GAYS DATING APPLICATIONS:
INFORMATION DISCLOSURE AND SEXUAL BEHAVIOR

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ABSTRACT

Gay dating applications serve the drive for meeting sex partners and are now used by over 2 million gay men around the world. The nature of these apps involves users engaging in conversation that allows for significant information disclosure and increased trust, allegedly leading to unprotected sex when they meet offline.

This paper therefore aims to explore the behavior of users of gay dating applications in Thailand and their pattern of information disclosure in order to investigate the relationship between app usage, information disclosure, and the resulting sexual behavior.

286 gay-dating application users in Thailand were surveyed with a self-administered, anonymous online questionnaire between February and March 2015.

The findings showed significant positive association between the degree of usage and the amount of information being disclosed. Moreover, the frequency of usage such as the number of days ($r = .249$), the number of locations ($r = .320$), and the amount of time ($r = .360$) that the participants use the apps along with the disclosure of personal information like Facebook account ($r = .337$), mobile number ($r = .306$) and address ($r = .240$), are associated with the higher rate of unprotected sex.

Trustworthiness deriving from information disclosure could play a vital role in the psychology of many gay men. Familiarity that develops as more information is exchanged and the level of trust increases could lead to unprotected sex. HIV/STI communication campaigns should put on emphasis on interventions conducted in gay dating applications, and publishing and promoting more content on gay-dating apps, and Facebook.

BACKGROUND

Although the ratio of Thai people contracting sexually transmitted diseases (STDs) is on the decline, this is only true for women and heterosexual men [1]. For men who have sex with men (MSM), there is a 50 percent annual increase of STDs due to unprotected sex [1-3]. This increase is concentrated in Bangkok, Chiang Mai, and Phuket. An important factor that plays a role in increasing STDs among MSMs, especially teens, is the use of smartphone dating applications (geosocial-networking applications) to meet potential sex partners [4].

Thus, the objective of this research is to study smartphone dating application use among Thai gays. Topics that will be touched on include online information disclosure, offline physical appointment arrangements, and subsequent sexual behavior, including, insertive, receptive, or non-penetrative sex, oral-genital fellatio, and anal sex. This study will be useful in helping to establish effective communication strategies to convey the risk of contracting STDs as well as forming preventive measures for HIV or other STDs in the future.

LITERATURE REVIEW

Social Networking Among MSMs

Online communication has many unique, notable features. Users can choose the type of information and level of personal details to disclose about themselves as well as revelation of their location in real-time via mobile applications, or communicating with others simultaneously anytime, anywhere [5, 6]. These features are useful for arranging physical appointments and building relationships with others [4, 7]

While using social networking, MSM's behavior is more open about expressing their intentions to have sex than other groups. For instance, MSMs may post suggestive photos of themselves that focus on their physical features and sexual attributes [5].

Self-Disclosure

Currently, Thai people are not fully open to homosexuals; there are no societal measures that accept the existence of those who are attracted to people of the same sex [8]. Consequently, many homosexuals feel the need to be discreet about their sexual orientation in public. Social networking then becomes a channel for this group to find others with similar beliefs about sexual orientation [9].

E-Dating

Dating mobile applications, which often disclose its users' locations, help users who are looking for potential partners easily meet up, have sexual relations [10] and make known their sexual roles and tastes, such as top, bottom, sadist and masochist [7]. These applications play a role in increasing sexual relations, which in turn increases the risk of STDs.

Past studies on physical meet ups that lead to sexual relations following online interactions have varied results. Some studies concluded that sexual relations with partners found via online channels result in greater risk in contracting STDs [11] while other studies stated no association between sexual interaction and the number of partners found via online or offline channels [12-14]. However, those studies are done outside the context of Thailand, where STDs and AIDS are highly prevalent.

Hence, this study fills the research gap as it focuses on smartphone dating application use among MSMs in Thailand and its effects on HIV and STD contraction.

METHODS

The research method used in this study involves an online survey, posted for a period of one month from mid-February to mid-March 2015, when the St.Valentine's Day might have some effects on increased attention on sexual issues among Thai people [15]. The questionnaire was completed by 277 respondents, 222 or 78.7 percent of which passed screening questions to be categorized as people who used smartphone dating applications to find potential partners (95% confidence interval, ±10).

Data Collection Sites

The questionnaire was distributed in three places online—Pantip, Palm Plaza's web board, and closed Facebook groups of gay people. Pantip is chosen as one of this study's questionnaire distribution spots as it ranks fifth as the most used website in Thailand, with an average of 200,000 visitors per day [16]. Threads were set up in the Suan Lumpini Room, Siam Room, and Sala Prachakom Room, all of which usually contain content for gays. Palm Plaza's web board is commonly known in Thailand as an online gathering place for Thai gays and ranks within Thailand's 500 most-visited websites—comparable to other popular websites such as T-News (ranks 491), Siam Dara (ranks 428), Tesco Lotus (ranks 466), and job search websites such as JobTopGun (ranks 441) [16]. About 10,000 members are online each day [16, 17]. The Facebook groups chosen to be the data collection site comprised of middle class, homosexual men residing in Thailand's big cities including, but not limited to, Bangkok, Chiangmai, and Phuket. The nethnography were conduct for a period of one week to ensure that the groups and the two aforementioned sites were suitable for this research [18].

Measurement

The three variables examined in this study include the frequency of smartphone dating application use, information disclosed via smartphone dating applications, and sexual behavior with partners found via smartphone dating applications. The findings gleaned are classified as nominal and interval variables.

Questions related to frequency of smartphone dating application use are as follows:

- Have you ever used smartphone dating applications to find potential partners?
- How long have you been using smartphone dating applications?
- In the last 4 weeks, how many times per day have you used smartphone dating applications?
- In the last 4 weeks, how many minutes per visit do you use smartphone dating applications?
- Which day(s) of the week do you use smartphone dating applications?
- What time of the day do you use smartphone dating applications?
- Where do you use smartphone dating applications?

Next, the questionnaire section on information disclosure via smartphone dating applications had respondents respond to the enquiry "which of the following information have you disclosed while using smartphone dating applications?" according to specific personal information as shown below:

- Photo of self with a clear view of the face
- First and last name
- Nickname (real nickname)
- Facebook account (main one)
- Line ID (main one)
- Instagram (main one)
- Phone number
- Home address
- Education or work place

Questions on behavior following use of smartphone dating applications were divided into two parts. The first part simply tested if the respondent had ever physically met up with people they met via smartphone dating applications while the second part had respondents verify which activities they had done during these meet ups, shown below:

- Prepared condoms before meet ups
- Bought condoms after meeting the other party and speculating possible sexual activity
- Used condoms every time when engaging in sexual activity using only hands, involving no sexual penetration
- Used condoms every time when engaging in oral sexual activity

- Used condoms and lubricants every time when engaging in anal sex

The last part of the questionnaire used the interval measurement method and had respondents write down their answer in response to listed activities they had engaged in with people they met via smartphone dating applications during the past six months:

- How many people did you physically meet up with?

- How many people did you have anal sex with?

- How many people did you have anal sex with, without using condoms?

Results

From a total of 277 respondents, 222 people passed the screening question to be categorized as smartphone dating application users with partner-finding intentions

Most respondents (34.9%) identify their sexual orientation as "versatile", followed by those who identify as "bottom" (32.5%) Half of the respondents use Jack'D (52.2%) while the other half uses Grindr (47.3%). In addition, 38.6% of the respondents have been using smartphone dating applications for more than a year, at an average of 2 times per day (35.1%), and at least 10 minutes per time (41.1%). More than half use smartphone dating applications every day (44.6%), and 4 in 5 respondents (81.9%) use them between 9:01 P.M. to 12:00 A.M. at home (88.6%). Almost half of the respondents (44.0%) use smartphone dating applications in more than 3 different places (see *Table 1*).

Table 1: Application Use (n=222)

Application Use	Number of People	Percentage
Applications Used (Must use at least 1 time) (May answer more than 1)		
Facebook	89	40.1%
Twitter	26	11.7%
Instagram	34	15.3%
BeeTalk	36	16.2%
Tinder	25	11.3%
Jack'd	118	53.2%
Grindr	105	47.3%
WeChat	13	5.9%
Hornet	22	9.9%
Glowlr	8	3.6%
PlanetRomeo	7	3.2%
Other	11	5.0%

Application Use	Number of People	Percentage
Length of time have been using application (28 people opted not to answer this question)		
Less than 6 months	56	28.9%
More than or equal to 6 months	19	9.8%
More than or equal to 1 year	44	22.7%
More than or equal to 2 years	29	14.9%
More than or equal to 3 years	15	7.7%
More than 4 years	31	16.0%
Frequency in application use within last 4 weeks (28 people opted not to answer this question)		
Never used	49	25.3%
1-2 times per day	77	39.7%
3-4 times per day	23	11.9%
5-6 times per day	9	4.6%
More than 6 times per day	36	18.6%
Length of time in using the application per time within the last 4 weeks (77 people opted not to answer this question)		
Less than 5 minutes per time	48	33.1%
More than or equal to 5 minutes per time	37	25.5%
More than or equal to 10 minutes per time	22	15.2%
More than or equal to 20 minutes per time	38	26.2%
Day of the week that I use the application (May answer more than 1) (56 people opted not to answer this question)		
Monday	91	41.0%
Tuesday	91	41.0%
Wednesday	90	40.5%
Thursday	90	40.5%
Friday	127	57.2%
Saturday	137	61.7%
Sunday	115	51.8%
Number of days that I use the application per week (May answer more than 1) (56 people opted not to		

Application Use	Number of People	Percentage
answer this question)		
1 day	23	13.9%
2 day	33	19.9%
3 day	21	12.7%
4 day	7	4.2%
5 day	6	3.6%
6 day	1	0.6%
7 day	75	44.6%
Time of day that I use the application (56 people opted not to answer this question)		
06.01A.M. - 09.00 A.M.	25	15.1%
09.01 A.M. - 12.00 P.M.	35	21.1%
12.01 P.M. - 03.00 P.M.	42	25.3%
03.01 P.M. - 06.00 P.M.	56	33.7%
04.01 P.M. - 07.00 P.M.	96	57.8%
09.01 P.M. - 12.00 A.M.	136	81.9%
12.01 A.M. - 03.00 A.M.	62	37.3%
03.01 A.M. - 06.00 A.M.	18	10.8%
Location that I use the application at 56 people opted not to answer this question)		
Home	147	88.6%
Educational institution	58	34.9%
Work place	65	39.2%
Transportation vehicle	81	48.8%
Mall	79	47.6%
Restaurant or café	65	39.2%
Other	9	5.4%
Number of locations I use the application (56 people opted not to answer this question)		
1 location	51	30.7%
2 locations	27	16.3%
3 locations	21	12.7%
4 locations	27	16.3%

Application Use	Number of People	Percentage
5 locations	15	9.0%
6 locations	22	13.3%
7 locations or more	3	5.4%

Most respondents (88.3%) do not reveal their real first and last names. The kind of information that is most often disclosed to conversation partners are real photo of self (80%), nickname (63,9%), and Line ID (58.4%). More than half of the respondents (54.3%) disclose more than two types of information (see *Table 2*).

Table 2: Information Disclosure on Smartphone Dating Applications

Information Disclosure on Smartphone Dating Applications	Number of People	Percentage
Type of information disclosed (May answer more than 1) (56 people opted not to answer this question)		
Photo of self with a clear view of the face	133	80.1%
Real first and last name	21	12.7%
Real nickname	106	63.9%
Facebook (main one)	31	18.7%
Line ID (main one)	97	58.4%
Instagram (main one)	29	17.5%
Phone number	52	31.3%
Address	33	19.9%
Education or work place	40	24.1%
Number of information categories disclosed		
1 type	33	19.9%
2 types	40	24.1%
3 types	32	19.3%
4 types	19	11.4%
5 types	20	12.0%
6 types	6	3.6%
7 types	10	6.0%
8 types	3	1.8%

In terms of condom preparation, 72.6% of respondents prepare condoms before meeting up with partners they met through smartphone dating applications while another 79.2% of respondents buy condoms only after meeting up and speculating sexual activity. Most respondents (91.5%) only use condoms for insertive or receptive anal sex; most do not use condoms for fellatio and oral-genital sex (13.2%) or engaging in sexual activity using only hands (17.9%) (see *Table 3*).

Table 3: Condom Use During Physical Appointments During the Last 6 Months (n=106)

Condom Use During Physical Appointments During the Last 6 Months		Met Up	
		Yes	No
Prepared condoms prior to meet ups	n	77	25
	%		
Bought condoms after meeting up and speculating sexual activity	n	84	36
	%		
Used condoms every time when having sex with hands (no penetration)	n	19	89
	%		
Used condoms every time for fellatio, oral-genital sex	n	14	95
	%		
Used condoms every time for insertive or receptive anal sex	n	97	11
	%		

Remark: May answer more than 1

Table 4: Behavior Related to Physical Appointments of People Who Met Through Smartphone Dating Applications Within the Last 6 Months (n=166)

Behavior Related to Physical Appointments of People Who Met Through Smartphone Dating Applications Within the Last 6 Months	Number of Peoples	Percentage
Number of people I met up with (n=106)		
1 - 2 people	49	46.2%
3 - 4 people	28	26.4%
5 - 6 people	11	10.4%
7 people or more	18	17.0%
Number of people I met for insertive or receptive anal sex (n=77)		
1 - 2 people	43	55.8%
3 - 4 people	19	24.7%
5 - 6 people	5	6.5%
7 people or more	10	13.0%
Number of people I met for insertive or receptive anal sex without using condoms (n=27)		
1 - 2 people	17	22.1%

Behavior Related to Physical Appointments of People Who Met Through Smartphone Dating Applications Within the Last 6 Months	Number of Peoples	Percentage
3 - 4 people	4	5.2%
5 - 6 people	0	0.0%
7 people or more	6	7.8%

Table 5: HIV and STD Check Up Behavior Within the Last 6 Months (n=166)

HIV and STD Check Up Behavior Within the Last 6 Months		Never checked	Checked			
			Less than 6 months ago	More than or equal to 6 months ago	More than or equal to 1 year ago	More than or equal to 2 years ago
HIV	n					
	%					
STI	n					
	%					

Table 6: Associations between smartphone dating application use, information disclosure, and sexual activity

	Physical appointment with conversation partner	Sexual activity with conversation partner	Unprotected sex with conversation partner
Smartphone Dating Application Use			
Number of days used	.192*	.249**	-.016
Number of times used	.368**	.360**	.190
Number of locations used at	.415**	.320**	.261*
Information Disclosure			
Photo of self with a clear view of the face	.124	.106	-.071
Real first and last name	.103	.066	.030
Real nickname	.201**	.199*	.202
Facebook (main one)	.234**	.254**	.337**
Line ID (main one)	.284**	.125	.124
Instagram (main one)	.223**	.195*	.267*

	Physical appointment with conversation partner	Sexual activity with conversation partner	Unprotected sex with conversation partner
Phone number	.301**	.225*	.306**
Address	.234**	.186	.240*
Education or work place	-.028	.004	-.113
Amount of types of information disclosed	.361**	.290**	.291*

p-value ≤   , ** p-value ≤   , ** p-value ≤

A total of 53.8% of respondents physically met up with more than two people they met on smartphone dating applications, with 77 out of 106 respondents (72.6%) stating that they had anal sex during the meet up. Among this amount, 27 people did not use condoms, 37.3% never checked for HIV, and 44.6% never checked for STDs (see *Table 4 – 6*).

There appears to be a significant association between the number of physical meet-ups and the number of locations where the application is used (r=.415), the amount of time spent using the application (r=.368), information disclosure (r=.361), sharing phone numbers (r=.301) and Line IDs (r=.284).

Likewise, significant association is found between sexual relations and the amount of time spent using the application (r=.369), the number of locations where the application is used (r=.320), information disclosure (r=.290), and disclosing Facebook accounts (r=.254).

Lastly, significant association is found between having unprotected sex and disclosing Facebook accounts (r=.337), phone numbers (r=.306), Instagram accounts (r=.267), and addresses (r=.240).

DISCUSSION

Respondent Profile

More than half of respondents have a bachelor's degree and medium to high income. This may be due to the fact that using smartphone dating applications necessitates a certain level of education and/or employment with considerable income to have a mobile phone and Internet access

. Many respondents state that they live with their parents, possibly due to the fact that in Thailand, men cannot legally marry other men and start a family. While others live alone in an apartment or dorm, allowing more opportunities for sexual interaction [20, 21].

Most questionnaire respondents are gay as the data is collected from Palm Plaza, a common online gathering place for gays. Very few transgenders found in the data as they may not identify

themselves as being gay men due to their personal preferences and their emotions being more geared to women [22]. Similarly, bisexuals may not identify as being gay men due to the privileged status of heterosexual male identity [23]. Thus, there might be fewer bisexuals and transgenders in the respondent group than in the actual population.

Geosocial-Networking Use

The reason that most respondents use smartphone dating applications to find partners may be because they cannot find partners as openly as heterosexuals in the offline environment [24]. Accordingly, applications that were specifically created to meet the partner-finding needs of this group such as Jack'D and Grindr are very popular [4]. We also found that Facebook is another popular channel for MSMs to find sex partners.

A significant number of respondents use smartphone dating applications every day during weekends before bedtime and after work or school, as these are the times when people have the most free time—for instance, they may be relaxing or traveling. Common locations in which respondents use these applications are at home, in transportation vehicles, or in malls. Personal residences are the most popular location to use smartphone dating applications owing to privacy and safety, while transportation vehicles and malls are frequent use locations as people have lots of waiting time at these places and may have arranged a meet up in a near-by public restroom. [25, 26]

Sharing Personal Information

In terms of sharing personal information, most respondents exchange photos with their smartphone dating application partners—ones that clearly show their faces. These photos are used on both sides to determine whether to continue conversing with the other party. Most respondents also disclose their nicknames by which they use to refer to each other. Thais often use nicknames for informal or friendly environment, or to avoid giving first names that might be traced to other official information. Giving out nicknames is more common than giving out first and/or last names as the latter is more personal and run the risk of inflicting damage to the user's reputation. In addition, more than half of respondents disclose their Line ID to their conversation partners. The disclosure of other types of information, such as phone numbers, addresses, Facebook and Instragram accounts, affiliated educational institutions and companies, and first and last names, are usually uncommon until users reach a further point in their relationship in which they feel safe disclosing this information [27-30].

Dating, Condom Use, and HIV Testing

In the last six months, more than half of the respondents who were looking for a sexual partner physically met up with people they encountered through smartphone dating applications; those

that never organized meet ups may be using these applications just to stave off loneliness by finding a casual friend to talk to rather than searching for a sexual partner [31].

Although more than half of respondents had anal sex during these meet ups, not even half used condoms in every instance. This behavior places an emphasis with health professionals to increase the intensity of communication regarding the current underestimation of involved risks, the seriousness of STDs, and overly trust in partners [32].

As for condoms, the majority of respondents either had them prepared prior to meet ups or decided to buy them after meeting up and speculating sexual activity. However, these condoms are usually not applied when respondents had sex with their hands (no penetration) or oral-genital sex; this may be due to the misunderstanding that only anal sex can lead to STDs [33].

While more than half of respondents had checked for HIV or other STDs, some respondents have never checked for these diseases as they either had never had sex. However, the barriers to voluntary counselling and testing (VCT) might include inconvenience of hours of operation, location, cost, and more importantly, underestimation of risk and fear of stigmatization of being an HIV-infected person [34, 35].

More Use, More Risk

The frequency of smartphone dating application use, whether in daily use, or in multiple daily access times or locations, is positively associated with physical appointments and sexual relations. Increased use means that users have an increased chance to find a person they like, which may lead to meet ups and, ultimately, sex [25]. Notably, using these applications in a variety of places more likely leads to unprotected sex because these applications typically match users who are close to each other geographically, making appointments easier and more convenient. These conditions may result in unprotected casual sex due to lack of time to prepare condoms [36].

More Formal Information, Less Risk

This study finds that disclosing informal personal information is positively associated with physical appointments and sexual relations—some of which may be unprotected, as disclosing more personal information usually leads to increased intimacy and trust [37]. This fact is especially pronounced in the disclosure of Facebook and Instagram accounts as well as phone numbers. Facebook and Instagram contain highly personal photos and messages while phone numbers are a direct way to increase intimacy; giving out this information is a sign of trust between two parties, which can easily lead to sex [30, 38].

On the other hand, disclosing formal information such as those on associated education institutions, companies, and first and last names does not lead to appointments or sex, as the party

disclosing the information may take into discretion that their image or family may be negatively affected if the other party reveals their secrets to others in the same social circle—those associated with the same educational institutions, companies, or families [37, 39].

CONCLUSION

MSMs use smartphone dating applications regularly, with the majority of them having met up and had sex with their on-line conversation partners. This study finds a positive association between the frequency of smartphone dating application use and physical appointments and sexual relations with conversation partners. In addition, there is also a positive association between the disclosure of personal information and physical appointments and sexual activity, which may in turn lead to unprotected sex due to trust gleaned from information disclosure.

Thus, smartphone dating applications are considered as another factor that contributes to the rise of STDs among MSMs in Thailand. To remedy this problem, campaigners are advised to form regular, strategic communication plans aimed at gay smartphone dating application users, especially those that engage in unprotected sex, to recognize the risks associated with STDs and HIV. For instance, disseminating this information in the applications in the form of banners or pop-ups will not only help users understand STDs and prevention, but will also encourage and drive actions that will stem the rise of STDs.

LIMITATIONS

As the researchers of this study used convenient methods of data collection, the proportion of respondents in each province cannot be considered actually representative of the populations in each province in Thailand. Thus, the findings of this study cannot be wholly extrapolated to explain the behavior of Thai gays nationwide.

Since this data was collected from online questionnaires in Palm Plaza, Pantip, and closed Facebook groups, the respondents are limited to only those who use these websites. Thus, those who use smartphone dating applications but do not use these websites did not have an opportunity to be part of the sample.

Lastly, although this research obtained information from a total of 277 respondents, only 222 of those used smartphone dating applications. For this reason, the use of smartphone dating applications described in this study cannot be accurately applied nationwide.

FURTHER STUDY

To fill research gaps and form a more complete, well-rounded picture of smartphone dating application use among Thai gays, further study on this topic should be applied at the following points:

1. Channels for data collection should be more varied, and not only be limited to online questionnaires. Online questionnaires, if given, should be placed at more, varied places.

2. Sample selection should aim to be more systematic in order to be accurately representative of the whole population. Respondents should represent every region nationwide or at least from key cities (e.g. Bangkok).

3. Qualitative research in the form of in-depth interviews will be useful in determining different factors that affect Thai gays' attitudes and smartphone dating application use that may lead to unprotected sex.

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