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Reaching Egyptian gays using social media: A comprehensive health study and a framework for future research

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Abstract:	Internet has revolutionized research on sexual minorities by providing direct and safe access to hidden, stigmatized and high risk populations. This study investigated the possibility of using Facebook to reach Egyptian gays. The questionnaire was manually distributed to an extensive list of Facebook pages and groups related to the topic that has been collected using a snowball-like technique. The recruitment lasted from August 2015 to May 2016. Among the 461 eligible participants, the mean age was 26.6 (SD=7.6) and the majority (74%) were highly educated. Only 17% use condoms consistently and 34% have ever tested for HIV. Guilt feeling and trial to change sexual orientation were very high and were associated with higher religiosity and low condom use and HIV testing (P < .05). Also, Ten percent have ever tried to end their life. Most of the participants didn't disclose their sexual orientation to anybody other than their partners and when asked about telling a doctor about the sexual orientation if needed, 60% refused. The low health awareness among Egyptian gays requires more innovative health campaigns probably using the Internet as well.
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8 Dec. 2016

Dear Editor,

I wish to submit a new manuscript entitled "Reaching Egyptian gays using social media: A comprehensive health study and a framework for future research" for consideration by the AIDS and Behavior journal.

I confirm that this work is original and has not been published elsewhere nor is it currently under consideration for publication elsewhere.

This study investigated the possibility of using the Internet for reaching Egyptian gays and assessment of health behaviors among them. This study is unique because of the following reasons:

- The study provides a framework for using Facebook to study Egyptian gays. This will empower future research.
- The study provides descriptive data about health awareness among Egyptian gays especially condom use and HIV testing. This will support the face-to-face studies and the grey literature in shaping health policies.
- The study investigates new areas like guilt feeling and suicidal behavior among Egyptian gays that haven't been studied before.
- The study which used a large number of participants seeking sex with strangers reflects a future problem that is more sex with strangers is happening recently through Facebook in Egypt. This in addition to the current low health awareness might lead to unpleasant outcomes.

The paper should be of interest to readers in the areas of health behaviors, HIV epidemiology and applied internet research.

Please address all correspondence concerning this manuscript to me at elmahy2005@gmail.com.

Thank you for your consideration of this manuscript.

Sincerely,

Ahmed Elmahy

Reaching Egyptian gays using social media: A comprehensive health study and a framework for future research

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Reaching Egyptian gays using social media: A comprehensive health study and a framework for future research

Abstract

Internet has revolutionized research on sexual minorities by providing direct and safe access to hidden, stigmatized and high risk populations. This study investigated the possibility of using Facebook to reach Egyptian gays. The questionnaire was manually distributed to an extensive list of Facebook pages and groups related to the topic that has been collected using a snowball-like technique. The recruitment lasted from August 2015 to May 2016. Among the 461 eligible participants, the mean age was 26.6 (SD=7.6) and the majority (74%) were highly educated. Only 17% use condoms consistently and 34% have ever tested for HIV. Guilt feeling and trial to change sexual orientation were very high and were associated with higher religiosity and low condom use and HIV testing ($P < .05$). Also, Ten percent have ever tried to end their life. Most of the participants didn't disclose their sexual orientation to anybody other than their partners and when asked about telling a doctor about the sexual orientation if needed, 60% refused. The low health awareness among Egyptian gays requires more innovative health campaigns probably using the Internet as well.

Introduction

In 2013, the Pew Research Center reported that ninety five percent of Egyptians agree that homosexuality should be rejected in Egypt (1) . This homophobia has a strong impact on the health and the psychology of Egyptian gays. Surveying Egyptian gays should improve our understanding of their behaviors. Such surveying is very difficult in Egypt; however, Internet provides a new way to easily reach that group.

Gays have special characteristics and needs especially in conservative countries like Egypt. The main feature of Egyptian gays is that they are almost hidden. There're no gays clubs or venues in Egypt and sex between men is criminalized (2) . There's a wide gap in understanding the behaviors of Egyptian gays due to the internalized homophobia and the social stigma (3,4). Another feature of Egypt is the Islam predominance. Research revealed that homophobia is higher in religious countries (1).

This study has three main concerns: to develop a framework for using the Internet to survey Egyptian gays; to assess risky sexual behaviors and preventive health behaviors among them; and to provide a base for future psychological research including suicidal behavior and internalized homophobia. Characteristics of the participants in this study can be combined with other studies that use face-to-face interviews to permit a better understanding of the health behaviors of Egyptian gays.

Health awareness among gays has become an important concern since the spread of HIV. UNAIDS has estimated eleven thousand HIV cases in Egypt (5). Also, meta-analysis research indicates that HIV incidence is increasing in the Middle East (6). Health programs have been developed for rapid discovery of HIV cases and for increasing health awareness including

voluntary counseling and testing centers (VCTs) and training programs for the workers in the medical field (7) . Testing for HIV and condom use rate are used in this study as a proxy that reflects the degree of health awareness and the success of VCTs in Egypt.

Although homosexuality is no longer considered a mental illness, the circumstances in Egypt including social stigma, discrimination and even violence can lead to mental problems (8). There is currently no statistics about the mental health of Egyptian gays and this study is intended to fill a part of this gap by assessing the suicidal behavior and the guilt feeling and its relation with health behaviors. Guilt feeling and internalized homophobia are expected to be high in Egypt due to the Islamic beliefs of Egyptians (9).

Random sampling of Egyptian gays is probably the most difficult step in the research because they are very hard to be reached. In general, several approaches have been used to partially overcome the sampling problem such as Respondent driven sampling and snowball technique. In Egypt, there's usually a lack of such studies; however, in 2008, Elsayed recruited Egyptian gays using the snowball technique (10). The current study presents another approach by sampling using the internet.

Internet has been promising in facilitating sexual minorities research. It facilitates collecting large samples, reaching hidden communities and providing more protection for the participants. However, it has also some drawbacks e.g. samples aren't necessarily random, it's difficult to estimate the response rate and online samples which are usually convenience samples include much younger and higher risk participants. Hence, the generalization of the results of Online studies should be done with caution (11,12).

There are many Internet based instruments for conducting research such as e-mails, dating websites and social media websites. In this study, Facebook is used because it was proved to be reliable in reaching sexual minorities and has become very common in Egypt (13,14). Now, there are hundreds of pages and groups that discuss sexual minority issues and allow dating between the members. This feature has been utilized in this study by manually reaching as much as possible related Facebook groups and pages.

Methods

In this online cross-sectional study, the questionnaire was designed in Arabic and published online using Google Forms. Questions were discussed with 20 Egyptian gays and many phrases were edited and added to ensure better understanding. A new questionnaire was published and posted in an extensive list of Facebook groups and pages. The list was collected using Facebook search, suggestions from the 20 gays. Then using a snowball-like technique, each Facebook profile was examined for related people, groups and pages and so on. Facebook search was done in Arabic and English with different dialects and keywords and in combination with the names of the different cities in Egypt. The recruitment phase lasted from August 2015 to May 2016.

The questionnaire included questions that summarize the demographic characteristics, health, sexual and psychological behaviors of Egyptian gays. The descriptive tables (1-4) include an English translation of many questions.

Responses (n) and percentages (%) were mentioned for every question in the Tables and in the rest of the paper. The word 'gays' is used in this paper to refer to men who have sex with men who are either exclusive homosexual or bisexual.

Participants not from Egypt (n=30) were excluded. The analysis of the responses was mainly in the form of descriptive tables. However, Chi-square test was used for hypothesis testing. Testing was restricted to the association between condom use and guilt feeling, between religiosity and guilt feeling and suicidal behavior and between HIV testing and job, education and other health seeking behaviors as predictors.

Data were downloaded from Google forms in the CSV format, imported into the R statistical software (15) . Translating and tidying the data were done using codes rather than the click

method to avoid mistakes. Descriptive tables were generated in a word format automatically using the ReporteRs package also to avoid copying mistakes and then revised manually (16). The mosaic plot was generated using the vcd package (17,18).

Results

The study included 461 eligible participants. The mean age was 26.6 years (standard deviation=7.6, minimum=15, maximum =55) and the mean age at the first relation was 15.9 years (standard deviation=5.5, minimum=4, maximum age=50). Most of the participants were highly educated (74%, n=461). Five participants (1%, n=461) reported having sex for money or gifts and only one participant (.6%, n=163) was open to let the society know about his sexual orientation. Table I summarizes the main and demographic characteristics of the participants.

Table 2 presents characteristics related to sexual behaviors among the participants. Some interesting points in Table 2 include: around one in six of the participants have been raped and the same ratio for those who have raped someone; around 18% practice masturbation more than 7 times a day; 90% practice anal or oral sex and 80% have sex with strangers.

Table 3 presents health related characteristics among the participants. Some important points in Table 3 include: Only 17% of the participants used condoms consistently; Only 34% had ever tested for HIV; Two participants reported testing positive for HIV (n=461); Fifteen participants (3%, n=461) reported previous history of STDs; less than 40% were smokers; more than 60% of the participants refused to disclose their sexual orientation to their treating doctor when it's needed.

Seventy percent of the participants reported guilt feeling about their sexual orientation and around half of the participants tried a lot to change it and visit or want to visit a psychiatrist because of it as presented in Table 4. Guilt feeling is higher among gays who practice religion, who agree and strongly agree that homosexuality is a disadvantage, and who want to change

their sexual orientation (p <.001). Guilt feeling is significantly related to low condom use and HIV testing as plotted graph 1.

Health behaviors including HIV testing, condom use and Hepatitis B testing were related to each other (p <.05). Consistent condom use was significantly associated with practicing religion (32% among less religious individuals compared to 18 % among highly religious individuals; p=.03). HIV testing was associate with hepatitis B vaccination and other STDs testing (p <.001). Additionally HIV testing is also lower among student (21%) and non-working individuals (8%) compared to working individuals (43%; p=.001) and lower among participants who take negative position compared to those who take positive and versatile positions (25% vs. 38%, respectively; p=.03).

Discussion

In this study, the majority of the participants didn't disclose their sexual orientation even to their families. Moreover, one in four of the exclusive homosexual individuals above 23 years were married to females. They probably marry females to hide their sexual orientation. These facts should attract the attention of health authorities and psychological researchers.

The rapid spread of the Internet in Egypt has become invaluable in reaching hidden populations. This study aims to use the Internet for research involving men who have sex with me. In 2014, the GOSS study estimated that 10% of Arab Internet users are gays (4) . After the Egyptian revolution in 2011, Facebook has become very popular in Egypt ("Alexa-Top Sites in Egypt"). Although Facebook has been used worldwide to survey sexual minorities, it is not used yet by researchers in the Middle East. This survey is not based on Facebook advertisement but rather based on manual distribution of the questionnaire link over a list of Facebook groups and pages that represent different parts in Egypt and different social statuses. This technique increased the interactivity between the participants and the researcher.

It has been very difficult to sample Egyptian gays. For example, Elsayed spent 8 months to recruit only 73 Egyptian gays (10). In the current study, using Facebook clearly solved this problem as the sample size was 461; however, the generalizability of the results of both studies is still questionable. Elsayed used the snowball technique starting with two trained Egyptian gays who recruited the other participants, while in the current study; a convenience sample was collected through a long list of Facebook pages and groups. Although the two studies complement each other, they still depend on non-random samples.

The interpretation of the study results should be with caution and should consider the demographic characteristics of the participants. There were more young participants and 74% of the participants were studying or studied at a higher level (institute or university). In contrast, Elsayed's study reported only 1.4% having higher education. Definitely, the demographics of the Egyptian people are half way in between these characteristics; however, both studies report similar consistent condom use rate which was 19% compared to 17% in the current study. Also half of the participants in both studies don't use condoms at all. These consistent results increase the validity of the online sampling of Egyptian gays as a cheap and fast alternative to Face-to-face sampling.

This study describes new statistics that has never been approached by research targeting gays in the Middle East such as suicidal behavior, sexual assault, hepatitis B testing and vaccination and other characteristics described in Tables 1-4. Also psychological factors such as guilt feeling, religiosity were found to affect health behaviors represented by condom use and HIV testing. Such integration of psychological factors in predicting health behaviors should be essential in future research addressing health behaviors.

This study; however, has many limitations. First, Although Facebook is used every day by most Egyptians, It's probable that not all Egyptian gays join dating groups or groups that discuss homosexuality that was used as a sampling frame in this study. Moreover, it’s impossible to assess the response rate due to the inability to control who sees the posts. Third, although anonymity was confirmed everywhere in the questionnaire and in the Facebook posts, still some Egyptian gays had some doubts.

Internet isn't just an instrument to recruit gay respondents to a survey. The impact of the Internet on Egyptian gays is far more useful and dangerous as well. Egypt is a conservative and religious country where gay venues and clubs rarely exist. In the past, sex between Egyptian gays was expected to be very limited. Recently, Internet and Facebook which played a role in the communication between gays in general probably played the main role in the communication between Egyptian gays. Now, Egyptian gays contact each other and have sex with strangers easily. In this study, 80% have sex with strangers and 22% had sex with more than 3 partners in the last year and 35% had sex few times in their life. This should be a bad sign given the low safe sex awareness that can be predicted from this study (only 19% used condoms consistently). On the other hand, the current role of Facebook in the communication between Egyptian gays makes this study more valid.

Absence of supporting research was another limitation in this study. There are very few previous studies about Egyptian gays e.g. there is a lack in validated or translated psychological scale e.g. internalized homophobia scales. This study could have been improved by translating and validating these scales. Also, future research should assess the rate of internet use for dating among Egyptian gays. This will help connecting the Face-to-face studies with the online studies to provide more generalizable results. Utilizing a mixed mode design would be a great improvement in upcoming studies.

Health policies appear to be insufficient and should be changed urgently to avoid new waves of HIV and sexually transmitted diseases (STDs). The following can be considered by upcoming policies: Online campaigns to improve health awareness among Egyptian gays using a method similar to this study; Guilt feeling and homophobia should be faced by removing

misunderstandings of sexual orientation and improving self-esteem among Egyptian gays. More testing centers are also still needed to reach this hidden population.

In summary, this study provides a new way to recruit Egyptian gays using Facebook. Demographic, sexual, health and psychological characteristics of the participants were reported. Consistent condom use rate, HIV and hepatitis B testing and hepatitis B vaccination were low. Guilt feeling was associated with lower health behaviors. Ten percent tried suicide before and internalized homophobia is very high. Current policies seem to be ineffective regarding safe sex awareness and new campaigns are needed probably using the internet, too.

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Figure

Click here to download Figure graph1.jpg

Graph1: Mosaic plot of the association between Guilt feeling and condom use and HIV testing

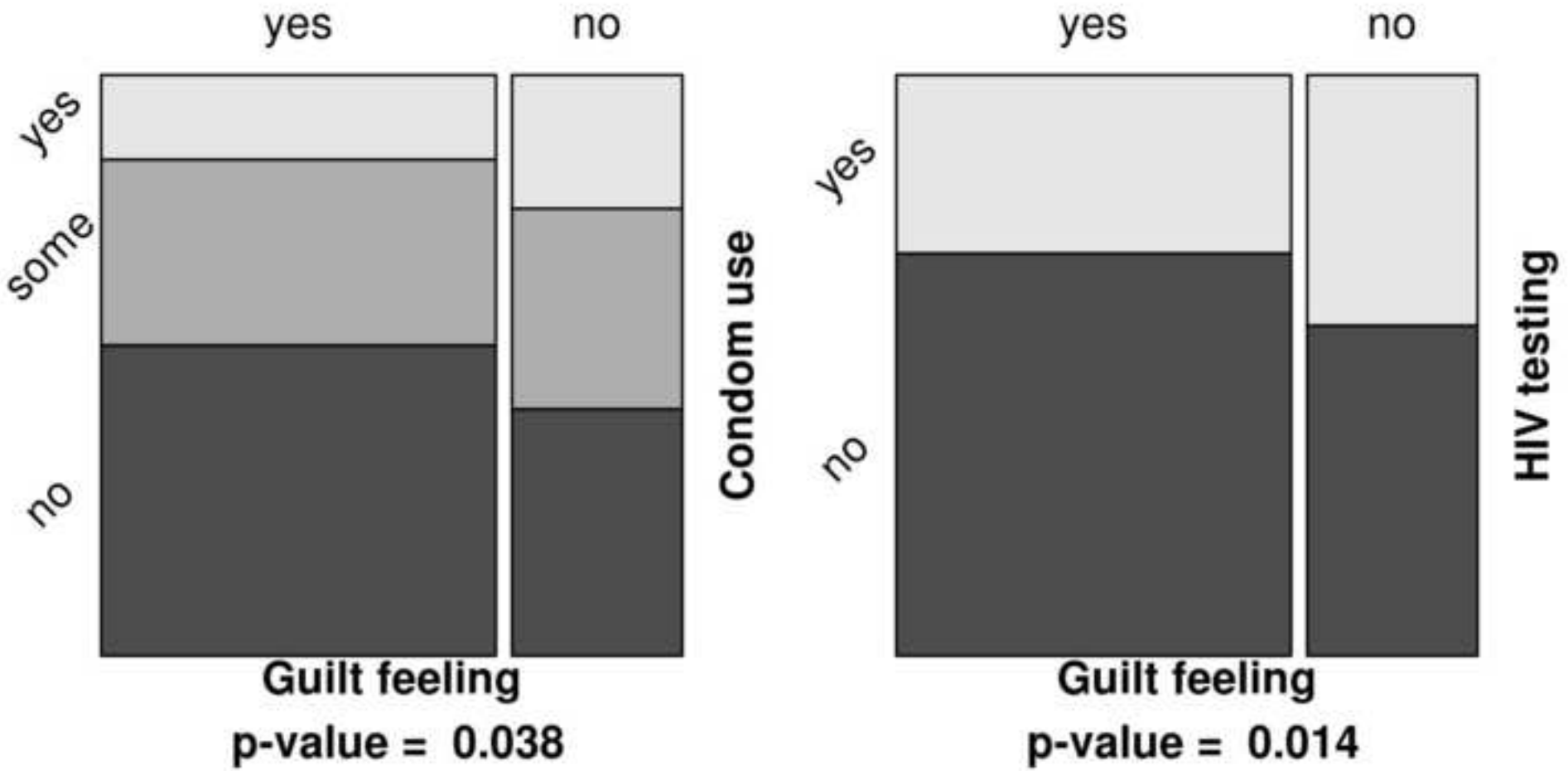

Table 1 general characteristics of the participants in the study (n=461)			
Characteristics		**n**	**%**
Age	-24	211	45.8%
	25-39	211	45.8%
	40+	39	8.5%
Job	student	163	35.4%
	employee	148	32.1%
	open	138	29.9%
	Not working	12	2.6%
Studied or studying at University/Institute	yes	342	74.1%
	no	119	25.9%
Disclosure of sexual orientation (n=163)	Speak about it in public	1	0.6%
	Someone knows(family or straight friends)	33	20.2%
	Nobody (only partners)	129	79.1%
Married to a female(n=175)	Yes	42	24.0%
	No	133	76.0%
Have sex for money or gifts	Yes	5	1.1%
	No	456	98.9%
Do you practice religion?	completely	136	29.5%
	sometimes	287	62.3%
	Rarely or no	38	8.2%

Table 2 Sexual and related characteristics of the participants (n=461)			
characteristics		**n**	**%**
Age at the first relation	-15	221	47.9%
	15+	240	52.1%
Sexual orientation	Homo	216	46.9%
	Bi	245	53.1%
Are you currently involved in a monogamy relation with one partner	Yes	21	4.6%
	No	440	95.4%
How many male partners have you had sex with last year?	More than 11	15	3.2%
	6-10	18	3.9%
	3-5	70	15.2%
	1-2	246	53.4%
	No	112	24.3%
How often do you have sex with men?	Weekly	27	15.8%
	Monthly	31	18.1%
	Yearly	52	30.4%
	Fewinlife	61	35.7%
What type of sex do you practice most of the time?	Anal	301	65.3%
	Oral	108	23.4%
	No penetration	52	11.3%
What sex position do you take?	Positive	164	35.6%
	Versatile	175	38.0%
	Negative	122	26.5%
Have you ever been raped?	Yes	74	16.1%
	no	387	84.0%
Have you ever raped someone?	yes	25	15.3%
	no	138	84.7%
How often do you have sex with strangers?	A lot	248	53.8%
	few	120	26.0%
	never	93	20.2%
How often do you practice masturbation?	more7 daily	84	18.2%
	6-7 daily	40	8.7%
	4-5 daily	50	10.8%
	2-3 daily	125	27.1%
	1 daily	69	15.0%
	On wider intervals or no	93	20.2%

Table 3: Health related characteristics of the participants (n=461)			
Characteristics		**n**	**%**
How often do you use condoms?	always	79	17.1%
	sometimes	151	32.8%
	never	231	50.1%
Have you ever screened for HIV?	Yes (and was positive)	2	0.4%
	Yes (negative)	157	34.1%
	no	302	65.5%
Have you ever screened for Hepatitis B?	Yes (and was positive)	2	0.4%
	Yes (negative)	175	38.0%
	no	284	61.6%
Have you ever tested for any other STDs?	Yes (and was positive)	15	3.2%
	Yes (negative)	46	10.0%
	no	400	86.8%
Have you taken the Hepatitis B vaccine?	yes	156	33.8%
	no	305	66.2%
How often do you smoke?	more20 daily	49	10.6%
	15to20 daily	29	6.3%
	10to15 daily	36	7.8%
	5to10 daily	31	6.7%
	less5 daily	33	7.2%
	On wider intervals or no	283	61.4%
Would you tell your doctor about your sexual orientation if needed?	yes	179	38.8%
	no	282	61.2%

*

Table 4: Psychological characteristics of the participants (n=461)			
characteristics		**n**	**%**
Have you tried to change your sexual orientation?	A lot	226	49.0%
	Tried but not a lot	49	10.6%
	no	186	40.4%
Is your mood currently depressed ?	yes	186	40.4%
	no	275	59.6%
Do you feel guilty about your sexual orientation?	yes	322	69.8%
	no	139	30.1%
Have you thought about suicide ever in your life?	I tried suicide before	44	9.5%
	I thought about ending my life but never tried	55	11.9%
	no	362	78.5%
Have you ever visited a psychiatrist because of your sexual orientation?	yes	45	9.8%
	No and want to	204	44.2%
	no	212	46.0%

*