

## Original article

# Sexual awareness and cognitive social capital among high school students: a cross-sectional study in rural Vietnam

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## Abstract

**Objective:** Since the late 1980s, Vietnam has seen numerous social changes, likely leading to changes in adolescent sexual awareness. Adolescents are currently exposed to a plethora of sexual information without adequate sex education and knowledge. Globally, researchers have identified sexual knowledge and self-esteem as determinants of adolescent sexual awareness and behavior, but little is known about the role of social capital, especially in rural areas. This study aimed to clarify the relationship between sexual awareness and cognitive social capital among high school students in rural Vietnam.

**Materials and Methods:** We conducted a questionnaire-based survey assessing sexual knowledge, sexual awareness, perceptions of peers' sexual experience, structural and cognitive social capital, and self-esteem (Rosenberg Self-Esteem Scale) in March 2017 among 1,583 11th graders at four public high schools in Hai Duong Province, Vietnam.

**Results:** The final sample comprised 1,517 students (95.8% of total responses): 609 boys (40.1%) and 908 girls (59.9%). Multiple logistic regression analysis was performed with intolerance toward premarital sex as the dependent variable. In the first model, the independent variables were self-esteem, knowledge of proper timing for condom use, and perception that many peers are sexually experienced. The second model added an indicator of cognitive social capital. In the first model, self-esteem, knowledge of proper timing for condom use, and perception that many peers are sexually experienced were all significantly associated with intolerance toward premarital sex for both boys and girls. In the second model, for both boys and girls, only cognitive social capital was significantly associated with intolerance toward premarital sex.

**Conclusion:** The results of this study regarding the effect of social capital in rural Vietnam are consistent with previous findings in urban areas. Social capital should be emphasized in efforts to improve sexual awareness and, in turn, sexual and reproductive health among adolescents in rural areas.

**Key words:** sexual awareness, high school students, social capital, adolescence, Vietnam

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## Introduction

Since the beginning of *Doi Moi* (Renovation) in 1986, Vietnam has witnessed several social changes, including the

rapid popularization of the Internet and the use of smartphones among adolescents<sup>1–3)</sup>. Scholars have noted that adolescents' exposure to a plethora of sexual information without sufficient sexual knowledge is becoming a public health concern<sup>1,4–6)</sup>. Studies have shown that premarital sex among adolescents has increased in Vietnam in recent years. The Survey Assessment of Vietnamese Youth found that the percentage of adolescents engaging in premarital sex increased from 7.6% in 2003 to 9.5% in 2009<sup>1, 7, 8)</sup>. Public attitudes toward premarital sex are also evolving; many people are becoming tolerant towards it, expressing the opinion that premarital sex is permissible. It is therefore likely that the number of high school students engaging in sexual activity is increasing in Vietnam<sup>9)</sup>. Adolescent sexual behavior, in

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comparison with adult sexual behavior, is associated with higher risks of unwanted pregnancy, sexually transmitted diseases, and future health problems such as infertility<sup>10</sup>.

Most previous studies have suggested that immature (low) sexual awareness, lack of sexual knowledge, and low self-esteem (SE) are associated with high-risk sexual behavior<sup>11</sup>. In recent years, research in developed countries has focused on the importance of social capital (SC), which contributes to a sense of belonging to the community and improves human relationships<sup>12</sup>. With the growing recognition of the social determinants of health, SC is increasingly being considered an important concept in international health research. SC can be divided into two broad categories: 1) structural SC, which relates to the properties of the social system and the network of relations as a whole, and 2) cognitive SC, which relates to shared values, attitudes, and beliefs at the individual level<sup>13</sup>. Both structural SC and cognitive SC influence people's awareness and behavior<sup>14, 15</sup>. Watanabe and colleagues hypothesized that cognitive SC might impact adolescent sexual awareness and tested this hypothesis using questionnaire surveys in Vietnam and Japan<sup>16–19</sup>. Their findings confirmed that adolescent sexual awareness is more likely to be impacted by SC factors such as sense of belonging to the community, rather than by the individual's sexual knowledge, SE, and the presence of sexually experienced peers—factors that had previously been identified as important<sup>11, 20</sup>.

Other than Watanabe *et al.*'s work among high school students in Hanoi and Ho Chi Minh City, Vietnam, and Tokyo, Japan<sup>16–19</sup>, there is a dearth of previous analyses of the associations between sexual awareness and various factors, particularly SE and SC. In the studies conducted by Watanabe *et al.*, it was found that SC has a stronger association with sexual awareness than sex education or SE, and those with high cognitive SC were likely to have healthy sexual awareness in both cities in Vietnam. However, owing to the great variability in culture, climate, and economic conditions in different areas in Vietnam, especially between urban and rural areas, it is not appropriate to generalize the results of studies conducted in Hanoi and Ho Chi Minh City to Vietnam as a whole. It is therefore important to study the current situation of sexual awareness among high school students in rural areas of Vietnam, which account for a large portion of the geographical area of the country.

The present research aimed to clarify the associations of sexual awareness among high school students in rural Vietnam with SE and cognitive SC, using data from a cross-sectional study among this population. Sexual awareness is expected to relate not only to the individual's sexual knowledge and SE but also to cognitive SC, as we previously found in urban areas of Vietnam. If the same findings are indeed demonstrated in rural areas, methods similar to those used in urban areas may be applied to address the issues of

adolescent sexual awareness and earlier initiation of sexual behavior. The findings from the present study will serve as a guide to the development of countermeasures against problems related to permissiveness toward premarital sex, unwanted pregnancies, abortion, and sexually transmitted infections in Asian countries.

## Materials and Methods

The methodological approach in the present study was informed by our previous survey of high school students in Hanoi and Ho Chi Minh City from 2012 to 2014<sup>15</sup>. We were attentive to the Vietnamese culture and climate, and we obtained permissions from the local authorities and complied with all rules and regulations in Vietnam.

### Participants

In March 2017, with the cooperation of Hai Duong Medical Technical University and the Ministry of Health Center for Population Research Information and Databases, General Office for Population and Family Planning, the participating high school students were selected from the rural Hai Duong Province.

To obtain a cross-section of typical Vietnamese high school students, special schools such as a school for foreigners, a vocational school, and a correspondence school were excluded from the survey. With the permission of the school principals, 1,583 11th graders enrolled at four of the five public, co-ed, full-time regular high schools in the province were selected as survey participants. We excluded incomplete responses, such as those from students who failed to report their age or gender, yielding a final analytical sample of 1,517 students (95.8% of all collected responses). The final sample comprised 609 boys (40.1%) and 908 girls (59.9%).

### Questionnaire

We used an anonymous self-administered questionnaire to assess the participants' demographic characteristics (age and gender), sexual knowledge, sexual awareness (permissiveness toward premarital sex), perception of many peers as sexually experienced, cognitive SC (sense of belonging to society), and level of SE (evaluated by the Rosenberg Self-Esteem Scale, which assesses levels of self-respect and self-confidence, with higher scores indicating higher self-esteem)<sup>21</sup>. The average Rosenberg score for American college students has been reported as 32.21<sup>22</sup>, but no data are available on Vietnamese students except for our previous findings of an average of 18.0 ± 3.9 in Hanoi and 21.5 ± 2.6 in Ho Chi Minh City among both boys and girls<sup>16, 17</sup>.

For the present study, first, we prepared a questionnaire in English. The contents of this questionnaire were reviewed by several researchers, and the questionnaire was translated into Vietnamese and checked again by native Vietnamese

speakers. Before the questionnaire was finalized for use in the survey, the contents were also verified by a representative from the participating schools.

## Statistical analysis

In this study, each variable was divided into two groups, comparing 1) *yes* vs. *no* answers to questions for different aspects of cognitive SC and sexual awareness; 2) correct vs. incorrect answers to sexual knowledge questions; and 3) high vs. low SE scores, which were dichotomized with the mean SE score as the cut-off point. After confirming that there was no multicollinearity between the variables (i.e., that they were independent of each other) using Spearman's rank correlation coefficients, variables were selected for multiple logistic regression analysis. In the multiple logistic regression analysis, intolerance of premarital sex was the dependent variable, and knowledge of the proper timing for condom use, perception that many peers were sexually experienced, and high SE score were simultaneously included as independent variables. All analyses were performed using IBM SPSS, Version 24.0.

## Informed consent and ethical considerations

Cooperation from the high schools and written informed consent from the participating students, as well as their parents or guardians, were obtained before administering the survey. First, the participating schoolteachers were informed about the study and provided a detailed explanation of the purpose, objective, and methods of the research. Second, the parents or guardians of the participating students, followed by the participating students themselves, were informed about the study in writing. This study was approved by the Ethical Review Board of the National Center for Global Health and Medicine. (Approval number: NCGM-G-002227-00).

## Results

### Demographic characteristics of the participants

Of the 1,517 students in the final sample, 98.7% were aged 16 or 17 years, and 80.2% lived with their parents and one sibling or no siblings—the so-called “nuclear family”.

### Social capital

Table 1 shows the students' responses to the structural SC and cognitive SC items. Regarding structural SC, more than 65% of the students of both genders responded that there were community events in which they could participate and around 63% said that they actually participated in these events. Considering that parents are likely to be involved in the lives of individuals in this age group, items about parents and family were included in the assessment of structural SC. Almost the same percentages of boys and girls responded that they had intrafamilial communication. Turning to cognitive SC, around 95% of the students of both genders responded that they had a sense of belonging to the community.

### Self-esteem

The Rosenberg Self-Esteem Scale was employed to measure the level of SE. The average score for boys was  $21.0 \pm 2.9$ , and the average score for girls was  $21.0 \pm 2.4$ , with no significant difference by gender.

### Sexual awareness

Table 2 shows the students' responses to the sexual awareness items. Compared with boys, more girls were intolerant of premarital sex. A greater number of boys than girls were tolerant of premarital sexual behavior in the context of love. A slightly higher percentage of boys than girls responded that many of their peers had sexual experience.

**Table 1** Structural and cognitive social capital

Variable	Gender			
	Boys (n=609)		Girls (n=908)	
	Yes n (%)	No n (%)	Yes n (%)	No n (%)
<b>Structural social capital</b>				
(1) Availability of events for residents in the community	411 (67.7)	196 (32.3)	602 (66.2)	306 (33.8)
(2) Participation in (1)	388 (63.6)	221 (36.4)	572 (62.9)	336 (37.1)
(3) Availability of events for students at school	578 (95.1)	31 (4.9)	891 (98.3)	17 (1.7)
(4) Participation in (3)	420 (69.1)	189 (30.9)	627 (69.0)	281 (31.0)
(5) Intrafamilial communication	384 (63.0)	225 (37.0)	582 (63.9)	327 (36.1)
(6) Father's involvement in sexual behavior decisions	262 (42.9)	347 (57.1)	618 (68.3)	290 (31.7)
(7) Mother's involvement in sexual behavior decisions	247 (40.5)	362 (59.5)	736 (81.3)	172 (18.7)
<b>Cognitive social capital</b>				
(8) I have a sense of community belonging.	575 (94.6)	34 (5.4)	866 (95.3)	42 (4.7)
(9) I would like to contribute to society in the future.	591 (97.4)	16 (2.6)	904 (99.3)	3 (0.7)

## Sexual knowledge

Table 3 presents the findings on participants' knowledge about sex. The students were presented with lists of sexually transmitted diseases and contraceptive methods and asked to select only those items with which they were acquainted and that they would be able to explain. For both boys and girls, the only sexually transmitted infections known by the majority of the students were syphilis and HIV/AIDS. The most well-known modern contraceptive methods for students of both genders were the condom and the oral contraceptive pill. However, less than 60% of the participants of both genders answered correctly on the proper timing for condom use or action to take after condom breakage. This reflects a large disparity between perceived and actual knowledge.

## Simultaneous test of multiple determinants of sexual awareness

Table 4 shows the results of the multiple logistic regression analysis with intolerance of premarital sex as the dependent variable. In Model 1, knowledge of the proper timing for wearing a condom, high SE, and the perception that many peers are sexually experienced were associated with intolerance toward premarital sexual behavior among high school students of both genders. In Model 2, after adding SC, the effects of knowledge of the proper timing for wearing a condom, high SE, and the perception that many peers were sexually experienced were dramatically reduced in size and were no longer significant. The newly added variable, having a sense of belonging to the community, was significantly associated with intolerance toward sexual be-

**Table 2** Sexual awareness

Response	Gender			
	Boys (n=609)		Girls (n=908)	
	Agree n (%)	Disagree n (%)	Agree n (%)	Disagree n (%)
High School students should not engage in premarital sex.	541 (88.6)	68 (11.4)	868 (95.3)	40 (4.7)
It is permissible to engage in premarital sex in the context of love.	238 (39.1)	371 (60.9)	142 (15.7)	766 (84.3)
I am able to refuse undesired sexual behavior.	588 (96.6)	21 (3.4)	894 (98.2)	14 (1.8)
If I have sex while I am in high school, I will use contraception.	567 (93.5)	42 (6.5)	845 (93.3)	63 (6.7)
The male partner is responsible for contraception.	380 (62.3)	229 (37.7)	324 (35.6)	584 (64.4)
Many of the peers around me have sexual experience.	412 (67.7)	197 (32.3)	586 (64.5)	322 (35.5)

**Table 3** Knowledge about sexually transmitted infections, contraceptive methods, and condom use

Variable	Gender	
	Boys (n=609) n (%)	Girls (n=908) n (%)
Familiarity with sexually transmitted infections		
Chlamydia	64 (10.4)	84 (9.2)
Gonorrhea	304 (49.5)	426 (46.5)
Syphilis	362 (59.0)	550 (60.0)
HIV/AIDS	608 (99.0)	903 (98.6)
Hepatitis B	139 (22.6)	217 (23.7)
Trichomoniasis	169 (27.5)	328 (35.8)
Familiarity with contraceptive methods		
Condoms	612 (99.7)	884 (96.5)
Oral contraceptives	578 (94.1)	883 (96.4)
Rhythm method	370 (60.3)	598 (65.3)
Coitus interruptus (pull-out method)	382 (62.2)	299 (32.6)
Intrauterine contraceptive device (IUD)	299 (48.7)	481 (52.5)
Injectable contraceptives	350 (57.0)	587 (64.1)
Correct knowledge about condom use		
Proper timing to wear condoms	284 (47.3)	509 (59.7)
Action to take after condom breakage	276 (47.6)	338 (40.0)

**Table 4** Multiple logistic regression analysis predicting intolerance toward premarital sex (n=1,517)

Variable	Model 1				Model 2			
	Boys		Girls		Boys		Girls	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
Knowledge of correct timing to wear condoms								
Correct	2.4 (1.62–3.61)	< 0.01	6.6 (4.14–10.36)	< 0.01	0.9 (0.56–1.51)	0.75	1.7 (0.98–3.07)	0.06
Incorrect	ref		ref		ref		ref	
Perception that many peers have sexual experience								
No	3.7 (2.6–5.2)	< 0.01	6.2 (4.0–9.57)	< 0.01	1.1 (0.70–1.85)	0.61	1.5 (0.85–2.65)	0.17
Yes	ref		ref		ref		ref	
Rosenberg Self-Esteem Scale score								
≤ 21 (lower self-esteem)	2.8 (1.78–4.53)	< 0.01	4.2 (2.29–7.64)	< 0.01	1.4 (0.82–2.32)	0.23	1.4 (0.69–2.66)	0.38
> 21 (higher self-esteem)	ref		ref		ref		ref	
Sense of community belonging								
Yes					6.9 (4.26–11.1)	< 0.01	11.48 (6.69–19.46)	< 0.01
No					ref		ref	

OR: odds ratio; CI: confidence interval; ref: reference group.

havior, with an odds ratio (95% confidence interval) of 6.88 (4.26–11.09) for boys and 11.4 (6.69–19.46) for girls.

## Discussion

The participants in this study were considered typical Vietnamese high school students in terms of the type of high school they attended and family structure. By limiting the study area and administering a survey among students at four of five public, co-ed, full-time regular high schools in a single rural province, we believe that we have obtained a sample that represents typical high school students in rural areas of Vietnam.

The results regarding SC demonstrated that cognitive SC was higher than structural SC for both boys and girls. In general, structural SC is thought to form the foundation for cognitive SC and boost cognitive SC, resulting in little difference between the two types of SC<sup>15</sup>. In this study, however, we found a significant difference between structural and cognitive SC. This suggests that the participants acquired factors to cultivate cognitive SC outside their surrounding environment, or that cognitive SC was boosted by internal factors.

A majority of the participants expressed a negative opinion toward premarital sex, and this was more prominent among girls (95%) than among boys (89%). Additionally, almost all participants said that they would be able to refuse undesired sexual behavior, and all were aware of the importance of using contraceptives if they did engage in sexual

intercourse while they were high school students. This apparent awareness strongly suggests the possibility of control over the initiation of their own sexual behavior and risky sexual behavior among students of high school age.

Regarding sexual knowledge, over 40% of both boys and girls responded incorrectly to the question on using a condom, which is the most effective and easy contraceptive method, requiring no doctor visit and free from side effects if properly used. This strongly suggests that only a minority of the participants had sufficient correct knowledge about sex. The students' lack of accurate sexual knowledge could lead to increased risks of sexually transmitted infections and unwanted pregnancies. Thus, access to sexual knowledge for boys and girls of high school age will be an important health care and social issue in the future.

The results of this study were similar to previous findings in Hanoi and Ho Chi Minh City<sup>16, 17</sup>; thus, interventions to improve methods of sex education at school and to develop at-home teaching materials for children in Vietnam must be considered in both urban and rural areas.

Through testing two models using multiple logistic regression analysis, we found that, in addition to the previously identified associations of sufficient sexual knowledge and high SE with sexual awareness, high SC was also significantly associated with sexual awareness. Both boys and girls with high cognitive SC were likely to have a cautious and conservative approach to sex, as indicated in previous reports by Watanabe *et al.*<sup>14, 15</sup> It can thus be argued that sexual awareness among high school students can be influ-

enced by enhancing cognitive SC.

In the United States, where the concept of SC has pervaded the fields of public health and adolescent research, correlations between SC and both sexual awareness and sexual behavior have been reported. Multiple studies have found that participating in religious activities and having a role model can delay the initiation of sexual behavior<sup>23–26</sup>.

Furthermore, in Brazil and El Salvador, it has been reported that maintaining good family relations and the desire to be liked by peers and teachers decreases the likelihood of being involved in health risk behaviors<sup>27, 28</sup>. In nine countries of the West Indies, strong ties with parents and school and participating in church events were found to be related to decreased health risk behaviors<sup>29</sup>. These reports suggest that emphasizing the development of relationships to the family, school, and community and maintaining good relations could lead to decreased risky behaviors among high school students. Participation in religious activities in previous studies was mainly a form of community involvement, and thus indicates that participating in events that foster a sense of community belonging was linked to sexual awareness. In Vietnam, encouraging adolescents to participate in community events may foster better SC.

The present study and previous studies conducted by Watanabe *et al.*<sup>14–17</sup> have simultaneously assessed the effects of multiple factors using multiple logistic regression analysis. This approach helps clarify the influence of factors previously considered to be strongly associated with sexual awareness.

Several limitations of this study should be considered. First, because this study used a self-administered-questionnaire survey, we cannot eliminate the possibility of reporting bias. Second, the cross-sectional nature of this survey design does not allow for the examination of changes in the participants' beliefs. This can be addressed through long-

term longitudinal studies on this topic in the future. Third, although we have conducted surveys in two urban cities and a rural area to collect data on typical Vietnamese high school students, there may be differences for adolescents of the same age who are not enrolled in school; this is particularly important because the national average high school education continuance rate in Vietnam is low (less than 60%)<sup>30</sup>. Therefore, there is a need for further research that includes working adolescents in the same age range as the students in the present study.

## Conclusion

The results of this study demonstrate that adolescents who are intolerant of premarital sex have significantly higher SC than do those who are tolerant of premarital sex, even after considering several other factors, such as SE, sexual knowledge, and perception of having many peers with sexual experience. It is therefore necessary to provide comprehensive programs in addition to conventional sex education to enhance a sense of belonging to society by increasing opportunities to participate in local events, which will serve to reduce the initiation of sexual behavior among adolescents.

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## References

1. Vinh NT, Tuan PC. Factors influencing unintended pregnancy and abortion among unmarried youth in Vietnam: a literature review. *Tap Chi Y Te Cong Cong* 2015; 3: 3–16. [Medline]
2. United Nations Children's Fund. Adolescent development in East Asia and the Pacific: realizing their potential. United Nations Children's Fund, New York, 2006; 22–24. [https://www.unicef.org/ADAP\\_series\\_2.pdf](https://www.unicef.org/ADAP_series_2.pdf).
3. United Nations Children's Fund. The state of the world's children 2011—Adolescence: an age of opportunity. United Nations Children's Fund, New York, 2006; 22–26. [http://www.unicef.org/sowc2011/pdfs/SOWC-2011-Main-Report\\_EN\\_02092011.pdf](http://www.unicef.org/sowc2011/pdfs/SOWC-2011-Main-Report_EN_02092011.pdf).
4. Ngo AD, Ross MW, Ratliff EA. Internet influences on sexual practices among young people in Hanoi, Vietnam. *Cult Health Sex* 2008; 10(Suppl): S201–S213. [Medline] [CrossRef]
5. Strasburger VC, Wilson BJ, Jordan A. Children, adolescents, and the media. 2nd ed. Sage, Thousand Oaks, 2009; 4–8.
6. Strasburger VC. Adolescents, sex, and the media. *Adolesc Med State Art Rev* 2012; 23: 15–33, ix. [Medline]
7. Ministry of Health, General Statistics Office, World Health Organization, United Nations Children Fund Survey Assessment of Vietnamese Youth Round 1 (SAVY 1). Vietnam Ministry of Health, Hanoi, 2005; 36–57. [https://www.gso.gov.vn/default\\_en.aspx?tabid=484&idmid=4&ItemID=4152](https://www.gso.gov.vn/default_en.aspx?tabid=484&idmid=4&ItemID=4152).
8. Ministry of Health, General Statistics Office, World Health Organization, United Nations Children Fund Survey Assessment of Vietnamese Youth Round 2 (SAVY 2). Vietnam Ministry of Health, Hanoi, 2010; 52–67.
9. Ghuman S, Loi VM, Huy VT, *et al.* Continuity and change in premarital sex in Vietnam. *Int Fam Plan Perspect* 2006; 32: 166–174. [Medline] [CrossRef]
10. United Nations Population Fund State of World Population 2013—Motherhood in Childhood: Facing the Challenge of Adolescent Pregnancy. United Na-

- tions Population Fund, New York, 2013; 17–29. <https://www.unfpa.org/sites/default/files/pub-pdf/EN-SWOP2013.pdf>.
11. Goodson P, Buh ER, Dunsmore SC. Self-esteem and adolescent sexual behaviors, attitudes, and intentions: a systematic review. *J Adolesc Health* 2006; 38: 310–319. [[Medline](#)] [[CrossRef](#)]
  12. McPherson K, Kerr S, McGee E, *et al*. Social capital and the health and wellbeing of children and adolescents. Glasgow Centre for Population Health, Glasgow, 2013; 1–2. [https://www.gcph.co.uk/assets/0000/3647/Social\\_capital\\_final\\_2013.pdf](https://www.gcph.co.uk/assets/0000/3647/Social_capital_final_2013.pdf).
  13. Nahapiet J, Ghoshal S. Social capital, intellectual capital, and the organizational advantage. *Acad Manage Rev* 1998; 23: 242–266. [[CrossRef](#)]
  14. Cramm JM, Nieboer AP. The influence of social capital and socio-economic conditions on self-rated health among residents of an economically and health-deprived South African township. *Int J Equity Health* 2011; 10: 51. [[Medline](#)] [[CrossRef](#)]
  15. Kawachi I, Berkman L. Social cohesion, social capital, and health. In: *Social Epidemiology*. Berkman LF, Kawachi I, Eds. Oxford University Press, New York, 2001; 174–190.
  16. Watanabe K, Kaneko Y, Fujita K, *et al*. The association between awareness of sexual behavior and cognitive social capital among high school students in Vietnam. *Open J Prev Med* 2014; 4: 116–122. [[CrossRef](#)]
  17. Watanabe K. The cross sectional study on the association between sexual awareness and cognitive social capital among high school students in Ho Chi Minh City, Vietnam. *Advances in Sexual Medicine* 2016; 6: 33–39. [[CrossRef](#)]
  18. Watanabe K, Tanaka H, Totsu Y. Determinants of sexual awareness among high school students in Tokyo, Japan—cross sectional analysis in relation to social capital. *Health* 2018; 10: 1371–1382. [[CrossRef](#)]
  19. Watanabe K, Tanaka H, Totsu Y. Determinants of sexual awareness among high school students in Tokyo, Japan—post-interventional comparison analysis in relation to social capital. *Health* 2018; 10: 1392–1405. [[CrossRef](#)]
  20. Buh ER, Goodson P. Predictors of adolescent sexual behavior and intention: a theory-guided systematic review. *J Adolesc Health* 2007; 40: 4–21. [[Medline](#)] [[CrossRef](#)]
  21. Rosenberg M. *Rosenberg Self-Esteem Scale*. Princeton University Press, Princeton, 1965; 1–4. [https://fetzer.org/sites/default/files/images/stories/pdf/self-measures/Self\\_Measures\\_for\\_Self-Esteem\\_ROSENBERG\\_SELF-ESTEEM.pdf](https://fetzer.org/sites/default/files/images/stories/pdf/self-measures/Self_Measures_for_Self-Esteem_ROSENBERG_SELF-ESTEEM.pdf).
  22. Schmitt DP, Allik J. Simultaneous administration of the Rosenberg Self-Esteem Scale in 53 nations: exploring the universal and culture-specific features of global self-esteem. *J Pers Soc Psychol* 2005; 89: 623–642. [[Medline](#)] [[CrossRef](#)]
  23. Harris L, Oman RF, Vesely SK, *et al*. Associations between youth assets and sexual activity: does adult supervision play a role? *Child Care Health Dev* 2007; 33: 448–454. [[Medline](#)] [[CrossRef](#)]
  24. Bensyl DM, Vesely SK, Tolma EL, *et al*. Associations between youth assets and sexual intercourse by household income. *Am J Health Promot* 2011; 25: 301–309. [[Medline](#)] [[CrossRef](#)]
  25. Oman RF, Vesely SF, Aspy CB. Youth assets and sexual risk behavior: the importance of assets for youth residing in one-parent households. *Perspect Sex Reprod Health* 2005; 37: 25–31. [[Medline](#)] [[CrossRef](#)]
  26. Oman RF, Vesely SK, Aspy CB, *et al*. The association between multiple youth assets and sexual behavior. *Am J Health Promot* 2004; 19: 12–18. [[Medline](#)] [[CrossRef](#)]
  27. Springer A, Parcel G, Baumler E, *et al*. Supportive social relationships and adolescent health risk behavior among secondary school students in El Salvador. *Soc Sci Med* 2006; 62: 1628–1640. [[Medline](#)] [[CrossRef](#)]
  28. Anteghini M, Fonseca H, Ireland M, *et al*. Health risk behaviors and associated risk and protective factors among Brazilian adolescents in Santos, Brazil. *J Adolesc Health* 2001; 28: 295–302. [[Medline](#)] [[CrossRef](#)]
  29. Blum RW, Halcón L, Beuhring T, *et al*. Adolescent health in the Caribbean: risk and protective factors. *Am J Public Health* 2003; 93: 456–460. [[Medline](#)] [[CrossRef](#)]
  30. Crosby RA, Holtgrave DR, DiClemente RJ, *et al*. Social capital as a predictor of adolescents' sexual risk behavior: a state-level exploratory study. *AIDS Behav* 2003; 7: 245–252. [[Medline](#)] [[CrossRef](#)]