UNDERTAKING THE FIRST ONLINE SEXUALITY SURVEY AMONG PRIVATE UNIVERSITY STUDENTS IN LEBANON: PROCESS, CHALLENGES AND LESSONS LEARNED

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ABSTRACT • Background : The taboo surrounding reproductive and sexual health in the Middle East and North African (MENA) region, specifically among unmarried youth, has resulted in an incomplete and inaccurate documentation of the status of youth sexual and reproductive health (SRH). Documenting regional research processes and successes can support SRH researchers in promoting evidence-based services and local policies. This paper describes the process, challenges and lessons learned during the first online research study in the MENA to assess university students' sexual practices, values and perceptions. **Methods**: An online survey was completed by 2,182 university students attending the 4th largest private university in Lebanon. **Results**: An online SRH survey among Arab youth must be carefully developed with the cultural context and its prevailing issues in mind. Careful attention must be paid to any translation process specifically regarding tone and choice of certain sexual terms. The online program/software must be thoroughly piloted for possible technical flaws, language support, and web browser compatibility. Inter-disciplinary collaboration between the research team, IT and IRB offices is crucial in order to conduct an ethically-appropriate technically-functional online survey. **Conclusion** : Online survey methods hold great promise for surveying SRH and other sensitive topics in Lebanon and the MENA.

Keywords : lessons learned; online study; sexuality; youth; Lebanon

RÉSUMÉ • Contexte : Les tabous entourant la santé sexuelle et reproductive (SSR) dans la région Moyen-Orient–Afrique du Nord (MENA), particulièrement parmi les jeunes non mariés, ont entraîné une documentation incomplète et inexacte de la SSR des jeunes. Les processus et les succès de recherches régionales consacrées à la SSR constitueraient une base de données pour les chercheurs pour promouvoir des services et des politiques locales. Cette étude régionale, la première en ligne à évaluer les pratiques, les attitudes et les perceptions sexuelles des étudiants universitaires, décrit les processus, difficultés et leçons apprises. **Méthodes**: Un sondage en ligne de 2182 étudiants inscrits dans la 4e plus grande université privée au Liban. **Résultats**: Cette méthode adressée aux jeunes du monde arabe doit prendre en considération le contexte social et ses enjeux, et examiner minutieusement le processus de traduction surtout la tonalité et le choix des termes sexuels. Le logiciel doit être piloté et conçu pour résoudre d'éventuels problèmes techniques, liguistiques ou liés à la compatibilité du navigateur. La collaboration entre l'équipe de recherche, le département informatique et le comité d'éthique institutionnel est indispensable pour une enquête efficace et éthiquement convenable. **Conclusion**: Ces méthodes de sondage sont prometteuses pour étudier les sujets sensibles tels que la SSR au Liban et dans la région MENA.

THE STATE OF RESEARCH ON YOUTH SEXUAL HEALTH IN THE MENA

The taboo surrounding the topic of youth sexuality in the Middle East and North African (MENA) region has driven research on the topic to become side-lined, scattered, unrepresentative, and scarce. Young people, particularly the unmarried, suffer from marginalization and neglect, and are negatively influenced by financial constraints, the absence of timely and optimal information, as well as youth-friendly specialized sexual and reproductive health (SRH) services. The absence of comprehensive sexuality education for youth in the MENA often leads them to seek information from invalid sources [1], increasing their risk of misinformation and ill-health behaviors [2].

In keeping with societal and religious values that prohibit premarital sexual activity, most researchers have shied away from understanding sensitive indwelling SRH-related issues in youth, and generating the data needed to initiate and promote evidence-based changes at the level of policy, existing structures, and practices, not to mention the larger society in terms of de-stigmatizing such an important public health issue. This is keeping in mind that youth in the MENA, ranging between the ages of 15 and 24, have reached an unprecedented number of 90 million in 2010 [3] whereby nearly every one in five persons is between that age range [4]. The most commonly surveyed SRH-relevant issues include violence against women, female genital mutilation, HIV/AIDS and other sexually transmitted infections, reproductive morbidity, and maternal mortality [5], in addition to knowledge of contraception and general sexual practices [6, 7]. Earlier

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research from the late 90's had shown how Lebanese youth are exposed to high-risk practices such as unsafe sexual practices in turn leading to ill-health consequences like unplanned pregnancy, sexually transmitted infections (STIs), and abortion [8-10]. More recent research exploring SRH among youth in Lebanon and the MENA region is scarce, and any attempt to conduct SRH research has to go through deductive and speculative reasoning due to the taboo around sexual behavior. In a self-filled paper and pencil university survey by Barbour and Salameh (2009), only 7% of the female students admitted to having had penetrative vaginal intercourse, compared to 47.7% of the males [6]. The taboo springs from the common and persistent myth that any discussion about sexual and reproductive health may lead to premarital sex among youth [2].

Globally, SRH research among youth has commonly used *the self-complete approach* to ensure privacy, sense of security and avoid interviewer bias [11]. Using *online survey methods* further promote disclosure and uninhibited responses, due to a higher sense of security and anonymity [12, 13] ; they also minimize coercion to participate and social desirability bias, enhancing the accurate collection of sensitive data such as sexual behaviors [12].

In the MENA region, however, only a handful of studies to date have employed online surveys to examine SRH among youth [14, 15], again addressing very specific themes such as erectile dysfunction in men [15] or the health status of men who have sex with men [14]. While invaluable, these studies on specific populations fail to reflect on the feasibility of using online methods among a larger more general population of youth. With an estimated 40% of the population in the Middle East having internet access in 2012 (3.7% of the world's internet users) [16], and an internet population penetration/access that is higher than the world average (34.3%) [17], online surveys present a viable yet untapped tool for gathering timely and sensitive SRH data on MENA youth.

This paper provides a useful description of the processes, successes and challenges of the first online research study in Lebanon to comprehensively assess the sexual practices, values and perceptions of a sample of university youth from the MENA region; evidence-informed recommendations are also presented for similar future surveys. The study, which was granted ethical approval by the Institutional Review Board (IRB) of the participating university, was conducted in a large private university that serves a wide range of students from Lebanon and the Arab region, of varying socio-demographic backgrounds (including both self-paid students and students on financial aid).

PROCESS, CHALLENGES, AND RECOMMENDATIONS

Recruiting an attainable youth population
Academic settings provide easy, affordable/free, and wider access to youth, and their active personalized institutional emails in the case of online surveys. Moreover, the availability of a sampling frame (known total denom-

inator of students) allows researchers/epidemiologists to evaluate important quality indicators such as response rate and the extent of self-selection bias. For instance, we were able to compare the age and sex distribution of the participating students to the overall distribution in the total student population – as a proxy for the level of selection bias that may have been introduced. Conducting an online survey within university settings also addresses some societal restrictions that women are subjected to, providing an equal probability for both sexes to be heard. For instance, while internet access is a privileged resource to many in the MENA, there exists an apparent gender gap whereby the ratio of internet access of men to women is 94:6 respectively [18]. Compared to recruitment through social media, online surveys among university youth – a clearly defined population – allows for the use of probability sampling techniques, calculation of response rates, equal opportunity for both sexes to participate, follow-up via friendly reminders, as well as the comparison of respondents to the overall targeted population to determine the extent of self-selection bias.

For this online survey, all registered students (n = 7841) within this study-site, the fourth most attended private university in Lebanon [19], between the ages 18 and 30 were invited to participate via an email that briefly introduced the study, the investigators, and explained the voluntary and anonymous nature of the study. The email included an opt-out link and the secured-survey URL that, once clicked, led students to the online informed consent form (ICF). The ICF was an 815-word document that was placed on its own webpage. Ultimately, 712 students "opted-out" (meaning they opted-out from receiving reminders to participate in the study, before they clicked the survey link and viewed the ICF), 54 students officially declined (meaning they clicked on the survey link, viewed
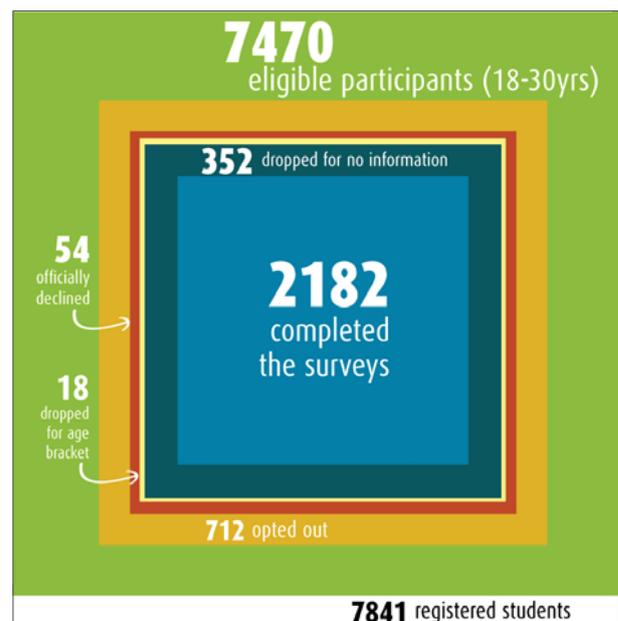

FIGURE 1. Description of the study sample

the ICF, and thereafter declined participation), and 2553 agreed to participate after having viewed the ICF page. Ultimately, 2182 surveys only were considered usable (Figure 1), representing an expected and acceptable response rate (29.2%) in the absence of incentives [20].

Completing an online survey on-campus has its own set of limitations, however, such as excluding youth within the defined age group (18-30) not attending university, or not reaching students who use their personal email (e.g., Gmail, Yahoo, Hotmail, etc.) rather than their institutional email address. Also, informative websites that may be suggested at the end of a survey may be "blacklisted" because of their sexual content. Thus, it is recommended that the researchers check with their IT offices for unblocking these sites prior to survey administration, or alternatively modifying the selected resourceful and credible websites.

Survey instrument
What to consider and what to avoid

The questionnaire was developed in English over a course of five months (Figure 2) after carefully reviewing six published sexual health interviews [21-26] and thereafter incorporating culturally relevant questions that reflect local SRH issues and societal norms (e.g., hymen protection, temporary marriages, gender roles and sexual pleasure, marriage expectations, premarital sexual relations).

The questionnaire, which was estimated to require approximately 20 minutes, included five main sections: the first on demographics including questions on cohabitation, temporary and/or polygamous marriages; the second and third sections were about sexual behaviors, including a section on general intimate behaviors (e.g. kissing, nudity, ability to discuss sex with parents/friends) and another including more sensitive questions (e.g. penetrative sexual behaviors, same-sex attraction and sexual activity, and sexual violence).

The behavioral questions were designed to ease the participants into gradually answering about more intimate and sensitive matters. To ensure clarity in definitions among all participants, a terminology box was included to explain some sex-related terms (i.e. oral, anal, and vaginal sex, sexual intercourse, cybersex, masturbation, and outercourse). Last two sections inquired about students' perceptions and attitudes towards sexuality and sexual health; youth's views on sexual activity, reasons of sexual abstinence, social norms, gender roles and expectations, personal and societal values, and pleasure were examined.

In order not to alienate either the conservative or non-conservative students, questions were developed using a simple and proper tone (without jargon or scientific terminology) that is youth-friendly while still upholding university-level professionalism. Involving junior researchers in the process of writing and reviewing the survey instrument was found helpful, particularly that the survey investigated young people's behavior, attitudes, and perceptions.

The questionnaire must be carefully developed with the cultural context and its prevailing issues in mind.
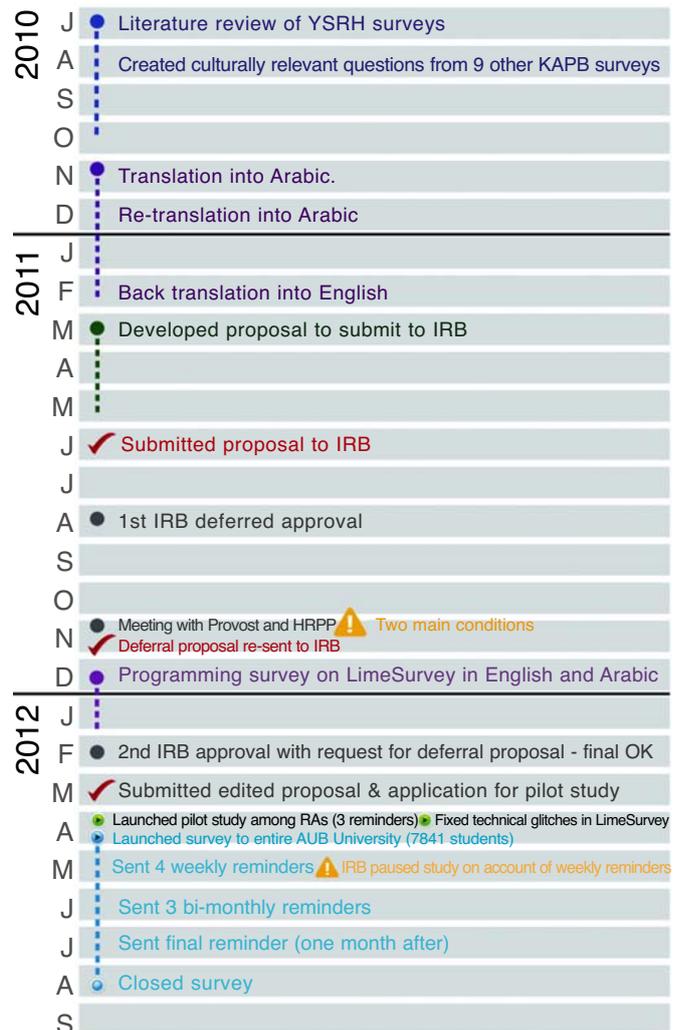

FIGURE 2. Infographic of research study process (2010 - 2012)

Adapting international questionnaires will not suffice as they tend to be heavily focused on HIV and penetrative sexual activity, while an online SRH survey among Arab youth must avoid solely investigating the sexually active in a harm reductionist view, and rather recognize the scarcity and need of broad encompassing research on sexuality whilst respecting and trying to understand youths' choice to remain abstinent or engage in alternative sexual behaviors. The process of understanding cultural sensitivities whilst creating a questionnaire is best addressed by local researchers and practitioners who can identify the issues in their communities and build questions in a context appropriate language.

Given the university's official language of instruction, the online survey was administered in English, but a translated and back-translated Arabic version is available for use in other settings. Careful attention must be paid to any translation process specifically regarding tone and choice of certain sexual terms. We learned that even a professional translator may fail to capture or retain the actual meanings; contracted translators must

therefore be attuned to terms and concepts in gender and sexuality, to avoid hetero-normative language, a sex negative tone, and mistranslated terms. Post back-translation, pilot-testing the questionnaire is essential to solicit feedback (as we did from 14 recently graduated students employed as research assistants) on each section with regards to the clarity, appropriateness, flow and sequence of the questions.

Finally, we highly recommend providing participants with the contact details of local hotlines and/or available SRH services, especially after sensitive questions related to sexual abuse and violence. Besides the ethical imperative of sharing such information, it helps build a more trusting relationship between researchers and participants as several students emailed us to thank us for directing them to such resources.

Feasibility and utility of the online data collection method

Data collected started in April 2012 and continued till August 2012. The online survey method was chosen given its appropriateness in investigating sensitive research topics such as youth sexuality and sexual experiences [12, 13]. It helped ensure the highest possible degree of privacy and a greater coverage of students since an email invitation was sent out to all 7,841 students registered (including undergraduates, graduates, and medical students) for that semester.

Extra measures were undertaken to maximize participation including: (1) using *LimeSurvey*'s non-shareable secure survey hyperlink that only the addressee could access; (2) blinding the investigators to the students' emails (untraceable responses); and (3) sending several friendly reminders. In a recent paper-and-pencil survey, 7% of female students attending a public university in Lebanon [6] admitted to having had penetrative vaginal intercourse in contrast to 27% of the females in our sample. Keeping in mind the various differences in study design and implementation, one cannot but wonder whether the online survey helped the female participants feel more comfortable about disclosing details of their sexual activity. Moreover, and since the university serves European and North American students as well, besides students from Lebanon and the MENA, one could argue that the former have varied acceptances and responses to online surveys, but worth noting is that non-Arab foreigners made up less than 4% of our sample, who were mostly either Lebanese (61%) or dual citizens (24%).

The online method also helped us avoid data entry errors, facilitated logical skips, and ensured that respondents selected only one response per question and responded to all mandated questions. In this study, we mandated a response (even as "rather not say") for all demographic and behavioral questions to ensure data completeness. Respondents were also not permitted to go back and change their answers, or to sneak preview all questions, but were allowed to clear and exit the survey.

The online program/software must be carefully chosen to fit the researchers' needs and available technical resources and support system. In our case, *LimeSurvey* is hosted on the university's server, and was chosen because it was familiar to the students and the technical support team. Nonetheless, any selected program must be thoroughly piloted for possible technical flaws, language support, and web browser compatibility. Notwithstanding its virtues, *LimeSurvey* had its drawbacks, including its lack of support for Arabic text (which was ultimately fixed working with the IT team). The features of any online survey software must also be carefully assessed for compatibility with a number of web browsers (e.g., Internet Explorer, Mozilla FireFox) and smartphones. In this study, Google Chrome was taking too long to open the survey link, a matter that was reported and rectified by university IT services.

Reminder emails: Figuring out the frequency

Four weeks into the data collection, the IRB paused data collection to re-examine the initially approved weekly reminder – in order to avoid student harassment. Ultimately, a biweekly reminder for the following six weeks was agreed upon, to be followed by a monthly reminder till the end of data collection (August 2012). To avoid student harassment, reminder emails were only sent to students who had not opted out from the study, had not initiated the survey or had an incomplete survey not yet submitted.

Regular reminders are encouraged in the literature [27] but their exact frequency is insufficiently addressed and so the intersection between what is empirically-sound and ethically-just is unclear. The varying intervals for frequent reminders in our study enabled us to note that bi-monthly and monthly email reminders recruited a lesser number of participants, in contrast to weekly reminders. Moreover, with every reminder email (weekly, bimonthly, or monthly), the first 24-48 hours witnessed the highest surge of newly completed surveys (250-350) and a notable increase in completing the partially filled surveys (150-200).

Obtaining ethical approval: The long and winding road

As shown in Figure 2, the process of obtaining the university's IRB approval took about nine months and necessitated the approval of a higher body, the Human Research Protection Program (HRPP). Our initial proposal was to survey university students in the ten largest universities in Lebanon, but IRB's and HRPP's condition for approval was for the project to be developed as a multisite study, whereby each university is to act independently and be responsible for its own IRB approval and research implementation. To date, we are still trying to identify and actively encourage other university institutions to partake in the study. We even held a meeting with decision-making administrators of four major universities but alas their institution's reluctance to surveying such a 'sensitive topic' has been a major impediment. All in all, and given all the delays witnessed, our recommendation is to allow an estimated two to three years between planning, IRB approval, implementation and preliminary analysis.

The reality of ethical accountability and data security
We learned that the functionality of even the best software should not be taken for granted and must be tested by the research team before the official survey is launched. Errors will often manifest with researchers more so than with IT personnel. Reporting technical errors that breach research ethics to IT services is imperative to perpetually enhance the online survey security. One shortcoming we faced during the pilot phase was when two unanticipated technical issues or glitches in the online survey program appeared, potentially jeopardizing the promised confidentiality to participants. The first was encountered when sending out the survey to the 14 pilot participants; our team noted that the random identification numbers (generated by *LimeSurvey*) and students' emails (which include initials only and a number but not full names) appeared together despite prior assurance by the IT office that they would not.

The second issue was that the team was able to view the temporarily saved survey responses of the pilot participants with either their names or emails (only if they had written them while saving their responses as *LimeSurvey* warns against using emails or real names and encourages use of pseudo names for identity protection). Despite prior use of the program by others on campus, these issues were not identified previously, and were fortunately detected at the pilot phase, immediately reported to IRB and IT, the latter whom rectified the issue by permanently disabling this option from the software prior to the launch of our survey (and other future surveys); quite importantly, pilot data were also immediately and completely destroyed. This incident stressed the importance of a candid solid collaboration between the research team, the IT and IRB offices in order to conduct an ethically-appropriate technically-functional online survey. Ethical responsibility lies not only on the researchers and IRB, but also on tech support and all those involved in the study security.

Another lesson learned specific to ethics was that students in our sample gave their consent to participate in the survey without really reviewing the detailed online ICF. Around two thirds (65%) had spent only 30 seconds or less reviewing the 815-word ICF webpage [28], clearly highlighting the ethical responsibility of researchers to work harder at ensuring that study participants are fully informed of their rights and involvement conditions.

CONCLUSIONS

Each study setting will probably have its own unique set of processes and challenges, yet given shared circumstances such as the taboo surrounding SRH research, and the challenges to conducting research on sensitive topics and vulnerable populations in general, documentation of such research processes and successes is an imperative step to help support regional (and international) researchers in conducting research and producing the evidence needed to reinforce evidence-informed positive change at the practice and policy level.

Despite the many challenges faced in this study, we proved that the process was feasible and the outcome was well worth the effort [28, 29] with many public health relevant publications underway or published. While two other recently published sexuality-related online studies [14, 15] have used the online platform, the former did not directly address the complexities of sexuality within the region, or in the case of the latter study, only a very specific issue (erectile dysfunction) was investigated among Arabic-speaking web surfers in selected countries of the Middle East (survey was offered via paid advertising on a popular social hub, Facebook®, in addition to other sites, on pay per click basis).

This study is therefore the first attempt to use online surveys to gather detailed data on a sensitive and socially taboo topic among students in the MENA region, illustrating great promise for similar future endeavors. The relatively acceptable response rate and student-initiated positive feedback of the study reassured us of the questionnaire's local authenticity, and the online method's capacity to provide participants with the much needed privacy and freedom for honest responses. Still, insight into how to effectively increase response rate and encourage university administrators from the region to partake in such research endeavors is yet to be determined.

Interdisciplinary collaborations cannot be stressed enough. It is the ethical stance of every researcher to make sure that the online survey method holds the same ethical weight as that of the traditional pen and paper format, requiring that the research team works jointly with the IT department to push the limits of creating better quality data and responses.

Online survey methods may be the golden opportunity to pioneer in producing new SRH research that would change the trite taboo excuse, and influence program and policy developments in reproductive and sexual health as well as other fields. This is particularly true when surveying youth in academic settings where computers and fast internet connections are secured, institutional emails are accessible and utilized, and good technical support is available.

Published research on SRH in these times is imperative to create an up-to-date body of literature on SRH from the MENA that is capable of influencing health policy planning and implementation on a governmental and non-governmental level. In order to do so, we hope to have set a precedent of using the newest research technologies and demonstrated how it may be one of the most viable options currently available for surveying sexuality and sexual health of youth in the MENA.

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