



## **Bridging the Gap: Understanding Discrepancies in Mother-Adolescent Communication on Sexual and Reproductive Health in Kuching, Sarawak**

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### **ABSTRACT**

Adolescents who have access to sexual and reproductive health (SRH) information are less likely to engage in risky sexual behaviours, and parents are among the best sources of this information. However, a lack of communication between parents and adolescents on SRH hinders the exchange of knowledge process. This study aims to describe the communication practices between mothers and adolescents on SRH in Kuching, Sarawak. A cross-sectional study was conducted in Kuching, Sarawak, on mothers and teenagers aged 13 to 17. The responses from the mothers and their respective adolescents' responses were reported as paired responses. The questionnaire was developed following the Information-Motivation-Behavioural Skills (IMB) model. Finally, the correlation between the communication level and the domains in the model was analysed. 152 pairs of mothers and adolescents participated in the study. The mean age of the mothers was 44.7 (SD=6.52) years old, and the mean age of adolescents was 15.1 (SD=1.42). About 69.1% of adolescents were female. The communication scores among the mothers were significantly higher than adolescents. Subsequently, the motivation and perceived communication skills domains were moderately correlated with their communication practice score. There was a discrepancy in the communication practice between mothers and adolescents, which indicated the effectiveness of the communication practice between mothers and adolescents on SRH. As a result, intervention programs targeting the IMB constructs of adolescents can improve the communication practice among adolescents on SRH.

**Keywords:** mother-adolescents, communication, sexual and reproductive health, Information-Motivation-Behavioural Skills model

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## 1 INTRODUCTION

Adolescence is a dynamic phase of life and transitional development from childhood into adulthood, characterised by rapid physical, cognitive, emotional, and social development. The World Health Organization (2017) defines adolescents as individuals aged 10 to 19 years old. In recent years, research on the understanding of adolescents has evolved, acknowledging their diverse experiences and unique challenges in the contemporary world. Among the challenges aspect related to adolescents is related to sexual and reproductive health (SRH), which is considered a neglected need among adolescents, such as misconceptions about puberty, teenage pregnancy, and sexual violence (UNESCO et al., 2018).

Globally, teenage pregnancy and STIs among adolescents constitute a public health concern, including in Malaysia. It was reported that about 34% of new Human Immunodeficiency Virus (HIV) infections worldwide were from 15 to 24 years old individuals (UNAIDS, 2016). In Malaysia, the prevalence of adolescents who ever had sex was 7.6% in 2022, which increased from 7.3% in 2017. However, there was a significant reduction in adolescents who had their sexual debut before the age of 14 years old, from 50.6% in 2017 to 32.8% in 2022 (Institute for Public Health, 2018, 2022). Nevertheless, teenage pregnancy was still drawing significant concerns, especially in Sarawak. It was reported that the prevalence was 8.3%, with 6.2% of teenage pregnancies aged less than 16 years old (Lian Cheng, 2021). This finding could be troublesome because most of those involved in premarital teenage pregnancy were practising unsafe sexual behaviour (Renjhen et al., 2016), which exposed them to other SRH-related problems among adolescents.

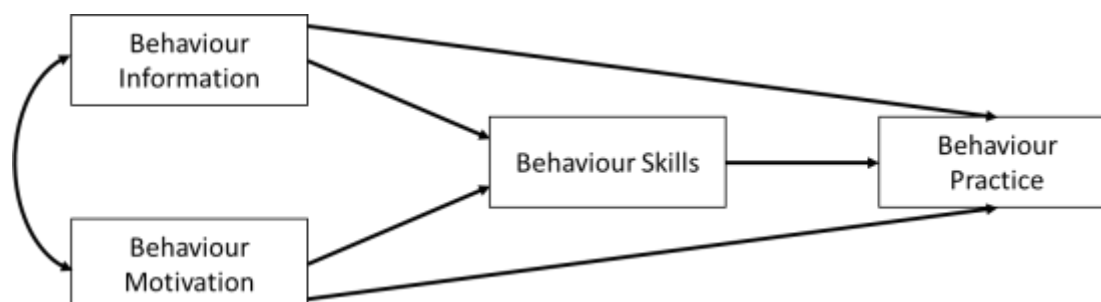
Despite several service provisions on SRH specifically targeting adolescents, including healthcare-based service provision and school-based SRH education (Hazariah et al., 2021), the issues remain worrying. Furthermore, adolescents tend to seek SRH-related information from peers instead despite available credential services provided to them (Vongsavanh et al., 2020). One reason for this scenario was that adolescents perceived peers as more accessible than the conventional services from healthcare and school-based intervention. A study among school students in East Malaysia found that the overall knowledge was moderate, with females, younger adolescents, and those living in rural areas tending to have a lower knowledge level (Awang et al., 2019). The main reason for the issue was limited access to information among those adolescents. Thus, parents could be the choice of conveying such information to adolescents. Contemporary research has emphasised the importance of parents as the pivotal influences in equipping adolescents with essential knowledge of the SRH (Minhat et al., 2023; Tan & Gun, 2018). Subsequently, adolescents can foster healthy sexual and reproductive behaviours such as healthy relationships, delay sexual debut, and reduce the likelihood of engaging in risky sexual activities (Widman et al., 2016).

Acknowledging the significance of parental involvement in delivering such information to adolescents is essential. Besides knowledge improvement among adolescents on SRH through accurate information dissemination, parents can also directly transmit cultural and spiritual values practised by the family tradition (Vongsavanh et al., 2020). However, the dynamic of parents-adolescents communication on SRH must still be mature and intricate, especially in Malaysia.

Cultural norms, societal attitudes, and individual beliefs influence the effectiveness of the information delivered to adolescents (Azie et al., 2023; El Kazdough et al., 2019). Among the reasons that hinder the communication between parents and adolescents was the limited valid resources for the parents to convey relevant information concerning SRH among adolescents. Even though some information was delivered at school, there was no continuation at home due to the lack of a definitive link between the teachers and parents to follow up on the issues (Babayanzad Ahari et al., 2020). Furthermore, the spurt of digital media and social networks imposes new challenges and opportunities to reshape how adolescents access information on SRH topics. All these issues make communication between parents and adolescents more difficult.

In addition to that, there are limited studies that measure the communication practices between parents and adolescents from both perspectives. Thus, it is crucial to examine the reliability of the communication practices reported by both parties. Several studies suggested discrepancies in the measurement reported by parents-adolescent dyads, in which parents report a higher value than adolescents in communication (Kapetanovic & Boson, 2022; Zhang et al., 2021). Thus, exploring the difference in the communication behaviour perceived by parents and adolescents can provide valuable information on understanding the effectiveness of the interaction between dyads. Subsequently, a more effective intervention programme can be designed to improve interaction between parents and adolescents on SRH.

In understanding the communication behaviour between parents and adolescents, the Information-Motivation-Behavioural Skills (IMB) model can be used to explain and predict such behaviour. The model proposed that individuals need accurate information, motivation to act, and behavioural skills to engage in a specific behaviour. Even though information and motivation are the precursors for developing behavioural skills, information and motivation are independent constructs that influence individuals to engage in the desired behaviour. Thus, adopting the model in exploring the communication practice between parents and adolescents in SRH topics can be promising in providing pertinent information (Seif et al., 2017, 2019). This model further assisted in planning the appropriate intervention to boost the information construct so that parents and adolescents can engage in the desired communication practices. Figure 1 shows the conceptual framework for the IMB model.



**Figure 1.** Information-motivation-behavioural skills (IMB) model.

This study, therefore, attempts to assess the level of information, motivation, and perceived communication skills of mothers and adolescents on SRH. The study also aims to assess the level

of communication practices between the mothers and adolescents from both perspectives. Subsequently, an evaluation of each IMB domain between mothers and adolescents was conducted to examine the differences between both groups. Finally, the correlation between communication practices among the mothers and adolescents with information, motivation, and perceived communication skills domains of both mothers and adolescents was examined.

## **2 METHODOLOGY**

### **Setting and Study Populations**

This study was conducted in the Kuching Division of Sarawak. The study population was mothers of adolescents aged 13 to 17 years in the Kuching district. This study focuses on mothers, considered the primary educator at home, primarily related to SRH issues. Mothers have also been suggested to monitor and communicate with adolescents (Mbachu et al., 2020). The mothers for this study were considered female guardians of the adolescents, either related biologically or as mother figures to the adolescents who take care of the adolescents and lived together in the same household for at least two consecutive years before the study. Subsequently, the adolescents of the mothers were selected alongside the mothers. Both male and female adolescents were included in the study. The responses from the mother and the adolescents were collected as a paired response.

### **Study design and sample size**

This is a community-based cross-sectional study among mothers and adolescents aged 13 to 17 years old to assess their communication practice on sexual and reproductive health by using the Information-Motivation-Behavioural Skills (IMB) model. This study used a quantitative study design to measure the IMB constructs for comparative analysis between the mothers and adolescents and the communication practice between them. Furthermore, the nature of the study to measure the IMB construct makes the quantitative study design more appropriate. The estimated sample size for the study was 128 mother-adolescent pairs, based on a single proportion sample size calculation, following a confidence interval of 95%, precision of .5, and 9.2% of parents had recent communication with adolescents on sexual and reproductive health. Nonetheless, after considering a 20% non-response rate, the final sample size estimation was 154 mothers-adolescent pairs. A community-based survey was used to assess the communication practices of mothers and adolescents regarding SRH issues.

### **Data collection**

The respondents were recruited through convenience sampling from community organisations in the Kuching district. The respondents were required to complete a self-administered questionnaire about their general background, knowledge of adolescents' SRH, motivation for communication, perceived communication skills, and communication practices on SRH components. Both the mothers and adolescents were given the same questionnaires with wording modifications to accommodate the perspectives of the mothers and adolescents, respectively.

## **Study instrument**

A questionnaire was adapted following the IMB model for the adolescents' SRH knowledge, motivation, perceived communication skills, and communication practices in SRH. A pilot study was done for the questionnaire on 30 pairs of mothers-adolescents for internal consistency.

*Sociodemographic characteristics* included age, gender, ethnicity, religion, occupation, highest educational attainment, monthly household income, and mother-adolescent relationship types.

*The adolescents' SRH knowledge* domain consisted of 31 items concerning sexual functions and adolescents' sexuality development. The items had three responses: True, False, and Do not know. Each correct response was given one mark, and the incorrect response was not given any mark, including the "Do not know" response. The possible score for the adolescents' knowledge ranged from 0 to 31. For this domain, the current study reported a Cronbach alpha of .62 for the mother component and .88 for the adolescent component.

*The motivation for the communication* domain consisted of 10 items with a 5-point Likert scale format. The scale for items 1 to 9 ranged from "Strongly disagree", "Disagree", "Neutral", "Agree", and "Strongly agree." The scale for item 10 ranged from "Most unlikely", "Unlikely", "Neutral", "Likely", and "Most Likely." The score of each statement was given accordingly with "Strongly disagree" and "Most unlikely" as one score and "Strongly agree" and "Most likely" as five scores, except for item 3, which was reversed coded. The total possible score for this domain ranged from 10 to 50 score. This domain reported a Cronbach alpha of .88 for the mother's component and .84 for the adolescent's component.

*The perceived communication skills* domain comprised nine items with a 5-point Likert scale format. The scale ranged from "Strongly disagree", "Disagree", "Neutral", "Agree", and "Strongly agree." The score of each statement was given accordingly, with "Strongly disagree" as one score, "Strongly agree" and "Most likely" as a five score. The total possible score for this domain ranged from 9 to 45 score. This domain reported a Cronbach alpha of .67 for the mother component and .85 for the adolescent component.

*The communication practices in the SRH* domain consisted of 10 items. The responses for all items ranged from "Never" to "Occasionally", "Sometimes", and "Often." The score for the response was given according to the order, with "Never" being one score and "Often" being four scores. The total possible score for this domain ranged from 10 to 40. This domain reported a Cronbach alpha of .93 for the mother component and .89 for the adolescent component.

## **Data analysis**

The data was collected and analysed using Statistical Package for Social Science version 25. The mean and standard deviation were used for continuous variables, and frequency and percentages were used for categorical variables. Subsequently, the score difference between mothers and adolescents in each domain was analysed using a paired t-test. Additionally, correlation coefficient analysis was used to analyse the mothers' and adolescents' knowledge, motivation, and perceived communication skills scores and the correlation between the adolescents' and mothers' communication scores, respectively. Finally, t-test and

analysis of variance (ANOVA) were used to compare the communication practice scores of mothers and adolescents on sociodemographic characteristics.

### **Ethical considerations**

The ethical clearance for this study was obtained from the UNIMAS (UNIVERSITI MALAYSIA SARAWAK) Medical Research Ethics Committee (FME/22/62). The mothers' initial written consent and written assent from the adolescents were obtained before the data collection to ensure their willingness to participate in the study.

## **3 RESULTS**

### **Sociodemographic characteristics**

152 pairs of mothers and adolescents participated in the study. The mean age was 44.7 (SD=6.52) for the mothers and 15.1 (SD=1.42) for the adolescents. In terms of gender, about 69.1% of adolescents were female. For the mothers, Malays consisted of 32.2% of the respondents, followed by Bidayuh (27.6%), Iban (23.0%), and Chinese (9.9%). The other ethnicities who participated in the study were other Sarawak Bumiputras, such as Melanau, Kayan, Kenyah, and Kelabit. In terms of religion, about 52.6% of the mothers were Christian, followed by Islam (42.8%) and Buddhism (4.6%). About 53.9% of adolescents were Christian, followed by Islam (42.8%) and Buddhism (3.3%).

Most mothers were married (84.4%) and had a biological relationship with adolescents (90.8%). Regarding occupation, 38.9% of the mothers were homemakers, 27.6% were in the public sector, and 19.7% were in the private sector. The rest of the mothers were self-employed (13.8%). Regarding educational level, most mothers (67.1%) had a low education level and either finished primary or secondary school only. In comparison, 32.9% of the mothers had at least a diploma. In terms of monthly household income, about half of the mothers (50.0%) were in the low-income category, which is less than RM3,000 monthly. Meanwhile, 38.8% of the mothers were in the middle-income category, and their household monthly income ranged between RM3,001 and RM6,000. Only 11.2% of the mothers had a household monthly income of more than RM6,000. Table 1 below shows the sociodemographic distribution of this study's mothers and adolescents.

**Table 1.** Sociodemographic characteristics of mothers and adolescents, n=152.

<b>Characteristics</b>	<b>Mothers, n (%)</b>	<b>Adolescents, n (%)</b>
Age	*44.72 (6.52)	*15.1 (1.42)
Gender		
Male	0 (0.0)	47 (30.9)
Female	152 (100.0)	105 (69.1)
Ethnicity		
Malay	49 (32.2)	54 (35.5)
Iban	35 (23.0)	31 (20.4)
Bidayuh	42 (27.6)	43 (28.3)
Chinese	15 (9.9)	13 (8.6)
Others	11 (7.2)	11 (7.2)
Religion		
Islam	65 (42.8)	65 (42.8)
Christian	80 (52.6)	82 (53.9)
Buddhism	7 (4.6)	5 (3.3)
Relationship status		
Biological	138 (90.8)	138 (90.8)
Non-biological	14 (9.2)	14 (9.2)
Marital status		
Single mother	24 (15.8)	
Married	128 (84.2)	
Occupation		
Public sector	42 (27.6)	
Private sector	30 (19.7)	
Self-employed	21 (13.8)	
Housewife	59 (38.9)	
Education level		
Lower education	102 (67.1)	
Higher education	50 (32.9)	
Household income		
Low income	76 (50.0)	
Middle income	59 (38.8)	
High income	17 (11.2)	

\* Mean (SD)

**The mean score for Information, Motivation, Communication Skills, and Communication Practices of the mothers and adolescents**

The mean score for the knowledge domain among mothers was 23.9 (SD=4.88) and 19.7 (SD=6.68) for adolescents. Regarding the motivation domain, the mean score for the mothers was 33.2 (SD=7.76) and 30.0 (SD=7.70) for the adolescents. For communication skills, the mothers had a mean score of 32.8 (SD=8.24), and the adolescents had a mean score of 27.8 (SD=9.20). The mean score for the SRH communication practices among the mothers was 22.5 (SD=7.35), while

the mean score for the adolescents was 18.8 (SD=6.94). Table 2 below shows the mean score for knowledge, motivation, communication skills, and SRH communication practices among mothers and adolescents.

**Table 2.** Mean score for knowledge, motivation, communication skills, and SRH communication practices among mothers and adolescents

Score	Mothers		Adolescents	
	Mean	SD	Mean	SD
Knowledge	23.9	4.88	19.7	6.68
Motivation	33.2	7.76	30.0	7.70
Communication skills	32.8	8.24	27.8	9.20
SRH communication practice	22.5	7.35	18.8	6.94

### Mother-Adolescent Comparison on the Information, Motivation, Communication Skills, and Communication Practice

The estimated difference between the mean score of the mothers and adolescents on the knowledge, motivation, communication skills, and SRH communication practices was analysed using paired t-tests. In terms of knowledge, there was a significant difference in mean score between mothers and adolescents [ $t(151) = 7.62, p < .001, 95\% \text{ CI} = 3.10:5.27$ ], where the mothers had a higher knowledge mean score than the adolescents. In motivation, there was a significant difference in the mean score between mothers and adolescents [ $t(151) = 4.28, p < .001, 95\% \text{ CI} = 1.74:4.73$ ], where the mothers had a higher motivation mean score than adolescents. In communication skills, the mothers had a significantly higher mean score than adolescents [ $t(151) = 5.99, P < .001, 95\% \text{ CI} = 3.31:6.56$ ]. Subsequently, the mothers also showed a significantly higher mean score for the SRH communication practices than adolescents [ $t(151) = 7.01, p < .001, 95\% \text{ CI} = 3.09:5.51$ ]. Table 3 shows the mean score differences between mothers and adolescents in knowledge, motivation, communication practices, and SRH communication practices.

**Table 3.** The mean score difference between mothers and adolescents on knowledge, motivation, communication skills, and SRH communication practices.

Score	t	df	Mean difference	SD	95% CI	
					Lower	Upper
Knowledge	7.62***	151	4.2	6.78	3.10	5.27
Motivation	4.28***	151	3.2	9.33	1.74	4.73
Communication skills	5.99***	151	4.9	10.14	3.31	6.56
Communication practice	7.01***	151	4.3	7.55	3.09	5.51

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



### Correlations between information, motivation, and communication skills of the mothers and adolescents with the communication practices

This section presents the correlations between the SRH knowledge, motivation, and perceived communication skills of the mothers and adolescents with the SRH communication practices. For mothers, there was a moderate positive correlation between the motivation [ $r(151) = .433, p < .001$ ] and perceived communication skills [ $r(151) = .447, p < .001$ ] with the mothers' SRH communication practice. On the other hand, the mothers' SRH knowledge had a weak positive correlation with the mothers' SRH communication practices [ $r(151) = .261, p < .01$ ], as well as for the mothers' motivation [ $r(151) = .278, p < .01$ ] and perceived communication skills [ $r(151) = .183, p < .05$ ] with the adolescents SRH communication practices. Nonetheless, the mothers' knowledge has no significant correlation with the adolescents' SRH communication practices [ $r(151) = .079, p > .05$ ].

From the adolescents' perspective, the adolescents' motivation [ $r(151) = .423, p < .001$ ] and perceived communication skills [ $r(151) = .538, p < .001$ ] had a significant moderate positive correlation with the adolescents' SRH communication practices. However, adolescents' SRH knowledge had a weak positive correlation with the SRH communication practice. Apart from that, the adolescents' SRH knowledge [ $r(151) = .186, p < .05$ ], motivation [ $r(151) = .166, p < .05$ ], and perceived communication skills [ $r(151) = .193, p < .05$ ] also had a weak positive correlation with the mothers' SRH communication practices. Table 4 shows the correlation between mothers' and adolescents' knowledge, motivation, and perceived communication skills with mothers' and adolescents' SRH communication practices, respectively.

**Table 4.** Correlation between the mothers' and adolescents' knowledge, motivation, and perceived communication skills on the SRH communication practices.

Score		Communication practice	
		Mothers	Adolescent
Maternal	Knowledge	.261**	.079
	Motivation	.433***	.278**
	Perceived communication skills	.447***	.183*
Adolescent	Knowledge	.186*	.278**
	Motivation	.166*	.423***
	Perceived communication skills	.193*	.538***

\*  $< .05$ , \*\*  $< .01$ , \*\*\*  $< .001$

### Comparison of mothers' and adolescents' communication practice score comparison between sociodemographic characteristics

Regarding mothers' communication practice scores, mothers with female and upper secondary school adolescents showed significantly higher scores than mothers with males [ $t(150) = 3.457, p\text{-value} < .001, 95\% \text{ CI} = 1.833:6.727$ ] and lower secondary school [ $t(150) = 3.411, p\text{-value} = .001, 95\% \text{ CI} = 1.702:6.388$ ] adolescents. In terms of adolescents' communication practice scores, the findings showed that adolescents with working mothers had a significantly higher communication practice score than adolescents with homemaker mothers [ $t(150) = 2.130, p\text{-value} = .035, 95\%$

CI=.164:4.377]. Besides, female adolescents also showed a significantly higher score than male adolescents [ $t(150) = 2.418$ ,  $p\text{-value} = .017$ , 95% CI=.492:4.889]. Table 5 shows the mean scores of mothers and adolescents on sociodemographic characteristics.

**Table 5.** Sociodemographic characteristics comparisons of communication practices mean score of the mothers and adolescents.

Characteristics	Communication practice, mean (SD)	
	Mothers	Adolescents
<b>Ethnicity</b>		
Malay	22.6 (7.28)	17.6 (5.96)
Dayak	22.6 (7.78)	18.9 (6.87)
Others	22.2 (6.39)	17.7 (6.31)
<b>Religion</b>		
Muslim	22.5 (7.05)	17.9 (6.47)
Non-Muslim	22.5 (7.62)	18.5 (6.51)
<b>Marital status</b>		
Single mother	21.4 (7.62)	17.2 (6.73)
Married	22.7 (7.31)	18.4 (6.44)
<b>Occupational status</b>		
Working	22.8 (7.13)	<b>19.1 (7.02)*</b>
Housewives	22.2 (7.73)	<b>16.8 (5.28)</b>
<b>Educational status</b>		
Low education	22.1 (7.76)	17.7 (6.50)
High education	23.5 (6.41)	19.3 (6.37)
<b>Household income</b>		
Low income	22.8 (7.55)	17.8 (6.42)
Medium income	22.3 (7.61)	18.4 (6.86)
High income	22.6 (6.04)	19.2 (5.59)
<b>Relationship status</b>		
Biological	22.6 (7.50)	18.0 (6.44)
Non-biological	21.7 (5.84)	20.7 (6.60)
<b>Adolescent gender</b>		
Male	<b>19.6 (4.91)</b>	<b>16.4 (5.26)</b>
Female	<b>23.9 (7.90)***</b>	<b>19.1 (6.83)*</b>
<b>Adolescents' education</b>		
Lower Secondary	<b>21.0 (6.57)</b>	17.8 (6.39)
Upper Secondary	<b>25.0 (7.89)***</b>	18.9 (6.62)

\*  $p\text{-value} < .05$ , \*\*  $p\text{-value} < .01$ , \*\*\*  $p\text{-value} < .001$

## 4 DISCUSSION

This study assessed the maternal and adolescent aspects of communication behaviour related to sexual and reproductive health. The IMB model was used as the framework for assessing communication behaviour, which involved the information (knowledge of SRH), motivation, and perceived communication skills related to the SRH topics. Subsequently, the association with the pattern of the communication practice was reported. In addition to that, this study also presents the communication practice described by both mothers and adolescents independently. The finding demonstrated the discrepancies between maternal and adolescent perspectives regarding communication practice related to SRH topics, as many studies on parents-adolescents communication on SRH topics relied on the information from either party (Grossman et al., 2018; Tan & Gun, 2018).

This study revealed that mothers had a higher knowledge score than adolescents. It is essential to acknowledge that mothers have a higher knowledge level due to their experiences related to SRH. Many studies also reported that most parents had a good knowledge of the topics, especially those related to development during puberty and the reproductive system (Malango et al., 2022). The adolescents have a moderate knowledge level related to SRH. Among the reasons given, especially in the Malaysian context, is the exposure to information related to the SRH topic to adolescents (Hazariah et al., 2021). Certain crucial information related to reproductive issues was lacking among adolescents, which can affect their judgment related to sexual behaviour.

In terms of motivation to communicate on SRH-related topics between mothers and adolescents, this study revealed that mothers had a higher motivation score than adolescents. In many studies, cultural and religious beliefs primarily influenced the motivation to communicate on such issues (Azie et al., 2023). Thus, different regions may demonstrate different motivation levels among mothers when communicating with their adolescents. The most common factors that affected the parents' motivation to communicate on SRH issues were strongly associated with cultural norms, which led to embarrassment for the parents to impart such behaviour (Ndugga et al., 2023). The same goes for adolescents, who find communicating with others other than their parents more comfortable, such as peers and extended relatives. One reason for this was that adolescents thought such communication was culturally unacceptable and shameful (Grossman et al., 2015).

In this study, the mothers showed a higher communication practice score than the adolescents. This difference in the communication practice perceived by both mothers and adolescents highlights the dynamic of the communication process (Janssen et al., 2021). The lower scores from the adolescents compared to the mothers' scores can indicate a misfit in the communication process between the mothers and adolescents. Besides, the conflicts and generational gaps between the mothers and adolescents also can be the factors for the discrepancies, in which the different life experiences and immediate social environment influenced the disagreement between mothers and adolescents on specific values and opinions. Thus, the communication may be initiated by the parents. However, it is not reciprocated well by adolescents, and less exchange of information occurs, leading to different perceptions of the communication contents.

However, this disagreement did not necessarily indicate a family conflict with a complete relationship breakdown. A further study is warranted to investigate the parents-adolescents interaction and variability of the relationship, especially in the communication behaviour related to the SRH topics. In most parent-adolescent relationships, the conflicts stem from adolescents' increasing need for autonomy. A study in Tanzania found that mothers tend to dictate communication in the form of warnings and vague messages about sexuality. Such harshness and indirect information hinder adolescents from communicating with their mothers (Rodgers et al., 2018). Thus, realignment of the relationship toward a more horizontal and equal exchange of power can help to renegotiate the direction of the relationship and reestablish the role of both parents and adolescents (Branje, 2018). Therefore, parents and adolescents must understand the communication process to convey and reciprocate the interaction successfully.

This study also found that the communication practice for mothers and adolescents moderately correlated with their motivation and perceived communication skills in the SRH topics. Another study also found that parents' motivation was correlated with communication with adolescents in the SRH (Seif et al., 2017). Thus, it is essential to acknowledge that motivation is the driving force that influences the initiation and quality of the conversation between mothers and adolescents, regardless of the other parties' motivation status. Another study in Ghana showed that elevating motivation through a positive attitude can influence parents to communicate with adolescents in the SRH (Azie et al., 2023).

Besides motivation, higher perceived communication skills on SRH topics can influence communication practices among mothers and adolescents. Adolescents may not communicate with their parents as they need to trust that their parents can communicate well on matters related to SRH (Babayanzad Ahari et al., 2020; Elegbe, 2018). This distrust can include adolescents feeling that they may get an unwanted response during communication. A study in rural Sarawak, Malaysia, showed that the significant sources of information for adolescents on SRH were the internet, electronic media, and peers (Panting et al., 2018). Thus, parents must have an open conversation so adolescents can recognise that parents communicate well, particularly on SRH matters (Guilamo-Ramos et al., 2012). Besides, another study among lower secondary school students in Malaysia also found that adolescents were ready to discuss SRH matters with their parents as long their opinions and views were not turned down unnecessarily (Ismail & Hamid, 2016). This also indicates the importance of communication skills that include active listening and the ability to provide appropriate feedback to ensure an effective exchange of information between parents and adolescents.

### **Strengths of the study**

There were limited studies that measured the communication practices between mothers and adolescents from both perspectives simultaneously, especially in the local context. Thus, this study provides significant value by examining the perspective of both mothers and adolescents on communication behaviour, specifically on SRH issues. Thus, the finding can justify the communication pattern from both sides and make the finding comparable across different parent-adolescent pairs. Subsequently, the findings demonstrated some level of agreement between mothers and adolescents instead of relying only on one side of the party (Rescorla et al., 2013).

Thus, the gap between mothers' and adolescents' scores can indicate that both did not have a similar perspective in various aspects of communication on SRH issues.

The study of family communication on SRH issues can be considered limited in the Malaysian setting. Thus, the findings on the factors that can improve the communication between parents and adolescents can help understand the family dynamic toward SRH issues and the development of a more comprehensive programme that suits the culture and sensitivity of the local community (El Kazdough et al., 2019). Thus, there will be more public acceptance of communication between adolescents and their parents. Besides, studying the role of family sexual communication in predicting sexual attitudes and safe sexual behaviour can contribute current information and provide another perspective on family communication practice (Tan & Gun, 2018).

### **Limitations of the study**

The study's main limitation was acquiring a sampling frame for mothers with adolescents in the community setting. Besides, the decline in response rate from the population of interest, due to the sensitivity of the topics, led to the utilisation of a non-probability sampling method for this study. Consequently, the findings need to be more generalisable for a larger population. The findings should be cautiously analysed, primarily upon concluding to suit specific populations with similar backgrounds (Beckett et al., 2010). Nonetheless, the findings still hold a certain degree of information related to the communication between parents and adolescents on SRH issues, especially for those who intend to design a similar study of interest.

Another concern of this study was using a self-reporting questionnaire for the responses from the mothers and adolescents, which might be affected by social desirability bias because of the issue's sensitivity and cultural barriers to reporting the responses (Malango et al., 2022). Thus, the positive findings from the study may not reflect the reality in the community, which can be harmful and hurt the interpretation of the findings to represent the community.

### **Recommendations for future research**

This study's findings were beneficial in providing essential insights into the factors that may influence the communication practices between parents, especially among mothers with adolescents on issues related to SRH. Subsequently, it offers a practical implication in designing a model-based intervention programme to help shape the family's communication behaviour. One of the salient findings was that their respective IMB constructs influenced the communication practice. Thus, designing an intervention programme should focus on improving the respective information, motivation, and perceived communication skills. Nonetheless, an intervention design for the mothers can still be done, and it should focus on how the mothers can improve the adolescents' IMB construct instead of focusing directly on the communication practice.

## 5 CONCLUSION

The findings revealed discrepancies in the level of communication between mothers and adolescents on the selected SRH topics in Kuching, Sarawak. Further study is needed to examine whether a mutual understanding exists between mothers and adolescents on the SRH issues, which indicates the effectiveness of the communication process. Nonetheless, the motivation and perceived communication skills within mothers and adolescents can influence the communication level of the mothers and adolescents. On the other hand, this study also showed that information weakly influences the communication level. Thus, the current findings will offer current information using the IMB model framework in designing intervention programmes. This study suggests that the strategies should focus on the motivation and perceived communication skills of both mothers and adolescents to improve communication between mothers and adolescents.

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