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The association between acculturation and parent-child communication about sexual and reproductive health in Vietnamese families in the U.S.

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Abstract

The association between acculturation and parent-child communication about sexual and reproductive health in Vietnamese families in the U.S.

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Objective. Cultural taboos and gender norms around sexual and reproductive health (SRH) in Vietnamese culture significantly impact SRH communication. This thesis aims to understand how acculturation affects parent-child conversations about SRH topics among U.S. Vietnamese families.

Methods. A secondary data analysis was conducted by using a cross-sectional online survey designed to assess adolescent HPV vaccination status. A sample of 326 mothers and 67 fathers who have children aged between 9 to 18 were included. Acculturation was measured using the Asian American Multidimensional Acculturation Scale as well as the participants' duration of stay in the U.S. Frequency of SRH communication was measured using the Dutch Health Behavior in School-Aged Children and Parent-Teen Sexual Risk Communication Scale which assessed 7 topic areas including birth control, contraceptives, or condoms, STDs, HIV, pregnancy, postponing or resisting pressure to have sex, being in love and having a romantic relationship, and physical changes during puberty. Bivariate analyses across each of the 7 SRH-related topics were conducted, followed by multivariate models adjusting for parent's gender and educational attainment, child's age, gender, and country of birth.

Results. The least spoken about SRH topic was postponing having sex with 54.2% of parents not discussing this topic, followed by STDs (48.4%) and contraception (47.6%) compared to less avoided topics, such as physical change during puberty (12.7%) and having a romantic relationship (22.9%). Greater American acculturation was associated with a greater likelihood of parents having talked about all 7 SRH topics than those with lower acculturation. However, there was no statistical association between Vietnamese acculturation and SRH communication. Interestingly, parents who have lived in the U.S. for less time talked about some SRH topics more frequently. Higher parental education and the child being female was associated with a greater likelihood that the parent had spoken to the child about pregnancy. Other important factors associated with frequency of communication of SRH topics were gender of parent and age of child.

Conclusion. Acculturation plays a role in parent-child communication of SRH topics. SRH parent-child communication should be complemented by culturally competent healthcare to support the health of U.S. Vietnamese youth.

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Chapter 1: Introduction

1. 1 Context

Parent-child communication is essential to the prevention of adverse SRH outcomes and behaviors among youth (Kim, 2020). However, Asian American adolescents may face barriers to conversations related to SRH with their families that can emanate from cultural taboos (Lee et al., 2015; Okazaki, 2002). This is a concern because experiences in adolescence impact adulthood. For instance, literature shows that Asian women in the U.S. do not have sufficient knowledge about reproductive health in comparison to their White counterparts (abbreviated as Whites hereafter) and might be at risk of negative SRH outcomes (Fowler et al., 2023). Also, Asian Americans are at an increased risk of STDs/HIV and have lower access to SRH services (CDC, 2022; Kao, 2006) compared to other racial groups in the U.S. There is a higher risk of unintended pregnancy among Asian American adolescent as well as women due to adverse life experiences than African Americans and Whites (Hall et al., 2019). Therefore, studying parent-child communication related to SRH among Asian American youth is important.

Contrarily, some studies find that there is no association between parent-child communication around SRH and sexual health outcomes among Asian American youth, despite a positive association among White counterparts (Lam et al., 2008). These findings are at odds with research that does find an association and warrants further study. One reason for a lack of association may be the use of aggregated Asian American categories in the study population without accounting for unique cultural aspects. Thus, it is necessary to disaggregate Asian American subgroups to elucidate the actual circumstance of parent-child communication to prevent negative SRH outcomes.

U.S. Vietnamese are under-represented in research aiming to disentangle the relationship between parent-child communication and SRH outcomes among youth. For instance, while there are several documented negative SRH outcomes among Asian Americans, few studies specifically address SRH among U.S. Vietnamese[1]. This lack of research is a concern because the studies that have focused on U.S. Vietnamese found that there are overall health disparities among Vietnamese immigrants in the U.S., especially they pertain to lower educational attainment (Ahmmad et al., 2021). Further research is needed to specifically understand SRH disparities among U.S. Vietnamese youth.

An important aspect of understanding SRH outcomes among U.S. Vietnamese families is their acculturation. Acculturation is generally assessed using cultural measurements of behavior, identity, and knowledge as measures between original and host cultures (Chung et al., 2004; McCullough Cosgrove et al., 2018). Specifically, acculturation is associated with sexual communication and can drive SRH outcomes among the immigrant population including U.S. Vietnamese (Kim et al., 2020). A previous study about Asian Americans showed that children whose parents are more acculturated in the U.S. are more likely to have better sexual health communication (Kim & Ward, 2007). Nevertheless, the effect of acculturation can lead to both negative and positive SRH outcomes. For example, there was a likelihood of being at risk of sexual health among more acculturated female youth in American culture than those less acculturated (Hahm et al., 2006; Tong, 2013). This can be because the impact of acculturation on SRH communication and health outcomes varies by how much people are adapted to the cultural contexts (Kim et al., 2020). As an initial step, it is necessary to understand how acculturation affects conversations about SRH to prevent undesirable health consequences among U.S. Vietnamese families.

1.2 Statement of the problem

The U.S. Vietnamese population has been rising since 1975 (Batalova, 2021), aligned with a similar increase in the wider Asian population over time (*The Office of Minority Health,* 2021). The population of Asian Americans is expected to double in about 40 years (Budiman & Ruiz, 2021) and currently accounts for 5.7 % of the entire population in the U.S. (*The Office of Minority Health,* 2021). U.S. Vietnamese are currently the fourth largest subgroup and comprise approximately 2.8 % of immigrants to the U.S. (Migration Policy Institute, 2020; United States Census Bureau, 2020). U.S. Vietnamese are also more likely to lack medical insurance compared to other Asian groups (Carrasquillo et al., 2000), and their education level was also lower than other immigrants and U.S.-born counterparts (Batalova, 2021). Both risk factors could affect poorer SRH and wellbeing.

Vietnamese culture around SRH leaves a significant impact due to existing gender norms that hinder sexual activity among unmarried Vietnamese women (Nguyen & Liamputtong, 2007). These gender norms also prevent them from accessing sexual health, such as family planning services (Nguyen & Liamputtong, 2007). The impact of sexual health communication between parents and children can also vary according to gender differences. For instance, other than general populations, mothers were not willing to talk about sexual health with girls than with boys in a sample of Chinese representing Asian Americans (McNeely et al., 2002; Gillmore et al., 2011). Although the importance of parental communication associated with adolescent decision-making in sexual health has already been recognized, fewer studies have addressed communication between a father and a child compared with maternal interaction (Commendador, 2010; Flores, D., & Barroso, J., 2017; Hutchinson, 2007).

There may be differences in perspective of acculturation between mainstream culture and the parental culture as they apply to U.S. Vietnamese families. Asian American families who follow Asian culture are conservative about sexuality, whereas more acculturated youth inside the U.S. are more sexually active (Tong, 2013). The needs of receiving SRH information among Asian youth should be addressed by filling a gap between their challenges and desire (Frost et al., 2016). However, many studies have not fully accounted for the impact of acculturation due to limited research in this population.

Also, studies specifically in the U.S. context do not always include Asian participants even though there are noted racial disparities in SRH between diverse racial and ethnic subgroups (Szucs et al., 2020). Even within Asian countries, there are heterogeneities between Asian subgroups (Kim & Ward, 2007). To accurately understand the cultural impact on parent-child sexual health communication, it is important to disaggregate subgroups from large racial groups, such as Chinese and Korean (Gillmore et al., 2011). A study about Filipino Americans showed a significant association between acculturation and frequency of parent-child communication about sexual behavior impacted by the gap in Asian cultural values between parents and children (Chung et al., 2007), but there are no studies focusing on Vietnamese families living in the U.S. Since many studies tended to only use survey tools in English, it restricted participation to those were English proficiency. We used the survey data collected in both Vietnamese and English to understand the pattern of SRH communication between parents and their children. Action is required toward a more culturally appropriate approach for parent-child communication about SRH. Hence, it is necessary to identify potential underlying mechanisms that explain the prevalence of communication, accounting for acculturation among Vietnamese families in the U.S.

1.3 State of purpose

This study aims to:

1. describe the frequency of and factors associated with parent-child communication about SRH among U.S. Vietnamese families.

2. assess the association between acculturation on SRH communication, simultaneously accounting for demographic features.

The hypothesis is that more acculturated parents in the U.S. context are more likely to talk with children about SRH. Ultimately, there is a need to understand the actual SRH parent-child communication by taking acculturation into account to avoid the risk of adverse SRH outcomes and sexual behaviors among Vietnamese youth in the U.S. Understanding how acculturation influences communication will help guide culturally appropriate research and interventions.

Chapter 2: Comprehensive Review of Literature

2.1 Asian American populations and Vietnamese populations in the U.S.

There is limited research and data focused on U.S. Vietnamese. Thus, there is a need to more accurately capture the health disparities that they may face. Asian Americans are currently the fastest-growing population in the U.S. compared to other racial and ethnic groups. However, Asian Americans are recognized as an understudied racial category in health disparity research (*The Office of Minority Health,* 2021). The population of Asian Americans is expected to double in about 40 years (Budiman & Ruiz, 2021) and currently accounts for 5.7 % of the entire population in the U.S. (*The Office of Minority Health,* 2021). U.S. Vietnamese alone comprise approximately 2.8 % of immigrants to the U.S. (1,403,000/50,633,000) and are the fourth largest subgroup among Asian populations (Migration Policy Institute, 2020; United States Census Bureau, 2020). However, U.S. Vietnamese are still considered newer immigrants compared to Chinese and Korean (Carreon & Baumeister, 2015). That can be a possible reason why the number of studies focusing on the Vietnamese population in the U.S. is still less than other Asian subgroups.

Since unfavorable social determinants of health (SDH) can be a key factor associated with adverse health status. Compared with non-Hispanic Whites even living in the same geographical locations, Asian Americans more frequently experience health disparities (Spoer et al., 2021). Sociodemographic factors associated with access to healthcare and health consequences are an important aspect among Asian Americans including Vietnamese populations. Parents' educational attainment plays a positive role in adolescents' sexual behaviors specifically at

adolescent age and late 20s (Cheshire et al., 2019). On the other hand, low socioeconomic status influences immigrant families' ability to access health services and ultimately results in inequitable health outcomes (Chang, 2019).

Healthcare access and health outcomes are also affected by English language proficiency among immigrants (Pandey et al., 2021). Regarding language proficiency among Asian Americans, data show that over 70 % of them spoke other languages in households except for English even though more than half of Asian Americans (55.5%) in comparison to the total non-Hispanic Whites (36.9%) had received at least a bachelor's degree in 2019 (*The Office of Minority Health*, 2021). Especially, Vietnamese immigrants were less likely to speak English at home compared to all the immigrants, and their education level was also lower than other immigrants and U.S.-born adults (Batalova, 2021). Also, U.S. Vietnamese were likely to lack insurance compared to other Asian immigrants due to the factors of age and income level (Carrasquillo et al., 2000). SRH disadvantages were impacted by lower educational attainment rather than income level among Vietnamese immigrants (Ahmmad et al., 2021). Those underlined sociodemographic components should be simultaneously considered when addressing health disparity.

2.2 SRH among Asian American adolescents

Asian Americans are less likely to experience romantic relationships than their counterparts (Lefkowitz et al., 2018), and have lower rates of most sexually transmitted diseases (STDs). However, they have higher rates of congenital syphilis and are less likely to receive and continue care for HIV and other STDs (CDC, 2021b). Additionally, the rate of Asian Americans who

received healthcare among those diagnosed with HIV was lower than Whites (CDC, 2022). Asian Americans did not acknowledge being at risk for STDs, hence, did not receive SRH services (Kao, 2006). The fact surrounding Asian Americans should not be negligible.

Generally, unintended pregnancies were more likely to occur among girls before the age of 15 involuntarily experiencing the first intercourse than those over 18 years old (Aztlan-James et al., 2017). The prevalence of contraceptive use differed in gender and age, also the actual contraceptive effects are not accurately understood by adolescents in the general population (Szucs et al., 2020). In the U.S., the primary contraceptive method for adolescents was condom use, however, racial disparities disproportionately impact equal access to the contraceptive method among U.S. youth (Szucs et al., 2020; Vargas et al., 2017). Also, the overall teen birth rate in the United States has declined in recent decades; however, the rate of decline has been slower among Asian teens compared to other racial and ethnic groups (Hamilton & Mathews, 2016; CDC, 2021a). Furthermore, Asian adolescent females who speak English at home have more sexual experiences no matter where they were born (Hahm et al., 2006). Fewer Asian adolescents consistently use a contraceptive method once they are sexually active compared to other youth counterparts (Ansari-Thomas et al., 2020). This may be tied to South Asian American women' unwillingness to talk about contraception, the limited choices of contraceptive methods, and misconceptions about the effects of these methods (Farid et al., 2013). Also, that could be reflected by Asian American youth commonly portraying conservative attitudes in sexuality and sexual behavior compared to other races or ethnicities (Okazaki, 2002).

The gap between Asian cultural influences and the actual need of Asian American youth exists. Compared to different racial counterparts, Lee et al. (2015) found that Asian American adolescents received limited information and knowledge about sex, STDs, and HIV due to

cultural influence. However, using aggregated subgroups does not make a clear difference in contraceptive use and attitudes between racial subgroups makes challenging to capture the actual barriers that U.S. Vietnamese have faced.

2.3 Asian Culture and SRH among Asian Americans

Discussions around sexuality and sexual health are considered taboo in most Asian cultures even within families (Lee et al., 2015; Okazaki, 2002). Thus, talking about SRH is a challenge for both Asian immigrant parents and their adolescent children. Cultural values within Asian communities may negatively impact attitudes, ideas, and behaviors regarding SRH in comparison to other racial groups (Okazaki, 2002). Also, families who prioritize religion conveyed more prohibitive messages to children in conversations about sexual health (Kim & Ward, 2007). Loyalty to family members also plays a role in what health behaviors are taken (Okazaki, 2002).

Asian cultural values and stigma adversely impact receiving SRH-related information that is generally available in the U.S. context. The theme of sexual health incorporated with the perspective of bicultural adaptation and established identities has not been studied as much as general sexual health topics (Kao et al., 2007). For instance, mothers without adequate knowledge about sex-related issues do not openly talk with their adolescent daughters due to the taboo, they also expect that their daughters can learn outside the home (Farid et al., 2013). The stigma around HIV exists in Asian culture (Chin & Kroesen, 1999), which can potentially influence obtaining knowledge about SRH. On the contrary, Asian American adolescents desired to receive information related to abstinence and contraceptive methods, and STDs (Frost et al.,

2016). As a result, most Asian American adolescents are inclined to receive information about sexual health from others outside of the family (Zhao et al., 2017). Further, a lack of confidentiality and bias from healthcare providers results in mistrust and impedes open communication about sexual health prevention among Asian American adolescents (Jahn et al., 2019; Zhao et al., 2017).

U.S. Vietnamese youth is no exception. Specifically, Vietnamese culture around SRH leaves a significant impact. Due to existing gender norms that hinder sexual activity among unmarried Vietnamese women, the normative idea in Vietnamese culture also prevented them from accessing family planning services (Nguyen & Liamputtong, 2007). Even in Australia, a previous study found that discussing sexual topics at home is similarly a challenge for Vietnamese adolescents (Rawson & Liamputtong, 2010). Like the trend seen in Asian American youth, Vietnamese adolescents were thus more willing to receive sexual health-related information from others including friends given that it was culturally appropriate (Rawson & Liamputtong, 2010). These situations may disproportionately impact on receiving accurate SRH-related information if unmet needs are not sufficiently addressed. Furthermore, barriers around sexual topics that immigrant female youth face should be culturally understood between their host culture and original culture (Rawson & Liamputtong, 2010). The quality of SRH communication would be a further concern among these Vietnamese youth. Because the environment in which adolescents are involved is important, adults' engagement, such as parents, can support their adaptation during adolescence (Carter et al., 2020).

2.4 Parent Child Communication about SRH

2.4.1 Importance and impact of parent-child communications about SRH in general

Generally, familial influence has an impact on SRH among youth. Parents and their children generally have reluctance in talking about sex and they mutually expect to initiate conversation due to intergenerational demographic factors within the U.S. context (Flores, D., & Barroso, J., 2017). More exposure to sexual health information and parent-child communication has been associated with a lower risk of unwanted pregnancy among youth (Brown et al., 2021), and high conversation and low conformity orientation in family communication were related to greater adolescent self-efficacy in sexual health (Hurst et al., 2022). Additionally, parent disapproval of sexual activity and parental connectedness with children positively affects having fewer partners (Cheshire et al., 2019).

2.4.2 Varied effects of parent-child communication across different race/ethnicity groups

The effect of parent-child sexual communication on sexual behavior does not manifest the same way throughout all racial groups. The significant impact of parent-child sexual communication on sexual behavior was identified among Asian youth, but not among White and Black counterparts (Cheshire et al., 2019). On the other hand, mothers' communication with adolescent daughters affected noncoital sexual activity within a White population, whereas it was not applied to Asian counterparts including Vietnamese respondents (Lam et al., 2008). Depending on how to evaluate SRH communication by different races, the impact of actual communication varied.

Even though sexual taboos exist in the Asian culture, considering the interaction between parents and children in Asian cultural settings is similarly necessary and is an important consideration for the context where Asian families are involved. Specifically, Lee et al. (2015) emphasized that the family had a significant association with the establishment of an individual's identity in many Asian cultures. Parental attachment could be a protective factor against risky sexual behaviors (Hahm et al., 2006). For instance, a positive influence on a daughter's decision-making regarding sexual health resulted from the attitude of understanding mothers' expectations among Taiwanese Americans (Kao et al., 2007). However, parental influence has not been explored yet specifically among U.S. Vietnamese.

Moreover, the influence of the increased risk of STIs/HIV or being pregnant depended on the parent-child relationship and the amount of knowledge about sexual health those children already have (Lee et al., 2015). Given that daughters have mothers who disapprove of sex and have higher educational attainment, it generally resulted in delaying intercourse (McNeely et al., 2002). As an effect of SRH communication, communicating with daughters normally influenced increased contraceptive use (Commendador, 2010). However, parental influences do not always work positively among Asian families. A previous study also found that mother-daughter communication was not associated with delaying sexual initiation in Asian American families (Kim et al., 2020). Hence, there appears uncertainty about how parent-child communication works among Asian Americans as well as U.S. Vietnamese.

2.4.3 Differences in gender

Commonly, there were different SRH communication patterns between girls' and boys' behaviors. Regarding sexual communication, mothers felt more uncomfortable talking about sexual topics with daughters than with sons (McNeely et al., 2002; Gillmore et al., 2011). Also, there was no major topic that sons receive more than daughters (Kim & Ward, 2007). In terms of discussed contents with Asian American daughters, parents readily talk more about the anatomy, such as menstruation and fertilization rather than sex-related topics, while mothers were more likely to talk about homosexuality and pregnancy to sons (Kim & Ward, 2007). Also, girls were inclined to face challenges to disclose sexual history to their parents (Zhao et al., 2017), which could be due to negative gender roles associated with females' lower position in Asian culture (Lee et al., 2015).

Additionally, the parent's gender also matters in parent-child communication about SRH. Generally, a challenge among fathers to initiate SRH communication with children was revealed, especially when the parents' gender differs from the child's gender (Grossman et al., 2022). However, even if a father was present at home, that did not facilitate a son having conversations among Chinese American families (Gillmore et al., 2011). Also, the amount of information children receive from their parents differs by mothers and fathers because of more limited communication with fathers among Asian American families (Kim & Ward, 2007). To identify the impacts of parent-child sexual risk communication, knowing the family influence and contextual characteristics is also necessary regardless of race (Hutchinson, 2007).

2.5 Acculturation

2.5.1 Introduction about acculturation and how it influences health behaviors

Acculturation is an indispensable factor that affects health and specifically SRH behaviors among immigrant families. Acculturation is commonly evaluated between being involved in original and host cultures, which contains cultural measurements of behavior, identity, and knowledge (Chung et al., 2004; McCullough Cosgrove et al., 2018). Acculturation to the non-original culture related to several perspectives, such as language use and period of residence, are also frequently assessed (Tong, 2013; Kim et al., 2020; Kim & Aronowitz, 2021b). For instance, in one study, the risk of earlier sex initiation was identified only among females who use English at home (Tong, 2013). Hence, multilateral aspects could help us deeply understand acculturation and its impact.

Acculturation may impact overall health outcomes depending on the different degrees of acculturation (Schwartz et al., 2010). Highly acculturated people mean that they are fully assimilated, whereas lower acculturation is related to that they are either isolated or marginalized in the culture they currently belong to (McCullough Cosgrove et al., 2018). A model of two dimensions proposed by Berry emphasized 4 perspectives in acculturation depending on retention or rejection in the native culture and adaptation and rejection in the host culture (Berry & Hou, 2016; Worthy et al., 2020) and it affects well-being depending on how strongly immigrant individuals follow between two cultures (Berry & Hou, 2021). For instance, young females who are more acculturated in American culture were more likely to engage in risky behaviors in sexual health than their less acculturated counterparts (Hahm et al., 2006; Tong, 2013). Whether or not immigrant families follow their heritage cultures also relied on the area of residence and length of residence, and language use associated with the geographic location they

live in (Kim & Aronowitz, 2021b). In another study in Taiwan, Vietnamese immigrant women had lower acculturation levels even moving to Asian countries (Kuo et al., 2013) but the feature of acculturation among Vietnamese immigrants is not clear in the U.S. context.

2.5.2 Acculturation and SRH communication

Acculturation encompasses both positive and negative effects on SRH and parent-child communication. For example, children having parents who are more acculturated could experience sexual communication (Kim & Ward, 2007). Overall, common language use between children and parents prevented barriers to sexual health communication (Kim & Ward, 2007). Specifically for immigrant families, language use is a significant component since children who are unable to share feelings and ideas with their parents easily face hardships through the communication process (Kim & Ward, 2007; Kim & Aronowitz, 2021b). In terms of the risk of sexual behaviors, the different magnitude of acculturation between parents and children would be another constraint to effective communication (Gillmore et al., 2011). The intergenerational impacts on immigrant health should be simultaneously considered (Acevedo-Garcia et al., 2010).

2.5.3 Potential influences of acculturation on Asian American parent-child SRH communication

Living in the U.S. for a longer period and being more exposed to the environment was related to less conservative in sexual norms among Asian Americans (Tong, 2013). However, focusing on only acculturation of the host culture does not always tell us about the whole picture of SRH. For instance, a higher Asian Values Scale (AVS) among Asian American adolescents

including Vietnamese was associated with engaging in dating even without parents' recognition (Lau et al., 2009). Therefore, these adolescents could be likely to be involved in risky behaviors. Understanding both cultural impacts will help us know about how each cultural perspective influences SRH-related attitudes.

Depending on how much they are exposed to American culture, acculturation into American society differs between girls and boys. For example, open communication between a daughter and a mother frequently occurred if Asian American daughters including Vietnamese were not conservative in sexual behaviors (Kim et al., 2020). Also, whether parents are conservative or not, actual parenting and bonds are another perspective that differentiates sexual communication (Kao et al., 2007). Sexual communication that mediated the relationship between acculturation and SRH consequences was considered significant (Kim et al., 2020). Therefore, SRH outcomes/behaviors could be attributable to the impact between acculturation and parent-child communication. The pattern of acculturation among Vietnamese families should be focused on to evaluate how it drives their communication.

2.6 Rationale and identified gaps in scientific literature

According to past studies, there are both positive and negative findings in SRH outcomes or behaviors attributable to acculturation and parent-child communication depending on which culture, who, and what kind of SRH topic is focused on. Regarding acculturation, understanding disparities of sexual attitudes among Vietnamese youth in developed countries, such as the U.S., is critical (Rawson & Liamputtong, 2010).To avoid adverse SRH outcomes and risky sexual behaviors among U.S. Vietnamese youth and meet their needs in learning about SRH, we need to

accurately assess the impact of acculturation on SRH communication by accounting for the cultural norms in this context. Also, to address gender gaps in acculturation and SRH communication patterns that were identified in previous studies, this study aimed to focus on the association between acculturation and parent-child SRH communication in both genders of parents and children, by considering multiple demographic features among Vietnamese families in the U.S.

Chapter 3: Methods and Results

3.1 Methods

3.1.1 Sample

This study is a secondary data analysis of a cross-sectional online survey originally designed to assess parent reports of adolescent HPV vaccination status. To recruit participants in the original study, snowball sampling was used through personal networks and contact with community-based and virtual groups serving the U.S. Vietnamese population (Community-Based Organizations (CBOs), Vietnamese Students Associations (VSAs), Facebook groups, and listservs). Participants were eligible if they (1) self-identified as Vietnamese, (2) had lived in the U.S. for at least 12 months, (3) were able to read either Vietnamese or English, and (4) had at least one child living in the household aged 9 to18 at the time of the survey (Vu et al 2022). Only one parent per household was allowed to participate. If a household had more than one eligible child, the questions regarding the oldest child who was between 9 and 18 years old were used.

408 U.S. Vietnamese parents participated in the survey from April to December 2020 (Vu et al 2022). For this study, 408 parents were considered a study sample.

Since there was a lack of studies addressing maternal and paternal influences on sexual health behaviors among children (Commendador, 2010), we included both fathers and mothers in this sample to assess if any differences in sexual health communication exist. Also, different effects of parental interaction were revealed between male and female children. Regarding sexual communication, the unwillingness of talking about sexual topics among parents impacted communication differed by the gender of children (McNeely et al., 2002; Gillmore et al., 2011). Ultimately, 393 samples made up of 326 mothers and 67 fathers for the analysis were included after excluding missing values that are considered to impact internal validity.

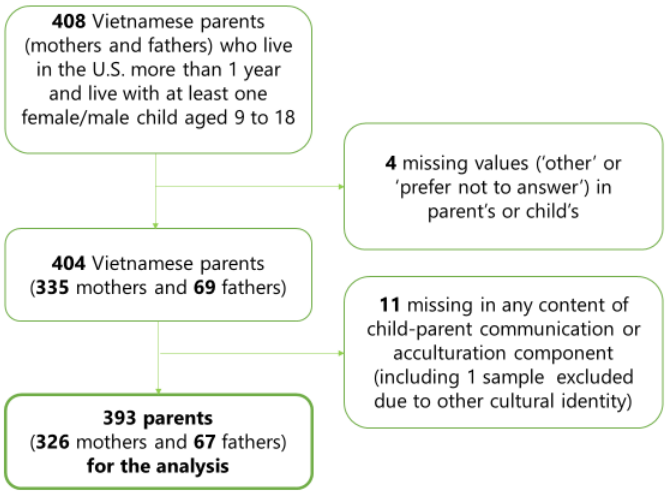

Fig.1 The participant diagram for the analytic sample selection

3.1.2 Measurements

Exposures

Acculturation is the exposure of interest. The items of acculturation included: parent's American and Vietnamese acculturation scores using the Asian American Multidimensional Acculturation Scale (AAMAS), parent's length of residence in the U.S.

In terms of AAMAS, the questions for asking about Vietnamese culture were comprised of: (1) How much do you feel you have in common with Vietnamese people? (2) How much do you interact and associate with Vietnamese people? (3) How much do you identify with Vietnamese culture? (4) How much would you like to interact and associate with Vietnamese people? (5) How proud are you to be a part of Vietnamese culture? (6) How negative do you feel about Vietnamese people? (7) How well do you speak Vietnamese? (8) How well do you understand Vietnamese? (9) How well do you read and write in Vietnamese? (10) How often do you listen to Vietnamese music or look at Vietnamese movies and magazines? (11) How knowledgeable are you about Vietnamese culture and traditions? (12) How knowledgeable are you about Vietnamese history? (13) How much do you actually practice the traditions and keep the holidays of Vietnamese culture? (14) How often do you actually eat Vietnamese food? (15) How much do you like Vietnamese food?

Also, AAMAS was assessed by 15 items for each American and Vietnamese acculturation, and all 15 items were grouped into 4 main categories, such as cultural identity, language proficiency, cultural knowledge, and food consumption (Chung et al., 2004; Vu et al., 2021). To differentiate these sub-categories, question (1) through (6) belongs to cultural identity, (7)

through (10) belongs to language proficiency, (11) through (13) belongs to cultural knowledge, and (14) and (15) are included for food consumption.

In terms of the internal validity of AAMAS, the coefficient alpha was 0.83, and a 6-point Likert scale (0: Not very much-5: Very much) was applied (Chung et al., 2004). For the sample of 393 participants, the Cronbach coefficient alpha of acculturation of American culture and Vietnamese culture showed 0.82 and 0.77, which were higher than 0.7 and considered reliable tools, respectively. Higher value shows a higher tendency of cultural identity, language proficiency, cultural knowledge, and food consumption based on which country's culture is considered their heritage culture or culture of origin responded to the former question. Also, according to the evidence of reliability and validity in AAMAS's instrument, the scores were assessed by the average rating for each scale in the data analysis (Chung et al., 2004). Therefore, the average value was used in the study.

Additionally, both of acculturation scales are theoretically not considered identical (Gerend et al., 2021), hence, we did not use both acculturation measures interchangeably. Statistically, the variables of acculturation measure also did not show a strong correlation by R=-0.18 and p=0.0003. Hence, these separated measures were simultaneously included into the same model.

Also, parent's length of residence in the U.S. was shown by the year. All 3 variables for acculturation measurement were used into the same model due to the variance inflation factors (VIF) lower than 10 for all 7 SRH items and acculturation items ranging from to 1.15-1.44.

Outcome

Outcome measurement is the frequency of communication with children about sexual health-related issues. The Dutch Health Behavior in School-Aged Children and Parent-Teen

Sexual Risk Communication Scale (PTSRC-III) (Hutchinson, 2007) was adapted for the original survey. Parents were asked: “How often have you spoken with your child about each of the following topics?” The topics include 7 categories: (1) Birth control, contraceptives, or condoms, (2) STDs, (3) HIV, (4) Pregnancy, (5) Postponing or resisting pressure to have sex, (6) Being in love and having a romantic relationship, and (7) Physical changes during puberty. Physical activity and nutrition were used for comparison to those 7 SRH categories in a descriptive analysis. Hence, neither topic was included in the primary analysis.

Response options for each item included: “Not at all”, “A little bit”, “Somewhat often”, “Very often”, “Extremely often”, and “Prefer not to answer”. After recoded the “prefer not to answer” as missing, there were 4 missing values in birth control, contraceptives, or condoms, 8 in STDs, 3 in both HIV and pregnancy, 5 in postponing or resisting pressure to have sex, 2 in being in love and having a romantic relationship, 1 in all these three; physical changes during puberty and physical activity, and nutrition. Understanding the pattern of SRH communication is important because of taboos in sexual communication that hinders having conversation with unmarried child in most Asian cultures (Kao et al., 2007; Okazaki, 2002). Ultimately, the outcome measurements were dichotomized into discussion about each topic, such as ‘None’=Not talking about each topic, ‘Any’=Talking a little bit/ somewhat often/very often/extremely often. Even though the 7 SRH topic items resulted in a high Cronbach’s alpha (alpha=0.86), given that SRH is a sensitive topic, this study aimed to assess each topic independently to accurately capture the differences across 7 topic areas.

Covariates

Sociodemographic factors were assessed based on parent's gender, parent’s educational attainment, child's age, child’s gender, and child’s country of birth. For the questions asking

about gender, ‘Other’ and ‘Prefer not to answer’ were recoded as missing. For child’s gender, parents responded either male, female or other. Parent’s highest educational attainment was dichotomized into lower than bachelor’s degree or bachelor’s degree or more. The place of birth was classified into two categories: outside the U.S. or within the U.S.

3.1.3 Statistical Analysis

Descriptive analyses such as frequencies and percentages or mean and standard deviations were completed for all the variables. Bivariate logistic regression models were generated for the exposure variable and each covariate on SRH communication. Multivariate logistic regression was applied to assess the relationship between acculturation and parent-child communication for each 7 SRH topic, adjusting for all the covariates. Alpha levels were set at 0.05 for all our analyses. Analyses were conducted using SAS 9.4.

3.2 Results

3.2.1 Description of the sample

The characteristics of the U.S. Vietnamese parents who have at least one child aged 9 to 18 were shown in Table 1. Most parents in this study were mothers (82.95%), and many had completed more than a bachelor’s degree (84.99%). There was no difference in the gender of the children (male: 49.36% and female: 50.64%). The mean age of those children was 13.2 years old, and there was a slight difference in country of birth, between outside the U.S. (51.65%) and U.S. (48.35%).

3.2.2 Description of the outcome and primary predictors

The distribution of acculturation comprised of American acculturation and Vietnamese acculturation and the parent's length of stay in the U.S. and 7 SRH-related topics of parent-child communication as described in Table 1. Overall, acculturation in Vietnamese culture (mean=4.15, SD=0.60) was higher than acculturation in American culture (mean=2.87, SD=0.82). Vietnamese acculturation mean scores ranged from 1.67 to 5.00. The mean value was 4.15 and food consumption was the subcategory with the highest mean value of 4.65 and cultural knowledge was the lowest at 3.90. Parents' American acculturation mean scores ranged from 0.33 to 4.80, the average value was 2.87, language accounted for the highest value of 3.41 across 4 subcategories, whereas food consumption (2.20) was the lowest. The average length of residence in the U.S. for parents was 14.64 years.

For SRH communication, more than half of parents did not discuss postponing or resisting the pressure of having sex (54.20%), and STDs (48.35%) followed next and birth control, contraceptives or condoms (47.58%) among 7 categories. Compared to these three topics, only a minority of them did not converse about physical change during puberty (12.72%) and being in love and having a romantic relationship (22.90%). Additionally, HIV and pregnancy were not talked about by slightly lower than half, 46.56% and 33.59%, respectively. The overall lack of conversation about SRH topics is made starker in comparison to a discussion about more general health topics including physical activity and nutrition which nearly all parents reported having discussed with their children (not shown).

Table 1. Characteristics of the sampled U.S. Vietnamese parents (N=393).

Variables	Unadjusted	
	(Mean/N)	(SD/%)
Total N=393		
Exposure		
Parent's American acculturation scores, mean (SD)[a] [Range:0.33- 4.80]	2.87	0.82
Cultural identity	2.87	0.80
Language	3.41	1.13
Cultural knowledge	2.58	1.10
Food consumption	2.20	1.20
Parent's Vietnamese acculturation scores, mean (SD)[a] [Range:1.67-5.00]	4.15	0.60
Cultural identity	3.96	0.74
Language	4.38	0.83
Cultural knowledge	3.90	0.86
Food consumption	4.65	0.54
Parent's length of life in the U.S., mean (SD) [Range:1-60]	14.64	11.63
Parent’s speaking English		
Not at all or a little bit or Somewhat well	166	42.24
Very well or Extremely well	227	57.76
Parent’s speaking Vietnamese		
Not at all or a little bit or Somewhat well	30	7.63
Very well or Extremely well	363	92.37
Outcome (SRH Topics)		
Birth control, contraceptives, or condoms		
Not at all	187	47.58

Any	206	52.42
STDs		
Not at all	190	48.35
Any	203	51.65
HIV		
Not at all	183	46.56
Any	210	53.44
Pregnancy		
Not at all	132	33.59
Any	261	66.41
Postponing or resisting pressure to have sex		
Not at all	213	54.20
Any	180	45.80
Being in love and having a romantic relationship		
Not at all	90	22.90
Any	303	77.10
Physical changes during puberty		
Not at all	50	12.72
Any	343	87.28
Covariates		
Parent's gender, n (%)		
Male	67	17.05
Female	326	82.95
Parent's highest educational attainment, n (%)[c]		
Lower than Bachelor's degree (High school degree or GED[d])	59	15.01
Bachelor's degree or higher	334	84.99
Child's age, mean (SD) [Range: Aged 9 to 18]	13.17	2.82

Child's gender, n (%)		
Male	194	49.36
Female	199	50.64
Child's birthplace, n (%)		
Outside the U.S.	203	51.65
United States	190	48.35

[a] Parent's American and Vietnamese acculturation scores were measured by the Asian American Multidimensional Acculturation Scale (AAMAS). Acculturation was scored from 0 to 75 and divided by the number 15 items to generate the mean value. Cultural identity, language, cultural knowledge, and food consumption are 4 sub-categories of 15 items in AAMAS.
[b] Contents of SRH communication included: 1) Birth control, contraceptives, or condoms, 2) STDs, 3) HIV, 4) Pregnancy, 5) Postponing or resisting pressure to have sex, 6) Being in love and having a romantic relationship, and 7) Physical changes during puberty. The frequency of talking each content was classified by 'Not at all' and 'Any'. 'Any' was comprised by: "A little bit", "Somewhat often", "Very often", and "Extremely often".
[c] Educational attainment is categorized as two levels: 1) less than bachelor's degree (high school degree or GED or less), 2) bachelor's degree or more.
[d] General Education Degree (GED)

The number of missing for SRH communication ranged from 1 to 8, which is less than 2.0% across 7 variables of this outcome measure.

3.2.3 Relationship between acculturation and SRH communication

Both Appendix 1 and Table 2 demonstrate the logistic regression analysis with crude Odds Ratios (cOR) and adjusted Odds Ratio (aOR) at 95% level of confidence. An adjusted relationship of acculturation on each SRH communication topic was identified in Table 2. Covariates considered related to SRH communication included parent's gender, highest

educational attainment, child's age, gender, and birthplace. These characteristics were accounted for by the multivariate logistic regression model.

After accounting for socio-demographic confounders, parents who were more acculturated in U.S. culture were more likely to talk about all the SRH-related topics from an adjusted OR of 1.53 (95%CI 1.06-2.21) for communication about being in love and having a romantic relationship to an adjusted OR of 2.16 (95%CI 1.36-3.45) for discussions about physical changes during puberty (Table 2). On the other hand, Vietnamese acculturation score was not significantly associated with SRH communication in our study once adjusted by all the covariates. Despite the longer length of time in the U.S. being a potent marker for American acculturation, a greater parent's length of life in the U.S. was negatively associated with the discussion about birth control or contraceptives, STDs, HIV, pregnancy, and being in love and having a romantic relationship.

Among the demographic characteristics, mothers were more likely to talk about being in love (aOR 2.32; 95%CI 1.25-4.31), and physical changes during puberty (aOR 3.09; 95%CI 1.47-6.52) compared to fathers. Parents who completed higher than a bachelor's degree were almost twice as likely to talk about pregnancy (aOR 1.99; 95%CI 1.06-3.76) compared to those who did not complete a bachelor's degree with a statistically significant finding.

Throughout all topics, child's age was positively associated with SRH communication. Focusing on the differences in the gender of the children, parents of female children were more likely to have talked about pregnancy (aOR 1.75; 95%CI 1.11-2.75) compared to parents of male counterparts. The child's gender was unrelated to discussion of all other SRH topics. There was not any relationship between child's birthplace and parent-child communication after accounting for all the covariates.

Table 2 Multivariate Logistic Regression for SRH parent-child communication across seven SRH topics (N=393).

	Adjusted Estimates [a]						
Variables	Birth control, contracept-ives, or condoms, (N=393)	STDs, (N=393)	HIV, (N=393)	Pregnancy, (N=393)	Postponing or resisting pressure to have sex, (N=393)	Being in love and having a romantic relationshi-p, (N=393)	Physical changes during puberty, (N=393)
	Any	Any	Any	Any	Any	Any	Any
	aOR [95% CI]	aOR [95% CI]	aOR [95% CI]	aOR [95% CI]	aOR [95% CI]	aOR [95% CI]	aOR [95% CI]
Exposure							
Parent's American acculturation scores, mean (SD)[b] [Range:0.33-4.80]	1.65 [1.19, 2.29]	1.85 [1.32, 2.57]	2.15 [1.53, 3.04]	1.69 [1.22, 2.35]	1.75 [1.27, 2.42]	1.53 [1.06, 2.21]	2.16 [1.36, 3.45]
Parent's Vietnamese acculturation scores, mean (SD) [b] [Range:1.67-5.00]	0.96 [0.65, 1.42]	1.15 [0.78, 1.70]	1.40 [0.94, 2.09]	1.28 [0.87, 1.87]	0.81 [0.55, 1.18]	0.81 [0.52, 1.26]	0.93 [0.52, 1.65]
Parent's length of life in the U.S., mean (SD)	0.95 [0.92, 0.98]	0.96 [0.94, 0.99]	0.94 [0.91, 0.97]	0.96 [0.94, 0.99]	0.97 [0.94, 1.00]	0.94 [0.91, 0.97]	0.96 [0.92, 1.00]
Covariates							
Parent’s gender, n (%)							
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	0.87 [0.48, 1.56]	1.18 [0.66, 2.12]	1.22 [0.67, 2.23]	1.33 [0.75, 2.38]	1.10 [0.62, 1.95]	2.32 [1.25, 4.31]	3.09 [1.47, 6.52]

Parent's highest educational attainment, n (%)							
Less than bachelor's degree (High school degree or GED [c])	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Bachelor's degree or more	1.87 [0.96, 3.65]	1.37 [0.71, 2.66]	1.53 [0.78, 3.00]	1.99 [1.06, 3.76]	1.15 [0.60, 2.19]	1.76 [0.87, 3.59]	0.84 [0.32, 2.22]
Child's age, mean (SD)	1.36 [1.25, 1.49]	1.36 [1.24, 1.48]	1.37 [1.25, 1.50]	1.13 [1.04, 1.23]	1.28 [1.18, 1.40]	1.27 [1.14, 1.40]	1.36 [1.19, 1.56]
Child's gender, n (%)							
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	0.88 [0.57, 1.37]	0.82 [0.52, 1.27]	0.66 [0.42, 1.04]	1.75 [1.11, 2.75]	1.04 [0.68, 1.60]	0.90 [0.54, 1.50]	1.22 [0.64, 2.32]
Child's birthplace							
Outside the U.S.	Ref	Ref	Ref	Ref	Ref	Ref	Ref
United States	0.98 [0.53, 1.79]	0.87 [0.47, 1.59]	1.35 [0.73, 2.52]	0.87 [0.47, 1.62]	0.84 [0.46, 1.53]	1.31 [0.66, 2.61]	1.34 [0.56, 3.22]

aOR: adjusted Odds Ratio. CI: Confidence Interval.
[a] Adjusted model simultaneously includes all covariables in the regression model.
[b] Parent's American and Vietnamese acculturation scores were measured by the Asian American Multidimensional Acculturation Scale (AAMAS). Acculturation was scored from 0 to 75 and divided by the number of 15 items to generate the mean value.
[c] General Education Degree (GED)

Chapter 4: Discussion, Limitations & Recommendations, and Conclusions

4.1 Discussion

4.1.1 Acculturation and SRH parent-child communication

The contents discussed by parents normally varied, and that also depends on whom parents are talking to. Based on a study of cervical cancer prevention among Southeast Asian mothers and daughters, mothers and daughters were generally talking about day-to-day activities, foods, and work based on daily concerns (Kue et al., 2021), and anatomy, menstruation and hygiene rather than sex-related topics (Kim, B., & Aronowitz, T., 2021a; Kim & Ward, 2007).

Within SRH topics, physical changes during puberty (87.28%) and being in love and having a romantic relationship (77.10%) were the most discussed topics with some frequency among study participants. The fact that puberty is the most common topic in general conversations with healthcare providers (Sieving et al., 2021), can also lead to more adolescent's familiarity. Additionally, this study also found that talking more about physical activities and nutrition in comparison to SRH-related topics (not shown). Especially in this cultural context, the first thing that is not discussed in the conversation between mothers and daughters is the topic of sexual intercourse (Kue et al., 2021). In common with past studies, postponing or resisting pressure to have sex was the least SRH topic parents did not talk about at all (54.20%), which might be influenced by taboos, especially in most Asian countries (Kim & Wolpin, 2008; Lee et al., 2015; Okazaki, 2002).

Even though limited knowledge and awareness of access to healthcare around STDs (CDC, 2021b; Kao, 2006) and an obstacle in talking about contraceptive methods (Farid et al., 2013)

raised concerns about sexual health in Asian Americans. The finding that STDs and contraception were also topics that are not widely discussed may be a barrier among this sampled population. Additionally, most Asian American adolescents expected to learn about SRH from others but not from parents due to being considered parents' limited knowledge of reproductive health (Zhao et al., 2017), which could also affect the opportunity for parent-child communication. Hence, a lack of information about sex, STIs, and contraception among Asian American adolescents in comparison to their counterparts (Zhao et al., 2017), will be a barrier to prevent adverse sexual health consequences.

Importantly, increased risk of sexual behaviors and negative health consequences, like STDs, HIV, and early pregnancy have been identified among Asian Americans as well as Vietnamese populations (Kao, 2006; Lee et al., 2015). These Asian adolescents are likely to feel uncomfortable and do not receive timely sexual health services due to cultural taboos (Kao, 2006). Asian American youth are not as much as sexually active as other ethnic groups are; however, once getting sexually active, they tended to engage in risky sexual behaviors, such as non-condom use, especially among males (Ansari-Thomas et al., 2020; Tong, 2013). Noticeably, these outcomes associated with sexual behaviors could be preventable by communication (Kim 2020).

To initially understand the impact of acculturation among U.S. Vietnamese families, this study describes an overview of how parents' acculturation is associated with SRH communication with their children. Interestingly, Vietnamese culture was not associated with parent-child communication among these sampled parents even though both sides of cultural impact were considered influential on SRH communication in a previous study. The duration of stay in the U.S. considered more exposure to the mainstream culture did not necessarily affect

more frequent SRH communication. Also, talking about pregnancy could be exceptionally experienced among parents who have daughters or completed higher degree of education among these U.S. Vietnamese families.

In this study, how much parents were acculturated in both American and Vietnamese culture was measured. Parents in this sample were more acculturated in Vietnamese culture than American culture, a finding similar to another prior study that has measured both American and Vietnamese acculturation (Ho & Birman, 2010), also more acculturated in Asian culture among Filipino Americans (Chung et al., 2004). However, the substantial difference in the ratios of parent gender between mothers (82.95%) and fathers (17.05%) may be considered to reflect the degree of acculturation pattern as similarly assumed in a previous study (Ho & Birman, 2010).

As hypothesized, parents who are more acculturated to the U.S. context are also more likely to talk about SRH with their children. In other words, parents were 1.53-2.16 times more likely to discuss all seven SRH topics with their children when they were more acculturated to American culture. However, Vietnamese acculturation was unrelated to SRH communication in this study. This finding is similar to the previous study that more acculturated parents in U.S. culture were considered to share more messages about sexual health, but sex-related topics were limited due to taboos in the Asian context (Kim & Ward, 2007; Trinh & Kim, 2021). Correspondently, discussion on SRH was relatively infrequent (Kue et al., 2021), especially when contrasted to a discussion about non-SRH topics. However, based on the finding, there is a possibility that these parents talk about all SRH topics no matter what sexual health topics once parents become more acculturated into American culture.

In terms of how to measure acculturation, another study showed the impact on communication was based on language use (Kim et al., 2020). This study applied AAMAS

which is an indicator comprised of cultural identity, cultural knowledge, and food consumption (Chung et al., 2004). Even though our analyses evaluated by the different measures, American acculturation had a significantly positive effect on overall SRH communication among U.S. Vietnamese parents in our study.

Considering the average age of their children (13.17 years) in our study, which is almost equal to the mean of the length of their parents' stay in the U.S. (14.64 years), most of these children included in this survey had lived most of their lives in the U.S. culture. Generally, the degree of acculturation to the original culture depends on how long they have resided in the United States (Kim & Aronowitz, 2021). Although American acculturation was positively associated with SRH communication with children, the duration of residence in the U.S. may not necessarily be proportional to SRH communication. As our finding, parents who resided in the U.S. for shorter periods of time talked about following SRH topics more frequently, including birth control and contraceptives, STDs, HIV, pregnancy, and being in love and having a romantic relationship, but not for postponing sex and physical changes during puberty. One of the studies stated that Asian women were more accepted by the mainstream culture and more quickly adapt to the new culture than their male counterparts (Tong, 2013). Parents' expectations that encourage a child to be adapted to American values might be another aspect impacting acculturation as a study of first-generation Korean Americans showed (Kim & Wolpin, 2008). Possibly, the geographic location of the higher percentage of Asian Americans more likely influenced them to follow their heritage culture (Kim & Aronowitz, 2021b). Therefore, duration of residence in the U.S. may not necessarily be a direct factor that encourages those parents to talk about SRH with their children because environmental factors might also affect their acculturation in the mainstream culture. Although the statistical impact was relatively small, a

consistent pattern across all the SRH topics in communication was identified in terms of the length of stay in the U.S.

4.1.2 Other demographic characteristics associated with SRH communication

Compared to mothers and fathers in SRH communication, mothers conversed about being in love and having a romantic relationship and physical changes during puberty about 2.3 times and 3.1 times more than fathers, respectively. Mothers' talking about these topics are consistent with the previous studies mentioned above if mothers are specifically talking with daughters, menstruation, fertilization, dating norms, and pregnancy were spoken at least much with both sons and daughters (Kim & Ward, 2007). In this study, most of the topics were more likely to be talked about by mothers. Despite the importance of fathers' SRH communication, talking about sexual health was challenging for male parents (Grossman et al., 2022). Other than these two topics, being in love and having a romantic relationship and physical changes during puberty, there was no other topic significantly associated with the gender of parents.

Additionally, Vietnamese parents' educational attainment was considered lower than other immigrants (Batalova, 2021), nevertheless approximately 85% of parents in this study completed at least a bachelor's degree. Parents who had more than a bachelor's degree were more likely to discuss pregnancy compared to those who did not hold a bachelor's degree. Socioeconomic conditions, such as parents' higher educational attainment related to family stability, influenced the protection of children from risky sexual behavior among Asian American families (Tong, 2013). Moreover, one intervention program for Asian immigrants in northern Taiwan was effective in SRH parental education for children and increased parental knowledge (Lee et al.,

2020). Even though school based SRH education and programs were limited in resources and capacity in one studied Vietnamese area (Pham et al., 2012), more exposure to educational opportunities could help parents to understand the importance of parental communication in SRH. These aspects would be one possibility that could contribute to having a conversation about pregnancy to prevent their children from undesirable SRH outcomes.

Also, the child's age was positively associated with parent-child communication across 7 different SRH topics. The older these children were, the more they communicated in common no matter which topic was talked about. Generally, the most discussed topics with providers vary by the age of the child, with more sexual topics being discussed in the older age groups (Sieving et al., 2021). Also, a similar finding was exhibited in another study about U.S. Puerto Rican immigrant families, which showed that parents were more willing to talk with older children about sexual health than with younger ones (Torres et al., 2016). As the age of a child increases, the topics for conversation will change accordingly.

Moreover, parents who have female children were associated with talking about pregnancy in comparison to those whose children are male. Even though girls' limited disclosure about sexual health (Zhao et al., 2017) and gender norms related to female's social status in Asian societies (Lee et al., 2015) exist, Asian American parents pay more attention to social activities to girls than boys (Tong, 2013). On the other hand, a previous study showed that Asian American daughters received more messages related to abstinence prior to marriage than sons (Trinh & Kim, 2021). In this context, it is possible to state that it is more common for parents to talk about abstinence and pregnancy than to talk about contraceptive methods for premarital girls because of the underlined notion of abstinence until marriage. Since there was no significant association between a child's gender and postponing or resisting sex in our study, this is not

relevant to the previous finding. Also, mothers were open to talking more about SRH with sons than daughters (McNeely et al., 2002; Gillmore et al., 2011). However, there was a gap regarding pregnancy prevention between girls and boys because of limited knowledge about contraception and a lack of SRH communication among male youth (Vargas et al., 2017). These contextual phenomena can be tied to what topic tends to be discussed and understood by both sons and daughters, which helps identify the difference in needs by the child's sex.

This study was based on a survey asking parents about SRH communication with their children. Understanding actual communication patterns from children's perspectives is also important. There could be a likelihood to impact actual conversation because there is a fact that their children were afraid of talking about these topics in this context (Lee et al., 2015). It is also due to the gaps between parent- and adolescent-perceived importance of talking about SRH topics (Sieving et al., 2021). With regards to acculturation, if acculturation in the mainstream culture was high, Latino caregivers had more adequate knowledge and positive beliefs toward health behaviors for their children no matter how much the magnitude of acculturation in the heritage culture (Gerend et al., 2021). Considering the results obtained in this study, only an aspect of following the original culture does not necessarily prove the acquisition of SRH communication. Acculturation for both original and host cultures could not always be inversely proportional since self-efficacy for health behaviors will be low if both acculturation measures are low (Gerend et al., 2021). In this study, parents were relatively high acculturation in Vietnamese culture compared to American culture. Being more acculturated in American culture is likely to result in more SRH communication with children regardless of what SRH topics are shared.

Because we did not distinguish individuals by several degrees of acculturation and disaggregate subcategories in each culture to assess the frequency of communication, a culturally appropriate approach for parent-child communication should be tailored depending on how much Vietnamese families adapt in the U.S. context. Also, the degree to which children and parents are acculturated to each culture influences their ability to communicate effectively to avoid the risk of adverse consequences in SRH (Gillmore et al., 2011). In sum, the research findings will help to consider culturally competent approaches to close gaps between their needs and barriers in SRH communication that Vietnamese families have faced. It should be a significant perspective to support sexual health education for both Vietnamese parents and children in a future study.

4.2 Limitations

There are some limitations that should be aware of through this study. First, this study used secondary cross-sectional data. A longitudinal study could be considered in the future to understand the causation of the associations between acculturation and parent-child communication, which might help us reflect on changes of acculturation over time that impacts the interaction between parents and their children. Also, the difference in the number of fathers and mothers in this sample may have led to an overestimation of the impact on SRH communication among fathers. The small sample size also limited the variation of Vietnamese families in the U.S. context that can be obtained. Higher educational attainment among those parents might be one of the variables that would impact their awareness of having communication with children against adverse SRH consequences. Also, the educational level was higher than the American community survey data (United States Census Bureau, 2019).

These sampled parents might be biased toward highly educated and the gender of parents, which might potentially affect SRH communication.

Second, it will be necessary to take into account who is focused on. This study assumed that more acculturated parents in the U.S. are likely to converse with their children about SRH; however, this may not be reliable in all U.S. Vietnamese families. Being able to communicate does not necessarily mean that both children and parents have mutual interaction. Because appropriate interaction and openness are important in parent-child sexual communication (Astle et al., 2022), only seeing parents' perceptions of acculturation and the frequency of communication with a child could not account for the actual gap in their sexual communication and actual awareness in SRH. Additionally, this study does not include other social factors associated with acculturation, such as marital status (Berry & Hou, 2016) and the degree to which religion is valued and the influence of neighboring communities. Therefore, it is still not fully understood how further acculturation in the host country affects SRH communication between parents and children.

Third, AAMAS scale does not necessarily indicate the actual identity of the respondents due to the limitation of psychometric measures (Chung et al., 2007). Taboos in Asian culture hinder SRH conversations. While this indicator for acculturation is validated by data from Asian Americans of several nationalities, the scale must be used accurately to capture the characteristics of the targeted individual country (Gillmore et al., 2011). Because we excluded 'Prefer not to answer' from all seven SRH topics, that might exclude essential findings associated with Vietnamese cultural influence among this population. In particular, the six topics except for physical changes are largely related to sexual content considered taboos. Hence, that also makes it challenging to clearly differentiate them from the large category of SRH to assess

the exact impact on the frequency of conversation. However, with the assurance that the content is more culturally familiar or accounted as cultural barriers, a detailed categorization would help to identify what limited knowledge and the barrier needed to be more focused.

4.3 Recommendations

To address racial gaps in SRH outcomes, it is critical to identify how SRH communication helps Vietnamese immigrant families avoid any risks in SRH. Including diverse Vietnamese families that can represent the U.S. context is important. Sociodemographic factors that are more influential on acculturation and parent-child bond and connectedness that would impact communication between parents and children are also potential factors to consider. In terms of the wide range of child's ages in this study, different needs by age of children aligned with developmental stages should be focused on to be confident in talking about SRH as well as effective communication (Lee et al., 2020; Sonenstein et al., 1997).

Only either individual influences or family adjustment could not fully contribute to understanding acculturation differences between parents and their children (Ho & Birman, 2010). Considering the actual needs of both children and parents in SRH communication is necessary. It is important to integrate diverse perspectives from two-sided assessments, such as a different frequency and preference of language use that impacted parent-child communication (Batalova, 2021; Kim & Ward, 2007; Kim & Aronowitz, 2021b). For example, parents' higher Vietnamese identity and children's lower Vietnamese identity impacted lower family connection and satisfaction (Ho & Birman, 2010), which might affect the frequency of SRH communication regardless of the topics they are talking about.

Since the child's acculturation was not considered in our study, uncertainty about how the overall acculturation among their children affects communication patterns and their awareness is a concern. However, the difference in communication pattern between parents and children is more complex than what the literature assumes. In fact, it was not always the case that parents were more acculturated to the native culture, and adolescents to the host culture, particularly with respect to the identity dimension of acculturation (Ho & Birman, 2010). Moreover, it would also be possible to evaluate based on how well they adapt to either culture in any degree and how long living in the U.S. by accounting environmental factors these families are exposed to. Notably, the impact of children's communication with their parents is more significant than the interactions with their friends because of conveying more restrictive messages about sexual health (Trinh & Kim, 2021). The degree to which religious ideas are followed and parents' high educational attainment (Kim & Ward, 2007; Tong, 2013), those components will impact the behavior of SRH communication. Therefore, several parents' characteristics should necessarily be understood through the study. To address the hardships in having a conversation that these Vietnamese families faced due to sexual taboos, the finding would help us consider culturally appropriate approaches in the complex environment toward equitable SRH for both male and female adolescents in a future study.

4.4 Conclusions

Overall, sampled U.S. Vietnamese parents talked more about physical change during puberty and being in love and having romantic relationship and less sex-related topics, such as postponing or resisting the pressure of having sex, STDs, and birth control, contraceptives or

condoms. Also, parents' average degree of acculturation in the U.S. culture is lower than that in the Vietnamese culture. While taboos around SRH and gender norms in Vietnamese culture exist, these U.S. Vietnamese parents who were more acculturated in American culture were likely to talk about all 7 SRH topics including sex-related topics at some frequency. Hence, this finding further supports our hypothesis. Regarding the duration of residence in the U.S., less time of living in the U.S. resulted in more communication with their children for most of the SRH topics except postponing sex and physical change during puberty. Based on the findings, parents' expectations toward SRH communication and their acculturation in the context might lead to more conversation with their children rather than the duration of their stay in the U.S. Despite taboo in Vietnamese culture, these parents might be more aware of preventing their children from negative SRH, especially pregnancy among daughters, which might also be related to having more conversation compared to those who received less education. Also, this study showed that there were gender differences in discussed SRH topics between parents and their children, which should be comprehended to close the gender gaps.

Their children also struggle with the self-identification between Vietnamese and American cultures (Ho & Birman, 2010). However, diverse contextual factors could mediate SRH communication toward preventive sexual health behaviors among those children, and how likely children engage in each different society would also be influential. Also, parents' lack of knowledge about sexual health was considered a possible impediment to sexual education for their children (Kao, 2006). Family-centered interventions, such as stressing responsibility and providing enough sexual health education, were important since family values were related to adolescents' attitudes and behavior (Commendador, 2010). However, it is not limited to maternal

influences, but father's interaction would also impact sexual health behaviors (Kim & Ward, 2007).

Sociodemographic characteristics should be accounted for in order to understand the influences of acculturation on SRH communication. More clarification on the degree of acculturation in life straddling both cultures is required toward recognizing a clearer pattern of effects on parent-child communication among U.S. Vietnamese families. Other validated measures and different combinations of components related to acculturation, such as area of residence, could lead to different findings. Conceptualizing acculturation as a multifaceted construct that influences SRH is needed in future research. SRH parent-child communication should be complemented by culturally competent healthcare to support SRH of U.S. Vietnamese youth.

Footnote

[1]In this thesis, I use U.S. Vietnamese when I am citing Vietnamese Americans.

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Appendix

Appendix 1 Unadjusted Model for Relationship Between Acculturation and Covariates on SRH Communication (N=393).

	Unadjusted Bivariate Estimates						
Variables	Birth control, contracept-ives, or condoms, (N=393)	STDs, (N=393)	HIV, (N=393)	Pregnancy, (N=393)	Postponing or resisting pressure to have sex, (N=393)	Being in love and having a romantic relationsh-ip, (N=393)	Physical changes during puberty, (N=393)
	Any	Any	Any	Any	Any	Any	Any
	cOR [95% CI]	cOR [95% CI]	cOR [95% CI]	cOR [95% CI]	cOR [95% CI]	cOR [95% CI]	cOR [95% CI]
Exposure							
Parent's American acculturation scores, mean (SD)[a] [Range:0.33-4.80]	1.15 [0.90, 1.46]	1.27 [1.00, 1.63]	1.32 [1.03, 1.69]	1.24 [0.96, 1.60]	1.33 [1.03, 1.70]	1.07 [0.80, 1.42]	1.54 [1.08, 2.20]
Parent's Vietnamese acculturation scores, mean (SD)[a] [Range:1.67-5.00]	1.20 [0.86, 1.66]	1.29 [0.93, 1.80]	1.61 [1.15, 2.27]	1.41 [0.96, 1.60]	0.91 [0.66, 1.27]	1.08 [0.73, 1.59]	0.93 [0.56, 1.54]
Parent's length of life in the U.S., mean (SD)	0.98 [0.96, 0.99]	0.98 [0.97, 1.00]	0.97 [0.96, 0.99]	0.97 [0.96, 0.99]	0.99 [0.98, 1.01]	0.97 [0.95, 0.99]	1.00 [0.97, 1.02]
Covariates							
Parent’s gender, n (%)							
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	1.01 [0.60, 1.71]	1.21 [0.71, 2.04]	1.32 [0.78, 2.23]	1.65 [0.97, 2.83]	1.13 [0.67, 1.92]	2.60 [1.48, 4.56]	2.69 [1.39, 5.24]

Parent's highest educational attainment, n (%)							
Less than bachelor's degree (High school degree or GED [b])	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Bachelor's degree or more	1.61 [0.92, 2.82]	1.32 [0.76, 2.30]	1.56 [0.89, 2.72]	2.35 [1.34, 4.12]	1.18 [0.67, 2.06]	1.93 [1.06, 3.52]	1.09 [0.48, 2.46]
Child's age, mean (SD)	1.29 [1.19, 1.40]	1.30 [1.21, 1.41]	1.26 [1.17, 1.36]	1.08 [1.00, 1.17]	1.25 [1.16, 1.35]	1.17 [1.07, 1.28]	1.29 [1.14, 1.46]
Child's gender, n (%)							
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	0.87 [0.59, 1.30]	0.82 [0.55, 1.22]	0.68 [0.46, 1.02]	1.65 [1.08, 2.51]	1.04 [0.70, 1.54]	0.98 [0.61, 1.56]	1.24 [0.68, 2.24]
Child's birthplace							
Outside the U.S.	Ref	Ref	Ref	Ref	Ref	Ref	Ref
United States	0.48 [0.32, 0.72]	0.54 [0.36, 0.80]	0.57 [0.38, 0.86]	0.52 [0.34, 0.80]	0.64 [0.43, 0.95]	0.54 [0.34, 0.88]	0.85 [0.47, 1.53]

cOR: crude Odds Ratio. CI: Confidence Interval.
[a] Parent's American and Vietnamese acculturation scores were measured by the Asian American Multidimensional Acculturation Scale (AAMAS). Acculturation was scored from 0 to 75 and divided by the number of 15 items to generate the mean value.
[b] General Education Degree (GED)