

# แนวคิดและการประเมินการรู้เท่าทันสุขภาพทางเพศในวัยรุ่น: การสังเคราะห์วรรณกรรม Concept and Measurement of Sexual Health Literacy in Adolescents: An Integrative Review

นิพนธ์ต้นฉบับ

Original Article

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## บทคัดย่อ

การสังเคราะห์วรรณกรรมนี้มีวัตถุประสงค์เพื่ออธิบายแนวคิดและองค์ประกอบของการประเมินการรู้เท่าทันสุขภาพทางเพศในวัยรุ่น วิธีการศึกษาใช้การสังเคราะห์วรรณกรรมของ Whittemore and Knafel (2005) โดยรวบรวมจากงานวิจัย ตำราทั้งในประเทศไทยและต่างประเทศที่เผยแพร่ในระหว่างปี พ.ศ. 2549 ถึง พ.ศ. 2559 พบทั้งหมด 18 เรื่อง ผลการสังเคราะห์มีดังนี้ 1) องค์ประกอบของการรู้เท่าทันสุขภาพทางเพศในวัยรุ่น มีจำนวน 6 องค์ประกอบ คือ ก) การเข้าถึงข้อมูลสุขภาพทางเพศและบริการด้านสุขภาพทางเพศ ข) ความรู้ ความเข้าใจเกี่ยวกับสุขภาพทางเพศ ค) ทักษะการสื่อสารเกี่ยวกับสุขภาพทางเพศ ง) ทักษะการจัดการตนเองเกี่ยวกับสุขภาพทางเพศ จ) ทักษะการตัดสินใจเกี่ยวกับสุขภาพทางเพศ และ ฉ) การรู้เท่าทันสื่อเกี่ยวกับสุขภาพทางเพศ นอกจากนี้ สามารถแบ่งระดับการรู้เท่าทันได้เป็น 3 ระดับ ดังนี้ ระดับที่ 1 ชั้นพื้นฐาน ระดับที่ 2 ชั้นการมีปฏิสัมพันธ์ และระดับที่ 3 ชั้นวิจารณ์ญาณ และ 2) องค์ประกอบสำคัญของการวัดเพื่อประเมินการรู้เท่าทันสุขภาพทางเพศในวัยรุ่น เน้นการวัดความรู้เกี่ยวกับการเปลี่ยนแปลงทางสรีรวิทยา การคุมกำเนิด โรคติดต่อทางเพศสัมพันธ์ สภาพทางเพศและการมีเพศสัมพันธ์ ผลการสังเคราะห์วรรณกรรมสามารถนำไปใช้เป็นแนวทางในการพัฒนาหลักสูตรการพยาบาล เพื่อส่งเสริมการรู้เท่าทันสุขภาพทางเพศของวัยรุ่น รวมทั้งพัฒนาวิธีการวัดผลเพื่อประเมินการรู้เท่าทันสุขภาพทางเพศได้อย่างมีประสิทธิภาพ

**คำสำคัญ:** แนวคิดการรู้เท่าทันสุขภาพทางเพศ, ประเมินการรู้เท่าทันสุขภาพทางเพศ, การรู้เท่าทันสุขภาพทางเพศในวัยรุ่น

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## Abstract

This literature synthesis aimed to explicate the concept and components of measurement for evaluating sexual health literacy in adolescents. This review was guided by Whittemore and Knafel's (2005) integrative review framework. A comprehensive search of articles and books in English and Thai published between 2006 and 2016. Based on the 18 studies yielded, findings were as follows. First, six components of sexual health literacy in adolescents included a) access to sexual health and sexual health service information, b) knowledge and understanding of sexual health, c) communication skills for sexual health, d) self-management skills for sexual health, e) decision-making skills for sexual health and f) media literacy about sexual health. Furthermore, the aforementioned components could be classified into the following three levels of sexual health namely functional, interactive and critical levels. Second, the significant components of measurement for evaluating sexual literacy in adolescents emphasized measuring knowledge about physiological changes in puberty, contraception, sexually transmitted diseases, sexuality and sexual intercourse. The findings from this literature synthesis can serve as a guideline for nursing curriculum development in adolescent sexual health literacy promotion and measurement methods development for the efficient assessment of sexual health literacy.

**Keywords:** concept of sexual health literacy, measurement of sexual health literacy, sexual health literacy in adolescents.

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## Introduction

Apart from being the important health determinant, health literacy enhances the individual's engagement in collective action for health promotion.<sup>1</sup> Meanwhile, health literacy refers to personal competencies for access, understanding, appraisal and application concerning health information in order to make sound decisions in everyday life and maintain good health.<sup>2,3</sup> An important part of health literacy in adolescence is sexual health because adolescents are particularly vulnerable to poor sexual health outcomes such as unplanned pregnancy, sexually transmitted diseases (STDs), and abortion.<sup>4</sup> The sexual health is one element for the good health so the sexuality studies are important to good

health promotion.<sup>5</sup> The necessary skills are promoted on the basis of the application of sexuality data and suitable sexual guideline for health maintenance.<sup>6</sup> However, such actions may be insufficient to respond to the changes of 21<sup>st</sup> century society; therefore, sexual literacy is an important mechanism for the integration of knowledge and skills with the help of technology and communication devices that facilitates the learning process.<sup>7</sup>

Based on the 1<sup>st</sup> National Conference on Sexual Health by Thai health Promotion Foundation<sup>8</sup>, learning about sexuality through sex education for sexual literacy is a challenge for the change of sexual education. This is derived

from the 21<sup>st</sup> century learning concept that aims to change the learners' skills in a manner that they are enabled to learn at any times or anywhere. Worldwide information is accessible without the limitation in the classroom setting alone. It is called "literacy" of which definition is not limited to the ability to read, write and do calculation. In addition, UNESCO7 extended the definition of literacy, so it also refers to the ability to identify, understand, interpret, create, communicate and compute in addition to producing printed and written materials. Literacy is defined as the ability to read, write, speak and think about main computing solutions, to work or live in a society for life goal achievement and to develop to the fullest potentials.<sup>9</sup> The World Bank, UNESCO and OECD recognize the importance of encouraging people to read, write or achieve literacy because the literacy rate of people is an index that reflects the quality and potentials of country development. According to the research, the people with lower education will have lower literacy rate as well<sup>10,11</sup>, while the illiteracy or low literacy level has the direct and indirect effects on health status of individuals.

It is obvious that the development of health literacy knowledge is critical to health outcomes. Accordingly, teens that develop sexual literacy can also protect themselves from sexual problems. However, the review literature found diverse research on sexual knowledge with different concepts and dimensions that are a measure of the diversity of health knowledge. Therefore, this study aimed to 1) synthesize concepts of sexual health literacy in adolescents, 2) determine components of measurement for evaluating sexual health literacy in adolescents, and 3) identify gap of knowledge of sexual health literacy in adolescents. Findings from this integrative review could be utilized in the development of a tool for measuring sexual literacy in adolescents.

## Methods

An integrative review was conducted as it allows for qualitative and quantitative approaches ensuring a variety of sources of evidence-based sexual literacy in adolescents were included. This review was guided by Whittemore and Knaff's integrative review framework to enhance the study rigor.<sup>12</sup> The framework consisted of five steps namely 1) specifying issues related to the review purpose, 2) searching the literature, 3) evaluating data from primary sources, 4) analyzing data, and 5) presenting the results.

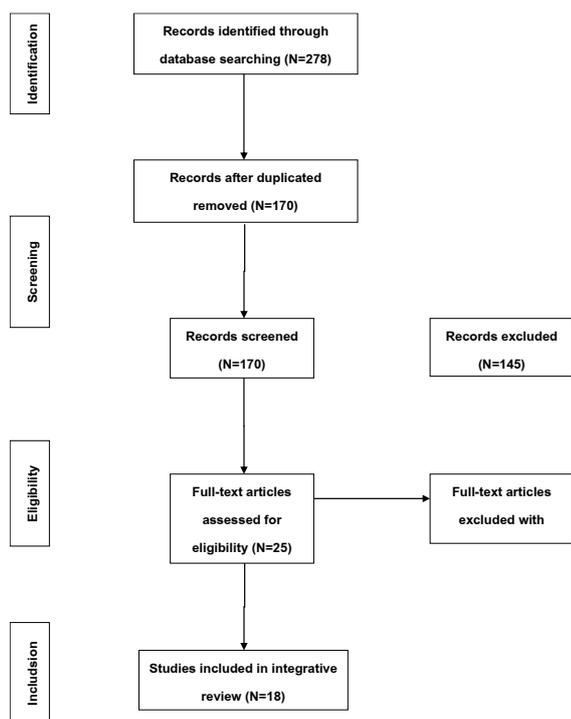
### 1) Specifying issues related to the review purpose

Sexual literacy is not only an interesting concept but also a challenge for the change of sex education based on the basis of 21<sup>st</sup> century learning concept. The learners' skill is enhanced to enable them to learn any times and anywhere. Worldwide information is accessible without limitation in the classroom setting alone. It is called "literacy" that leads to the modern way towards the promotion of sexual knowledge and of awareness of possible sex-related dangers. There are some confusion and ambiguity in the concept of sexual literacy in adolescents and measurement for evaluating sexual literacy in population. The findings from this integrative review could be utilized to develop a tool for measuring sexual literacy in adolescents. The knowledge not only enables early screening of those adolescents having sexual risk behaviors but also is used as a sexual health promotion to achieve a safe and suitable sexual behavior, and ultimately a good sexual health.

### 2) Searching the literature

The search has begun at the beginning with the use of objectives of concept analysis on the sexual literacy in adolescents as the literature review guideline. A literature search of articles and books in English and Thai language published between 2006 and 2016 was performed in the following databases: CINAHL, EBSCO Host, Science Direct, Cochrane Library, and Thai- Journal Citation Index. The keywords for searching included sexual literacy, health literacy, sexual health knowledge in adolescent, indicators of sexual health in adolescent and measurement of sexual literacy.

To be eligible as the study sample, the selected full-text studies had to contain contents of adolescents with characteristics specific in developing physiology and psychology and growing into different adults. In addition, the studies had to have an explicit focus on sexual literacy indicators. Lastly, studies with scales or questionnaires to measure sexual literacy or sexual knowledge were also eligible. These combined search strategies resulted in 18 articles meeting the inclusion criteria (Figure 1).



**Figure 1** Search strategy flowchart adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).<sup>13</sup>

### 3) Evaluating data from primary sources

The credit rating of data and evidences in this study was based on the Joanna Briggs Institute's method.<sup>14</sup> Levels of evidence could be summarized as follows: level 2.d (2 studies), level 3.e (6 studies), level 4.b (1 study), level 4.d (1 study), level 5.b (4 studies), and level 5.c (4 studies) (Table 1).

**Table 1** Level of evidence of primary sources.

Type of research	Number
Quasi-experiment research	
Comparison study	1
One-group pre-posttest design	1
Descriptive research	
Cross-sectional study	1
Survey design	2
Explanatory study	4
Qualitative research (case study)	1
Single expert opinion	4
Expert consensus	4
<b>Total</b>	<b>18</b>

### 4) Data analysis

Data from evidence-based practice were synthesized and categorized into various components and functional levels pertaining to health literacy.

## Results

### Concept of sexual health literacy in adolescents

From the literature review, sexual health literacy could be defined as advanced cognitive skills of critical thinking, analyzing, decision-making and problem-solving in sexual health related context combined with social skills of communication, and investigation on information leading to the protection of one's own sexual health and well-being (Table 2).<sup>15-21</sup>

**Table 2** Components and level of sexual literacy in adolescents.

Components	Important characteristics	Level
1) Access to the sexual health and sexual health service information	- To choose the source of health and health service information as well as to be knowledgeable of search methods and search engine usage.	Functional level
	- To search the correct information on health and health services.	
	- To verify the information from multiple sources in order to ascertain one's own understanding and information reliability for the application in self-care.	
2) Knowledge and understanding of sexual health	- To be knowledgeable of and to memorize the important health-related contents.	Functional level
	- To be able to explain the understanding of the implementation of determined plans.	
	- To be able to rationally analyze and compare health-related contents/ practices.	
3) Communication skill of sexual health	- To be able to communicate health-related knowledge through the speaking, reading and writing skills for enhancing the understanding of others.	Interaction level
	- To be able to convince others to accept health-related information.	
4) Self-management skill of sexual health	- To be able to formulate the targets and to plan the practices.	Interaction level
	- To be able to take actions according to the determined plans.	
	- To review and adjust self-practice for the acquisition of correct health behaviors.	
5) Decision making skill of sexual health	- To determine the alternatives and to deny/avoid or choose the practices for the realization of good health.	Critical level
	- To rationalize or analyze the advantages-disadvantages for denying/ avoiding/choosing the practices.	
6) Media literacy of sexual health	- To be able to indicate the alternatives with the least impact on one's self and others.	Critical level
	- To examine the correctness and reliability of health-related information presented by the media.	
	- To compare the media reception methods for avoiding risks which may occur to one's self and others.	
	- To evaluate the media statement for providing a guideline for the society or community.	

## Measurement for evaluating sexual health literacy in adolescents

According to the analysis of the studies related to measurements for evaluating sexual health literacy in adolescents from 2006 to 2016 both in Thailand and abroad, 3 studies were conducted in Europe, 3 in Asia and 3 in Thailand. The studies emphasized measuring the components of sexual health literacy in various dimensions including physiological changes in puberty (8 of 9 studies), followed by contraception (7 of 9 studies), sexually transmitted diseases (6 of 9 studies), sexuality (5 of 9 studies) and sexual intercourse (4 of 9 studies). These findings concur with life skill and sex education building policy of Thailand.<sup>22</sup> Moreover, in correspondence with WHO Guidelines on preventing early pregnancy in developing countries, there are recommendations on action and research for preventing early pregnancy, and increasing knowledge and understanding of the importance of pregnancy prevention.<sup>23</sup>

Regarding evidence-based approach, 18 studies that explained 6 components of sexual health literacy in adolescents could be classified three levels according to their components of sexual health. Moreover, it was found that significant components of the measurement for evaluating sexual literacy in adolescents were knowledge in physiology change in puberty, contraception, sexually transmitted diseases, sexuality, and sexual intercourse (Table 3).

## Gap in current research and published articles

Based on the evidence-based practice on the components of measurements for sexual health literacy in adolescents, 19 components were determined. Three studies were found in Thailand alone, but there are still many components used in varied and diverse measurements, depending on the use of concepts in sex education curriculum at any given institute or based on a review of related literature. Furthermore, these studies aimed only at evaluating health knowledge about preventing unplanned pregnancy for female Thai adolescents aged 15 - 21 years. These were used as measurements in female adolescents with sexual risk behaviors and unplanned pregnancy. None of these studies evaluated sexual literacy in adolescents with the components for standardized measurement at the national level in concurrence with the context of Thailand. They were able applicable for measurements both in women and men and in general

concept in order to evaluate sexual literacy before conducting surveillance and preventing unplanned pregnancy and STDs.

## Discussions and Conclusion

After analyzing 18 research papers, their reliable study process was found. The research quality was assessed using the Joanna Briggs Institute's criteria.<sup>14</sup> It was revealed that 2, 6, 2 and 8 studies adopted quasi-experimental, observational-analytic, observational-descriptive as well as expert opinion and bench research, respectively.

Furthermore, the integrative review framework to enhance rigor of Whitemore and Knaf's<sup>12</sup> demonstrated a process that analyzes crucial concepts and components of measurements for evaluating sexual health literacy in adolescents. This helped clarify those concepts and measurements, which still are ambiguous and confusing. The analysis results provided the following definitions of sexual health literacy in adolescents consisting of advance cognitive skills of critical thinking, analyzing, decision-making, and problem-solving in sexual health related context combined with social skills of communication, and investigation of information leading to protecting one's own sexual health and well-being. In addition, sexual health literacy was composed of six components including 1) access to the sexual health and sexual health service information, 2) knowledge of and understanding on sexual health, 3) communication skill for sexual health, 4) self-management skill for sexual health, 5) decision making skill for sexual health, and 6) media literacy of sexual health. Furthermore, the review literature indicated 3 levels of sexual health components. Firstly, the functional health literacy involves access to the information, knowledge and understanding on sexual health care and sexual health service. Meanwhile, the interactive health literacy refers to communication and self-management skills of sexual health. Lastly, the critical health literacy skills are decision making skill and media literacy of sexual health. It could be said that this agreed with health literacy definition, which is composed of perceptions and social skills in using various methods to access to, gain understanding of and apply information for personal health promotion and care based on characteristics of 6 components of health literacy.<sup>3,5,20</sup> Furthermore, health knowledge also benefits sexual health in terms of gender equality promotion, reduction of inter-gender gap in education,

**Table 3** Literature review on measurements for evaluating sexual health literacy in adolescents.

Source (Year)	Title	Author	Components of measurement																	
			Physiology change in puberty	Psychology change in puberty	Sexual intercourse	Pregnancy	Contraception	Sexually transmitted diseases	Sexuality	HIV	Religious rules regarding sexual issues	ANC	Age of consent	Prevent sexual harassment	Good attitude towards to sexual	Ability to manage sexual health	Sexual media literacy	Ability to communicate sexually	Accessibility to the information	Problem-solving skills
<sup>24</sup> Journal of Intellectual Disability Research (2006)	A revised sexual knowledge assessment tool for people with intellectual disabilities: Is sexual knowledge related to sexual offending behaviour?	Talbot T J, Langdon P E.	/	-	/	/	/	/	/	/	-	-	-	-	-	-	-	-	-	-
<sup>25</sup> Pediatrics & Child Health (2013)	Sexual knowledge of Canadian adolescents after completion of high school sexual education requirements	Kumar MM, Lim R, Langford C, Seabrook AJ, Speechley NK, Lynch T.	/	-	-	/	/	/	/	/	/	-	-	-	-	-	-	-	-	-
<sup>26</sup> International Scholarly Research Network ISRN Pediatrics (2012)	Sexual knowledge among high school students in Northwestern Iran	Malek A, Shafiee-Kandjani AR, Safaiyan A, Abbasi-Shokochi H.	/	-	-	-	/	/	/	-	-	/	-	-	-	-	-	-	-	-
<sup>27</sup> Biomedical Research (2011)	Knowledge and attitude about reproductive health among rural adolescent girls in Kuppam mandal: An intervention study	Mallesappa K, Krishna N, Nandini C.	/	-	/	/	/	/	/	-	-	-	-	-	-	-	-	-	-	-
<sup>28</sup> The European Journal of Contraception and Reproductive Health Care (2008)	Factors associated with Estonian adolescents' sexuality-related knowledge: Findings from the 1994 and 1999 KISS studies	Kai P, Kaja R, Mati R, Helle K.	/	-	/	-	/	/	/	/	/	-	-	/	-	-	-	-	-	-
<sup>29</sup> Health Care for Women International (2013)	Testing of the factor structure of the sexual health knowledge measure with young adolescent Taiwanese girls	Hsiang-chu P, Sheuan L, Wen-juan Y, Ming-yung L.	/	/	-	-	/	/	/	-	-	-	-	/	-	-	-	-	-	-
<sup>30</sup> Thammasat Medical Journal (2016)	Development of sexual health literacy indicators for early adolescent.	Nomsiri A, Sri Siri S, Wiratsetsin K, Malarat A.	/	-	-	-	-	-	/	-	-	-	-	/	/	/	/	/	/	/
<sup>31</sup> Journal Evaluation of Education Mahasarakham University (2015)	The development of sexual literacy indicators in teens	Boonthanom J.	-	-	-	-	-	-	/	-	-	-	-	-	/	-	-	-	/	/
<sup>21</sup> Health Education Division (2014)	Health literacy scale for unwanted pregnancy prevention of Thai female adolescents	Health Education Division	/	/	/	-	/	-	-	-	-	-	/	-	/	/	/	/	/	/
<b>Total</b>			<b>8</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>

improvement of future economic opportunities and poverty eradication.<sup>1</sup>

In addition, the synthesis results indicated 19 components of measurement for evaluation of sexual health literacy in adolescent. Despite the existence of many components to be used in different measurements, most of them emphasized on measuring physiological knowledge, change in puberty, contraception, sexually transmitted diseases, sexuality and sexual intercourse. It can thus be said that the adolescence period is the transition from childhood to adulthood<sup>32</sup> as a result of rapid physical changes in adolescents, especially their physiological and sexual hormone changes.<sup>33,34</sup> Higher natural sexual hormone function stimulates arousal, causing them to seek or experiment to meet their sexual needs.<sup>35</sup> Lovers or partners usually look for opportunities to stay closer to each other in order to mutually do their interested activities and satisfy their sexual emotion.<sup>36</sup> All these changes can cause sexual risk behaviors, e.g. unsafe sexual intercourse,

unplanned pregnancy and sexually transmitted diseases. Therefore, the evaluation of adolescents' knowledge should be based on age-appropriate sexual development to prevent possible sexually risk behaviors. This conformed universal sex education guideline and efficient programs overseas such as knowledge on sexually transmitted diseases, pregnancy, sexual orientation and contraception.<sup>37,38</sup> On contrary, the adolescents who lack the information on sexual matters and sexually transmitted diseases may likely have a higher opportunity to develop sexually risk behaviors.<sup>39</sup> Finally, the literature review revealed the gap of adolescents' sexual health literacy knowledge. Despite the existence of 19 components of measurement for evaluation of sexual health literacy in adolescents, only three studies in Thailand were found and components for measurement of sexual health literacy in Thai adolescents are unclear. In addition, there were no general studies on the evaluation of sexual health literacy in adolescents of both genders to evaluate their sexual

health literacy before conducting surveillance and prevention of unplanned pregnancy and STDs. Consequently, the research on the development of instruments for evaluation of sexual health literacy in Thai adolescents of both genders should be carried so that sexual health literacy development activities or programs within Thai adolescent's context could be initiated. As a result, health outcomes are used as sexual health promotion directed at achieving safe and suitable sexual behavior as well as good sexual health.

Based on our literature review and synthesis, practical and future research implications could be as follows. In nursing practice, the knowledge gained from this study could be helpful to nurses, health care providers, and teachers who play significant role in sex education provision. They will then be able to apply synthesized results into curriculum and course improvement as well as learning administration technique development in which all components of adolescent sexual literacy are included. This is to support the adolescents' acquisition of adequate sexual health literacy. The findings of this literature synthesis could be used as fundamental information to develop a measurement method for efficiently evaluating the sexual health literacy among adolescents. The findings of this study could also be used to create a conceptual framework for developing a measurement for evaluating the sexual health literacy of male and female adolescents.

Our study had some limitations. The empirical evidences were synthesized only from 2 experimental researches; therefore, the concepts still had unclear components, while the diversity depended on each country's context. In addition, there was no internationally-standardized tool for adolescent sexual health assessment.

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