

SOCIAL SCIENCES & HUMANITIES

Journal homepage: http://www.pertanika.upm.edu.my/

Malaysian Youth eHealth Literacy via Healthcare Websites: A Study on Factors Forming Sexual and Reproductive Health Information-seeking Intention

Andrew Jason George^{1*} and Moniza Waheed²

Department of Communication, Faculty of Modern Languages and Communication, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia

ABSTRACT

Extensive research has been carried out to study the relationship between Malaysian youth and their perceptions of sexual and reproductive health (SRH); ranging from knowledge and awareness levels to lifestyle choices. However, there is insufficient information on youth e-health literacy levels on the subject matter. Therefore, this study examines the factors that influence youth intention towards using healthcare websites to search for SRH information. This study is guided by the Theory of Reasoned Action (TRA) which suggests that the best indicator of behaviour is intention, which is formed by attitude and subjective norms. Participants for the study were 400 youth (from 18 – 40 years of age) based in the Klang Valley area. Data was collected through a self-administered questionnaire where the research instruments were adopted from the TRA framework, namely: Attitude, Subjective Norms, and Intention. Overall, the findings showed that youth who had positive attitudes and adequate social support/pressure towards using healthcare websites to find SRH information were likely to have a high intention to do so. One crucial finding in the context of this study is how subjective norms are a stronger predictor of SRH information-seeking intention compared to attitude. This finding here can add a new dimension to how the TRA framework is utilised, especially in studies revolving around Asian youth intentions and behaviours. Ministries, NGOs, and private institutions that advocate better SRH practices

ARTICLE INFO

Article history:

Received: 04 September 2020 Accepted: 15 February 2021 Published: 26 March 2021

DOI: https://doi.org/10.47836/pjssh.29.1.28

E-mail addresses:

andrewjasongeorge89@gmail.com (Andrew Jason George) moniza@upm.edu.my (Moniza Waheed)

* Corresponding author

in Malaysia should leverage the influence of new media to improve health literacy levels among youth.

Keywords: Healthcare websites, information-seeking intention, internet, sexual and reproductive health, the theory of reasoned action, youth

INTRODUCTION

Health, in general, is a topic that Malaysians freely discuss. However, when it comes to sexual and reproductive health (SRH), it is often labelled as a *taboo* or sensitive subject, where people in general, are hesitant to talk about out in the open. Owing to this, Malaysian youth face the risk of being inadequately informed about issues related to sexual health, sexuality, risk-taking behaviours and so on (Farid et al., 2018; Ismail & Hamid, 2016; Mustapa et al., 2015).

One of the biggest stumbling blocks that youth face when it comes to seeking SRH information in Malaysia is the lack of official online communication channels to disseminate accurate and credible SRH information (Farid et al., 2018; Mohamad et al., 2020). Shakir et al. (2019) argued that youth often found information on such matters, especially on sexually transmitted infections (STIs), through general websites via Google instead of visiting specific healthcare websites that specialise in SRH matters. In addition, some have even resorted to finding such information on social media sites such as Facebook where there is a high probability of receiving unreliable information or fake news (Khawaja et al., 2017; Müller & Schulz, 2019).

This highlights the need for young people to have access to official online SRH sources for information-seeking purposes and the opportunity to engage with qualified healthcare providers. Moreover, youth must also be equipped with the right skills to find information that is verified and factually-

correct in order to make better judgments of their overall reproductive health choices (Shakir et al., 2019). While local authorities are tasked with exploring, monitoring, and improving e-health literacy levels among youth, this responsibility does not fall on the government alone, but also on the nation as a collective noun (Centers for Disease Control and Prevention [CDC], 2018).

The main aim of this study is to analyse the factors that predict youth intention in using healthcare websites to seek SRH information by examining the predictive strength of the variables in the Theory of Reasoned Action (TRA). The TRA framework is apt for studies that investigate consumers' information-seeking intentions in various communication and behavioural fields because these intentions are associated with distinct influencing factors; an individual's intrinsic motivation (attitude) and social influence (subjective norms) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Researchers have used this theory to study various sexual intentions among youth (Conner et al., 2017; Manstead, 2011; Randolph et al., 2009; Rise, 1992).

The TRA postulates that intention is formed by the attitude towards the act and subjective norms (social pressure). A strong positive intention towards performing an act requires positive (favourable) attitudes and adequate social support/pressure to actually pursue the act (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Lee & Kotler, 2016).

In a Malaysian context, previous studies have indeed looked at issues related to the topic, mainly focusing on knowledge of reproductive health (Ayub et al., 2017; Mokhtar et al., 2013; Mustapa et al., 2015; Ujang & Sutan, 2018; Wong, 2012) and factors predicting reproductive health issues (Cheah et al., 2016; Low, 2009; Manaf et al., 2014; Muhammad et al., 2017). However, these studies scarcely use this theory as a guide to study intention towards seeking SRH information to boost e-health literacy levels among young Malaysians. Currently, there is little academic research that suggests the usage of the TRA in predicting SRH information-seeking intention among youth (Alagrisamy & Arokiasamy, 2019).

Based on the aforementioned points, this study advances the following research objectives:

RO1: To determine the relationship between attitude towards using healthcare websites as a source of SRH information and the intention to do so among youth.

RO2: To analyse the relationship between subjective norms towards using healthcare websites as a source of SRH information and the intention to do so among youth.

RO3: To investigate if attitude and subjective norms will predict youth intention to use healthcare websites as a source of SRH information.

LITERATURE REVIEW

It is key for youth to develop healthy behaviours from a young age as various studies have shown that many young Malaysians are practicing unsafe sexual habits (Ayub et al., 2017; Cheah et al., 2016; Farid et al., 2018; Manaf et al., 2014; Manimaran et al., 2017; Muhammad et al., 2017). In most cases, it is due to the information available to them, or a lack of it, and how this affects their perspectives towards SRH topics. The common theme that resonates throughout these studies is that there is a need to understand the factors that form SRH information-seeking intention as there are insufficient studies on extensive e-health literacy among young Malaysians (Mohamad et al., 2020; Hamzah et al., 2016).

Theory of Reasoned Action

In SRH studies that employ the TRA framework, much focus is given towards the formation of intention as it is a precursor of behaviour, some examples include, seeking sexual health information (Crook et al., 2016; Donoghue et al., 2017; Tabaac, 2016), sexual communication (Bryan et al., 2002; Sheeran et al., 1999; Widman et al., 2014), intentions to use contraception (Alagrisamy & Arokiasamy, 2019; Albarracín et al., 2001; Delany-Moretlwe et al., 2015; Greene et al., 1997; Vanlandingham et al., 2014), intentions to get HPV vaccination (Fisher et al., 2013; Jozkowski & Geshnizjani, 2016) and teen pregnancy (Dippel et al., 2017; Woog et al., 2015). As for this study, in order to examine youth intention to use healthcare websites to seek SRH information, attitude and subjective norms are considered as the independent variables (IV) whereas intention is the dependent variable (DV).

Many research associate attitude with three basic features: attitude is learned, attitude predisposes action and these actions are either consistently favourable or unfavourable towards the act (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Mittler et al., 2012; Montano & Kasprzyk, 2008; Muhammad et al., 2017). Youth are likely to access SRH information from healthcare websites if they form a positive attitude towards the action first. In a Malaysian context, Ayub et al. (2017) conducted a study to investigate the correlation between knowledge and attitude with regards to youth seeking SRH information. A quantitative study with a sample size of 853 university students was carried out where data was collected through questionnaires. This research had two independent variables (IV), attitude and knowledge, and one dependent variable: sexual health communication. All items were measured using a five-point Likert scale (1 = "strongly disagree" to 5 = "strongly agree"). Overall, it was found that SRH information-seeking behaviour was minimal among youth, in addition, Ayub et al. (2017) noted that there were gaps in identifying how youth behaved after receiving SRH knowledge, calling for further investigations to study the correlation between knowledge and attitude towards sexual health communication among young people. As Malaysian youth are avid users of new media (Shakir et al., 2019), getting SRH information through healthcare websites and other online platforms will motivate them to continue using these channels to improve their SRH knowledge, which will

ultimately lead to them having a positive attitude towards using online sources to seek for SRH information (Ujang & Satan, 2018). Therefore, the following can be predicted:

H1: There is a significant positive relationship between youth attitude and intention to use healthcare websites as a source of SRH information.

Moving on, Fishbein and Ajzen (1975) defined subjective norms as an individual's perception that those who were close and important to him (peers and family members) believed that he should or should not perform said behaviour (Ajzen & Fishbein, 1980; Breuner & Mattson, 2016; Montano & Kasprzyk, 2008; Sanci et al., 2015). Youth may want to access healthcare websites to find SRH information if there is some social pressure from family members, peers, partners, authoritative figures, and the community at large influencing them to do so. Ismail and Hamid (2016) added that Malaysian youth mainly acquired SRH knowledge from parents, friends, teachers, and the media, however in a bid to avoid the embarrassment of seeking information from a known source, they preferred the confidentially that the Internet offered, slowly their trust towards healthcare websites increased and they valued this platform as a legitimate source of SRH information (Farid et al., 2018; Manaf et al., 2014; Mustapa et al., 2015). One reason why the Internet prevails in this scenario is due to the breakdown in parentadolescent communication with regards to SRH matters. Parents are reluctant to talk about sex in front of their children, they find it difficult to initiate conversations about sexuality, puberty, and reproductive health (Bleakley et al., 2018; Widman et al., 2014, 2016) more so in Asian societies where parents usually advice or warn their children to abstain from sex (Ismail & Hamid, 2016). Cultural and religious sensitivities also affect youth in their search of SRH knowledge, guidance, and services in Malaysia, thus, there is an unmet need for an open and credible source of SRH information for young people to use as a guide (Ismail & Hamid, 2016; Lim, 2015; Wong, 2012). In light of this, the following can be predicted:

H2: There is a significant positive relationship between youth subjective norms and intention to use healthcare websites as a source of SRH information.

Lastly, Fishbein and Ajzen (1975) noted that intention is the best predictor of behaviour; it is a person's readiness to accomplish a behaviour, a cumulative function of both attitude and subjective norms (Ajzen & Fishbein, 1980; Freberg, 2013; Montano & Kasprzyk, 2008; Pecchioni & Sparks, 2007; Sheeran, 2002). Youth are likely to access SRH information from healthcare websites if they first demonstrate positive attitudes towards this act, along with having adequate social support/pressure from their social circle. To further understand youth sexual intentions here in Malaysia, Muhammad et al. (2017) developed a survey through the means of a questionnaire to measure youth sexual intention towards SRH behaviours; the

questions were crafted based on previous literature, input from experts in the SRH industry and opinions of youth. The finalised version of the questions had 20 items namely to gauge attitude towards sexual activities, subjective norms, and sexual intention. The survey was aptly titled the Youth Sexual Intention Questionnaire (YSI-Q). Each item in the YSI-Q was measured via a 4-point Likert scale of level of agreement from 1 (strongly disagree) to 4 (strongly agree), items that were closer to the value 4 indicated positive outcomes on attitude, subjective norms, and sexual intention respectively. Abdullah et al. (2020) used the YSI-Q to explore factors that predicted intention to take part in premarital sex amongst 466 local secondary schools among students (18 - 19 years old) in the peninsular state of Kuantan. The instruments and measuring scales on sexual intention were similar to the work created by Muhammad et al. (2017), the only addition was a self-administered questionnaire on socio-demographic profiles that had aspects of age, gender, race, religion, parent's education levels, total household income (monthly) and dating status. Results showed that gender was a significant factor in predicting sexual intention towards premarital sex, especially among male students. Abdullah et al. (2020) explained that this outcome was most likely related to the norms in Malaysia where males, in general, were less stigmatised while the fairer sex tended to get the blame for unwanted SRH consequences such as unplanned pregnancies or STIs. Therefore based on the aforementioned points, the following can be predicted:

H3: Attitude and subjective norms significantly predict youth intention to use healthcare websites as a source of SRH information.

METHODS

Sample Selection

The Klang Valley is one of the most industrialised regions in Malaysia with an established Internet structure (Krimi et al., 2010; Perumal et al., 2018), it consists of the highest number of Internet users in Malaysia (Alam et al., 2009; Haque et al., 2007; Rycker et al., 2017). According to the Internet Users Survey by the Malaysian Communications and Multimedia Commission (MCMC, 2018), about 70 percent of active Internet users were from urban regions in Malaysia, such as the Klang Valley, in addition, a majority of these users were in their 20's (30%) and 30's (25.9%) (Below 20 - 8.1%, 40's -17.9%, 50's -11.6% and 60 & above, 6.5%).

Some popular online activities of Internet users include searching for information and reading articles/journals/publications (MCMC, 2018). Therefore, as this study seeks to understand youth behaviour in seeking SRH information via healthcare websites, the target population for this study is Malaysian youth between the ages of 18 – 40 years old residing in the Klang Valley region. These key features are set as the inclusion criteria of the study. As the population for this study is large and well over 100,000 people (Department of Statistics Malaysia, 2018), Krejcie and Morgan (1970) stated that the sample size

for this study should be 384 respondents, this figure is rounded up to include 400 respondents.

Sampling and Data Collection Procedures

Data was collected using a self-administered questionnaire through convenience sampling where the sampling frame was homogenous in nature as the sample was controlled for age (18 – 40 years old) and location (Klang Valley Area). Most of the respondents comprised of public and private university students (undergraduate and postgraduate) and working youth.

Upon receiving the questionnaire, the respondents were given a short brief of the study (purpose and objectives) on the cover page of the questionnaire and they were informed that participation is on a voluntary basis and all answers are confidential. It takes about 10 to 15 minutes to complete the questionnaire after which the respondents returned their questionnaire personally to the researcher. Respondents completed their questionnaires promptly without any issues and answered all questions so no follow-up questionnaires were made. The data collection process ended when an adequate number of respondents (N = 400) was achieved.

A total of 400 youth aged 18-40 years old, with a mean age of 24.18 (SD=4.51) were included in this study. The majority of the respondents of this study were made up of Indians (41.8%) and Chinese (39.0%) ethnicity followed by those of the Malay ethnicity (12.0%). A detailed explanation

of the respondent's demographic profiles is tabulated in Table 1.

Research Instruments

The data collection procedure for this study was done through a survey via a questionnaire. The first section of the questionnaire – Section A: Profile of Respondents – comprised relevant information regarding the respondents' demographics: gender, age, race, religion, and current education level. The last two questions in this section were the average number of hours spent on the Internet per

Table 1
Profile of respondents

| Demographic | Frequency | % |
|--|-----------|------|
| Gender | | |
| Male | 143 | 35.8 |
| Female | 247 | 64.3 |
| Age | | |
| 18 - 23 | 209 | 52.3 |
| 24 - 29 | 143 | 35.8 |
| 30 - 35 | 37 | 9.3 |
| >35 | 11 | 2.8 |
| Race | | |
| Malay | 48 | 12.0 |
| Chinese | 156 | 39.0 |
| Indian | 167 | 41.8 |
| Others | 29 | 7.3 |
| Religion | | |
| Islam | 51 | 12.8 |
| Buddhist | 85 | 21.3 |
| Christian | 155 | 38.8 |
| Hindu | 79 | 19.8 |
| Others | 30 | 7.5 |
| Education Level | | |
| STPM / Diploma / Advanced Diploma/ Pre-U | 123 | 30.8 |
| Bachelor's Degree | 237 | 59.3 |
| Post-graduate | 40 | 10.0 |
| On average, how many hours per day do you spend on the Internet? | | |
| Less than 3 hours | 57 | 14.3 |
| 4 – 6 hours | 172 | 43.0 |
| 7 – 9 hours | 87 | 21.8 |
| More than 9 hours | 84 | 21.0 |
| Which is your most preferred source of information about reproductive health? (Pick ONE) | e | |
| Parents | 10 | 2.5 |
| Newspapers/Magazines | 8 | 2.0 |
| Friends | 10 | 2.5 |
| Internet | 260 | 65.0 |
| TV/Radio | 1 | 0.3 |
| Healthcare providers (Doctors, nurses) | 111 | 27.8 |

day and the most preferred medium to receive reproductive health information

Moving on to Section B: Attitude towards Healthcare Websites to find SRH Information. Followed by Section C: Subjective Norms towards Healthcare Websites to find SRH Information. Finally, Section D: Intention of using healthcare websites to find reproductive health information. These variables were measured following a level of agreement 5-point Likert Scale (1 – "Strongly Disagree" to 5 – "Strongly Agree").

Attitude. The scale to measure this attitude was inspired by the TRA survey construction guidelines (Fishbein & Ajzen, 2010). Items for this section were adapted from the work of Ajzen (2013), Godin et al. (1991), and Tabaac (2016) which included questions such as "I feel that healthcare websites are useful when it comes to finding SRH information", "I prefer using websites over traditional media (television, radio, newspapers) to find reproductive health information", and "I feel relieved when healthcare websites remove my need to consult a doctor for minor reproductive health illnesses".

Subjective Norms. The scale to measure subjective norms follows the TRA survey construction guidelines (Fishbein & Ajzen, 2010). Questions in this section were divided into two types of norms: injunctive (e.g. most people around me think that I should perform this behaviour) and descriptive (e.g. most people around me

perform this behaviour) and were adapted from Ajzen (2013), Randolph et al. (2009), and Tabaac (2016). Examples include "My partner (boyfriend, girlfriend, husband, wife or significant other) would encourage me to use healthcare websites to find SRH information", "I will use healthcare websites to find SRH information if my personal doctor suggests that I should do so", and "Using healthcare websites to find reproductive health information is completely acceptable by my close friends".

Intention. The scale to measure intention was adapted from the TRA survey construction guidelines (Fishbein & Ajzen, 2010). Questions were adapted from Ajzen (2013), Randolph et al. (2009), Sheeran (2002), and Tabaac (2016). Every item here was crafted in terms of intention to perform a specific behaviour and included verbs such as plan, aim, intend, and so on. For instance, "I intend to use healthcare websites in the future to gain knowledge on reproductive health before engaging in sexual activities", "I plan to spend more time on healthcare websites in the future to find information on contraception (e.g. condoms, and birth control pills)", and "I aim to use healthcare websites in the future to update myself on new reproductive health information".

Reliability Analysis

The questionnaire underwent a pilot study and was pre-tested by 50 college/university students from Universiti Putra Malaysia and a few private universities in the Klang Valley area. Respondents were chosen

based on the characteristics that were set in the study's inclusion criteria. After collecting all the results from the pilot study, a reliability test took place via the Statistical Package for Social Sciences (SPSS) 22.0. The Cronbach's alpha values for all the variables in the survey instrument recorded a good to excellent (more than 0.8) internal consistency score. Table 2 shows a breakdown of Cronbach's alpha values according to the research instruments.

Table 2 Reliability analysis of the study's instruments

| Variables | Number of Items | α |
|------------------|-----------------|------|
| Attitude | 9 | .869 |
| Subjective Norms | 11 | .940 |
| Intention | 10 | .954 |

Data Analysis

All the data obtained was analysed using SPSS 22.0. Two bivariate correlation analyses were carried out to test the strength and direction of the relationship between the study's independent variables (attitude and subjective norms) and dependent variable (intention). After enquiring the strength and direction among the variables, a regression analysis was employed to evaluate the predictive power of the independent variables on the dependent variable.

RESULTS AND DISCUSSION

Hypothesis Testing

Table 3 shows the correlation analyses summary between the relationships of attitude – intention and subjective norms – intention. Based on the table, there was

a significant positive relationship between youth attitude and intention to use healthcare websites as a source of SRH information. The results for yielded, r(400)=.64, p<.001, indicating a moderate, positive correlation between attitude and intention; an increase in attitude was associated with an increase in youth intention to use healthcare websites as a source of SRH information. In addition, there was also a significant positive relationship between youth subjective norms and intention to use healthcare websites as a source of SRH information. The results yielded, r(400)=.66, p<.001, indicating a moderate, positive correlation between subjective norms and intention; an increase in subjective norms was associated with an increase in youth intention to use healthcare websites as a source of reproductive health information. Hence, both H1 and H2 were supported.

Table 3

Zero-Order correlations analysis summary

| Measure | 1 | 2 |
|---------------------|--------|--------|
| 1. Attitude | _ | |
| 2. Subjective Norms | .67*** | _ |
| 3. Intention | .64*** | .66*** |

Note. ***p<.001

Table 4 shows the regression analysis summary of attitude and subjective norms as predictors of intention. Based on the table, the two predictors explained 50.4% of the variance in intention [R^2 =.50, F(2, 397) = 201.57, p<.001). It was found that attitude (β =.36, p<.001) and subjective norms (β =.41, p<.001) significantly predicted youth intention to use healthcare websites

as a source of SRH information. Although the difference in the coefficient values is minimal, it appears that subjective norms are a stronger predictor of intention compared to attitude. H3 was supported.

Table 4
Regression Model summary: Attitude and subjective norms as predictors of intention

| Variables | В | SE B | β |
|------------------|-----|------|--------|
| Attitude | .41 | .05 | .36*** |
| Subjective Norms | .43 | .05 | .41*** |

Note: R^2 =.50. ***p<.001

Relationship between Attitude and Intention

Using the TRA as a guide, this study sought to investigate the factors that influenced youth intention in using new media to seek SRH information. The attitude – intention relationship revealed that youth who have positive (favourable) attitudes towards using healthcare websites to find SRH information are likely to have a high intention to do so (Mittler et al., 2012; Muhammad et al., 2017).

From a Malaysian point-of-view, the Internet provides a worry-free, private and confidential pathway for young people to access this important information as such topics are still considered inappropriate to discuss openly in a public space, especially in Asian societies (Khawaja et al., 2017; Woog et al., 2015). A positive attitude towards accessing and accepting reproductive health information through Internet-based interventions is key for enhancing proper SRH practices among youth (Farid et al., 2018; Muhammad et al., 2017).

Relationship between Subjective Norms and Intention

In Malaysia, apart from new media, peers and romantic partners are considered as one of the main sources of SRH information for youth. They often share or discuss their findings with their peers via face-to-face and/or virtual communication (Ismail & Hamid, 2016; Low, 2009). As talking about sex often carries a negative connotation, it is no surprise that youth are more comfortable with peers of the same age/experience when discussing sexually-related matters. However, relying on peers for information may be detrimental, this is especially worrisome when friends get involved with each other in romantic relationships (Manaf et al., 2014).

Wong (2012) mentioned that there were instances where youth disregarded the importance of contraception during sexual activities as they trusted their partner, clearly showing a lack of SRH awareness (Awang et al., 2014; Mustapa et al., 2015). This is in stark contrast to youth who were influenced by authoritative figures from the medical field as they were willing to change their risk-taking behaviours and instil safer practices in their sexual lives (Breuner & Mattson, 2016; Donoghue et al., 2017; Sanci et al., 2015).

Attitude and Subjective Norms as predictors of Intention

Generally, studies using the TRA as a guide found that a stronger intention – behaviour relationship was formed when intention was based on attitudes as opposed to subjective norms (Ajzen & Fishbein, 1980; Sheeran et al., 1999), but these studies looked at individual behaviour, where active participation of significant others was not a major contributing factor to behaviour (Ross & McLaws, 1992). In studies pertaining to SRH, especially in measuring intention of using contraceptives, subjective norms played a more important role as social pressure from sexual partners can influence an individual's sexual habits (Dippel et al., 2017; Sanci et al., 2015; Widman et al., 2014).

In an Asian context, cultural values influence people's decision-making process, which ultimately affects behavioural intentions (Ohbuchi et al., 1999). For instance, the collectivist culture in Malaysia meant that the sexual experiences of young women were bounded by social norms in a bid to avoid public shaming and stigma (Khalaf et al., 2018). In some cases, young women even agreed to engage in sexual relations with their partners to prove their loyalty and sustain a long-term relationship, even if it meant not using any form of contraception (Reddy & Dunne, 2007). The collectivist culture places importance on relationships, roles, and status within the community (Guess, 2004), which mirrors the role of subjective norms in this study where the opinions of others weigh in on one's formation of SRH intentions.

CONCLUSION

This research aimed to examine the factors that predict youth intention in using healthcare websites to seek SRH information.

Youth who have a positive (favourable) attitude towards using healthcare websites to find SRH information are likely to have a high intention to do so. In addition, social support/pressure also influences youth intention to use healthcare websites to find SRH information. One crucial finding in the context of this study is how subjective norms are a stronger predictor of intention compared to attitude in terms of being an influential factor for Malaysian youth in their quest to equip themselves with SRH knowledge. This finding here can add a new dimension to how the TRA framework is utilised, especially in studies revolving around Asian youth intentions and behaviours when it comes to SRH scenarios.

The TRA variables attitude and subjective norms were used as a guide to understand the formation of intention development in this study. The findings confirmed the main assumption of the theory where attitude and norms have a linear relationship with intention (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Tabachnick & Fidell, 2007). This study linked both communication and health behaviours to examine youth SRH information-seeking intentions. This is imperative in improving e-health literacy levels among young people (Mohamad et al., 2020; Shakir et al., 2019). Furthermore, the TRA showed its reliability as a viable model to predict health intention outcomes, it warrants more use to fully understand youth SRH intentions in Malaysia.

Implications, Limitations, and Recommendations

The findings of this study have a number of important implications for future research in understanding the intention of youth in using healthcare websites to access reproductive health information, especially with SRH issues among young Malaysians increasing over the past years.

From a theoretical point of view, the findings suggest that the TRA framework may be useful in explaining youth attitude/ behaviour in health communication and information-seeking studies in a Malaysian context as this theory is rarely used in this manner here. When testing the strengths of linear relationships between the TRA variables, it was found that subjective norms had a slightly bigger impact on intention than attitude, this shows the influence of social pressure from an individual's social circle when it comes to making SRH decisions.

From a practical standpoint, the findings here showed how the Internet is the go-to medium for youth who intend to seek SRH information. Healthcare website regulators who are tasked with creating and delivering such information to young Malaysians could work together with NGOs such as FRHAM (Federation of Reproductive Health Associations Malaysia), ARROW (Asian-Pacific Resource & Research Centre for Women), and MAC (Malaysian AIDS Council) and leverage on new media to provide SRH content and support that is credible, easily accessible and free/

affordable. These organisations have spearheaded online SRH efforts by offering information, guidelines, and services to those in need. However, the effectiveness of these efforts in influencing youth behaviour towards better SRH practices is largely unknown even though it has many benefits.

New media has the potential to revolutionise health education more effectively and efficiently compared to current traditional methods by engaging with large and diverse populations, providing relevant and personalised information to users, facilitating real-time feedback from health experts through online live chat services, and so on. One great example moving forward is the MyHEALTH portal by the Ministry of Health (MOH) which has gained traction over the years for providing quality healthcare information and services. Adequate utilisation of web-based health information services would greatly increase youth health literacy levels if it is widely used and adopted into their lifestyles. This paves the way for young people to become active health consumers.

Despite its findings, every study has its flaws, this one is no different. Firstly, one of the main limitations of this study is that the data is limited to youth in the Klang Valley; hence, the data that was collected was skewed to this group of people from the same area. In addition, the sample size (N=400) was rather small to make a significant conclusion of the general population, the results would yield new and additional information if the number

of respondents was increased to include youth from other states in Malaysia as well. Future research may also extend to younger individuals such as school students as they are also tech-savvy in today's modern world.

Moving on, as the study uses a convenience sample, the findings of this study may not represent all quarters of the population. Although the measures used in this study did well with the selected sample due to its homogeneity, repeating the process with different population samples is necessary to examine the generalisability of the research outcomes.

Lastly, there are other variables that contribute to the rise of eHealth literacy among youth that could also be tested such as the emergence of social media and how healthcare experts are turning to Facebook, Instagram, and Twitter to disseminate factual and credible information to their many followers.

This study hopes to provide a strong incentive for more research to understand Malaysian youth SRH behaviours and their health literacy levels to aid the formation of necessary policies and programmes. It is important for government bodies, education institutions, media outlets, NGOs, and other relevant parties to work together and realise that there must be a change in the conventional methods currently used to tackle the SRH issues faced by our youth.

ACKNOWLEDGEMENT

We are grateful to Professor Ezhar Tamam for his counsel and encouragement.

REFERENCES

- Abdullah, F. I., Rahman, N. A. A., Muhammad, N. A., Zainuddin, N. A., & Samsudin, S. (2020). Association between social-cognitive factors and intention towards sexual activity among schoolgoing late adolescents in Kuantan, Malaysia. *International Journal of Adolescence and Youth*, 25(1), 1-9. https://doi.org/10.1080/02673843.20 20.1828111
- Alagrisamy, R., & Arokiasamy, L. (2019). A study on young female adults' intention and adoption of emergency contraceptive pill in rural Malaysia. Global Business and Management Research: An International Journal, 11(1), 505-516.
- Alam, S. S., Musa, R., & Hassan, F. (2009). Corporate customers' adoption of internet banking: Case of Klang Valley business firm in Malaysia. *International Journal of Business and Management*, 4(4), 13-21. https://doi.org/10.5539/ijbm.v4n4p13
- Ajzen, I., & Fishbein, M. (1980). *Understanding* attitudes and predicting social behavior. Prentice Hall.
- Ajzen, I. (2013). Theory of planned behavior questionnaire. Measure Instrument Database for the Social Science. http://www.midss.org/sites/default/files/tpb.construction.pdf
- Albarracín, D., Fishbein, M., Johnson, B. T., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*, 127(1), 142-161. https://doi.org/10.1037/0033-2909.127.1.142
- Awang, H., Wong, L. P., Jani, R., & Low, W. Y. (2014). Knowledge of sexually transmitted diseases and sexual behaviours among Malaysian male youths. *Journal of Biosocial Science*, 46(2), 214-224. https://doi.org/10.1017/s0021932013000114
- Ayub, S. H., Hamzah, M. R., Azmy, S. N. S., Omar, W. A. W., Abdullah, N. H., Wahab, Z., & Salim, H. (2017). Sexual health communication

- among youth: A study of knowledge and attitude. *Malaysian Journal of Communication*, 33(4), 234-248. https://doi.org/10.17576/jkmjc-2017-3304-15
- Bleakley, A., Khurana, A., Hennessy, M., & Ellithorpe, M. (2018). How patterns of learning about sexual information among adolescents are related to sexual behaviors. *Perspectives on Sexual and Reproductive Health*, 50(1), 15-23_https://doi.org/10.1363/psrh.12053
- Breuner, C. C., & Mattson, G. (2016). Sexuality education for children and adolescents. *Pediatrics*, 138(2), 1-11. https://doi.org/10.1542/peds.2016-1348
- Bryan, A., Fisher, J. D., & Fisher, W. A. (2002). Tests of the mediational role of preparatory safer sexual behavior in the context of the theory of planned behavior. *Health Psychology*, 21(1), 71-80. https://doi.org/10.1037/0278-6133.21.1.71
- Cheah, Y. K., Lim, H. K., Kee, C. C., & Ghazali, S. M. (2016). Factors associated with underage sex in Malaysia: A secondary data analysis of Malaysia Global School-Based Student Health Survey 2012. *Journal of Population and Social Studies*, 26(4), 305-320. https://doi.org/10.25133/JPSSv26n4.021
- Centers for Disease Control and Prevention. (2018). How CDC prepares healthy youth for successful futures. https://www.cdc.gov/healthyyouth/about/pdf/DASH Snapshot.508.pdf
- Conner, M., Mceachan, R., Lawton, R., & Gardner, P. (2017). Applying the reasoned action approach to understanding health protection and health risk behaviors. *Social Science & Medicine*, 195, 140-148. https://doi.org/10.1016/j. socscimed.2017.10.022
- Crook, B., Stephens, K. K., Pastorek, A. E., Mackert, M., & Donovan, E. E. (2016). Sharing health information and influencing behavioral intentions: The role of health literacy, information overload, and the internet in the

- diffusion of healthy heart information. *Health Communication*, 31(1), 60-71. https://doi.org/10.1080/10410236.2014.936336
- Delany-Moretlwe, S., Cowan, F. M., Busza, J., Bolton-Moore, C., Kelley, K., & Fairlie, L. (2015). Adolescent sexual and reproductive health: The global challenges. *Journal of the International AIDS Society*, 18(2), 29-40. https:// doi.org/10.7448/IAS.18.2.19833
- Department of Statistics Malaysia. (2018). *Population* by age. http://pqi.stats.gov.my/result.php?token= 14dec6447b3c1bb0f570c2b6a3ddab76
- Dippel, E. A., Hanson, J. D., McMahon, T. R., Griese, E. R., & Kenyon, D. Y. B. (2017). Applying the theory of reasoned action to understanding teen pregnancy with American Indian communities. *Maternal and Child Health Journal*, 21(7), 1449-1456. https://doi.org/10.1007/s10995-017-2262-7
- Donoghue, C., Bonillas, C., Moreno, J., Cardoza, O., & Cheung, M. (2017). Young people's perceptions of advice about sexual risk taking. *Sex Education*, *17*(1), 73-85. https://doi.org/10. 1080/14681811.2016.1236016
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research.* Addison-Wesley Pub.
- Fishbein, M., & Ajzen, I. (2010). Predicting and changing behavior: The reasoned action approach. Psychology Press (Taylor & Francis).
- Fisher, W. A., Kohut, T., Salisbury, C. M., & Salvadori, M. I. (2013). Understanding Human Papillomavirus vaccination intentions: Comparative utility of the theory of reasoned action and the theory of planned behavior in vaccine target age women and men. *The Journal of Sexual Medicine*, 10(10), 2455-2464. https://doi.org/10.1111/jsm.1221
- Freberg, K. (2013). Using the theory of planned behavior to predict intention to comply with a food recall message. *Health*

- Communication, 28(4), 359-365. https://doi.org/10.1080/10410236.2012.68865
- Godin, G., Valois, P., Jobin, J., & Ross, A. (1991).
 Prediction of intention to exercise of individuals who have suffered from coronary heart disease.
 Journal of Clinical Psychology, 47(6), 762-772.
 https://doi.org/c9snr6
- Greene, K., Hale, J. L., & Rubin, D. L. (1997).

 A test of the theory of reasoned action in the context of condom use and AIDS.

 Communication Reports, 10(1), 21-33. https://doi.org/10.1080/08934219709367656
- Guess, C. D. (2004). Decision making in individualistic and collectivistic cultures. Online *Readings in Psychology and Culture*, 4(1), 1-18. https://doi. org/10.9707/2307-0919.1032
- Hamzah, S. R., Suandi, T., & Ishak, N. H. (2016). Association between health literacy and demographic factors among adolescents in Malaysia. International Conference on Youth (ICYOUTH) 2016, Seri Kembangan, Selangor, Malaysia.
- Haque, A., Mahmud, S., Tarofder A. K., & Ismail, A. (2007). Internet advertisement in Malaysia: A study of attitudinal differences. *The Electronic Journal of Information Systems in Developing Countries*, 31(9), 1-15. https://doi.org/10.1002/j.1681-4835.2007.tb00218.x
- Ismail, K., & Hamid, S. R. A. (2016). Communication about sex-reproductive health issues with adolescents: A taboo among Malaysian parents? European Journal of Social Sciences Education and Research, 6(1), 27-41.
- Jozkowski, K. N., & Geshnizjani, A. (2016). Using a reasoned action approach to examine US college women's intention to get the HPV vaccine. *Health Education Journal*, 75(1), 14-26. https:// doi.org/10.1177/0017896914561100
- Khalaf, F. Z., Liow, J. W., Low, W. Y., Ghorbani, B., & Merghati-Khoei, E. (2018). Young women's experience of sexuality: A battle of pleasure and

- sexual purity in the context of Malaysian society. *Sexuality and Culture, 22*(3), 849-864. https://doi.org/10.1007/s12119-018-9496-4
- Khawaja, Z., Ali, K. I., & Khan, S. (2017). Using Facebook for sexual health social marketing in conservative Asian countries: A systematic examination. *Journal of Health Communication*, 22(2), 111-123. https://doi.org/10.1080/108107 30.2016.1222031
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational* and *Psychological Measurement*, 30(3), 607-610.
- Krimi, M., S., Yusop, Z., & Law, S., H. (2010). Regional development disparities in Malaysia. *Journal of American Science*, 6(3), 70-78.
- Lee, R. L., & Kotler, P. (2016). Social marketing: Changing behaviours for good (5th ed.). Sage.
- Lim, H. M. (2015). Country profile on universal access to sexual and reproductive health: Malaysia. Federation of Reproductive Health Association Malaysia (FRHAM). https://doi.org/10.1080/0144287012000277507
- Low, W. Y. (2009). Malaysian youth sexuality: Issues and challenges. *Journal of Health and Translational Medicine*, 12(1), 3-14. https://doi.org/10.22452/jummec.vol12no1.2
- Manaf, M. R. A., Tahir, M. M., Sidi, H., Midin, M., Jaafar, N. R. N., Das, S., & Malek, A. M. A. (2014). Pre-marital sex and its predicting factors among Malaysian youths. *Comprehensive Psychiatry*, 55(SUPPL.1), S82-S88. https://doi. org/10.1016/j.comppsych.2013.03.008
- Manimaran, K. K., Vikneswaran, S., Ng, S. Y., Aisah, M. S., & Chiew, W. L. (2017). Sexual and reproductive health implementation in Malaysia. *International Journal of Public Health and Clinical Sciences* 4(6), 12-21.
- Manstead, A. S. R. (2011). The benefits of a critical stance: A reflection on past papers on the

- theories of reasoned action and planned behavior. *British Journal of Social Psychology*, 50(3), 366-373. https://doi.org/10.1111/j.2044-8309.2011.02043.x
- Malaysian Communications and Multimedia Commission. (2018). *Internet users survey 2018*. https://www.mcmc.gov.my/skmmgovmy/media/ General/pdf/Internet-Users-Survey-2018.pdf
- Mohamad, E. M. W., Kaundan, M. K., Hamzah, M. R., Azlan, A. A., Ayub, S. H., Tham, J. S., & Ahmad, A. L. (2020). Establishing the HLS-M-Q18 short version of the European health literacy survey questionnaire for the Malaysian context. BMC Public Health, 20(580), 1-7. https://doi. org/10.1186/s12889-020-08704-7
- Mokhtar, M. M., Rosenthal, D. A., Hocking, J. S., & Satar, N. A. (2013). Bridging the gap: Malaysian youths and the pedagogy of school-based sexual health education. *Procedia Social and Behavioral Sciences*, 85, 236-245. https://doi.org/10.1016/j.sbspro.2013.08.355
- Montano, D. E., & Kasprzyk, D. (2008). Theory of reasoned action, theory of planned behavior, and the integrated behavioral model. In K. Glanz,
 B. K. Reimer, & F. M. Lewis (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed., pp. 67-96). Jossey-Bass.
- Muhammad, N. A., Shamsuddin, K., Amin, R. M., Omar, K., & Thurasamy, R. (2017). Questionnaire development and validity to measure sexual intention among youth in Malaysia. *BMC Public Health*, 17(1), 1-11. https://doi.org/10.1186/s12889-016-3949-1
- Mittler, J. N., Volmar, K. M., Shaw, B. W. Christianson, J. B., & Scanlon, D. P. (2012). Using websites to engage consumers in managing their health and healthcare. *The American Journal of Managed Care*, 18(6), 177-184.
- Müller, P., & Schulz, A. (2019). Facebook or Fakebook? How users' perceptions of 'fake

- news' are related to their evaluation and verification of news on Facebook. *Studies in Communication and Media*, 8(4), 547-559. https://doi.org/10.5771/2192-4007-2019-4-547
- Mustapa, M. C., Ismail, K. H., Mohamad, M. S., & Ibrahim, F. (2015). Knowledge on sexuality and reproductive health of Malaysian adolescents A short review. *Procedia Social and Behavioral Sciences*, 211, 221-225. https://doi.org/10.1016/j. sbspro.2015.11.088
- Farid. N. D. N., Arshad, M. F. M., Yakub, N. A., Zaki, R. A., Muhamad, H., Aziz, N. A., & Dahlui, M. (2018). Improving Malaysian adolescent sexual and reproductive health: An Intenet-based health promotion programme as a potential intervention. *Health Education Journal*, 77(7), 837-848. https://doi.org/10.1177/0017896918778071x
- Ohbuchi, K. I., Fukushima, O., & Tedeschi, J. T. (1999). Cultural values in conflict management: Goal orientation, goal attainment, and tactical decision. *Journal of Cross-Cultural Psychology*, 30(1), 51-71. https://doi.org/10.1177/0022022199030001003
- Pecchioni, L. L., & Sparks, L. (2007). Health information sources of individuals with cancer and their family members. *Health Communication*, 21(2), 143-151. https://doi.org/10.1080/10410230701307162
- Perumal, I., Abdullah, A., Supramaniam, M., Subramaniam, M., Sinniah, S., & Perumal, G. (2018). Determinants of online purchasing intention of household appliance among Malaysians in Klang Valley. *International Journal of Computer Science and Network Security*, 18(12), 211-220.
- Randolph, M. E., Pinkerton, S. D., Somlai, A. M., Kelly, J. A., Mcauliffe, T. L., Gibson, R. H., & Hackl, K. (2009). Seriously mentally ill women's safer sex behaviors and the theory of reasoned action. *Health Education & Behavior*, 36(5), 948-958. https://doi.org/10.1177/1090198108324597

- Reddy, S., & Dunne, M. (2007). Risking it: Young heterosexual femininities in South African context of HIV/AIDS. Sexualities, 10(2), 159-172. https://doi.org/10.1177/1363460707075797
- Rise, J. (1992). An empirical study of the decision to use condoms among Norwegian adolescents using the theory of reasoned action. *Journal of Community & Applied Social Psychology*, 2(3), 185-197. https://doi.org/10.1002/casp.2450020303
- Ross, M. W., & Mclaws, M. L. (1992). Subjective norms s about condoms are better predictors of use and intention to use than attitudes. *Health Education Research*, *7*(3), 335-339. https://doi.org/10.1093/her/7.3.335
- Rycker, A. D., Yang, L. F., Lee, C. E., & Ponnan, R. (2017). Internet use among urban Malaysians: Network diversity effects. SHS Web of Conferences, 33, 1-7. https://doi.org/10.1051/ shsconf/20173300066
- Sanci, L., Chondros, P., Sawyer, S., Pirkis, J., Ozer, E., Hegarty, K., Yang, F., Grabsch, B., Shiell, A., Cahill, H., Ambresin, A.-E., Patterson, E., & Patton, G. (2015). Responding to young people's health risks in primary care: A cluster randomised trial of training clinicians in screening and motivational interviewing. *PLOS ONE*, *10*(9), e0137581. https://doi.org/10.1371/journal.pone.0137581
- Shakir, S. M. M., Wong, L. P., Abdullah, K. L., & Adam, P. (2019). Factors associated with online sexually transmissible infection information seeking among young people in Malaysia: An observational study. *Sexual Health*, 16(2), 158-171. https://doi.org/10.1071/SH17198
- Sheeran, P., Norman, P., & Orbell, S. (1999). Evidence that intentions based on attitudes better predict behaviour than intentions based on subjective norms. *European Journal of Social Psychology*, 29(23), 403-406. https://doi.org/10.1002/

- (SICI)1099-0992(199903/05)29:2/3<403::AID-EJSP942>3.0.CO;2-A
- Sheeran, P. (2002). Intention-behavior relations: A conceptual and empirical review. *European Review of Social Psychology, 12*(1), 1-36. https://doi.org/10.1080/14792772143000003
- Tabaac, A. R. (2016). Gender and sexual health:

 Applying gender role theory to men and women's intention to engage in sexual health information seeking behaviors (Master's thesis),

 Virginia Commonwealth University. http://scholarscompass.vcu.edu/etd/4119/
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon/Pearson Education.
- Ujang, F., & Sutan, R. (2018). The effects of short health messages intervention in improving knowledge and attitude on sexual and reproductive health among late adolescents at colleges in Malaysia. *Open Journal of Preventive Medicine*, 8(8), 207-228. https://doi.org/10.4236/ojpm.2018.88019
- Vanlandingham, M. J., Suprasert, S., Grandjean, N., & Sittitrai, W. (2014). Two views of risky sexual practices among Northern Thai males: The health belief model and the theory of reasoned action. *Journal of Health and Social Behavior, 36*(2), 195-212.
- Widman, L., Choukas-Bradley, S., Helms, S. W., Golin, C. E., & Prinstein, M. J. (2014). Sexual communication between early adolescents and their dating partners, parents, and best friends. *Journal of Sex Research*, 51(7), 731-741. https://doi.org/10.1080/00224499.2013.843148
- Widman, L., Choukas-Bradley, S., Noar, S. M., Nesi, J., & Garrett, K. (2016). Parent-adolescent sexual communication and adolescent safer sex behavior: A meta-analysis. *JAMA Pediatrics*, 170(1), 52-61. https://doi.org/110.1016/j. bbi.2017.04.008

- Wong, L. P. (2012). An exploration of knowledge, attitudes and behaviours of young multiethnic Muslim-majority society in Malaysia in relation to reproductive and premarital sexual practices. *BMC Public Health*, 12, 865. https://doi.org/10.1186/1471-2458-12-865
- Woog, V., Singh, S., Browne, A., & Philbin, J. (2015).

 Adolescent women's need for and use of sexual and reproductive health services in developing.

 Guttmacher Institute. https://www.guttmacher.org/sites/default/files/report_pdf/adolescent-srhs-need-developing-countries.pdf