be put in relation with findings of a study conducted on 1069 unmarried sexually active males aged 15 to 19 in the US (Pleck et al., 1993). This study revealed that traditional attitudes decrease the likelihood of consistent use of condoms. These traditional gender norms are also linked to specific attitudes about condoms associated in the literature with low condom use such as condom interference with pleasure, less belief in man's responsibility in preventing pregnancy, and higher belief that pregnancy proves manhood (Pleck et al., 1993). Gender norms do not only affect women's RH but also other aspects of their well being. Only one study was found in Lebanon addressing the effect of gender norms on women's health. A cross-sectional population-based study

conducted in Lebanon on 2797 households showed that after adjusting for socioeconomic status, social capital, and other demographic and health risk factors, the level of husband's involvement in housework is negatively associated with psychological distress, marital dissatisfaction, and overall unhappiness among married women (Khawaja et al., 2007).

Gender norms do not only affect girls' health but also boys' social and sexual behaviors that may increase their risk for several negative health outcomes. In fact, gender norms can create an unrealistic and sometimes harmful manhood image exerting by that intense pressures on boys who try to approach it (International Sexuality and HIV Curriculum Working Group, 2009). The possible harmfulness of such gender norms particularly traditional images of manhood and masculinity on men's health has been studied in the literature. It has been proven that traditional attitudes toward manhood are associated with higher odds of multiple partnerships, engaging in sexual relation with an unfamiliar partner, and belief that relationships between women and men are adversarial (Pleck et al., 1993). Men's belief in inequitable gender norms is significantly related to reported STI symptoms, lack of contraceptive use, in addition to both physical and sexual violence against a partner as revealed by a quasi-experimental study conducted on young men aged 14 to 25 in Rio de Janeiro, Brazil (Pulerwitz et al., 2006). The same study showed that an improvement on the gender norm scale was associated with a positive change in one key HIV/STI risk outcome at least (like STI symptoms and condom use) after controlling for socio-demographic variables like age and education (Pulerwitz et al., 2006).

The strong association between gender norms and women and men's health suggests the need for a comprehensive sexuality education addressing young people's

decision-making skills and gender norms. Although still not widely implemented, the global community including governments, civil society, and international agencies is increasingly aware of the importance of comprehensive RHE that addresses issues of gender and human rights (International Sexuality and HIV Curriculum Working Group, 2009).

This points to the importance of providing them with reliable RH information through comprehensive RHE programs that meet universal values of respect and human rights (UNESCO, 2009). Studies examining the effectiveness of such RHE programs can be found in the literature. A randomized control trial was performed on 1360 men and 1416 women aged 15-26 years from 70 villages (clusters) in the Eastern Cape province of South Africa (Jewkes et al., 2008). This study tested the effectiveness of a comprehensive RHE program called "Stepping stone" aiming at improving knowledge, risk awareness and communication and critical thinking skills (Jewkes et al., 2008). The "Stepping Stone" program's session addressed many sexual and human rights values from which we cite: "sex and love; conception and contraception; taking risks and sexual problems; unwanted pregnancy; sexually transmitted diseases and HIV; safer sex and condoms; gender based violence; motivations for sexual behavior; dealing with grief and loss; and communication skills." (Jewkes et al., 2008). The program had no significant effect on the incidence of HIV (Jewkes et al., 2008). However it showed a positive effect in reducing Herpes Simples Type-2 (HSV-2) incidence – as detected by blood tests - and perpetration of intimate partner violence which are considered as risk factors for HIV (Jewkes et al., 2008).

These findings are confirmed by another quasi-experimental study was conducted on three groups of young men aged 14 to 25 in Rio de Janeiro, Brazil

(Pulerwitz et al., 2006). The study tested the effectiveness of an intervention addressing gender norms values, critical thinking and decision-making skills among young men aged 15 to 24. A number of key HIV-related outcomes has improved in the intervention group including increased condom use and decreased reported STI symptoms when compared to the control group (Pulerwitz et al., 2006).

In conclusion, gender equality and human rights should not be seen as mere lofty goals, but also as possible strong weapons that can be used to prevent the spread of HIV and as a key to enable young people to grow and maintain good health and well-being (International Sexuality and HIV Curriculum Working Group, 2009).

## **B. In-school RHE**

RHE provision in schools is one of the key strategies extending beyond combating HIV/AIDS to promote young people's sexual and RH through encouraging gender equality and empowerment of women and reducing maternal mortality by decreasing unintended pregnancy and unsafe abortion (UNESCO, 2009).

Comprehensive RHE is recommended to be part of the school curriculum and to be taught by well-informed and skilled teachers (UNESCO, 2009). This is why in the context of achieving HIV risk reduction among school attending young people, providing in school comprehensive sex education programs that addresses the "real world" needs of adolescents seems one of the most cost-effective interventions to adopt (Piot et al., 2001).

We keep in mind that for RHE to be effective in promoting positive sexual health, school-based RHE is essential along with the engagement of family, peers, religious teaching and media (Yu, 2010).

### ***1. Parents' and Teachers' Attitudes about RHE***

Assessing and understanding teachers' personal beliefs and attitudes towards RHE is a crucial step in the design and implementation of a RHE curriculum (Khzami et al., 2009). A study done in Nigeria, Africa, in secondary schools showed that 80% of teachers supported the integration of RHE in the school curriculum as opposed to 90% of students' parents (Orji et al., 2003). The difference between the two may be attributed to some teachers feeling possibly unable or not trained enough to deliver sufficient and adequate RH information to children (Orji et al., 2003). In fact, only 30% of teachers believed that the person to teach RHE should be the teacher while 60% nominated the parents (Orji et al., 2003). In another African country, Tanzania, only 59% of parents believed that schools should be the source of information on RHE (Mbonile et al., 2008). However, more than half of the parents believed that RHE provision in schools may increase STIs and HIV/AIDS infections (Mbonile et al, 2008).

In Minnesota, USA the overwhelming majority (around 90%) of parents were in favor of comprehensive RHE defined to include both education about abstinence and contraception (Eisenberg et al., 2007). Another study conducted in California, USA showed that on average 89% of parents supported school-based comprehensive RHE (Constantine et al., 2007). More than 90% of public school (of K-12 class level) students' parents support RHE with 89% among them in favor of comprehensive RHE as opposed to abstinence-only RHE (Ito et al., 2006). These studies were conducted in the USA mainly to inform policies after the growing trend of abstinence-only education given in schools under federal funding for more than a decade preceding these studies (Darroch et al., 2000; Waxman, 2004). They recommended the implementation of



comprehensive RHE that covers all aspect of sexuality to include RH information that is developmentally appropriate (Constantine et al., 2007; Eisenberg et al., 2007; Ito et al., 2006).

In the Middle East and North Africa (MENA) region, a study was released in 2009 assessing teachers' attitudes towards sexuality education in Lebanon, France, Morocco and Tunisia (Khzami et al., 2009) but to our knowledge, no comparable study has been done looking at students. According to this study, teachers' country had a significant effect on their attitude towards the early delivery of RHE in schools (Khzami et al., 2009). Lebanese and Tunisian teachers were more likely to refuse the idea and less likely to support the inclusion of sexual and social topics such as pleasure organs, sexual pleasure, orgasm, eroticism and pornography as compared to French and Moroccan teachers (Khzami et al., 2010). This shows the effect of the social background and societal norms and beliefs on the attitude towards in-school RHE. It seems that the more conservative the society is, the less likely people coming from it are to support the early implementation and comprehensiveness of RHE to include "sensitive" topics. As for the teacher's personal beliefs, this same study revealed that Lebanese and French teachers' were more likely to express a belief of gender equality than their Moroccan and Tunisian colleagues (Khzami et al., 2010). One may argue here, that the personal beliefs of the teacher may not only be transmitted to the students but also it may affect the content delivered through RHE as the teacher may favor to cover a certain topic in a subjective way.

## ***2. Importance of Involving Students in the Decision Making***

In order to improve sex and relationships education it is essential to address the needs of the target group (Wight, 1999). In studying RHE, it is important to approach the receivers themselves i.e. the students (Eisenberg et al., 1997). A systematic review conducted in United Kingdom on in-school RHE and the effect of social factors of teenagers' sexual behavior concluded to the recommendation of considering students' opinions concerning RHE programs (Yu, 2010). Studying the perspectives of young people in the design of RHE programs is a prerequisite for the program to be effective in meeting young people's needs (Yu, 2010). In fact, students' expression of their views about RHE can be seen as one of their rights as a Child. According to the article 12 of the UN Convention on the rights of the Child (United Nations, 1989), children below the age of 18 years are entitled to a free expression of their views regarding matters that affect them.

Encouraging children to participate in the decision-making process is also considered as a precondition for promoting their health (De Winter et al., 1999). The mere act of asking students about their opinions concerning receiving RHE in their schools can help them reflect about their role as responsible citizens. Involving children in the reflection and the articulation of their opinion about matters that affect their health can contribute to the development of their social awareness and responsibility (De Winter et al., 1999). Programs should therefore be developed with children and not only for them (De Winter et al., 1999). We argue that the implementation of a RHE program in schools should be accompanied by continuous assessment and understanding of students' need for such a program as well as their expectations from it. This can be done through surveys, focus groups, in-depth interviews that help tailor and

continuously evolve the program to be adapted to the receivers' needs. Based on constructivist learning theories, giving students "ownership" of the task taught is believed to enhance their learning process possibly leading to a change in their behavior (Jensen et al., 2005). This "ownership" is given to students among other ways through challenging the learner's thinking about both the content of learning as well as the way it is delivered (Savery et al., 1995). From here we see the importance of encouraging students to reflect upon the need for RHE in schools as well as the expectation from such a program including the way they believe it should be delivered.

One may argue that a study examining students' attitudes and opinions concerning RHE – if done – will only target a small sample of students compared which is unlikely to affect the students' population on a national scale.

However, conducting such studies may contribute to the change in the stakeholders and researchers' attitude towards the importance of engaging students in the decision making when it comes to RHE. Publishing the results of such studies may also help broaden its effect to a bigger proportion of the students' population. These hypotheses still need to be tested with further research that is still lacking in the literature. Several studies have touched upon the application of the constructivist learning theories in the health education field (Barker et al., 2013; Payton et al., 2000; Liimatainen et al., 2001; Jensen et al., 2005). Particularly, consulting with and engaging young people throughout the process of implementing RHE programs has been recommended as necessary for the sustainability and effectiveness of such programs in reaching young people (UNFPA, 2010). The contextualization of the RHE programs is judged necessary and only possible through the considerations of students' needs, values and behaviors (Yu, 2010). Research assessing the importance of students' support for

RHE in schools in the efficiency of such programs was found to be lacking. However, young people's claimed preferences may not be reflective enough of their RHE needs (Wight, 1999). This is of particular importance in the Arab world where little is known about young people's beliefs, values preferences, socio-cultural orientations etc. (Harb, 2010).

### ***3. Students' Support for In-school Reproductive Health Education***

#### **a. Studies Assessing Students' Support for Reproductive Health Education**

Most of the qualitative and quantitative studies found aiming at understanding students' attitudes towards RHE and their expectations from and need for it are relatively recent (Andrew et al., 2003; Benzaken et al., 2011; Chen et al., 2008; Eisenberg et al., 1997; Forrest, 2004; Ogunjimi, 2006; Orji et al., 2003; Shahid et al., 2012). Research studying students' own opinions about RHE was less frequent in the past (Eisenberg et al., 2007). A focus group-based study conducted in Minnesota USA in 1994 on high school students (grades 9 to 12) showed a high level of consensus among them concerning the support for including RHE in the school curriculum (Eisenberg et al., 1997). Some of them also advocated for the start of such education in early elementary school as well as for the inclusion of a variety of human sexuality topics covering all social and emotional aspects of sexuality and relationships (Eisenberg et al., 1997). Although qualitative studies lack external validity, they are essential for an in-depth understanding of students' views and opinions (Bryman, 2008). These studies can also help in designing generalizable quantitative studies built on themes expressed by students and adapted to their needs and opinions.

Worldwide, we noticed a recently emerging trend of studies assessing students' support for school-based RHE in developing countries reflecting students' expressed need for such programs (Benzaken et al., 2011; Chen et al., 2008; Ogunjimi, 2006; Orji et al., 2003; Shahid et al., 2012). In a study in Cross Rivers State, for example, Nigeria more than 90% of the secondary school students were in favor of integrating RHE in the school curriculum (Ogunjimi, 2006). Among those students, a vast majority attributed the reason behind their support for intra-curricular RHE to the decrease in unwanted pregnancies (97.5%) and HIV/AIDS incidence (78%) among youth (Ogunjimi, 2006). Less than a third of students accepting intra-curricular RHE believed that the teacher was trained enough to do the job (Ogunjimi, 2006). This implies that they may not be comfortable discussing RH with their teachers despite the need to do so. A study conducted in India that is considered to be a conservative society where the sexuality of young unmarried people is considered as a taboo (Jejeebhoy, 1998; Nath, 2009) showed that the vast majority of junior college students (90%) with a median age of 16 supported the inclusion of RHE in the school curriculum. Similar results were found in a study conducted in China, another conservative society where unmarried young people's sexuality remains a sensitive topic that is hardly discussed (Chen, 2008; International Institute for Population Sciences 2004; Zhang, 2004), this study assessed College students' attitude towards RHE and found that 94% of them agreed to the necessity of RHE in University/College (Chen, 2008). The study had several limitations, however. Answers were not separated by age group nor gender (Chen, 2008). We also note that the average age of participants was not indicated and only a wide age range of 15 to 34 years was given (Chen, 2008).

In some studies, assessment of variations in the support for the implementation of sexuality education in schools was limited to gender as an independent variable (Ogunjimi, 2006; Orji et al., 2003; Shahid et al., 2012; Li et al., 2004). We note that some studies looked at students' perceived reasons behind their support for school-based sexuality education (Ogunjimi, 2006; Orji et al., 2003), while others examined the topics to be discussed in RHE programs as suggested by students (Li et al., 2004; Eisenberg et al., 1997) or explored students' evaluation of already implemented RHE programs (Eisenberg et al., 1997; Shrestha et al., 2013). Worldwide, no studies were found to explore the relationship between students' support for RHE and other variables other than gender such as students' sexual risky behaviors. Students' awareness about the importance of RHE may be associated with awareness regarding sexual behavior.

b. Developing Hypotheses for Lebanon Study

Worldwide, no studies were found to explore factors differentiating students who support RHE from those who do not. Variables tested for association with students' support for RHE were therefore mostly chosen on intuitive basis expanding on the scant literature in this domain. For instance, no study assessing the relation between students' Body Mass Index (BMI) and their support for RHE could be found in the literature. A significant positive relation may suggest an association between students' perceived body image and their feeling comfortable to discuss sexual topics in front of their classmates. We bear in mind that the BMI as reported by the student might be an underestimate of the true value. As seen in the literature, adolescents tend to underreport their weight and over report their height leading by that to an underestimated BMI (Elgar et al., 2005; Wang et al., 2002). In a study conducted in Minnesota, USA the

level of conservatism, religion, income level and type of school (private vs. public) had a significant effect on parents' attitude towards comprehensive RHE (Eisenberg, 2007). This suggests that similar results may be observed for students. Being subjected to bullying using sexual comments is suspected to increase the likelihood of refusing the discussion of sex related topics in front of classmates for fear of recurrence of such bullying acts. Being subject to physical abuse by a teacher or school member might be negatively related to students' openness to discuss sensitive issues in a "non-safe" school setting. When assessing students' attitudes towards when RHE should start, saying that RHE initiation should happen around puberty may reflect less conservative attitude as well as higher openness to discuss RH topics in class, as compared to linking RHE initiation to marriage. Relating RHE initiation to puberty is expected to be positively associated with support for school-based RHE.

A positive association between previous exposure to school-based RHE (intra and/or extra-curricular) and support of school-based RHE might reflect a positive experience of students in such programs previously. Gender and previous exposure to RHE are possible predictors of students' attitude towards RHE in schools. A study conducted in Mumbai, India revealed a gender difference among students with regard to their preferred source for RHE (Benzaken, 2011). Around 40% of females chose lectures from school teachers as a preferred source for RHE versus 30% of males (Benzaken, 2011). Worth noting is that, in the same study, the majority of females (72.2%) cited school as the major source of information about RH while less than half of the males reported that (Benzaken, 2011). This suggests that exposure to and experience with RHE in schools might affect students' support for RHE in schools. As mentioned in the limitations section of the study, the nature, the extent and content of

the RHE obtained from schools was not accounted for which may affect the internal validity of the findings as it determines students' experience with RHE in schools (Benzaken, 2011). Another study conducted in the UK revealed that school, in particular lessons at school, was the most preferred source of RHE among students of different ethnic groups (Coleman et al., 2007). Also, concerning students' preferences with regards to the topics to be covered by RHE females showed a higher interest in learning about emotions and relationships when compared to males, in all ethnic groups (Coleman et al., 2007). This difference in the need for different types of RHE may reflect a different attitude towards a certain RHE program depending on gender. In the same study, a significant difference was obtained between students of different ethnic groups (Coleman et al., 2007). For example, Black students wanted to learn more about biological issues, while Asian students were the most interested in contraception and STDs as an RHE topic (Coleman et al., 2007). This may hint to the effect of the social background and norms that may affect students' expectations from RHE.

## **C. The Case for Lebanon**

### ***1. An Overview on Young People in the Arab World and Lebanon***

The Arab world is currently witnessing a phenomenal increase in the proportion of young people referred to as "youth bulge" in the literature. By the year 2010, the proportion of young people aged between 15 and 29 in the Arab population reached over 20% which corresponds to more than 70 million young people (ESCWA, 2009; Mirkin, 2013). The population of young people is still expected to increase to reach 81.4 million in 2025. Despite the increase in school enrollment rates, the Arab world remains one of the regions suffering from one of the highest illiteracy rates



worldwide (over 60 million) (Hammoud, 2005; Mirkin, 2013). Only 62.2% of the region's population of 15 and over able to read and write (Hammoud, 2005). Also, the Arab "youth bulge" has been linked to significant high rates of unemployment among Arab youth ranging from 20 to 40 per cent compared to a worldwide average of 10 to 20 per cent (ESCWA, 2009; Dhillon, 2008).

A general observed trend in marriages in the Arab world states that the average age at marriage is witnessing an increase for both men and women, along with the number of never married Arab women (Rashad et al, 2005). Arab young people are delaying their marriage due to several socio-economic factors. The high rate of unemployment, the increase in girls' school enrollment rate, the high cost of marriage and economic difficulties (among other factors) have contributed to the rise in the age of marriage and celibacy rates in all Arab countries (ESCWA, 2009; Rashad et al., 2003; Rashad et al., 2004). This however does not deny the fact that unmarried young people are engaging in sexual activity. On the contrary, the widening gap between the age of puberty and marriage increases the likelihood of pre-marital sexual activity (DeJong et al., 2005). Unmarried young people may also engage in nonconventional forms of marriage usually practiced in secrecy as a "pretext or cover" for premarital sex (DeJong et al., 2005; Rashad et al., 2004). Despite all this, Arab societies are still reluctant to acknowledge the possibility of unmarried young people being sexually active (DeJong et al., 2005). A "policy of silence" surrounds Arab young people's RH and the discussion of sexual activity outside marriage is taboo (DeJong et al., 2005).

A survey was performed with 1200 Lebanese young people aged 18-25 years (mean age  $21.5 \pm 2.2$ ) and selected through multi-stage cluster sampling of households (Harb, 2010). The survey revealed that only 12 % of Lebanese people of this age group

are married, more than 41% of them hold a university degree, around 62% of them are unemployed and the vast majority (90%) reported a household income of less than 2,000\$ (Harb, 2010). What is most shocking is that around half of the Lebanese young people sampled were either considering or actively seeking to emigrate (Harb, 2010). A high level of religiosity is recorded among Lebanese young people (mean:  $3.4 \pm .84$  on a 5 point scale) with no significant difference existing between sexes and regions in terms of religiosity (Harb, 2010). Shia and Sunni Muslims have a substantially higher level of self-reported religiosity (Harb, 2010). Based on differences in media consumption preferences, Lebanese young people are shown to be a culturally heterogeneous population (Harb, 2010). The study has a high external validity as the sample was collected through a multi-stage cluster sampling method (Harb, 2010).

## ***2. Reproductive Health of Youth in Lebanon***

In Lebanon, a study has revealed a low level of knowledge about contraception and its use among university students in Lebanon (Barbour and Salameh, 2009). This study was performed on a convenience sample of 1410 students approached in a random sample of 14 public and private universities in Lebanon. Around 52% of university students considered school as a source for RHE (Barbour and Salameh, 2009). According to this study, 73.3% of male and 21.8% of female students reported having already had sexual relations among whom 48% of males and 60% of females reported ever having sex without using contraception (Barbour and Salameh, 2009). A large study was conducted on secondary school and university students in Lebanon examining their knowledge, attitudes, behaviors and practices related to RH using a mixed method approach (La Sagesse University Faculty of Health Sciences, 2012). The

quantitative component of the study assessed their levels of knowledge, attitudes and the prevalence of related risky behaviors as well as their practices and behaviors regarding HIV/AIDS, SIDs and RH through a self administered questionnaire. The number of secondary students who participated in the study was 2057 (La Sagesse University Faculty of Health Sciences, 2012). Around 60% of secondary school male students have reported ever engaging in an "intimate relationship" in both public and private school as opposed to the small percentage of over 3% among girls (La Sagesse University Faculty of Health Sciences, 2012). Around one third of sexually active students admitted not using a contraceptive method at first intimate experience (La Sagesse University Faculty of Health Sciences, 2012). Although discussion and practice of premarital sex is considered a taboo in Lebanese society, particularly when it comes to adolescents, societal gender norms tend to have higher tolerance towards young men's sexual activity before marriage than towards that of women, as is the case of other Arab countries (DeJong et al., 2007). This suggests females' and males' reporting of sexual activity might be respectively under and overestimated for reasons of social desirability. The increased sexual activity among Lebanese females may be proven by the observed increase in hymen repair operations done by Lebanese women who have engaged in pre-marital sexual relations (Usta 2000). Also, the external validity of the results obtained is judged weak as the participants were chosen through convenience sampling (Barbour and Salameh, 2009). Respondents who were not accessible - either because they refused to participate (29.5% of students approached) or because they were not present at the university – may also differ in terms of the variables studied compared to the participants (knowledge and practices regarding contraception). Hence, the generalizability of the results to all University students in Lebanon is questionable.

### ***3. Reproductive Health Education in Lebanon***

Recently, in Lebanon the National AIDS Control program in collaboration with the Center for Education Development and Research succeeded in integrating new HIV and RH topics into the national secondary school curriculum that is not yet implemented in schools (UNAIDS, 2012). This step has been preceded by years of advocacy by both public institutions and Non Governmental Organizations (NGOs) to increase awareness about the HIV/AIDS global epidemic through the implementation and evaluation of limited-scale RHE intervention programs targeting schools (UNAIDS, 2012; UNFPA, 2011c). A partnership between the Ministry of Social Affairs (MOSA) and the United Nations Fund for Population Activities (UNFPA) office in Lebanon between the years 2002 and 2009 aimed at increasing the “availability of information and enhanced awareness of youth about SRH” (UNFPA, 2011b; MOSA, 2010). This project included sensitization and advocacy activities targeting stakeholders at the community-level as well as at the decision-making level in various regions in Lebanon to promote their awareness concerning the importance of adolescents’ RHE (UNFPA, 2011b). Other interventions in this project included training of NGOs and social development center workers and adolescent peer educators in the implementation of RH awareness activities and in the provision of counseling in RH topics to adolescents in need (UNFPA, 2011b). With time, such interventions may have affected students attitudes towards RHE especially since a high number of students participating in the extra-curricular RHE programs was recorded in public schools (UNAIDS, 2012). However, proper implementation of these programs on a national scale is still needed in order for them to be effective in increasing young people's knowledge and awareness concerning sexual

and RH topics. Three main key players need to be addressed in this regard; teachers, parents and students.

#### ***4. Students' Support for Reproductive Health Education in Lebanon***

In 2005, the Global School Health Survey revealed that only 49.6% of the Lebanese students of grades 7 to 9 supported the discussion of RH topics in school classes (WHO et al., 2007). Six years later, as reported in the 2011 GSHS, 58% of the middle school supported receiving in class RHE. The percentage of students supporting RHE remains low compared to many other developing countries where it ranges from 78% to 93.9% (Benzaken et al., 2011; Chen et al., 2008; Ogunjimi et al., 2006; Orji et al., 2006). Substantially higher levels of support for RHE in schools were recorded among students in other developing countries where the discussion of sexual relations outside marriage is also taboo, when compared to Lebanon (Benzaken et al., 2011; Nath, 2009; DeJong et al., 2007). The differences in the level of agreement may be more justified by the lack of awareness among Lebanese students concerning the importance of school-based RHE than by a lower need for such education. In fact, the high participation rate of Lebanese students in voluntary extra-curricular activities on RH organized by NGOs in 60 public schools (UNAIDS, 2012) suggests the perceived need for RHE among students. Four focus group discussions conducted with 60 female and male intermediate students from various regions in Lebanon reflected the perceived need and importance of a comprehensive RHE program among these students (UNFPA, Lebanon, 2011a). However, due to the lack of generalizability of these results, they may not constitute enough evidence to advocate for RHE implementation (UNFPA, Lebanon, 2011a).

As seen in the KABP study, the most three sources of RH knowledge as classified by secondary school students in Lebanon as important were Friends (53.3%), school teacher (48.2%) and TV shows (43 %) among private school students and internet (48.8%), family members other than parents (41.5%) and school teacher (41.4%) (La Sagesse University Faculty of Health Sciences, 2012). The vast majority of students in both public (83%) and private (88.3%) schools were shown to support the discussion of RH in classrooms (La Sagesse University Faculty of Health Sciences, 2012). No gender differences were observed. Students who did not support the discussion of RH topics in class were asked about the reason for their rejecting opinion (La Sagesse University Faculty of Health Sciences, 2012). In private schools, around half of them expected their classmates make fun of these topics, one third thought they already know what they need to about RH topics (La Sagesse University Faculty of Health Sciences, 2012). Respectively, 29% and 13% of them were embarrassed to discuss such topics in public and in front of their friends in particular (La Sagesse University Faculty of Health Sciences, 2012). In public schools, the results obtained were quite different (La Sagesse University Faculty of Health Sciences, 2012). Around half of the public school students who did not support in-class RHE justified their choice by being embarrassed to discuss these topics in public while 40% and 30% were concerned about other students making fun of the topic and embarrassed to discuss them in front of their friends, respectively (La Sagesse University Faculty of Health Sciences, 2012).

## CHAPTER III

### METHODS: QUANTITATIVE PHASE (ANALYSIS OF THE GSHS 2011 DATA)

#### **A. Data Source**

The Global School Health Survey (GSHS) is a worldwide collaborative surveillance project aiming to assist countries to monitor and assess health protective and risk factors among school attending adolescents primarily aged 13-17 (WHO et. al, 2007). It was developed by the World Health Organization (WHO) in collaboration with United Nations Children's Fund (UNICEF), United Nations Educational, Scientific and Cultural Organization (UNESCO), and Joint United Nations Programme on HIV and AIDS (UNAIDS) with the technical assistance of the Center for Disease Control and Prevention (CDC) (CDC, 2003).

The three main purposes of the GSHS are: (1) Help set priorities, inform and advocate for programs particularly concerning school health and youth health; (2) Allow for comparisons between countries concerning young people's health behaviors and protective factors; (3) Help detect trends in the prevalence of young people's health behaviors and protective factors by country for youth health promotion and school health (CDC, 2003).

As of the year 2011, 73 countries have already completed at least one GSHS with more than 420,000 student participants, worldwide. In the Eastern Mediterranean Region, the Eastern Mediterranean office of the World Health Organization (EMRO) has conducted the GSHS in 16 countries: Algeria, Djibouti, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Occupied Palestinian Territories, Pakistan, Syria, Tunisia, United Nations Relief and Works Agency for Palestine Refugees in the Near

East (UNRWA), United Arab Emirates (UAE) and Yemen. In Lebanon, the GSHS has been conducted twice, first in 2005 and subsequently in 2011 targeting students of grades 7-9.

## **B. Instrument**

The GSHS is a school-based survey of students aged 13-17 years. It provides a nationally representative view of students' attitudes and behavior in both public and private schools concerning several topics through a self-administered questionnaire (WHO et al., 2007).

The GSHS questionnaire assesses students' health behaviors and protective factors for the leading causes of young people and adults' morbidity and mortality worldwide (CDC, 2003). The questionnaire contains some or all of the modules covering respondent demographics, hygiene, dietary behaviors, physical activity, mental health, tobacco, alcohol and drug use, violence and unintentional injury protective factors, sexual behaviors that contribute to HIV infection, other sexually-transmitted infections, and unintended pregnancy (CDC, 2003).

The questions included in the survey are divided into three categories: (1) the mandatory core questions for comparability reasons which are set by the Center for Disease Control and Prevention (CDC) headquarters located in Atlanta, (2) the optional core expanded questions also set by CDC which can be chosen from to elaborate more on a certain module, and (3) the Country Specific questions which are set by a committee in the corresponding country.

In 2011, GSHS in Lebanon included the following modules: alcohol use; dietary behaviors; drug use; hygiene; mental health; physical activity; protective factors;



and violence and unintentional injury. Others modules were omitted, i.e. (1) respondent demographics, (2) sexual behaviors that contribute to HIV infection, other sexually-transmitted infections, and unintended pregnancy and (3) tobacco use.

### **C. Sampling**

The full country report of 2011 GSHS that includes the detailed sampling procedure was not available online by the time this thesis is written. The WHO representative in Lebanon was therefore contacted for information. In order to select a nationally representative sample, a two-stage stratified cluster sample design was adopted. In the first stage, schools eligible to be included in the study were all schools offering the seventh, eighth and ninth grades and that enroll overall 40 or more students from all areas in Lebanon. These schools constituted the sampling frame for the survey. The schools had a probability of inclusion in the sample proportional to their enrollment size. The second stage consisted of the selection of grade 7, 8 and 9 classes where a self-administered questionnaire was distributed to all students. The school response rate was 88% and that of students was 99%. A total of 2286 students from 44 schools participated in the survey. Students completed their answers to a self-administered questionnaire on computer-scannable answers sheets.

### **D. Measures**

#### ***1. Outcome of Interest***

For this study, the main outcome of interest is students' support for in-school RHE, it was assessed by the following question: " Do you support being taught about reproductive health topics in school classes?". Three answers were possible "Yes";

“No” and “I don't know”. For analysis purposes, we combined the answers "No" and "I don't know" together since they both meant the student was not sure of his/her support for RHE. A binary outcome variable was obtained with two possible outcomes 0= “No/I don't know” and 1= “Yes”.

## ***2. Independent Variables***

The independent variables tested for association with the main outcome can be clustered into 5 categories:

### **a. Socio-demographics**

This category includes the categorical variables:

- Age (1= 11 or younger, 2= 12, 3= 13, 4= 14, 5= 15 and 6= 16 and older);
- Sex (1= male and 2= female);
- Grade level (1= 7<sup>th</sup> grade, 2= 8<sup>th</sup> grade and 3= 9<sup>th</sup> grade);
- Type of school (0= private and 1= public);
- Self-perceived body image was assessed by the question "How do you describe your weight?". The possible answers were recombined as follows:  
1= “very/slightly underweight”, 2= “about the right weight”, 3= “slightly/very overweight”, 4= “I don't know”;
- Household food insecurity was assessed by the question "During the past 30 days, how often did you go hungry because there was not enough food in your home?", the answers were recombined into 3: 1= “never/rarely”, 2= “sometimes” and 3= “most of the times/always”;
- The reported body mass index (BMI) interpreted by age and sex - calculated

using students' heights and weights as reported by them – was included in the data provided by the WHO. The BMI was obtained in the form of 3 binary variables Underweight, Overweight and Obese with "yes/No" answers. We have recombined these variables into one categorical ordinal variable having 1= “Underweight”, 2= “Normal weight”, 3= “Overweight” and 4= “Obese” as outcomes.

b. Substance Use

○ *Alcohol consumption:*

- Ever drank alcohol variable was created using the question "How old were you when you had your first drink of alcohol other than a few sips?" where answers were recombined to 1= "yes" and 2= "No";

○ *Drugs consumption:*

- Lifetime use of marijuana was measured using the following possible answers: 1= “0 times”, 2= “1 or 2 times” , 3= “3 to 9 times”, 4= “10 to 19 times”, 5= “20 or more times”;
- Lifetime use of amphetamines or methamphetamines was measured using the following possible answers: 1= “0 times”, 2= “1 or 2 times”, 3= “3 to 9 times”, 4= “10 to 19 times”, 5= “20 or more times”;
- Both variables cited above were merged into one variable named "ever used drugs" with possible answers: 1= "yes" and 2= "No".

Five new binary variables with possible answers 0=Yes and 1=No were created by recombining the previous variables. These variables are "ever drank alcohol", "ever used marijuana", "ever used amphetamines or methamphetamines", "ever used

drugs" and "ever used substance".

c. School and Home Environment

This category contains the following categorical variables:

- Parents' understanding of child's problems as reported by students was measured by the question "During the past 30 days, how often did your parents or guardians understand your problems and worries?" with the following recombined possible answers: 1= "never/rarely", 2= "sometimes" and 3= "often/always";
- Parental attention to child as reported by students was measured by the question "During the past 30 days, how often did your parents or guardians give you attention and listen to you?" with the following recombined possible answers: 1= "never/rarely, 2= "sometimes" and 3= "often/always";
- Communication with parents about RH was measured by the question "Have you ever talked about HIV infection or AIDS with your parents or guardians?" with possible answers 1= "Yes" and 2= "No";
- Physical abuse by teacher assessed by the question "During the past 12 months, did your teacher ever hit, slap, throw something at you (chalk), or physically hurt you on purpose?" with 1= "Yes" and 2= "No" as possible answers;
- Being bullied for reasons related to sex was assessed by the question: "During the past 30 days, how were you bullied most often?", the answer choices ("I was not bullied during the past 30 days"/ "I was hit, kicked, pushed, shoved around, or locked indoors/I was made fun of because of my

race, nationality, or color”/ “I was made fun of because of my religion”/ “I was made fun of with sexual jokes, comments, or gestures”/ “I was left out of activities on purpose or completely ignored”/ “I was made fun of because of how my body or face looks”/ “I was bullied in some other way”) were recombined into: 1= “Yes” and 2= “No” as possible answers of the variable "was bullied for reasons related to sex";

- Reported friendliness of schoolmates was measured by the question "During the past 30 days, how often were most of the students in your school kind and helpful?" with the following recombined possible answers: 1= “never/rarely”, 2= “sometimes” and 3= “often/always”.

d. Exposure to Health Education in School

This category includes the following categorical variables with the possible answers "Yes/No/I don't know" recombined into 0= “No/I don't know” and 1= “Yes”:

- Exposure to Healthy nutrition education in class measured by the question "During this school year, were you taught in any of your classes the benefits of healthy eating?";
- Exposure to education in class about self-hygiene measured by the questions "During the past 12 months, were you taught in any of your classes about the importance of hand washing with soap and water?" and "During the past 12 months, were you taught in any of your classes in school about the importance of hand washing with soap and water?";
- Exposure to avoiding bullying skills education in class measured by the question "During the past 12 months, were you taught in any of your classes

how to avoid being bullied?"

- Exposure to fighting stress skills education in class measured by the question "During the past 12 months, were you taught in any of your classes in school how to handle stress in healthy ways?"
- Exposure to importance of physical activity education in class measured by the question: "During the past 12 months, were you taught in any of your classes the benefits of physical activity?"
- Exposure to alcohol education in class measured by the question: "During this school year, were you taught in any of your classes the problems associated with drinking alcohol?"
- Exposure to drugs education in class measured by the question: "During the past 12 months, were you taught in any of your classes the problems associated with using drugs?"
- Exposure to HIV/AIDS education in class measured by the question: "During this school year, were you taught in any of your classes how to avoid HIV infection or AIDS?"
- Exposure to HIV/AIDS extracurricular education measured by the question: "During this school year, were you taught in any of your extra-curricular school activities how to avoid HIV infection or AIDS?"
- Number of health education topics given in class was measured by generated a discrete score ranging from 0 to 10. The score was based on the combination of all variables cited here above.

Two new combined categorical variables were created:

- Exposure to any type of health education in class (healthy nutrition or

hygiene or oral hygiene or avoiding bullying skills or alcohol problems or drugs problems) has two possible answers 0= “No/I don't know” and 1= “yes”;

- Exposure to alcohol, drugs or HIV/AIDS education has two possible answers 0= “No/I don't know” and 1= “yes”.

e. Knowledge, Attitudes and Skills Regarding RH and RHE

- Perceived sex refusal skills was assessed by the question: "Do you know how to tell someone you do not want to have sexual intercourse with them?" with possible answers 1= “Yes”, 2= “No/I don't know”;
- Knowledge of role of abstinence in avoiding HIV infection was assessed by the question: "Can people protect themselves from HIV infection or AIDS by not having sexual intercourse?" with possible answers 1= “Yes”, 2= “No” and 3= “I don't know”.
- Ever heard of AIDS with possible answers 1= “Yes”, 2= “No”;
- Preference for mixed or single-sex classes for discussion of RH topics was assessed by the question: "Do you prefer that the discussion of RH topics to be in “boys only” or “girls only” classes?" with possible answers (Boys only, Girls only, Boys and Girls together and I don't know) recombined into 1= “single-sex”, 2= “mixed-sex” and 3= “I don't know”;
- Opinion on appropriate age for starting RHE was assessed by the question: "When should education on RH start?" with possible answers: 1= “Before the age of puberty”, 2= “During the age of puberty”, 3= “When one is getting ready for marriage”, 4= “at marriage” and 5= “I don't know”.

## **E. Analysis**

Statistical analyses were performed using STATA (version 10) and SPSS (version 18). Statistical analysis took account of the two-stage stratified cluster sampling design by incorporating sample weights to obtain unbiased results. For that purpose, the "svyset" command was used in STATA.

In order to check for internal consistence between the variables used to create the score measuring "the number of health education subjects given in school", the Cronbach's alpha coefficient was used. The coefficient obtained was around 0.7 indicating "good internal consistency" between the variables. The score considered reliable was used as a discrete independent variable in the analysis.

Since the outcome studied "students' support for RHE" is binary, chi-square test was performed to test for association between the outcome and each independent variable, individually. An unadjusted Odds Ratio (OR) was obtained.

- Model (1):

All predictors that proved to be significantly associated with the outcome at the bivariate level were first included in a model (1) containing only school type, gender, grade level and the variable in question. This model was created to test for the significance of the association between the independent variables in question and students' support for RHE after adjusting for basic socio-demographic variables. Model (1) is less strict than model (2).

- Model (2):

All predictors that proved to be statistically significant at the bivariate level were included in the final multiple logistic regression model (2). We note here that for



variables used as indicators for the same concept (for example, alcohol consumption), the variable that was the most significantly associated with the outcome (lowest p-value) was chosen to be included in the final model. Adjusted ORs were obtained reflecting the strength of the association between a variable and the main outcome adjusting for the effect of the other variables included in the model.

A cutoff point for statistical significance was taken at  $\alpha=0.05$ , meaning that a p-value less than this value indicated a statistically significant association.

#### **F. Ethical considerations**

Permission to conduct a secondary analysis of the 2011 GSHS was requested and granted by the World Health Organization (WHO) in Lebanon, the Lebanese Ministry of Education and Higher Education (MEHE) and the Lebanese Ministry of Public Health (MOPH). Confidentiality and anonymity were respected. The data obtained does not include any identifiers of the participants. Permission to conduct the quantitative phase of the study was granted by the American University of Beirut (AUB) Institutional Review Board (IRB) on February 18, 2014.

## CHAPTER IV

### RESULTS: QUANTITATIVE PHASE

In this chapter, the main findings of the quantitative analysis of the data are presented. For more information please refer to Table 1 (Sample Descriptives), Table 2 (Adjusted and Unadjusted OR of Support of School-based RHE).

#### **A. Sample Descriptives**

The sample consisted of 2,286 students in total of which 1,064 were males (46.7%) and 1,220 were females (53.3%). The majority of the participants were aged between 13 and 15 years (76.8%) while 12% were 12, another 10.3% were 16 and older and only 1% 11 years or younger. The number of students in the sample who were in grade 9 was 452 (29.2%), 910 (32.7%) were in grade 8 and 922 (38.1%) in grade 7. The sample was almost equally comprised of private (43.2%) and public (56.8%) school students.

The vast majority of the participants (86.3%) "never or rarely" went hungry for lack of food availability at home in the past 30 days while 10% "sometimes" did and 3.7% "most of the time or always". Around 15% of the students reported drinking alcohol in the last 30 day with 7% of the sample consuming 2 or more drinks the same day. More than 20.4% of students reported having experienced binge drinking. Around 4.7% reported ever using drugs. Reported use of amphetamines or methamphetamines (3.4%) and marijuana (3.1%) was almost equally prevalent among students, with more than half of the students who have ever used drugs reporting doing so more than twice.

Concerning the school environment, the majority (69.1%) of students described their school-mates as being "kind and helpful" "always or most of the time" in the past 30 days, one fifth "never or rarely" and the rest (12.9%) "sometimes". A quarter of the students reported having ever been physically abused by their teacher. A fifth of students reported ever being victims of bullying. As for students' relation with their parents, more than a third of students said their parents never or rarely understood their problems and worries. The majority of students (64%) never discussed the topic of HIV/AIDS with their parents or guardians.

On the level of skills and knowledge related to RH, only 37% of students knew that abstinence is a protective factor against HIV infection. Around 30% of the students had never heard of HIV/AIDS= مرض الايدز/السيدا (70.4% of males and 71% of females). Slightly less than a third of the students in the sample said that people cannot protect themselves from HIV/AIDS by not having sex and an equal percentage of students reported not knowing the answer for that question. Around 58% of students reported having sex refusal skills (59.4% of males versus 57.7% of females).

On average students were exposed to 4.09 health education topics in class out of the 10 possible topics present in the questionnaire in the last year. More than half of the sample was taught in class about the importance of physical activity (54.4%) and about healthy nutrition (56.9%). Around two fifth of the students were exposed to in-class education about hand hygiene (42.5%) and about oral hygiene (41%). Less than one third of the students were taught in class skills to avoid bullying (31.2%) and fight stress (28.5%). Half of the students were informed in class about the negative effects of drugs consumption and a smaller percentage of 42% about problems associated with alcohol drinking. Two fifth of the students (39.9%) reported being exposed to RHE in

class. Slightly more than a quarter of the students (28.7%) participated in extra-curricular activities providing RHE. All health education topics were delivered during the last year of the survey.

As for students' opinions regarding RHE, more than half of the students (58.1%) supported the discussion of RHE in school classes (60.7% of males and 55.9% of the females). Around 44% of students preferred the discussion of RH topics in single-sex classes (52% of them were males versus 48% females). More than one third of the participants (39.9%) preferred RHE to be done in mixed classes (43.5% of males and 53.4% of females) and an almost equal percentage (38.3%) said it should start before puberty.

## **B. Bivariate Analysis and Unadjusted Associations**

In this section are presented the results of the unadjusted association between the main outcome "students' support for in class RHE" and several independent variables grouped into 5 main categories: Socio-demographics, substance use, school and home environment, knowledge attitude and skills regarding RH and RHE and exposure to health education in school. Table 3 shows the results calculated at the binary level with a significance level  $\alpha=0.05$ .

### ***1. Socio-demographics***

A significant positive association was found between students' support for RHE and their increasing grade level. For example, grade 9 students were more than twice as likely to support RHE than grade 7 students (OR=2.19, p-value=0.005). Students who in the past 30 days went hungry "sometimes, most of the time or always"

for lack of food availability at home were 0.74 times less likely to support RHE in class than those who "never or rarely" did (p-value=0.002).

## ***2. Substance Use***

Having ever experienced binge drinking was significantly associated with students' support for RHE (p-value=0.007), particularly having binge drank once or twice in life multiplied the odds of supporting in class RHE by 1.89 (p-value=0.031). All other categories ("0 times, 3 to 9 times, 10 or more times") were not significantly associated with the main outcome. Using drugs decreased the odds of supporting RHE (for amphetamines and methamphetamines: OR=0.41, p-value=0.005; for marijuana OR=0.39, p-value=0.004). However, ever drinking alcohol was positively associated with students' support for RHE (OR=1.61, p-value=0.001). In particular, as compared never drinking alcohol in the past 30 days, drinking 1 to 5 drinks in the same day increased the odds of students supporting RHE while drinking 5 or more drinks decreased it (OR=0.25, p-value=0.017).

## ***3. School and Home Environment***

Being subjected to bullying or physical abuse by the teacher, feeling one's problems and concerns are not understood or reporting not being given enough attention by parents were all not associated with students supporting RHE in class. However, having ever discussed RH topics with parents (OR=1.85, p-value<0.0001) was significantly associated with support of in class RHE among students. Also, students who felt that schoolmates were often or always "kind and helpful" were 1.48 times more likely to support RHE compared to those who never or rarely felt it (p-value=0.003).

#### ***4. Knowledge, Attitude and Skills Regarding RH and RHE***

When asked about the appropriate time for starting RHE, students who said it should be before or during puberty were 3.33 times more likely to support RHE than those who said it should begin right before or at marriage (p-value<0.0001). Students who said RHE should be before or during puberty were also 6.67 times more likely than those who did not know how to answer this question to support RHE in class (p-value<0.0001). The odds of supporting RHE among students who preferred having RHE in mixed classes were 3.3 times those of students preferring it to be in single-sex classes (p-value<0.0001). Students who have ever heard of HIV/AIDS (OR=2.08, p-value<0.0001) and those who reported having sex refusal skills (OR=1.61, p-value<0.0001) were significantly more likely to support RHE.

#### ***5. Exposure to Health Education in School***

Supporting RHE was found to be significantly negatively associated with the lack of each of the following in-class health education topics: healthy nutrition (OR=0.66, p-value=0.002), hand hygiene (OR=0.79, p-value=0.046), avoiding bullying (OR=0.67, p-value=0.002), alcohol problems (OR=0.55, p-value<0.0001), drugs problems (OR=0.44, p-value<0.0001), benefits of physical activity (OR=0.64, p-value<0.0001), and HIV/AIDS (OR=0.57, p-value<0.0001). The only type of health education that was not significantly associated with the main outcome was oral hygiene education (p-value=0.647). In summary, students who were exposed to any of the in class health education topics mentioned were twice as likely to support in class RHE as compared to those who were not exposed to such classes (p-value=0.001).

### **C. Multiple Logistic Regression Model**

A total of 13 variables, that showed significance at the binary level, were included in the final model. More details are provided in Table 4. The final model includes the following variables:

- Age;
- Gender;
- Class level;
- Household food insecurity
- Communication with parents about RH
- Reported friendliness of schoolmates
- Number of health education types given in class
- Opinion on appropriate age for starting RHE
- Preference for mixed or single-sex classes for discussion of RH topics
- Ever heard of AIDS
- Perceived sex refusal skills
- Ever drank alcohol
- Ever used drugs

#### ***1. Socio-demographics***

Gender was significantly associated with the main outcome with males being 1.2 times more likely to support RHE in class ( $p$ -value=0.017) adjusting for the effect of all other variables in the model. The higher the grade level the more likely it was for middle school students to support RHE in class. Grade 9 students were 1.8 times and

grade 8 students 1.1 times significantly more likely to support being taught RHE in class when compared to grade 7 students. Household food insecurity lost statistical significance when included in the multilogistic regression model.

## ***2. Substance Use***

Ever drinking alcohol was associated with twice the odds of supporting RHE as compared to never drinking alcohol in life, controlling for all other variables. Lifetime drug use did not show statistical significance in the model.

## ***3. School and Home Environment***

Controlling for all other variables, having ever heard of AIDS was significantly positively associated with the main outcome (p-value=0.011) meaning that students who have never heard of HIV/AIDS education were 0.74 times less likely to support RHE in class. Perceived sex refusal skills was no longer associated with students' support for RHE after adjusting for the effect of the other variables of the model (p-value=0.859). Having discussed HIV/AIDS topic with parents was not significantly associated with the support for RHE (p-value= 0.182), controlling for other variables.

## ***4. Knowledge, Attitude and Skills Regarding RH and RHE***

Controlling for all other variables, students who answered the question "When should education on RH start?" by "before the age of puberty" or "during the age of puberty" were 3.45 times more likely than those who chose "when one is getting ready for marriage" or "at marriage" (p-value<0.0001) and 4.76 times more likely than those who answered "I don't know" (p-value<0.0001) to support RHE in class. The odds of



supporting RHE among students who preferred having RHE in mixed classes were 3.45 times those of students who preferred it to be in single-sex classes (p-value<0.0001), adjusting for the effect of the other variables.

### ***5. Exposure to Health Education in School***

A one unit increase in the score of "number of health education types given in class" multiplies the odds of supporting RHE by 1.23 (p-value<0.0001). This means that with every exposure to an additional health education topic, students were 1.23 times more likely to support RHE in class, keeping all other variables in the model constant.

In summary, at the bivariate level, support for in-class RHE was associated with gender, grade level and household food insecurity as socio-demographics. In particular, males were more likely to support RHE than females. The odds of supporting RHE increase with the increase in grade level. Those who went hungry "sometimes, most of the times or always" because of lack of food at home were less likely to support RHE compared to those who did so "rarely or never". Substance use was also significantly associated with the main outcome with drugs consumption decreasing the odds of supporting RHE. On the other hand, alcohol consumption increased the odds of supporting RHE in class. However we note that excessive alcohol consumption (having drunk more than 5 glasses a day vs. never drinking, in the past 30 days) decreased the odds of supporting RHE. Having discussed RH topics with parents and finding school mates "kind and helpful" were both positively associated with the outcomes. As for students' recommendations regarding RHE in class, preferring it to be in a mixed class (vs. single-sex class) and saying it should start right before or during puberty (vs. before or at marriage) increased the odds of supporting RHE. Having ever-heard of HIV/AIDS

and having been exposed to other health education topics in school were both positively associated with the main outcome. Even more, the odds of supporting RHE in class increased with the increase in the number of health education topics discussed in class in the last year.

In model (1), controlling for gender, grade level and type of school, all variables that showed statistical significance at the bivariate level did were still statistically significantly associated with the outcome except for finding school mates helpful and kind (please refer to model (2) in table (2) for further details).

In model (2), controlling for all the variables cited above that showed statistical significance at the Bivariate level, five still showed a statistically significant association with the main outcome: grade level, ever drinking alcohol, preferring mixed class for RHE, recommending RHE start before or at puberty and exposure to other health education topics.

## CHAPTER V

### METHODS: QUALITATIVE PHASE (IN-DEPTH INTERVIEWS WITH STUDENTS)

#### **A. Justification of Methods**

The objectives of this phase being: (1) to elicit students' understanding of the term "RHE" and (2) to explore their attitude towards in-school RHE, we are interested in students' perspective regarding RHE. In social sciences, people are considered capable of reflecting on their environment (Bryman, 2008; Silverman, 2011). In this phase of the study, our main interest was to explore in depth students' expectation from RHE as well as understanding their perceived reasons behind them supporting or not RHE in school. This qualitative phase, although not generalizable, will help us understand how students perceive RHE in school, and what meaning they attribute to it as part of their experiences and social world (Bryman, 2008; Silverman, 2011). The study subjects – here the students – may understand things differently than researchers, parents, teachers and other stakeholders (Bryman, 2008). New themes unthought-of themes can emerge using this type of qualitative methods (Bryman, 2008). For these reasons, for this phase, semi-structured in-depth interviews individually with a convenience sample of middle school students.

#### **B. Pilot Study**

A pilot study was conducted with two middle school students and their parents to test if the language used in both the consent form and the interview questions are understandable to both.

The pilot study was performed on two of my relatives and family friends that

are in middle school and their parents. I briefly explained the aim of the study to both the parents and the children; oral consent was to be taken from both the parents and the children to participate in the pilot study. The parents were asked to read the consent form and explain to me how they understood each section to make sure the language used was understandable to "non-health literate" parents. The two children were asked to read the assent form and explain their understanding of it to check whether the language used is understandable to middle school students. The interview guide was read out loud to the 2 students (in a private room), they answered briefly to the questions to help check their understanding of the questions asked. We note that the pilot study was used to test readability and understanding of the consent form and interview questions and that no data was retrieved to be included in the analysis.

### **C. Sampling**

The sampling frame is formed of all middle school students attending private or public schools in Lebanon. No exclusion criteria was imposed as the aims of the study are to elicit grade 7-9 students' understanding of and expectations about RHE and to explore grade 7-9 students' support or lack thereof for RHE among a sample of students from private and public schools in Lebanon.

The sampling process is based on a two-stage convenience sample. First, a sample of three private and four public schools located in the capital Beirut was selected. The owner of an NGO called MMKN was contacted to facilitate the contact with four public schools. MMKN is involved in designing and implementing after-schools academic-support programs in public schools in Lebanon. After a first visit to one of these schools, the director stated that she does not have the authority to allow us

to conduct the study on the school premises and that the MEHE's permission should be sought. An application was submitted to the MEHE and an official approval to conduct the study in the four public schools suggested by MMKN was obtained. As for private schools, we tried to diversify the sample as much as possible in terms of economic level as determined by the tuition fees. For each school contacted, I met with the counselor or director to explain the recruitment procedure and interview process. All forms related to the study were also presented i.e. Parental consent form, child assent form, the preliminary interest to participate in the study form. A "school's permission to conduct the study" form, was presented to be signed by the person entitled to give permission to conduct the study in the school. The permission was obtained from one high income, one middle income and one low income school. A rejection was obtained from one high income school.

The administration of only one private school of the three approached agreed to participate in the study. As for private schools, only one middle-high income school. The two other private schools that approved to participate in the study were not accessed either for security reasons (low income private school located in a geographic area judged unsafe due to frequent explosions) or due to time constraints (high income private school).

As a second step a convenience sample of participants was recruited from each school. First, the number of classes to be addressed as well as the level was kept for the school administration to decide. Grade 9 classes had official examinations and were tight in time to finish the curriculum. Grade 7 students were considered as "too young" to be addressed in such a sensitive topic by many administrators. Most schools allowed access to grade 8 students.

I visited the classroom(s) assigned by the school administration for an introductory session. During this session, I explained briefly the aims of the study to the students and distributed two forms: (1) a "Preliminary interest to participate in the study" form to be filled by interested students and deposited in a locked box placed at the administrations' office (including my number for parents to contact me to set a date for the interview), (2) the parents' consent form to be taken home and signed by interested parents. During the introductory session, students were collectively asked to give their parents the distributed consent form in case they were interested to participate in the study, and to ask their parents to contact me on the phone to set a time for the interview and ask any questions or inquiries they have about the study. On the agreed date, the student had to hand in the signed parental consent form to me before the start of the interview.

#### **D. In-depth Interviews**

I conducted semi-structured in-depth interviews individually with a convenience sample of middle school students. The interview took place (1) in a private place on school premises during the recess time or (2) right after school (according to parents' preference). The interview lasted 20 to 30 minutes long. The student was given the choice of the language to be used during the interview (Arabic or English). Most students chose the Arabic language as they felt more at ease expressing themselves in their mother tongue except for the students of one high income private school who preferred in their majority to have the interview conducted in English.

## **E. Topic Guide**

Since the interview was semi-structured, a topic guide was constructed with detailed sentences to be used during the interview. The topic guide started with the presentation of the researcher (myself), the aims of the study as well as an introduction to the assent form to be read before the start of the interview. The topic guide was reviewed by both the advisor and the IRB.

The topic guide was divided into 2 main sections:

- Students' definition of "RHE" including questions like:
  - What is the first thing that comes to your mind when you hear the term "RHE"?
  - So can I ask you please to define the term "RHE" using your own words?
  - In your opinion, what are the possible sources from which an adolescent like you can learn about RH?
  - Among these sources you just cited, which ones do you prefer and why?

A transition sentence was used to connect the two parts in a smooth way without interrupting the flow of the discussion. An example of transition sentence used would be: "You mentioned school as a possible source for RHE; I would like to elaborate more on this idea".

- Students' opinion about in school RHE including questions like:
  - Do you support that RHE would be given in school classes?
  - Can you please explain to me why?

At the end of each section, I repeated the main points of student's answers in a sort of a wrap-up without changing the meaning or wording used by the student. Then the student was asked whether he/she has an additional idea related to the topic discussed to add.

For the first couple of interviews the topic guide followed included detailed instructions about the questions to be asked. As more interviews were conducted, the topic guide was slightly changed without altering the main themes tackled. For example, prompts were added to each question based on students' answers to the questions and themes mentioned (please refer to the analysis section for further details). The prompts were not used in any way to guide the interviewee or shape his/her answer but only to help in the identification of recurring themes and ask the student to elaborate more on a certain notion mentioned in a previous interview with another student.

## **F. Transcription**

Transcripts were written in the same day of the interview. This helped me write down details of the conversation accompanied by my personal side notes and impression of the interview while I still remembered them. Transcripts were done based on the recording and notes taken during the interview. I also included later reflection regarding the interview. The writing of transcripts coupled with a deep reflection on interview content helped me to alter the interview guide as the interviewing process progressed. Prompts taken from previous interviews were added to the topic guide indicating important notions to stress on in future interviews. Since I became more familiar with students' understanding of and need for RHE, my personal notes included in the transcripts became more elaborate putting in relation different interviews. As a native Arabic speaker, I translated the transcripts of the interviews conducted in Arabic. In case I had doubts about the accurate translation of a word or notion I referred to an English speaking Arabic High School teacher who helped me in the choice of the appropriate English wording.



## **G. Analysis**

Interview transcripts were analyzed using thematic analysis. Coding of data was done in grounded theory where themes and subthemes were extracted from indicators in the data (Bryman, 2008). I constructed a summary table including all themes, subthemes and indicators along with my personal notes linking the themes obtained to the objectives of the study. The indicators used were quotes illustrating the subthemes. They were linked to the interviewee's gender, grade level and school name and type (private vs. public, and for private schools: high vs. middle vs. low socio-demographic level). The analysis of the first transcript was reviewed by my advisor to make sure that I was able to cover all themes related to the research question mentioned in the interview.

- Ethical considerations

The study conducted respected all forms of anonymity and confidentiality. During the recruitment process, the form filled by interested students with identifiers on it, was deposited in a locked box placed at the administration's office. This form was destroyed right after finishing all interviews in the corresponding school. Participants were assigned numbers that are not linked in any way to their names or any identifier. Only the gender, the grade level (not the class section) of the participant and the school name were noted related to the participant's number for their relevance in the analysis.

A written consent was signed by one of the participant's parents or guardians before the interview. A copy of the consent form was given to them. An assent form was read to the student before the start of the interview. The form explained the research aims and procedure as well as the participant's role and rights using simplified terms. The student wrote down his initials on the assent form. He was then given a copy

of it. The interview took place in a private room in the school premises. Participants who have been victims of sexual abuse risked feeling discomfort while discussing RHE. This risk may have been reduced by the fact that the questions asked covered only the definition and opinion about RHE. No personal views or experiences were requested. We also provided all participants with the hotline number 1714 of the Ministry of Social Affairs destined to report all types of child abuse.

Permission to conduct the qualitative phase of the study was granted by the American University of Beirut (AUB) Institutional Review Board (IRB) on April 2<sup>nd</sup>, 2014.

## CHAPTER VI

### RESULTS: QUALITATIVE PHASE

#### **A. Description of the Sample**

Over 120 middle school students were approached through a recruitment session in two grade 8 classes in a private school and one grade 9 and two grade 8 classes in the public school. Five of the 120 students approached accepted to participate in the study. We did not have any information regarding any objection from parents while their child was interested in participating. One public school female girl has presented the consent form signed by her parents then changed her mind and preferred not to participate on the day of the interview. Another private school student has refused to participate while one of his parents has contacted me to show interest in the study. The sample was constituted of two were females (hereafter referred by fictitious names as Sherin and Dina) and 3 were males (hereafter referred to by fictitious names Nabil, Talal and Samir). The age of the students was not recorded as it may constitute an identifier to track participants. Two students were recruited from a middle to high income private school while three came from one lower income public school, both schools being in predominantly Muslim areas of Beirut. The majority of interviewed students were in grade 8 (4 students) and only one was in grade 9. No questions were asked assessing personal experiences in RHE, and information about previous exposure to RHE was not asked about.

## **B. Retrieved themes**

### ***1. Students' definition of RHE are unclear and diverse***

Most students expressed their lack of a clear understanding of the term RHE. No two definitions given by the students were found to be consistent. Many perceived the scope of RHE to be limited to starting a family and marriage. All students interviewed did not understand RHE in a broad or comprehensive aspect.

#### **a. Lack of clear understanding of the term RHE**

Some students found it hard to state a clear definition of the term RHE. In particular all three public school students expressed explicitly that they did not clearly understand the term RHE while the two private school students directly stated a definition when asked to. Dina, a grade 9 public school student said:

"I will not be able to explain it [RHE]..." *Dina (female, public school, grade 9)*

Another public school student *Nabil* stated explicitly that he is not familiar with the term "RHE":

"I don't have a definition. I don't get what you mean by it [RHE]." *Nabil (male, public school, grade 8)*

*Nabil* also referred to a common confusion among his classmates regarding the term RHE during the study recruitment session.

"This is the sentence [RHE] I did not understand well when you came last time and said it. We asked you about it [the meaning of RHE] and you told us that we are the ones who should answer. So I did not get what you meant exactly by it." *Nabil (male, public school, grade 8)*

Interestingly, one of the students *Sherine*, a grade 8 private school student had a broader understanding of the term RHE and the topics it may address as compared to

the other students. She believes students of her age lack a clear understanding of the term RHE. According to her, her classmates are not as aware about the topic as she is.

"Most people don't have awareness, they don't know what it [RHE] means – especially in my age... Maybe I know a bit more than my classmates but they don't, if you ask them." *Sherine (female, private school, grade 8)*

b. Different definitions of RHE

The interviews revealed a clear inconsistency in the conceptualization of RHE. When asked to define RHE, some students related it to childbearing and reproduction, others to marriage and family formation while some students understood it as a means to educate people about diseases affecting children or to spread awareness among young people about STIs. Two public school students *Samir* and *Dina* mentioned family formation:

"it means how I'm going to have children? Start a family?" *Samir (male, public school, grade 8)*

"the majority of people think about having children but they don't think about the future." *Dina (female, public school, grade 9)*

Two students related the term to childbearing:

" RHE is when the women is pregnant she must rest and do not do unhealthy things...and also like how the baby can come" *Talal (male, private school, grade 8)*

One of the definitions revealed a link to diseases that can affect children:

"How their children can grow up in a more scientific way. Maybe they can have diseases or something like that." *Dina (female, public school, grade 9)*

One private school student *Sherine* understood it as a means to spread awareness about the dangers of unsafe sex.

c. Relating RHE to Marriage and family formation

Some students related RHE to education about marriage and the formation of families. By breaking up the words of the expression "RHE", *Nabil* understood it as an education about marriage:

"Reproductive Health is related to reproduction... which means marriage. RHE? Which means it becomes a subject to be taught?" *Nabil* (male, public school, grade 8)

*Samir*, another public school student related RH to bringing children and starting a family.

Only one student *Sherine* spoke of sexual relations outside marriage affecting unmarried young people in particular who engage in passing affairs. In her opinion, RHE spreads awareness among young people to the possible repercussions of unsafe sex that she translated to Arabic by العلاقات العابرة = Passing affairs. When asked to define RHE, she said:

"Spreading awareness among young people about the dangers they can face if this thing happens so that they avoid these problems in society now. .. [this this like] unsafe sex and things like that. Passing affairs." *Sherine* (female, private school, grade 8)

d. "RHE" not perceived to be comprehensive

Students did not understand RHE in its broad comprehensive sense. None of them talked about gender roles or familial relations that can be covered by RHE. *Dina* said that the doctor can teach a girl about RHE in case she was raped. However, she specified that he will "يوعيتها" = make her aware" just in case she fell pregnant, and hence RHE to her targets pregnancy and not the topic of rape itself. Only one student *Sherine* mentioned that RHE should begin at the age of puberty when body changes start to occur in girls. Also she recommended that the content of RHE should evolve in parallel with students' body changes implying that she had a broader understanding of RHE:

## 2. *Students generally rely on a wide range of sources for RHE*

### a. Parents as a source of RHE

Three out of the five students interviewed discussed the possibility of parents being a source for RHE. Two students believed that parents will surely not explain to their children about RH until they become old enough. When put in a hypothetical situation where a child comes to ask him about the definition of RHE, *Samir* a public school student would refer him to his parents.

" I would tell him you can ask your parents. But then again for sure they will not tell him. They will tell him, when you get older and things like that..." *Samir (male, public school, grade 8)*

Four out of the five either did not mention parents as a source of RHE or assured parents would not discuss the topic with them at this age. *Samir* for example, stated that his parents did not know he was aware of the RH topic until he gave his mother the consent form to sign. Even her knowing her son would know about RH did not trigger a conversation about the topic, she just approved of his participation without discussing any details with him.

"When she saw the paper.... she didn't tell me anything. She just read it and told me "ok"." *Samir (male, public school, grade 8)*

Only one private school student *Talal* favored the transmission of RHE through parents, although he believed his parents would not teach him about RH because he was not old enough. He argued that parents were capable of judging the appropriate time to expose their child to RHE given their knowledge of his/her personality and way of thinking.

### b. Friends as a source of RHE

Two male students of the five interviewees mentioned explicitly friends as a possible source for RHE. They both were not supportive of the discussion of RH topics

with friends, *Samir*, a grade 8 male public school student believed that a well raised child should not ask his friends about RH. To him, the early discussion of such topics with friends will make the child deviant. Also, his/her friends will spread the news of him/her asking about the topic. *Talal* a supporter of RHE by parents believed that friends are a bad source of RHE as they themselves did not learn their information from parents. He believed that since friends are of the same age, they are not likely to have more accurate information. To him, the discussion of RH topics with friends can lead to the spread of misinformation between peers.

"They distribute to their friends in a bad way. Their friend heard from their friend and so on." *Talal (male, private school, grade 8)*

The third male student *Nabil* did not clearly state a refusal to discuss RH topics with his friends. However, when asked about his opinion concerning the introduction of RHE in schools, one of his arguments against it was the presence of his friends in class. He believed the topic was embarrassing to discuss with any other person.

c. The doctor or a specialist as a source of RHE

Two female students, *Dina* from a public school and *Sherine* suggested that RHE should be given by an adult specialist in the subject. They both argued that a specialist is well equipped with the knowledge necessary to spread awareness regarding the topic. When asked to explain what she meant by specialist, this is what *Dina* said:

"I mean someone who have studied the subject and understood it well to be able to spread awareness the way it should be." *Dina (female, public school, grade 9)*



*Dina* described a scenario where a girl who fell pregnant as a result of her being victim of rape visits a doctor and he provides her with information about RH.

"For example if someone attacked a girl in case she got pregnant she will ask a doctor and he will tell her. Of course he should tell her." *Dina (female, public school, grade 9)*

d. Books as a source of RHE

Two students mentioned books as one of their preferred source for RHE, in particular scientific books. To *Nabil* books save people the embarrassment they can face trying to discuss a RH topic with another person. He considered that a book represents science. While resuming the information he provided during the interview he interrupted me twice to stress on the fact that he favored books in schools and not schools in general as a source of RHE.

"...from the book we can know. It would be science." *Nabil (male, public school, grade 8)*

*Sherine* also specified books with an educational purpose as an acceptable source of RHE as opposed to books aiming for sexual pleasure.

e. The media as a source of RHE

One student suggested the possible role media can play in RHE - especially TV shows. However, according to her, these shows should not be watched by young people unless under the supervision of their parents. According to her, they should also be subject to regulation to make sure they are health oriented and socially acceptable.

"Maybe from the TV but there should be limits, censorship. It should be more health wise. They should not put wrong things." *Sherine (female, private school, grade 8)*

f. The school teacher as a source of RHE

Two students did not support delivery of RHE by their regular class teacher. *Sherine* said that teacher's experience in the academic domain was not sufficient to enable him/her to teach about RH. To her, this type of education should be only delivered a university graduate specialized in the RHE field.

On the other hand, *Samir* and *Nabil* were in favor of the teacher being a source of RHE. According to *Nabil*, the teacher is educated and capable of explaining the topic in a good and respectable manner. *Samir* does not only entrust the teacher with the delivery of RHE but also with the decision upon its content.

"Both teachers (male and female) should meet and agree on what they will say. It's up to them to decide." *Samir (male, public school, grade 8)*

**3. *Students Generally Value the Implementation of RHE in Schools***

a. RHE in Schools as a Tool for Spreading Awareness

With the exception of *Nabil*, a male grade 8 public school student who thought the topic was too embarrassing to discuss with anyone and did not support its introduction in school classes, all students reflected on the importance of in-school RHE in spreading awareness among students. Although, the words "awareness" and "ignorance" were not used in any of the questions asked, the four students mentioned these terms 15 times overall in the four interviews. Both *Dina* and *Samir* believed that in-school RHE was necessary to prevent ignorance among students especially in the future i.e. when they grow up. When asked whether she supports in-school RHE or not, *Dina* answered:

"It would be better to spread awareness among all students maybe no one will come and make them aware." *Dina (female, public school, grade 9)*

*Talal* believed it is important to educate students about life. *Sherine* reflected on the effect of RHE on adolescents in their young age. She believed RHE is mostly about safety awareness regarding young people's sexual relations and the dangers associated with them.

"Many homes or families = بيوت are getting hurt because of the ignorance about this topic." *Sherine* (female, private school, grade 8)

b. RHE as a Preventive Method for Risky Behaviors

Two students *Talal* and *Sherine*, both coming from a private school, mentioned the role of RHE in the prevention of risky behaviors. *Talal* talked about smoking and lack of resting during pregnancy that according to him, can have a negative impact on the baby's health and even his or her survival.

*Sherine* also discussed the role of RHE in spreading awareness among young people with regards to their sexual life. In particular, she explained how RHE aims at enhancing young people's awareness about unsafe sex and sex with unfamiliar partners that she refers to by "passing affairs = علاقات عابرة" by saying:

"Spreading awareness among young people about the dangers they can face if this thing happens so that they avoid these problems in the society now." *Sherine* (female, private school, grade 8)

c. Importance of RHE in Preventing STDs, Teen Pregnancy, Violence against Women and Poverty

The only student who talked mentioned STDs and teen pregnancy was *Sherine*. She highlighted the importance of RHE as a preventive method for health problems young people can face during adolescence. She defined RHE as a safety awareness to protect against STDs and teen pregnancy. According to her, teen pregnancy can lead to physical abuse of women along with poverty both of which can therefore be prevented

through RHE. When she was asked to explain the problems that can be faced by young people who get involved in unsafe sex, she said:

"Teen pregnancy, teen mothers [the two expressions were said in English] which can lead to violence against women. There may be poverty because it increases the expenses. They would not be capable of bearing it yet." *Sherine (female, private school, grade 8)*

d. School: a favorable environment for RHE

Aside from *Nabil* who refused any discussion related to RH with any person including his teacher and classmates, all students interviewed considered school as an acceptable source of RHE. When asked about his support for in-school RHE, *Nabil* replied refusing to elaborate any further:

"I don't support it. Not to become a subject taught. A class like this one? With my friends and teachers? No." *Nabil (male, public school, grade 8)*

*Samir* for example, argued that school is a familiar place to him which makes it an appropriate environment for RHE. The presence of his friends in class also contributes to his supporting of in-class RHE. When asked about the source of RHE he preferred, he answered:

"School. Since I did my studies in it and got used to it and comfortable with it. Also I would have my friends with me which is better. That we would be in class and they are teaching us." *Samir (male, public school, grade 8)*

Nevertheless, some students were concerned about the seriousness both the teacher and students should show when dealing with the RHE topic. They stressed on the idea that RHE classes should not be taken lightly.

"...there should be order... I mean that no one should start laughing. They would take it lightly = بياخذوها مسخرة." *Samir (male, public school, grade 8)*

As stated by *Sherine*, the teacher should not make jokes that can hurt some students' feelings.

"It should not aim at hurting people = تجرّح... That the teacher jokes around or hurts a student or something like that." *Sherine (female, private school, grade 8)*

e. Importance of considering social context in RHE

Students mentioned the importance of taking into account societal norms when designing and implementing RHE programs. According to these students, the timing, content and way of delivery of RHE should be in accordance with societal norms.

*Sherine* talked about the importance of the teacher not giving socially unacceptable = غير لائق اجتماعيًا remarks while delivering RHE. As for *Nadim*, he stressed the necessity of parents being aware of the RHE and accepted that RHE be delivered by the teacher as he/she will explain it in a respectable manner.

"Parents would be aware. Teachers will explain in a good and respectable way [about the content to be delivered in each of the single-sex classes (for males and females)." *Talal (male, private school, grade 8)*

**4. Students have concerns regarding the implementation of RHE in schools**

a. Fear of Deviance of Children due to Early Exposure to RH Related Topics

Some of the students argued that exposure to RH topics that occurs too early in a child's life will harm him instead of benefiting him.

"It can attract kids' attention to things they might not have noticed before. It will harm them instead of benefiting them." *Sherine (female, private school, grade 8)*

According to *Samir*, an early introduction to RH topics can lead to the child becoming deviant from societal norms= يبتعد.

b. RH, a Topic Embarrassing to Discuss

Many students expressed their embarrassment of discussing topics related to RH in front of their classmates of opposite sex, their parents, their siblings and their class teacher. *Nabil* believed neither the teacher nor the students would be comfortable discussing RH topics in class as it is an embarrassing topic.

"It would be annoying (سئيلة)... in front of the teacher... Also she cannot. The topic is embarrassing to discuss with anybody. She might not be able to explain it personally (بلسانها)." *Nabil (male, public school, grade 8)*

c. Separation by gender during RHE sessions

One of the students interviewed *Samir* suggested that RHE be given in single-sex classes. To him, this separation will make students more comfortable discussing RH topics. To him, this method can save students the intimidation they can face discussing RH topics in front of their classmates from opposite sex. Also, such separation will enhance their learning process as it they will understand the content better from a teacher having the same sex. He also felt that the RH of the opposite sex does not concern the student.

"It's better so that they understand each other from one girl to another. It's better. Let's take for example, if three guys were with a group of girls there will be intimidation. They will feel intimidated since they have nothing to do with anything= ما خصن بشي." *Samir (male, public school, grade 8)*

d. Suggested subjects for in-school RHE

All three boys interviewed suggested that RHE should be part of biology. Two of them linked at some point during the interview to animal reproduction they learned

about in science class. *Nabil* preferred to learn about RH from the science book without discussing it in class.

"It is okey if it's about animals but RH about humans? No." *Nabil (male, public school, grade 8)*

Two students, *Samir* and *Dina* suggested the introduction of RHE through literary subjects such as philosophy and Arabic while two others *Nabil* and *Sherine* had opposing opinions about introducing RHE as a subject by its own. When asked about the possibility of introducing RHE in schools, *Nabil* answered:

"No, not in school, not with Arabic. Not a subject in the curriculum. But in a sense that someone explains." *Nabil (male, public school, grade 8)*

*Sherine* on the other hand suggested that there should be a subject dedicated to RHE and taught by a specialist in the field.

e. RHE using students' first language

*Dina* a public school student, suggested that RHE should be delivered in students' first language as this will enhance their receptivity of the material taught.

" In Arabic because not all students understand French or English. There are students who understand and others who don't. So that everybody understands, it better be in Arabic." *Dina (female, public school, grade 9)*

f. Appropriate age/grade level for introducing RHE

Four of the Five students interviewed mentioned the importance of considering students' age in RHE programs. In particular, *Sherine*, *Samir* and *Talal* stressed on fact that the content of RHE programs should be age appropriate regardless of the source of RHE that they preferred. The terms "old" and "young" and their equivalents were repeated a total of 21 times in these three interviews. In all 21 times students were

referring to the age of the students. However, opinions about the appropriate age to introduce RHE varied widely from one interviewee to another. Two students *Talal* and *Samir* did not favor the introduction of RHE in early classes as they believed students were not old enough to understand the topic. However, their definition of "early classes" differed. *Samir* a grade 8 public school student, thought RHE is only provided to grade 12 students since they are mature and capable of understanding its content. *Talal* a grade 8 student supported the introduction of RHE in grade 9 classes as he thought students at this level are entitled to learn about RHE. To him, they are open minded enough to understand the topic. *Talal* believes that learning animal reproduction is a prerequisite to learning about human RH.

"Although this might not be true for other people but in my opinion, a child aged 14 years should know what happens in life [meaning that RH is part of one's life hence the importance of being exposed to RHE]"  
*Talal (male, private school, grade 8)*

On the other hand, *Sherine* a female private school student believed the implementation of RHE programs in school should begin at puberty. She related the need for the RHE to start with the beginning of girls' body changes at this phase.

g. RHE with age-appropriate content

Two students referred to the importance of RHE's content being age-appropriate whether implicitly or explicitly. *Sherine* recommended that the material taught in RHE programs should be adapted to students' age and evolve with the physical changes they undergo throughout their development.

"Also with each grade level the material taught will be different according to their age and how their bodies change." *Sherine (female, private school, grade 8)*



She also stated that the content of any book read by the child for RHE purposes should be age-appropriate. According to *Sherine* lectures provided to students about RHE by specialists be it in schools or universities should be adapted to their age class.

" One can read a book but it should be appropriate to his age and scientific not for pleasure." *Sherine (female, private school, grade 8)*

Another student grade 8 *Samir* implied a certain progression through grade levels in the content delivered by RHE. He differentiated between grade 9 and grade 12 in terms of the subjects through which RHE is introduced. He also mentioned that in grade 7 the curriculum includes a brief introduction to RHE. *Samir* concluded this from looking at his grade 7 book, he justified them not taking this part by the repetitive teachers' strikes that occurred the previous year which prevented them from covering the whole curriculum.

"I've seen the material. In brevet [grade 9] we will take it in a broader way. In grade 7 they take something light [about RHE but last year we didn't. [About the subject where RHE should be integrated] In biology for middle school. In philosophy for bac 2 [grade 12] because this is why they have the philosophy subject." *Samir (male, public school, grade 8)*

#### h. Evaluation in RHE

*Sherine* suggested that RHE should not be evaluated like all other academic subjects. According to her, the success of RHE should be measured by grades but the awareness it could spread among students:

"It should not aim only for lessons and grades [meaning grades-based assessment] but awareness and edification" *Sherine (female, private school, grade 8)*

In summary, students' definition of RHE revealed their lack of a clear, broad and common understanding of the term RHE. In their definition of RHE, some students related it to marriage, family formation and sexuality. Suggested sources for RHE were parents, friends, the doctor or a specialist, books, the media and the school teacher. Most of the students were in favor of the introduction of RHE in school curricula. One student considered RHE in schools as a tool for spreading awareness and preventing risky behaviors, STDs, teen pregnancy, violence against women and poverty. Many students considered school as a favorable environment for RHE. However, many students perceived RH topics to be intimidating and embarrassing to discuss and believed that an early introduction of RHE makes the child prone to deviance. The importance of considering social context in RHE was pointed out. Suggested recommendations regarding the implementation of RHE in schools included (1) separation by gender during RHE sessions, (2) using age-appropriate content for RHE programs, (3) applying a special assessment system other than grades to evaluate RHE outcomes and (4) using students' first language as a language of instruction in RHE. There was no agreement on the appropriate grade level or subject matter through which RHE should be introduced. The suggested subject matters were biology, Arabic, philosophy and a new independent subject called "RHE". Worth noting here is that there is currently no independent subject specific to RHE in the Lebanese curriculum.

### **C. Reflections about the qualitative phase**

During all 6 recruitment sessions I have conducted, I have seen blank expressions on many faces when I mentioned the title of the study. It was not until I varied the terms used from "RHE" to "RH teaching" = تربية و تعليم that some eyes

seemed to brighten up and some shy giggles were heard in the corners. Some students raised their hands to ask about the meaning of RHE. They were most of the times stopped by their neighboring classmate who whispered something in their ear after which they withdrew their answer with a bright smiling expression on their face. Only in one or two cases I had to answer back saying that the study does not aim to inform students about RHE or its meaning but to explore how they themselves understand it.

Answers given were short and brief especially at the beginning of the interviews. As the interview went along and students became more comfortable, they elaborated their answers more and became more vocal in expressing their thoughts. Students' shyness to discuss the topic of RH was obvious to me. During the interviews, many of them laughed shyly when mentioning sexual relations even implicitly. Some of them avoided the use of words with sexual connotations. They used instead the expressions "هالاشيا" = these things" to refer to RHE or unsafe sex and "حالة" = a case" to refer to rape. With the exception of *Sherin*, students showed hesitation and lack of confidence in their knowledge regarding the topic. *Sherine's* mother, a medical doctor, contacted me on the phone before the interview to ask some questions about the study aims as she has noticed the mentioning of "HIV/AIDS" in the recruitment form (distributed in English) but not in the parental consent form (distributed in Arabic). I explained to her that both forms were different and that one was not the translation of the other. Her question revealed a meticulous reading of both forms. Also, through our long phone conversation she mentioned having discussed the topic with her daughter *Sherine* and her older sibling and that both of them have convinced her of the importance of introducing RHE. *Sherine's* exposure to such a discussion at home ahead

of the interview may explain the richer information she had with regard to RHE as compared to the other participants.

## CHAPTER VII

### DISCUSSION

#### **A. Quantitative phase**

An extensive literature review has shown a recent trend of studies aiming at assessing students' attitudes towards RHE and their expectations from and need for it (Andrew et al., 2003; Benzaken et al., 2011; Chen et al., 2008; Eisenberg et al., 1997; Forrest, 2004; Ogunjimi, 2006; Orji et al., 2003; Shahid et al., 2012). To our knowledge, no study was done in Lebanon or the world to examine the determinants of students' support for RHE. Few studies assessed variations in the support for the implementation of sexuality education in schools by gender only (Ogunjimi, 2006; Orji et al., 2003; Shahid et al., 2012; Li et al., 2004). Some looked at students' perceived reasons behind their support for school-based sexuality education (Ogunjimi, 2006; Orji et al., 2003). Others examined students' suggestions in terms of the topics to be discussed in RHE programs (Li et al., 2004; Eisenberg et al., 1997) or explored students' evaluation of already implemented RHE programs (Eisenberg et al., 1997; Shrestha et al., 2013). To our knowledge, our study is the first one to investigate the association between students' support for RHE and their characteristics in terms of socio-demographics, behaviors, exposure to other health education topics and knowledge, attitudes and skills related RH. This makes it hard to compare our results to similar ones in the literature. However, in this discussion section, we will try to explain the observed patterns based findings of previous studies, as well as to fill some existing gaps in the literature.

### ***1. Prevalence of students' support for RHE***

Our findings indicate that 58% of middle school students in Lebanon support receiving in class RHE. This can be compared to the results of another study KABP conducted in Lebanon on representative sample of 2057 secondary school students chosen using multi-stage cluster sampling (La Sagesse University Faculty of Health Sciences, 2012). The quantitative component of the study assessed their levels of knowledge, attitudes and the prevalence of related risky behaviors as well as their practices and behaviors regarding HIV/AIDS, STDs and RH through a self administered questionnaire (La Sagesse University Faculty of Health Sciences, 2012). The KABP study showed that the vast majority of secondary school students in both public (83%) and private (88.3%) schools supported the discussion of RH in classrooms. It consisted of a large study was conducted on secondary school and university students in Lebanon examining their knowledge, attitudes, behaviors and practices related to RH using a mixed method approach (La Sagesse University Faculty of Health Sciences, 2012). The sample of secondary school students included over 2057 participants. The quantitative component of the study assessed their levels of knowledge, attitudes and the prevalence of related risky behaviors as well as their practices and behaviors regarding HIV/AIDS, STDs and RH through a self administered questionnaire.

The higher support rate observed in the KABP study (83% in public and 88.3% in private schools) as compared to the GSHS (42.7% in public and 57.3% in private schools) can be attributed to several explanations (La Sagesse University Faculty of Health Sciences, 2012):

- 1) The secondary school students' response rate in the KABP survey was 82% in public schools and 83.2% in private schools while that of the middle school students in the

2011 GSHS was of 99%. Participants' recruitment and data collection was made harder by the sensitivity of the topic in the KABP as mentioned in the limitations of the study (La Sagesse University Faculty of Health Sciences, 2012). Students who did not agree to participate in the KABP are expected to have a higher tendency to refuse RHE. Their non-inclusion in the analysis might partly explain the difference between the two surveys.

2) The lower students' refusal rate obtained in the GSHS might be explained by its more comprehensive health aspect and by the fact that RH constituted only one section among many. On the contrary, the KABP survey's main aim was assessing students' knowledge, attitudes, behaviors and practices related to RH (La Sagesse University Faculty of Health Sciences, 2012).

3) The questions asked about RH topics in the GSHS were more general as compared to those in KABP where sexual experiences and behaviors were assessed.

4) As observed in our study, grade level was significantly associated with students' support for RHE, adjusting for all other variables. Although the results cannot be easily extrapolated to secondary school, the higher support among secondary school students for RHE might possibly be justified by their higher grade level.

In fact, similar trends can be observed in other developing countries where the prevalence of secondary students supporting RHE is high. In Cross Rivers State, Nigeria more than 90% of the secondary school students were in favor of integrating RHE in the school curriculum (Ogunjimi, 2006). Among those students, a vast majority justified their support for intra-curricular RHE by its role in decreasing unwanted pregnancies (97.5%) and HIV/AIDS incidence (78%) among youth (Ogunjimi, 2006). A study conducted in India that is considered to be a conservative society where the

sexuality of young unmarried people is considered as a taboo showed that the vast majority of junior college students (90%) with a median age of 16 supported the inclusion of RHE in the school curriculum (Jejeebhoy, 1998; Nath, 2009). Another study performed in China, another society where unmarried young people's sexuality remains a sensitive topic that is hardly discussed, showed that 94% of college students agreed to the necessity of RHE in University/College (Chen, 2008; International Institute for Population Sciences 2004; Zhang, 2004). This study had several limitations, however including the wide age range of participants (15 to 34 years) that was not accounted for in the analysis (Chen, 2008).

## ***2. Students' socio-economic level***

Our study has found that hunger caused by lack of food availability at home is significantly associated with students' support for RHE. In our case, hunger caused by household food insecurity suggests extreme poverty (14% of the students). Hunger may be considered as an indicator for socio-economic level since it stems from financial resource constraints (Bickel et al., 2000). This may be explained by the possibility of students of lower socio-economic level being of a more conservative way of thinking. Some authors have related socio-economic level to the level of conservatism in the way of thinking. For example, a study was performed in Hong Kong assessing the nature of University students' thinking styles (Zhang et al., 2001). The association between students' socio-economic level and self-esteem on one hand, and their thinking style on another hand was measured. (Zhang et al., 2001). Two types of thinking styles were examined: Type I was related to creativity requiring complex information processing while type II involved simplistic information processing (Zhang et al., 2001). Students



of type I thinking style were considered more norm-challenging and risk-taking and less conservative and authority-oriented than those of Type II thinking style (Zhang et al., 2001). High socio-economic status was associated with type I thinking style, after controlling for age. The results were explained by the possibility that students from higher socio-economic status were more exposed to a diversity of situations, discussions and issues (Zhang et al., 2001). This may have lead to them having broader horizons and more analytical thinking than students of lower socio-economic level (Zhang et al., 2001).

### **3. Gender**

After adjusting for all variables in the model, gender was no longer associated with students' support for RHE. The same results were observed in the study KABP study conducted with secondary school students where no gender differences in support for RHE were observed (La Sagesse University Faculty of Health Sciences, 2012). This however does not eliminate the possibility of different understanding, expectations or concerns about such an education. In fact, as we will see, males and females rely on different sources of RHE, they also appear to have different preferences with regards to this education being provided in a mixed or single-sex classroom (Shahid et al., 2012; Allen et al., 1987; Strange et al., 2003).

### **4. Type of school (public vs. private)**

As seen in our study, the type of school was associated with students' support for RHE with public school students being less likely to support it as compared to private school students. In the KABP survey, the percentage of students who were

embarrassed to discuss RH topics in public was 46% in public schools versus 29% in private schools among students who did not support in-class RHE (La Sagesse University Faculty of Health Sciences, 2012). This may be explained by the higher level of conservatism among public school students who are assumed to be of lower socio-economic level in Lebanon (Haddad et al., 2012; Zhang et al., 2001). In the KABP survey, students who did not support the discussion of RH topics in class were asked about the reason for their rejecting opinion. In private schools, around half of them expected their classmates make fun of these topics, one third thought they already know what they need to about RH topics (La Sagesse University Faculty of Health Sciences, 2012). Respectively, 29% and 13% of them were embarrassed to discuss such topics in public and in front of their friends in particular. In public schools, the results obtained were quite different. Around half of the public school students who did not support in-class RHE justified their choice by being embarrassed to discuss these topics in public while 40% and 30% were concerned about other students making fun of the topic and embarrassed to discuss them in front of their friends, respectively. These findings can lead us to two conclusions. First, public school students are more likely not to support RHE as compared to private school students in both middle and secondary schools in Lebanon. Further studies are needed to assess the reasons behind this difference. Policy makers need to take into account both groups special needs and concerns in the planning and implementation of in-school RHE programs.

##### ***5. Communication with parents about RH topics***

Students who discussed RH topics with their parents were more likely to support RHE than those who did not (adjusted OR=1.3, p-value=0.001). A study

performed in Ethiopia on a sample of 697 secondary (equivalent to grades 9 and 10) and preparatory (equivalent to grades 11 and 12) school students has looked at the association between students' communication with parents about RHE and several other factors (Shiferaw et al., 2014). Students' acceptance of discussing RHE with parents was shown to be associated with them actually communicating with their parents about RH topics (Shiferaw et al., 2014). Comparing these findings to our own, we can note that students who communicate with their parents about RHE tend to be more open to discussing RH topics be it with their parents or in class. The conclusion can be formulated differently since no relation of causality was proven in either studies. In other words, we can also say that students who support the discussion of RH topics in class or with parents are more likely to discuss these topics with their parents. In the Ethiopian study, the observed association was explained by the perceived importance of the discussion of RH topics among these students (Shiferaw et al., 2014). Further studies are needed to examine the direction of the association between students' opinions about the discussion of RH topics and the practice of such communication. This is important to orient awareness interventions. These interventions can target parents to encourage that type of communication and hence enhance students' openness to discuss the subject.

Another possible explanation would be that addressing students' attitudes towards discussing RH topics will improve students' communication with parents about RH topics. The importance of improving child/parents communication about RH topic stems from its relation to child's health. The literature is abundant with studies showing the strong association existing between the discussion of RH related topics with parents and decreased sexual risky behaviors and negative sexual health outcomes such as:

multiple sexual partners, unprotected sexual intercourse and teen pregnancy (Hutchinson et al., 2003; Kotchick et al., 2001; Miller, 2002; Miller et al., 1998; Shiferawet et al., 2014). Our findings highlight even more the need to improve this kind of communication through awareness programs targeting both parents and children.

## **6. Substance use**

Our study has shown a difference between alcohol and drugs users in terms of their support for RHE. In particular, excessive alcohol users (five or more drinks per day in the past 30 days) and drugs ever users (ever used marijuana, amphetamines or methamphetamines in life) were less likely to support RHE (OR= 4, p-value= 0.017 for excessive alcohol and OR=0.39, p-value=0.002 for drugs). Even though the association between drugs use and support for RHE lost significance after including it in the multiple logistic model, controlling for gender, grade level and school type it revealed a significant association with the main outcome (adjusted OR=0.31, p-value=0.011). On the other hand, alcohol ever users were 1.5 times more supportive of RHE compared to non-users ever after adjusting for all variables (adjusted OR=1.54, p-value=0.004). Whether the observed difference between these two groups emerges from an actual variation in attitude regarding RHE or constitutes a simple statistical artifact cannot be judged in this study. No studies could be found to scrutinize a possible differential association between drugs and alcohol users on one hand and attitudes regarding RHE on the other. The observed results may be linked to difference in anti-social behaviors and experiences in sexual behaviors both of which are associated to substance use (Staton et al, 1999, McAdams et al, 2014). We do not have enough evidence in the literature to make any inferences about the observed pattern.

## ***7. Preference regarding onset of RHE and single versus mixed-sex classes***

Students who preferred the discussion of RH topics to be in mixed-sex classes were around three times more likely to support RHE compared to those who chose single-sex classes, after controlling for gender, grade level and type of school ( $p$ -value $<0.0001$ ). More than one third of the participants (39.9%) preferred RHE to be done in mixed classes (43.5% of males and 53.4% of females)

The literature is copious with arguments around the preference of single-sex versus mixed-sex classrooms particularly when it comes to RHE. Many studies were in favor of gender segregation of classes, and suggested that girls prefer single-sex classes and respond better to education in such settings (Allen et al., 1987; Strange et al., 2003). A three-year longitudinal case study revealed that girls risk being marginalized in mixed-sex classes, which points to the possible benefits of single-sex classrooms (Gilliband et al., 1999). Measor et al. (1996) noted that girls are more engaged as participants when the sessions do not include boys. This may be explained by the work of Woodcock and colleagues (1992) who reported that girls feel intimidated by the presence of the boys, which hinders their willingness to ask all their questions. Interestingly, there could be a shift in this preference with age as older girls express a curiosity in learning about the “opposite sex” in a mixed setting (Evans et al., 1994). Kreuse et al. (1992) advocates for a balance between the two approaches by first giving sex-segregated sessions, which would be followed by mixed sessions. Chen et al. (2008) attempted to quantify the described differential preferences, and showed that 43.5% of females prefer same sex education sessions compared to only 18.5% for males. Indeed, it appears that boys are more accepting of mixed-sex RHE. One argument in favor of mixed sessions is the potential worsening of the ‘macho’

behavior by boys in a setting of a male facilitator teaching them only (Epstein et al., 1998; Lees 1994). Nevertheless, some male-only sex education programs have been successful. In a sense, a male teacher is able to stimulate the involvement of boys if he addresses issues that they deem to be of relevance and importance to them (Kreuse, 1992; Woodcock et al., 1992; Measor et al., 1996).

### **8. *Exposure to health education topics in school***

A positive association was found between students' support for RHE and the number of other health education topics discussed in class in the last year. This along with the significant association we have found between substance use and students' support for RHE indicate the need for the integration of RHE within a comprehensive health education program in schools, an effective method to promoting students' health (WHO, 1997).

## **B. Qualitative phase**

### **1. *Students' definition of RHE are unclear and diverse***

The in-depth interviews revealed a diversity in students' understanding of the term "RHE" in the sample. No clear understanding of the term was expressed by the majority of students interviewed. To our knowledge, no study has ever assessed students' conceptualization of the term "RHE". Only one study conducted in Nigeria assessed quantitatively students', parents' and teachers' definition of "sex education" which can be understood differently by students view its explicit "sexual connotation". Students understood "sex education" differently than parents and teachers (Orji et al., 2003). Over 65% of students defined sex education by teaching students how to make

love and have sex (Orji et al., 2003). A small minority of teachers (4%) and of parents (6%) picked this choice while the majority of them did not know how to define it (Orji et al., 2003). Students' definition of RHE may reveal their need from such education. The differences between students' answers and those of parents and teachers suggests a non homogeneous conceptualization of RHE that should be taken into account in both research and practice. In other words, students conceive RHE differently from adults. RHE programs should try and meet their expectations and that is only possible through extensive research addressing their perceptions and needs that is still limited and sometimes lacking in the literature.

## ***2. Students rely on a wide range of sources for RHE***

Many sources for RHE have been mentioned by students during the interviews; parents, friends, a doctor or a specialist, books, media, school teacher. According to quantitative studies done in several countries we find that students rely on the same sources for RHE with different proportion. The KABP survey done on secondary school students in Lebanon found that in the 12 months preceding the survey, the vast majority of students consulted with family members, friends and no one for RH matters (La Sagesse University Faculty of Health Sciences, 2012). The most three sources of RH knowledge classified as important were friends (53.3%), school teacher (48.2%) and TV shows (43%) among private school students, and internet (48.8%), family members other than parents (41.5%) and school teacher (41.4%) among public school students (La Sagesse University Faculty of Health Sciences, 2012). A study was conducted in Mumbai on Junior school students in Mumbai (aged 15-17) with one of its aim to determine students' exposure to RHE (Benzaken et al., 2011). This study showed that also, the 3 most preferred sources of RHE are school (65%), friends (52%) and TV (42%) and parents and other family

members (42%) (Benzaken et al., 2011). We note a significant gender difference with regards to relying on schools as a source for RHE (72% for females and 49% for males) (Benzaken et al., 2011). Also, the internet was more than twice more consulted by males (47%) than females (20%) for information about RH (Benzaken et al., 2011). Another quantitative study done on a sample of 1050 secondary school students in Nigeria suggested a significant gender difference between girls and boys communication with parents about RHE (Opara, 2012). Girls communicated more with their mothers about RH topics (71% for girls and 29% for boys) while boys with fathers (71% for boys and 21% for girls) (Opara, 2012). Fathers were amongst the least mentioned source of information (Opara, 2012).

### ***3. Students value the introduction of RHE in schools***

Students interviewed reflected on the importance of RHE in spreading awareness, preventing risky behaviors with one student mentioning awareness about STDs, teen pregnancy, violence against women as part of RHE role. Their views support the literature that has shown that young people who receive comprehensive sex education are less likely to be involved in early sexual activity and more likely to have protected sexual relations when they become sexually active (ESART, 2011). Early sexual initiation is associated with many sexual risk factors such as increased number of sexual partners and recent sexual activity under alcohol influence (Sandfort et al., 2008). Curricula-based sex and HIV programs targeting youth in settings including schools were shown to be promising interventions to reduce negative outcomes in adolescents including early sexual initiation, high frequency of sex, multiple sexual



partners, non-condom use, non-contraceptive use in general, sexual risk-taking behavior, higher reported pregnancy and STI rates. (Kirby, 2007).

Social norms such as gender inequality can have major repercussion on the health of both men and women. Women in a relationship with violent and controlling male have a higher risk of HIV infection (Dunkle et al., 2004). Men's belief in inequitable gender norms is significantly related to reported STI symptoms, lack of contraceptive use, in addition to both physical and sexual violence against a partner as revealed by a quasi-experimental study conducted on young men aged 14 to 25 in Rio de Janeiro, Brazil (Pulerwitz et al., 2006). The strong association between gender norms and women and men's health suggests the potential role of RHE addressing young people's decision-making skills and gender norms in preventing STDs, teen pregnancy and violence against women. Teenage pregnancy and risky sexual behaviors are also associated with low socio-economic level and economic hardship (Dodoo, F. N. et al., 2007). The themes extracted from the in-depth interviews regarding the importance of RHE in spreading awareness, preventing risky behaviors, STDs, teen pregnancy, violence against women are therefore supported by the literature. However, none of the students interviewed mentioned other RH issues such as contraception, infertility, early age of marriage or abortion let alone more comprehensive aspects of sexuality such as gender norms, RH related decision making-skills and relationships. This means that our participants not only did not have a clear idea about RHE but their knowledge about the health problems included within most conceptualizations of RH was limited.

#### ***4. Students have concerns regarding the implementation of RHE in schools***

Students suggested RHE should be integrated within science education particularly biology while others supported it being taught as a subject alone. Students' opinions about both choices i.e. the integration of RHE within other subjects versus it being introduced as a subject by itself, have been already assessed in the literature. The majority (77.6%) of university students' in Malaysia were in favor of RHE being incorporated with other subjects as compared to a minority (29%) who preferred the implementation of RHE in a separate module (Mutalip, S. M. et al., 2012).

Some students expressed during the interview their concern about early RHE causing deviant behaviors among students. This misconception is not hard to find among people (Yu, 2010). There seems to be variations in the prevalence of the idea of RHE increasing promiscuity among students as seen in the literature. A large study was performed on 5236 university/college students in Shanghai, China to show that around 16% of students thought RHE would increase students' sex practice while more than 43% of them believed it was difficult to judge (Chen, B. et al, 2008). Another study conducted with 1111 university students in Iran found that 80% disagreed to the statement saying that RHE encourages inappropriate sexual behavior among young people (Simbar, M. et al., 2005).

One of the emerging themes from the interviews with students was the consideration of age/grade level in terms of the appropriate time for the initiation and in terms of the content of RHE. A majority of secondary students in Nigeria (65%) were in favor of the onset of RHE being for age of 11 to 15 years (Opara, P. I., 2012). This suggestion is supported by the literature. A systematic review paper aiming at summarizing the evaluations of youth oriented RHE programs which were based on

written curricula and implemented in schools, clinics and community settings summarized the common characteristics of effective programs (Kirby et al., 2007). Some of the students interviewed also hinted to the importance of RHE programs taking into account the social context. In terms of the curriculum content, effective programs should address young people's psychological needs taking into account their cultural context, age and sexual experience (Kirby et al., 2007).

An issue that was not discussed to our knowledge, in the literature was introduced by one student interviewed. This issue concerns the language in which RHE should be introduced. The effect of language of instruction on the learner's understanding of the content delivered has been examined in the educational literature. Students who learn science using a language other than their native language tend to have more difficulties processing and understanding the content taught (Lee, O. et al., 1998; Strevens, P., 1976). No inferences can be made from this study regarding the proper language on which RHE should be introduced. However, this point should be considered in future research and program planning and implementation in Lebanon as elsewhere.

Four out of the five students interviewed would have answered yes the question "do you support RHE?" in the GSHS. However, if when we explored in depth their understanding of what RHE is, we were able to see a clear difference among them. They all had different perceptions and expectations of such an education. All expectations, concerns and recommendations given by students depend on their understanding of RHE, the topics it includes as well as their perceived needs. We conclude the importance of quantitatively assessing students' understanding of the term RHE as well as the reasons for their support of RHE or lack thereof.

### **C. Limitations**

We are aware of limitations in both the quantitative and the qualitative phases of this study which are discussed in this section. As for the quantitative phase, a major limitation in the statistical analysis was the inability to control for students' religion, religiosity, conservatism and socio-economic status all for lack of indicators of these variables in the dataset. No information was collected in the questionnaire on religion, religiosity and conservatism and therefore they could not be integrated in the final model. Despite the strong established association between substance use and religiosity, in particular among young people, we cannot take the leap and assume that substance use compensates for the missing religiosity variable (Walker et al., 2007). Nevertheless, hunger was used as an indicator for extreme poverty since it stems from financial resource constraints (Bickel et al., 2000).

Although the aim of the study was to assess factors associated with students' support for in-school RHE, merging students who did not support RHE (27.8%) with those who did not know how to answer the question (14%) in the reference category is considered a limitation to this study. Students who answered "I don't know" may be different from those who were decided on not supporting RHE. Including this group as a separate category may reveal different results in the analysis. Further research is needed to assess the indecisive group's needs and concerns.

The main outcome studied – that is students' support of RHE - does not necessarily reflect students' understanding of the term RHE or their conceptualization of it. This has been particularly evident through the in-depth interviews that allowed us through probing to identify lack of clarity and differences in perceptions of RHE

between the students interviewed. However, our quantitative study did not intend to assess the reasons behind students' support for RHE nor did it aim to identify possible differences in their understanding of the term. Our goal was to recognize trends differentiating students supporting RHE from those who do not. This is important as a first step toward addressing equitably both groups' special needs and expectations.

We cannot assume a causal relationship between the main outcome and the factors we found to be associated with it due to the cross-sectional nature of the quantitative phase of the study. As seen in the discussion sections, many factors come into play when looking at the association between students' support for RHE and the variables associated with it. The associations obtained are not straight forward relationships. More studies are needed to disentangle these associations and attribute directions to them.

As for the generalizability of the findings of the quantitative phase. The results obtained in this study concern all students attending middle schools in Lebanon in 2011. However, the findings cannot be extrapolated to all children aged 13-15 at the time residing in Lebanon because about 30% of children whose age corresponds to middle school were not enrolled in middle schools in 2008 in Lebanon (CAS, 2008). Still our results reflect the reality of the high majority of students in this age group in 2011.

More than 2 years have passed since the GSHS 2011 was conducted. During this time, Lebanon witnessed an inflow of Syrian refugees seeking safety from the war that started in their country in May 2011. According to the United Nations' Refugees Agency's (UNHCR) estimates, by April 2014, more than one million Syrian refugees are currently residing on the Lebanese territories. The effect of these demographic changes on our findings is not yet known and further research is needed to measure it.

We suggest that the GSHS survey should be conducted again to compare results and draw conclusions about any changes in middle school students' attitudes, perceptions and behaviors.

Like in all other qualitative studies, the findings we obtained from the interviews conducted with some students cannot be extrapolated to the whole population of middle school students in Lebanon. However, qualitative studies are not intended to be generalizable, their value resides in the in-depth understanding of people's views and opinions (Bryman, 2008). We also suppose that students who agreed to participate and their parents are probably different from those who did not in terms of knowledge and attitude regarding RHE.

We consider the small sample size of five students as a drawback for our study since it limits the possibility of drawing more conclusions from the analysis of transcripts. However, the interviews conducted allowed us to retrieve sufficient themes to respond to the aims of the qualitative study. Many reasons were behind the limited sample size obtained. The administration of one private school and two public schools visited refused to participate in the study. No more schools could be approached due to time constraints. The small sample size can also be explained by the low response rate in view of the sensitivity of the topic or the lack of students' understanding of the term "RHE" and therefore of the title of aim of the study. This limitation however could not be avoided. Providing students with a definition of RHE would have jeopardized one of our main objectives which is to elicit students' own understanding of the term. The interviews conducted were also short and not many topics could be tackled. However, since the interviews took place during the break and on the school premises, the time

could not be extended and interruptions by teachers, administration and students were difficult to avoid.

Another limitation would be that the convenience sample was drawn from only two schools in Beirut. The opinion of students residing in rural areas, or those attending religious or low income private schools may differ from our sample due to different experiences and knowledge regarding RHE. Nonetheless, the schools chosen varied in terms of socio-economic level; one school was a middle to high income private school and the other a public school (frequented mostly by low socio-economic level students). Gender was almost equally represented in the sample, since two participants were girls and three were boys.

#### **D. Strengths**

The main strengths of the quantitative phase of our study are:

- 1) The high generalizability of the findings obtained. This is due to the large sample size of 2,286 middle school students chosen through multi-stage cluster sampling representing all areas in Lebanon. Using the weighted sampling in the analysis also enhances the generalizability of our results.
- 2) This study provides a baseline for future studies as it was conducted before the full implementation of RHE in schools in Lebanon. Our results can therefore be compared to later on as the implantation of in-school RHE program proceeds. Variations in students' support for RHE as well as in the factors associated with such support may give us insight on the influence of such a program on students' attitudes and knowledge.
- 3) This study constitutes one of the first initiatives to touch upon this concept that is studying the characteristics differentiating students who support RHE from those who

do not. Consulting with and engaging young people throughout the process of implementing RHE programs is necessary for the sustainability and effectiveness of these programs in reaching young people (UNFPA, 2010). The contextualization of the RHE programs is judged necessary and only possible through the considerations of students' needs, values and behaviors (Yu, 2010). Even though the importance of the main outcome of the quantitative phase of the study - that is students' support for RHE - is well established in the literature, to the best of our knowledge, no studies, in Lebanon and the world, have reflected upon the factors associated with such support. This study is a first step towards understanding and addressing students' concerns regarding RHE. Studies like ours are expected to have implications on both research and interventions.

4) The students interviewed in the qualitative phase of the study were picked from two schools only - one school was private (middle to high income) and the other public (considered as low-income). Nevertheless, we cannot assume sufficient diversity in the small sample of students interviewed.

5) The use of mixed methods has allowed us to go beyond numbers and associations and explore in-depth some students' thoughts, needs and concerns regarding RHE. The quantitative phase of the study gave us a broad picture reflecting trends that differentiate middle school students who support of RHE from those who do not on a national scale. The qualitative phase complemented the quantitative one by giving in-depth insight into some students' understanding of RHE and the reasons behind their support of it or lack thereof.



## **E. Recommendations**

The results of the in-depth interviews reveal a possible diversity in students' understanding of the term RHE. This puts into question students' understanding of the question "Do you support RHE?" in the GSHS 2011 questionnaire. One of the main characteristics of curricula-based RHE programs is its responding to the needs of the target group (Kirby et al., 2007). Based on our findings, we recommend that the GSHS questionnaire be altered in a way to add a standardized definition of the term RHE as implemented in schools in Lebanon before the question asking about students' support for it. Another more advisable possibility would be to add more questions assessing student's definition of the term RHE targeting directly their needs and expectations from such a program. The design of such questions may be informed by large-scale qualitative in-depth interviews and/or focus groups with students from different socio-demographic backgrounds.

Expanding the section destined for RH in the questionnaire to include more questions assessing students' attitudes and knowledge regarding different aspects of RH is also advisable. We recommend the inclusion of the RH behavior module that was omitted from the questionnaire in Lebanon. The inclusion of such module is essential to provide an idea about middle school students' relevant sexual behaviors that is still lacking in Lebanon. Also, adding a RH behavior module to the GSHS will help controlling for such behaviors in studies like ours. Other missing variables like religion, religiosity, conservatism and socio-economic level are important to include to allow researchers to control for these possible confounders in many associations to reduce bias in the results.

Findings from our study can potentially inform both interventions planning and future research. We have found that students in public schools and students with low socio-economic background support RHE less than others. Studying these groups' concerns about RHE is important before and throughout the implementation of any RHE programs targeting them. Also, using drugs and alcohol excessively were associated with not supporting RHE. This suggests an interesting relation between students' risky behavior and them not wanting to discuss RH topics in class. Many possible explanations of the observed relation exist. One of them would be that these students either have more RH related knowledge or think they do while they do not. In either case, special attention should be given to this high risk group in research and the planning of RHE programs in schools.

The positive association we found between students' support for RHE and the number of other health education topics discussed in class on one side and students' substance use on the other indicates that RHE should not be treated as an independent entity. On the contrary, it should be integrated in schools within a broader and more comprehensive health promotion program. Such a program should target students' knowledge and skills related not only to RH but to all factors affecting their health e.g. substance use and other risky behaviors. The introduction of RHE under a wider umbrella of health promotion is expected to reduce parental resistance against this sensitive topic. Developing interventions to explain the comprehensive aspect of RHE to students, parents and other stakeholders may also contribute to increase the societal support of such a program.

The quantitative phase of our study aimed at identifying factors associated with students' support of RHE. Further studies are needed to reveal the reasons behind the

differences observed as well as their implications on students' response to RHE and subsequently their health.

Since our findings do not directly concern out-of-school adolescents, RHE research and interventions should target this population even if it may be more difficult to access than adolescents enrolled in schools.

## CHAPTER VIII

### CONCLUSION

Young people are taking a wide share of the world's attention, as they constitute a large age group of the world's population. In the Arab world, the “youth bulge” is evident with approximately two thirds of the population aged less than 30 (Dhillon, 2008). Young people's potential future roles in socio-economic fields make them an essential foundation in all societies. Their health should therefore be considered as a priority. Intervention planning and allocation of resources targeted to youth have major impacts on public health. RHE programs have proven to be an effective approach to improve young people's health (Kirby et al., 2007). Aside from their positive outcomes on youth's sexual knowledge and behavior, comprehensive RHE is a means towards fighting stigma and discrimination related to RH (ESART, 2011, UNAIDS, 2013a).

Involving the receivers of in-school RHE themselves i.e. students, in the decision-making process is necessary be it on the level of planning, implementing or evaluating youth RHE programs. Reaching out for students and trying to understand their perceptions and needs with regard to such education is crucial for designing successful context specific interventions.

Our study highlighted that 58% of Lebanese middle school students want to be taught about youth RH in their school classes. Their support of RHE is related to several factors, implying that students who support RHE differ from those who do not with regard to many characteristics. For instance, students of economically underprivileged

background and those attending public schools tend to be less supportive of RHE. Exploring the reasons behind these groups' lower enthusiasm for in-class RHE is necessary to assure meeting their special needs and concerns in any program. Also, students who had the privilege of being exposed to different health education programs in their schools tend to encourage in-school RHE more than others. This association suggests that RHE cannot be isolated from other health promotion programs in schools but should be integrated within a comprehensive health education system.

The fact that over half of the students (58%) support RHE is only one cross-sectional view of the situation. In-depth interviews with some middle-school students provided further insights into students' opinions and views regarding RHE. In fact, there is a lot more behind a student's choice of the answer "yes", "no" or "I don't know" to the questions: "Do you support being taught about RH in school class?" Our qualitative approach revealed that each one of the students interviewed had a different conceptualization of the term "RHE". Although four of these students would have picked the choice "yes" for supporting RHE, each had a unique expectation from such a program. The results of our qualitative investigation were not intended to be generalizable. Rather, the in-depth interviews constituted an eye-opener on the need to consider the diversity of understandings/expectations that the students have in any future RHE intervention.

More qualitative studies with larger and more diversified samples are recommended to inform the construction of future surveys targeting young people's needs with regard to RHE. The use of a more transparent term to refer to sex and RHE reflecting the actual programs implemented may help remove the confusion around students' understanding of the term and enhance the significance of the survey results.

An extensive review of the literature has shown that our study is the first one in Lebanon and the world, to our knowledge, to examine variables associated with students' support for RHE at the socio-demographic, behavioral, knowledge and attitudinal level. Assessing at a larger scale reasons behind students' support or lack thereof of RHE and studying the effects of such support on the effectiveness of these programs were outside the scope of this thesis. We believe that our results are relevant for achieving an equitable provision of RHE programs. Studies such as this one do not only inform future studies and interventions targeting children, they also open opportunities for this vulnerable group to exert their human right for freedom of expression regarding matters that affect them (United Nations, 1989).

**Table 1: Sample Descriptives**

<b>Variables</b>	<b>Answers</b>	<b>N</b>	<b>%</b>
<b>Support for RHE</b>	1: No & I don't know	<b>983</b>	<b>41.8</b>
	2: Yes	<b>1,244</b>	<b>58.1</b>
<b>Age</b>	1: 11 years old or younger	<b>24</b>	<b>1.0</b>
	2: 12 years old	<b>268</b>	<b>12.0</b>
	3: 13 years old	<b>618</b>	<b>25.6</b>
	4: 14 years old	<b>619</b>	<b>28.6</b>
	5: 15 years old	<b>477</b>	<b>22.6</b>
	F. 16 years old or older	<b>267</b>	<b>10.3</b>
<b>Gender</b>	1: Male	<b>1,064</b>	<b>46.7</b>
	2: Female	<b>1,220</b>	<b>53.3</b>
<b>School type</b>	1: Private	<b>1,081</b>	<b>43.2</b>
	2: Public	<b>1,205</b>	<b>56.8</b>
<b>Grade level</b>	1: 7 <sup>th</sup>	<b>922</b>	<b>38.1</b>
	2: 8 <sup>th</sup>	<b>910</b>	<b>32.7</b>
	3: 9 <sup>th</sup>	<b>452</b>	<b>29.2</b>
<b>Ever went hungry in the past 30 days because food was missing at home</b>	1: never/rarely	<b>1,944</b>	<b>86.3</b>
	3: sometimes/most of the time/always	<b>326</b>	<b>13.7</b>
<b>Ever used drugs in life</b>	1: Yes	<b>81</b>	<b>4.0</b>
	2: No	<b>2,109</b>	<b>96.0</b>
<b>Ever drank alcohol in life</b>	1: Yes	<b>751</b>	<b>37.9</b>
	2: No	<b>1,444</b>	<b>62.1</b>
<b>Communication with parents about RH</b>	1: Yes	<b>784</b>	<b>34.7</b>
	2: No	<b>1,421</b>	<b>65.3</b>
<b>Perceived sex refusal skills</b>	1: yes	<b>1,254</b>	<b>58.4</b>
	2: No/I don't know	<b>964</b>	<b>41.2</b>
<b>Opinion on appropriate age for starting RHE</b>	1: Before or during puberty	<b>1,658</b>	<b>75.0</b>
	2: Right before or at marriage	<b>326</b>	<b>13.5</b>
	3: I don't know	<b>265</b>	<b>11.6</b>
<b>Preference for mixed or single-sex classes for discussion of RH topics</b>	1: single-sex	<b>1,007</b>	<b>43.9</b>
	2: mixed	<b>818</b>	<b>39.3</b>
	3: I don't know	<b>403</b>	<b>16.8</b>
<b>Ever heard of HIV/AIDS</b>	1: yes	<b>1,549</b>	<b>70.7</b>
	2: no	<b>669</b>	<b>29.3</b>
<b>Abstinence protects from HIV/AIDS</b>	1: yes	<b>808</b>	<b>36.9</b>
	2: no	<b>697</b>	<b>31.6</b>
	3: I don't know	<b>706</b>	<b>31.5</b>

**Table 2: Adjusted and Unadjusted OR of Support of School-based RHE**

Variables	Answers	Model 1				Model 2	
		Unadj OR	p-value	Adj OR (1)	p-value (1)	Adj OR (2)	p-value (2)
<b>Socio-demographics</b>							
<b>Gender</b>	1: Male	-	-	-	-	-	-
	2: Female	<b>0.82</b>	<b>0.035</b>	*	*	<b>0.94</b>	<b>0.574</b>
<b>School type</b>	1: Private	-	-	-	*	-	-
	2: Public	<b>0.70</b>	<b>0.022</b>	*	*	<b>0.94</b>	<b>0.688</b>
<b>Grade level</b>	1: 7 <sup>th</sup>	-	-	-	-	-	-
	2: 8 <sup>th</sup>	<b>1.42</b>	<b>0.002</b>	*	*	<b>1.06</b>	<b>0.684</b>
	3: 9 <sup>th</sup>	<b>2.19</b>	<b>0.005</b>	*	*	<b>1.78</b>	<b>0.005</b>
<b>ever went hungry in the past 30 days because food was missing at home</b>	1: never/rarely	-	-	-	-	-	-
	2: sometimes/most of the time/always	<b>0.74</b>	<b>0.002</b>	<b>0.76</b>	<b>0.007</b>	<b>0.88</b>	<b>0.382</b>
<b>Home and School environment</b>							
<b>Communication with parents about RH</b>	1: Yes	-	-	-	-	-	-
	2: No	<b>0.54</b>	<b>&lt;0.0001</b>	<b>0.59</b>	<b>0.001</b>	<b>0.79</b>	<b>0.107</b>
<b>Reported friendliness of schoolmates</b>	1: never/rarely	-	-	-	-	-	-
	2: sometimes	<b>1.27</b>	<b>0.152</b>	<b>1.16</b>	<b>0.311</b>	<b>0.84</b>	<b>0.369</b>
	3: often/always	<b>1.48</b>	<b>0.003</b>	<b>1.35</b>	<b>0.029</b>	<b>1.08</b>	<b>0.647</b>
<b>Substance use</b>							
<b>ever drink in life</b>	1: yes	-	-	-	-	-	-
	2: no	<b>0.58</b>	<b>0.002</b>	<b>0.60</b>	<b>0.001</b>	<b>0.66</b>	<b>0.012</b>
<b>ever used drugs in life</b>	1: yes	-	-	-	-	-	-
	2: no	<b>2.54</b>	<b>0.002</b>	<b>3.19</b>	<b>0.011</b>	<b>1.60</b>	<b>0.419</b>
<b>Knowledge, attitude and skills regarding RH and RHE</b>							
<b>Ever heard of HIV/AIDS</b>	1: Yes	-	-	-	-	-	-
	2: No	<b>0.48</b>	<b>&lt;0.0001</b>	<b>0.56</b>	<b>&lt;0.0001</b>	<b>0.90</b>	<b>0.397</b>
<b>Perceived sex refusal skills</b>	1: Yes	-	-	-	-	-	-
	2: No/I don't know	<b>0.61</b>	<b>&lt;0.0001</b>	<b>0.67</b>	<b>&lt;0.0001</b>	<b>0.95</b>	<b>0.713</b>
<b>Opinion on appropriate age for starting RHE</b>	1: Before or during puberty	-	-	-	-	-	-
	2: Right before or at marriage	<b>0.30</b>	<b>&lt;0.0001</b>	<b>0.31</b>	<b>&lt;0.0001</b>	<b>0.28</b>	<b>&lt;0.0001</b>
	3: I do not know	<b>0.15</b>	<b>&lt;0.0001</b>	<b>0.16</b>	<b>&lt;0.0001</b>	<b>0.21</b>	<b>&lt;0.0001</b>
<b>Preference for mixed or single-sex classes for discussion of RH topics</b>	1: single-sex class	-	-	-	-	-	-
	2: mixed class	<b>3.30</b>	<b>&lt;0.0001</b>	<b>3.01</b>	<b>&lt;0.0001</b>	<b>3.19</b>	<b>&lt;0.0001</b>
	3: I do not know	<b>0.40</b>	<b>&lt;0.0001</b>	<b>0.41</b>	<b>&lt;0.0001</b>	<b>0.52</b>	<b>&lt;0.0001</b>
<b>Number of health education topics discussed in class in the past year</b>	Score (/10)	<b>1.23</b>	<b>&lt;0.0001</b>	<b>1.23</b>	<b>&lt;0.0001</b>	<b>1.20</b>	<b>&lt;0.0001</b>

Model (1): including gender, school type, grade level in addition to the variable in questions

Model (2): including all the variables in the table (that showed significance at the bivariate level)

\*: results not shown since OR and p-value changed with each variable below



## ANNEX A

### Topic Guide for In-depth Interview with the Student

- **Introduction:**

*The interviewer Farah Mouhanna presents herself and the project then reads the "student assent form".*

*The student is asked to write down his/her name at the end of the assent form and is handed a copy of the assent form and a copy of the parental consent form to give to his parents.*

- In what grade level are you?

"As you have seen the title of this study is: "Factors associated with middle school students' support for Reproductive Health education"."

- **Students' definition of "Reproductive Health education":**

- What is the first thing that comes to your mind when you hear the term "Reproductive Health education"?
- So can I ask you please to define the term "Reproductive Health education" in your own words?
- In your opinion, what are the possible sources from which an adolescent like you can learn about reproductive health?

*The interviewer repeats the sources cited by the interviewee then asks:*

- Among these sources you just cited, which ones do you prefer and why?

*The interviewer summarizes the definition of Reproductive Health education given by the interviewee (using his/her own words), then asks:*

- Do you think what I just said describes well enough your definition of Reproductive health education?
- Is there anything you would like to add on this point?

- **Transition:**

*Two possible transitions:*

*In case the interviewee mentions school as a source for Reproductive Health education, the transition sentence would be:*

- You mentioned school as a possible source for reproductive health education; I would like to elaborate more on this idea.

*In case the student did not mention school as a source for Reproductive Health education, the transition would be:*

- What about schools? Don't you think that adolescents can learn about reproductive health in their schools?

- **Student's opinion about in school reproductive health education:**

- Do you support that "Reproductive health" education would be given in school classes?
- Can you please explain to me why?
- So to conclude, what in your opinion is the best way to teach about Reproductive Health in schools i.e. who should teach it, how and in what subjects should it be taught?

*The interviewer summarizes the interviewee's opinion about in school reproductive health education (using his/her own words), then asks:*

- Do you think what I just said describes well enough your opinion and thoughts?
- Is there anything you want to add? Any idea related to reproductive health education that you want to mention and did have the chance to express in this interview?

"At the end I would like to thank you again for your participation. It was nice meeting with you. I wish you a very nice day and a successful year."

## ANNEX B

### All variables tested for Univariate association with the main outcome: Students' support for RHE in class

**Table a: Socio-demographics**

Question	Answers	OR	p-value	95 % CI
<b>How old are you?</b>	1: 11 years old or younger	-	-	-
	2: 12 years old	0.29	0.013	0.11 – 0.75
	3: 13 years old	0.38	0.046	0.15 – 0.92
	4: 14 years old	0.46	0.134	0.17 – 1.29
	5: 15 years old	0.57	0.281	0.19 – 1.65
	F. 16 years old or older	0.50	0.122	0.20 – 1.22
<b>What is your sex?</b>	1: Male	-	-	-
	2: Female	0.82	0.035	0.68 – 0.98
<b>Type of school</b>	1: private	-	-	-
	2: public	0.70	0.022	0.52 – 0.95
<b>In what grade are you?</b>	1: 7th	-	-	-
	2: 8th	1.42	0.002	1.15 – 1.74
	3: 9th	2.19	0.005	1.30 – 3.69
<b>How do you describe your weight?</b>	1: Very underweight	-	-	-
	2: Slightly underweight	1.24	0.299	0.81 – 1.90
	3: About the right weight	1.33	0.222	0.83 – 2.13
	4: Slightly overweight	1.22	0.445	0.71 – 2.10
	5: Very overweight	1.54	0.125	0.88 – 2.72
	6: I don't know	0.72	0.241	0.41 – 1.26
<b>During the past 30 days, how often did you go hungry because there was not enough food in your home?</b>	1: Never	-	-	-
	2: Rarely	1.16	0.118	0.96 – 1.41
	3: Sometimes	0.74	0.004	0.61 – 0.90
	4: Most of the time	1.26	0.335	0.77 – 2.06
	5: Always	0.44	0.033	0.21 – 0.93
<b>Ever went hungry in the past 30 days because food was missing at home</b>	1: never	-	-	-
	2: rarely	1.16	0.118	0.96 – 1.41
	3: more than rarely (sometimes/most of the times/ always)	0.77	0.006	0.64 – 0.92

**Table b: Communication with parents**

Question	Answers	OR	p-value	95 % CI
<b>Have you ever talked about HIV infection or AIDS with your parents or guardians?</b>	1: Yes	-	-	-
	2: No	0.54	<0.0001	0.41 - 0.70
<b>During the past 30 days, how often did your parents or guardians understand your problems and worries?</b>	1: never/rarely	-	-	-
	2: sometimes	1.11	0.406	0.86 – 1.43
	3: often/always	1.12	0.539	0.77 – 1.63
<b>During the past 30 days, how often did your parents or guardians give you attention and listen to you?</b>	1: never/rarely	-	-	-
	2: sometimes	1.23	0.073	0.98 – 1.54
	3: often/always	1.10	0.573	0.78 – 1.56

**Table c: School environment**

Question	answers	OR	p-value	95% CI
<b>During the past 12 months, did your teacher ever hit, slap, throw something at you (chalk), or physically hurt you on purpose?</b>	1: Yes	-	-	-
	2: No	1.01	0.971	0.72 – 1.41
<b>was most often bullied using sexual jokes, comments or gestures</b>	1: yes	-	-	-
	2: no	2.03	0.063	0.96 – 4.27
<b>reason for bullying</b>	1: reasons not related to sex	-	-	-
	2: related to sex and body	2.23	0.066	0.94 – 5.28
	3: not bullied	1.13	0.348	0.87 – 1.45
<b>During the past 30 days, how often were most of the students in your school kind and helpful?</b>	1: never/rarely	-	-	-
	2: sometimes	1.27	0.152	0.91 - 1.78
	3: often/always	1.48	0.003	1.16 - 1.90

**Table d: Substance use**

<b>Question</b>	<b>Answers</b>	<b>OR</b>	<b>p-value</b>	<b>95% CI</b>
<b>Amount of drinking in the past 30 days</b>	1: never	-	-	-
	2: less than 1 drink	1.60	0.087	0.93 – 2.76
	3: 1 drink or more	1.68	0.007	1.17 – 2.41
<b>Ever drink in life</b>	1: yes	-	-	-
	2: no	0.62	0.001	0.48 – 0.81
<b>Ever used marijuana in life</b>	1: yes	-	-	-
	2: no	2.58	0.004	1.41 – 4.73
<b>Ever used amphetamines in life</b>	1: yes	-	-	-
	2: no	2.45	0.005	1.36 – 4.42
<b>Ever used drugs in life</b>	1: yes	-	-	-
	2: no	2.54	0.002	1.46 – 4.43
<b>Ever used substance in life (alcohol and/or drugs)</b>	1: yes	-	-	-
	2: no	1.49	0.004	1.15 – 1.93
<b>During the past 30 days, on the days you drank alcohol, how many drinks did you usually drink per day?</b>	1: I did not drink alcohol during the past 30 days	-	-	-
	2: Less than one drink	1.60	0.087	0.93 – 2.76
	3: 1 drink	2.14	0.002	1.36 – 3.36
	4: 2 drinks	1.50	0.181	0.82 – 2.75
	5: 3 drinks	2.46	0.011	1.26 – 4.84
	F. 4 drinks	3.01	0.021	1.20 – 7.58
	G. 5 or more drinks	0.25	0.017	0.08 – 0.76
<b>During your life, how many times did you drink so much alcohol that you were really drunk? (binge drinking)</b>	1: 0 times	-	-	-
	2: 1 or 2 times	1.89	<0.0001	1.47 – 2.45
	3: 3 to 9 times	1.39	0.245	0.78 – 2.47
	4: 10 or more times	0.50	0.308	0.13 – 1.96
<b>During your life, how many times have you used marijuana?</b>	1: 0 times	-	-	-
	2: 1 or 2 times	0.19	0.031	0.04 – 0.84
	3: 3 to 9 times	0.74	0.688	0.16 – 3.41
	4: 10 to 19 times	2.02	0.545	0.19 – 21.41
	5: 20 or more times	0.34	0.138	0.08 – 1.46
<b>During your life, how many times have you used amphetamines or methamphetamines?</b>	1: 0 times	-	-	-
	2: 1 or 2 times	0.73	0.314	0.39 – 1.37
	3: 3 to 9 times	0.44	0.164	0.13 – 1.44
	4: 10 to 19 times	0.29	0.149	0.05 – 1.60
	5: 20 or more times	0.16	0.015	0.04 – 0.68

**Table e: Exposure to health education in school**

Question	Answers	OR	p-value	95% CI
<b>During this school year, were you taught in any of your classes the benefits of healthy eating?</b>	1: Yes	-	-	-
	2: No/I don't know	0.66	0.002	0.51 – 0.85
<b>During the past 12 months, were you taught in any of your classes in school about the importance of hand washing with soap and water?</b>	1: Yes	-	-	-
	2: No/I don't know	0.780	0.046	0.63 – 1.00
<b>During the past 12 months, were you taught in any of your classes about the importance of cleaning or brushing your teeth with a toothbrush and toothpaste?</b>	1: Yes	-	-	-
	2: No/I don't know	0.94	0.647	0.72 – 1.23
<b>During the past 12 months, were you taught in any of your classes how to avoid being bullied?</b>	1: Yes	-	-	-
	2: No/I don't know	0.67	0.002	0.52 – 0.85
<b>During this school year, were you taught in any of your classes the problems associated with drinking alcohol?</b>	1: Yes	-	-	-
	2: No/I don't know	0.55	<0.0001	0.44 – 0.70
<b>During the past 12 months, were you taught in any of your classes the problems associated with using drugs?</b>	1: Yes	-	-	-
	2: No/I don't know	0.44	<0.0001	0.36 – 0.54
<b>During this school year, were you taught in any of your classes how to avoid HIV infection or AIDS?</b>	1: Yes	-	-	-
	2: No/I don't know	0.57	<0.0001	0.48 – 0.67
<b>During the past 12 months, were you taught in any of your classes the benefits of physical activity?</b>	1: Yes	-	-	-
	2: No/I don't know	0.64	<0.0001	0.52 – 0.80
<b>During this school year, were you taught in any of your extra-curricular school activities how to avoid HIV infection or AIDS?</b>	1: Yes	-	-	-
	2: No/I don't know	0.47	<0.0001	0.37 – 0.60
<b>Was exposed to ANY type of health education IN CLASS (healthy nutrition OR hygiene OR oral hygiene OR avoiding bullying skills OR alcohol problems OR drugs problems)</b>	1: yes	-	-	-
	2: No/I don't know	0.50	0.001	0.34 – 0.74
<b>Was exposed to alcohol OR drugs problems OR HIV/AIDS infection education</b>	1: Yes	-	-	-
	2: No/I don't know	0.40	<0.0001	0.28 – 0.57
<b>Does not know if was exposed to alcohol OR drugs problems OR HIV/AIDS infection education</b>	1: Yes	-	-	-
	2: No	2.01	0.001	1.38 – 2.91

**Table f: Knowledge, attitude and skills regarding RH and RHE**

Question	Answers	OR	p-value	95% CI
<b>When should education on reproductive health start? (opinion on convenient age for RHE)</b>	1: Before the age of puberty	-	-	-
	2: During the age of puberty	0.57	<0.0001	0.46 – 0.72
	3: When one is getting ready for marriage	0.30	<0.0001	0.19 – 0.47
	4: At marriage	0.18	<0.0001	0.12 – 0.26
	5: I do not know	0.11	<0.0001	0.08 – 0.16
<b>Do you prefer that the discussion of reproductive health topics to be in “boys only” or “girls only” classes?</b>	1: Boys only	-	-	-
	2: Girls only	0.87	0.491	0.58 – 1.3
	3: Both boys and girls together	3.07	<0.0001	2.07 – 4.55
	4: I do not know	0.37	<0.0001	0.26 – 0.54
<b>Have you ever heard of HIV infection or the disease called AIDS?</b>	1: Yes	-	-	-
	2: No	0.48	<0.0001	0.36 – 0.65
<b>Can people protect themselves from HIV infection or AIDS by not having sexual intercourse?(awareness of role of abstinence if avoiding HIV infection)</b>	1: Yes	-	-	-
	2: No	0.90	0.364	0.71 – 1.14
	3: I do not know	0.61	<0.0001	0.51 – 0.72
<b>Do you know how to tell someone you do not want to have sexual intercourse with them? (perceived sex refusal skills)</b>	1: Yes	-	-	-
	2: No/I don't know	0.61	<0.0001	0.49 – 0.76
<b>When should education on reproductive health start?</b>	1: Before or at puberty	-	-	-
	2: When getting prepared to or at marriage	0.30	<0.0001	0.20 – 0.44
	3: I do not know	0.15	<0.0001	0.10 – 0.22
<b>Do you prefer that the discussion of reproductive health topics to be in “boys only” or “girls only” classes?</b>	1: single-sex class	-	-	-
	2: mixed class	3.30	<0.0001	2.46 – 4.44
	3: I do not know	0.40	<0.0001	0.30 – 0.54

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