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Sexual Education and Teens: A Study of the Effectiveness of Greater Lowell Area Public High Schools

Victoria Harkins

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Victoria Harkins is a senior majoring in Sociology with a concentration in Education and a minor in Psychology. Her research was conducted with funding from a 2011 Adrian Tinsley Program Summer Research Grant under the mentorship of Dr. Jodi Cohen of the Sociology Department. Her work was presented at the Adrian Tinsley Program Summer Symposium and was also accepted for presentation at the 2012 National Conference on Undergraduate Research. Upon graduating in May, Tori plans to attend graduate school for school counseling.

In 2008, the teen birth rate for Lowell, Massachusetts was 142.3% higher than the teen birth rate for all of Massachusetts. The State of Massachusetts does not mandate sexual education or education about sexually transmitted disease (STD) and human immunodeficiency virus/acquired immunodeficiency virus (HIV/AIDS), but instead provides curriculum recommendations. This study examines the health and sexual education curricula from nine public high schools in Greater Lowell, comparing their content to the recommendations of the Massachusetts Comprehensive Health Curriculum Framework. Data were collected using two methods: a survey of health educators, and a content analysis of 9th-12th grade health curricula. The results show that 78% of the reviewed curricula discuss abstinence and 100% discuss STDs and HIV, yet 67% of educators surveyed report that abstinence and contraceptives receive equal emphasis in their respective school's sexual education program. One-hundred percent of the curricula discussed pregnancy prevention, though only 56% discussed consequences of teen parenting. Finally, only 62% of educators reported that their respective school's health curriculum meets students' needs. These findings foster greater awareness of the current status of health and sexual education curricula in Greater Lowell, and offer insight into the growing issues that these communities face with teen pregnancy, STD and STI rates, and the overall sexual health of teens.

Introduction

"Teen Mom" and "16 and Pregnant" are popular MTV reality shows in which the lives of pregnant teens and new teenage mothers are filmed. These shows are representative of the media's depiction of teenage sexuality. According to L'Engle, Brown and Kenneavy (2006), "Media users are more likely to adopt behaviors depicted by characters who are perceived as attractive and realistic, and who are not punished but rewarded for their behavior" (p. 191). The reality shows reward teen moms for their pregnancies by making them television stars, and therefore teen viewers may perceive the mothers on television as role models. According to the Kaiser Family Foundation, Hoff, Greene, and Davis (2003), more than half of young people admit to having learned about sexual health and relationships from media sources such as television and movies. They also state that many females admit to using magazines as sources of sexual health and relationship information. However, television, movies and magazines often do not depict sexual health information accurately or in an age-appropriate manner. Because teens are

being misinformed by the media, the need for accurate sexual health information in appropriate settings is urgent.

According to Melby (2010), sexual education for teens is declining, with only 66 percent of males and 70 percent of females receiving formal education about birth control. Schools need to counteract the negative influence of the media by providing accurate and appropriate information on sexuality, because, as explained by Hampton, Watters, Jeffrey, and Smith (2005), students prefer to learn information about pregnancy-prevention and STI-prevention in school rather than from friends, parents, or clinics. Adolescents need accurate information so that they will make healthy sexual decisions; they should not have to risk being uninformed about sexual health by the media.

This research study focused on the Massachusetts Comprehensive Health Curriculum Framework for public high schools located in the Greater Lowell area. The effectiveness of each high school curriculum was examined as well as whether sexual education components of the Massachusetts Comprehensive Health Curriculum Framework standards were being met. The objective of this study was to learn how well Greater Lowell area public high school students were being informed about topics relating to sexual education. Research findings indicate that the Greater Lowell area high schools need to reevaluate and improve the reproductive/sexuality sections of their health curricula. These changes can impact the Greater Lowell area in a positive way by engaging teachers in working to provide more effective sexual education programs to the high school students and potentially lowering the teen birth rate in the future.

Literature Review

The United States records the highest teen pregnancy rate of all industrialized nations. About 20% of all sexually active girls and women ages 15-19 become pregnant annually (Chandra et al., 2008). According to Abma, Martinez, Mosher, and Dawson (2002), one-third of teens have not been formally taught about birth control, and, according to Kaiser Family Foundation et al. (2003), three-fourths of adolescents express a need for more information regarding sexual health. Most youth desire a stronger understanding of sexual health, so sexual education classes must acknowledge this.

Methods of Sexual Education

There are several different methods of teaching sexual education, but the two most common are comprehensive sexual education and abstinence-only sexual education. Comprehensive sexual education teaches the use of contraception for prevention of STDs and pregnancy as well as promotes abstinence, while abstinence-only sexual education censors information about contraception and focuses on teaching teenagers to abstain from sex (Alford, 2001).

In the United States, 27 states require abstinence to be stressed, while 18 states require information on contraception to be provided (Guttmacher Institute, 2011). Massachusetts does not require any sexual education, STD or HIV/AIDS education. When sexual education is taught in the public high schools, whether through abstinence-only or comprehensive sexual education, Massachusetts does not require the teachings to be medically accurate (Guttmacher Institute, 2011). Even though the United States as a whole places more emphasis on abstinence when teaching sexual education, "no abstinence-only-until-marriage program has been shown to help teens delay the initiation of sex or to protect themselves when they do initiate sex" (McKeon, 2006, p. 1). Abstinence-only sexual education programs also have been found to contain insufficient and inaccurate information about sexual health (Weiss, 2007). By teaching students incorrect information, the students are put at risk for unhealthy sexual behavior. According to Zanis (2005), students who are sexually active will continue to be sexually active even after taught to abstain. Furthermore, teaching abstinence to students who are already sexually active does not teach the adolescents how to properly protect their sexual health. Trenholm, et al. (2007), explain that students who participate in abstinence-only sexual education programs are no more likely than students who do not participate in any type of sexual education to abstain from sexual intercourse; the students in abstinence-only programs are just as likely to engage in unprotected sex, contract an STD, and become pregnant. According to The Foundation for AIDS Research (2007), abstinence-only-until-marriage programs "fail to address the fact that… marriage and faithfulness do not necessarily protect women and girls from HIV" (p. 2). While abstinence-only programs teach the health benefits of abstaining from sex, they cannot guarantee that students will abstain. Students in abstinence-only programs are not taught how to protect themselves and their personal health when they do ultimately decide to have sex.

In contrast, according to Alford (2001), comprehensive sexual education teaches that sexuality is a healthy part of life; the method includes information on abstinence, as well as information to prevent pregnancy, STDs, and HIV/AIDS. Comprehensive sexual education promotes adult sexual health (Sexuality Information and Education Council of the United States, 2004) and the adaptation and maintenance of healthy behaviors (American Cancer Society, 2007); it encourages sexual delay for those who are not sexually active, and promotes condom use for those who are (Massachusetts Department of Elementary and Secondary Education, 2007). According to

The Foundation for AIDS Research (2007), "the scientific evidence to date suggests that investing in comprehensive sexuality education that includes support for abstinence but also provides risk-reduction information would be a more effective HIV-prevention strategy for young people" (p. 4). Students are better informed through comprehensive sexual education, and are thereby more likely to become sexually healthy adults (Massachusetts Department of Elementary and Secondary Education, 2007).

First Sexual Experiences Set the Stage for Subsequent Experiences

The median age for first intercourse is 16.5; however, 9% of all sexually active adolescents had their first sexual intercourse at 13 years old or younger (Kaiser Family Foundation et al., 2003). According to Spriggs and Halpern (2008), the earlier an adolescent's sexual debut, the more likely contraception use will be lower, and pregnancy and STD infection rates will be higher. In addition, according to Kaiser Family Foundation et al. (2003), two-thirds of adolescents believe that delaying sex is "a nice idea, but nobody does" (p. 8). Adolescents who are sexually active are more likely than those who are not sexually active to report feeling pressured by their peers to have sex (Kaiser Family Foundation et al., 2003). Young people are misinformed about condoms and birth control; this is evident because one in six adolescents believe sex without a condom sometimes, "is not a big deal" (Kaiser Family Foundation et al., 2003, p. 4).

Female adolescents face particular adversity when becoming sexually active. Not only are they at risk of STDs and HIV/AIDS, but they also are at risk of becoming pregnant. According to the Kaiser Family Foundation et al. (2003), the younger the female is when she first has sex, "the greater the average age difference is likely to be between her and her partner" as well as "the greater the likelihood the experience was unwanted and/or non-voluntary" (p. 18). Females who have early sexual debuts are at a higher risk of pregnancy and early childbearing and they have a lower likelihood of postsecondary education (Spriggs and Halpern, 2008). They are also more likely than males to be subjected to more negative labeling by their peers.

Risks of Unprotected Sexual Activities

Students may be avoiding using condoms because they do not know how and/or do not understand the risks of unprotected sexual activity. Less than half of students are taught in school how to use a condom (Massachusetts Department of Elementary and Secondary Education, 2007). This may be because "no highly effective sex education program is eligible for federal funding because mandates prohibit educating youth about the benefits of condoms and contraception" (McKeon, 2006, p. 1). In other words, because schools are not given funding from the federal government to teach comprehensive sexual education, they more often choose an abstinence-only program that they will receive funding for.

The use of condoms by adolescents is important because four million adolescents in the United States contract an STD every year, and half of all new HIV infections are diagnosed in young people under the age of 25 (Kaiser Family Foundation et al., 2003). At the same time, the Centers for Disease Control and Prevention (2009) reports that the teaching of HIV/AIDS has decreased by almost 5% since 1997. The Kaiser Family Foundation et al. (2003) found that one-third of sexually active adolescents have never been tested for STDs because they are unsure what the test involves, or because they do not know where they can get tested. Teaching students the risk of contracting STDs and HIV/AIDS is important, as well as discussing local places where they can be tested.

Greater Lowell, Massachusetts

In 2008, the teen birth rate for Lowell, Massachusetts was 142.3 percent higher than the Massachusetts teen birth rate (FACTS: Lowell, 2010). The Greater Lowell Community Health Needs Assessment found that the "increase in the teen birth rate, after years of decline, signals that teens are not receiving adequate sex education and reproductive health services" (Lee, Ackerson, Flodin, & Slatin, 2010, p. 41). It is important for high school students to be provided updated and accurate sexual education information so that before engaging in sexual intercourse, teens will know how to properly protect themselves.

Methodology

This research analysis was completed with a mixed-methods design using two types of data. The first set of data is a content analysis of the 9th-12th grade health curricula from the public high schools in Greater Lowell: Billerica Memorial High School, Chelmsford High School, Dracut Senior High School, Greater Lowell Technical High School, Groton-Dunstable Regional High School, Lowell High School, Tewksbury High School, Tyngsboro High School, and Westford Academy. The second set of data was collected through a survey administered to the health educators of the public high schools in the study.

Setting

Lowell, Massachusetts has the 11th highest teen birth rate in Massachusetts: 48.7 births per 1,000 teenage girls and women. The state does not require sexual education nor for it to be medically accurate, but it does have curriculum standards within the Massachusetts Department of Elementary and Secondary Education. The 2010-2011 student enrollment at Lowell High School was 3,403. The student body was

approximately 37% White, 30% Asian, 24% Hispanic, and 9% Black. The four-year graduation rate was 69.8%. In 2010, the average expenditure per pupil in Lowell was $12,899; the Massachusetts state average was $13,055 per pupil.

Sample

The high schools included in this study are Billerica Memorial High School, Chelmsford High School, Dracut Senior High School, Greater Lowell Technical High School, Groton-Dunstable Regional High School, Innovation Academy Charter School, Lowell High School, Tewksbury High School, Tyngsboro High School, and Westford Academy. All public schools in the Greater Lowell area were contacted to participate in this research study. Innovation Academy Charter School was the only school that did not participate. Billerica Memorial High School, Dracut Senior High School, and Greater Lowell Technical High School each had four teachers participate in the survey; Tyngsboro High School and Westford Academy each had three teachers participate.

Research Design

Principals at each school were mailed a letter and then received a follow-up phone call and/or email. The principals made referrals to educators within the schools' respective health departments, and a meeting was set up with each of those health educators to discuss the sexual health curriculum. The curricula requested were for courses required for graduation, as well as other health electives. Courses required for graduation are mandatory courses the student must pass in order to graduate, while elective courses are those which the student may choose take; these courses are not required and are not taken by all students. Other classroom information, such as worksheets and PowerPoint presentations, were also provided by the health educators and analyzed for this study.

The first data collected in this study came from a content analysis of the 9th-12th grade health curricula from the public high schools in Greater Lowell. Out of the nine schools, four had their health curriculum posted online: Chelmsford High School, Groton-Dunstable Regional High School, Tewksbury High School, and Westford Academy. The remaining five schools' curricula were obtained through email or by meeting with the school's health educator. Meetings were also held with health educators from four schools: Billerica Memorial High School, Dracut Senior High School, Greater Lowell Technical High School, and Tyngsboro High School. Upon receiving each school/district's health curriculum, a comparison of each was undertaken with the Reproduction/Sexuality Strand in the Massachusetts Comprehensive Health Curriculum Framework.

The curricula were analyzed by using a checklist of topics recommended for sexual education within the Massachusetts Comprehensive Health Curriculum Framework. This checklist was used to compare each school's curriculum to the Massachusetts Comprehensive Health Curriculum Framework. Each school was represented by one column. An X in the column indicates that the school discussed that topic in their curriculum, while an O indicates that the topic was not found or was not directly discussed in the curriculum. Each curriculum was analyzed twice to make sure all topics were found. After comparing the schools to the Massachusetts Comprehensive Health Curriculum Framework, the schools were then compared to each other through graphs. This was done by utilizing the checklist and totaling the number of schools that discussed each topic for graduation-required courses (those with an X in their column). Each graph was broken up into categories based on the topic discussed. Then another graph was made that included schools that discussed each topic in both graduation-required courses and elective courses. The graphs were then overlapped to show the different topics discussed between schools that offered only graduation-required courses and schools that offered both graduation-required courses and elective courses. Both totals were then formed into a percentage (number of curricula that included topic divided by total number of curricula) and are illustrated in Tables A-C.

The second data set in this research was collected through the survey of health educators in the Greater Lowell public schools. During meetings with each health educator, the names and emails of the other educators within their school's health department were requested and obtained. Each educator was then sent an email with the link to the survey. The survey was set up online through Survey Monkey (an online survey service). The survey included opinion questions in which respondents were asked whether or not they believe that their school/district's health curriculum meets state standards and how they feel their school's curriculum meets the needs of students. Other questions asked how well specific topics are discussed, and what resources are used for sexual education. The survey was administered and collected during the final weeks of May and throughout the month of June, while schools were still in session. The schools that participated were Billerica Memorial High School, Dracut Senior High School, Tyngsboro High School, Greater Lowell Technical High School, and Westford Academy. Fourteen of the eighteen educators contacted participated in the survey, for a 78% response rate.

Lastly, in addition to the content analysis of the curricula and analysis of the survey results, meetings were scheduled at both the Lowell Community Health Center and Lowell General Hospital to learn what resources they have available

Table A. Physical & Sexual Health/Interpersonal Relationships

Topic in Massachusetts Health Curriculum Frameworks	Curricula of Graduation Required Courses	% Curricula of Graduation Required Courses	Curricula of Graduation Required Courses & Electives	% Curricula of Graduation Required Courses & Electives
Stages of male and female reproductive systems over life cycle	8	88.89%	8	88.89%
Abstinence	7	77.78%	7	77.78%
Identify sexual risks such as pregnancy, STI, sexual assault, HIV/AIDS	9	100%		
HIV prevention	9	100%	9	100%
STI/STD prevention	9	100%	9	100%
Sexual orientation	4	44.44%	4	44.44%
Influence of gender on identity/self-concept	5	55.56%	6	66.67%

Total number of curricula: 9

Table B. Pregnancy Health/Family Life

Topic in Massachusetts Health Curriculum Frameworks	Curricula of Graduation Required Courses	% Curricula of Graduation Required Courses	Curricula of Graduation Required Courses & Electives	% Curricula of Graduation Required Courses & Electives
Pregnancy Prevention	9	100%	9	100%
Pregnancy Signs	7	77.78%	7	77.78%
Prenatal Care	4	44.44%	6	66.67%
Examination for HIV/STI before conception	3	33.33%	4	44.44%
Risks and precautions of delivery with HIV/STI	3	33.33%	4	44.44%
Harmful effects of drug/alcohol substances on pregnant women and their unborn children	4	44.44%	5	55.56%
Birth defects	3	33.33%	4	44.44%
Steps for getting support or help for the family	4	44.44%	6	66.67%
Consequences of teen parenting	5	55.56%	6	66.67%
Consequences of teen parenting from teen mother perspective	1	11.11%	1	11.11%
Consequences of teen parenting from teen father perspective	2	22.22%	2	22.22%
Consequences of teen parenting from perspective of parents of the teens	1	11.11%	1	11.11%
Child rearing skills; emotional maturity needed to parent	3	33.33%	4	44.44%
Child rearing skills; financial resources needed to parent	4	44.44%	6	66.67%

Total number of curricula: 9

to the youth in the community. The health centers provided information about programs and events, and offered pamphlets and information directed toward the adolescent population of Greater Lowell. Both health centers provided information to pass on to the participating high schools, so that the health educators can have a better knowledge of resources provided in the Greater Lowell community.

Limitations

Some schools provided supplemental information in addition to the requested sexual education curriculum. The additional information allowed for a more thorough understanding of topics discussed within the curriculum. This may cause some curricula to appear more extensive with greater topic coverage and potentially more detail given to certain topics. An additional limitation is that this research cannot verify what is taught in the classroom because it only examines the curriculum materials, not the classroom teaching of those materials.

Results and Discussion

As shown in Table A, 77.78% of the curricula discuss abstinence, while 100% identify sexual risks, including HIV prevention and STI/STD prevention, illustrating that sexual risks are more widely incorporated in curricula than abstinence. 44.44% of the curricula discuss sexual orientation and 55.56% of required course curricula discuss the influence of gender on identity/self-concept. This may be explained by the fact that sexual orientation and gender identity are controversial topics in today's society; by not discussing either topic, schools can avoid having to choose a side in the controversy. There are no significant differences between curricula that include electives and curricula for only graduation-required courses.

Table B shows that 100% of curricula discuss pregnancy prevention; however, less than half of the curricula of the courses required for graduation discuss the steps to take after becoming pregnant, such as prenatal care, the harmful effects of drugs/alcohol on pregnant women and their unborn children, and steps for getting support or help for the family. This may be explained by a reluctance to admit that students may become pregnant, or by the belief that students will not become pregnant if pregnancy prevention is taught. The consequences of teen parenting are discussed in two-thirds of all curricula; however, less than 25% of all curricula discuss the consequences of teen parenting from the mother's, the father's, or the parents of the teens' perspectives. The difference between the topic of consequences of teen parenting and the topics of various perspectives may be attributed to the curricula providing an overview of the topic but not including an in-depth discussion of each sub-topic. The only significant differences between curricula that include electives and curricula for only graduation-required courses are the topics "steps for getting support or help for the family" and "identify child rearing skills-financial resources needed to parent." Each topic had a 22% variance. This variance may be attributed to family/life skills and child development electives which typically include pregnancy and family life topics.

As demonstrated in Table C, 66.67% of all curricula include the topic of date and acquaintance rape. However, less than one-third of all curricula discuss how to protect oneself from rape, the health consequences of rape, how to seek help from rape, strategies for preventing rape, strategies for dealing with rape, and date and acquaintance rape laws. The small percentage of curricula that discuss these topics may be attributed to the curricula providing an overview of the topic but not including an in-depth discussion of each sub-topic. The small percentage of curricula discussing these topics may also be attributed to a reluctance to admit that students may be raped, may have been raped, or may have to protect themselves from being raped. There are no significant differences between curricula that include electives and curricula for only graduation-required courses.

Table D reports that 91.7% of respondents believe that emphasis on abstinence is equal to or greater than contraceptives in their respective school's sexual education program. However, as shown in Table A, abstinence is not discussed in 22% of all curricula.

As shown in Table E, 92.9% of respondents believe that their respective school's health program meets or exceeds the expectations of the Massachusetts Department of Elementary and Secondary Education. However, as shown especially in Table B and Table C, many curricula do not discuss various topics recommended by the Massachusetts Department of Elementary and Secondary Education in the Massachusetts Comprehensive Health Curriculum Framework.

Table F reports that 61.6% of respondents believe the sexual education components of their respective school's/district's curricula are meeting the needs of the students. 23.1% of these respondents believe the needs are very effectively being met. However, a comparison of Table F with Table E shows a 31% difference between respondents who believe their respective curricula meet the needs of the students, and respondents who believe their respective curricula exceed/meet the expectations of the Massachusetts Department of Elementary and Secondary Education. This could be attributed to respondents believing that the Massachusetts Comprehensive Health Curriculum Framework does not meet the needs of the students. However,

Table C. Safety, Violence and Injury Prevention/Laws and Policies

Topic in Massachusetts Health Curriculum Frameworks	Curricula of Graduation Required Courses	% Curricula of Graduation Required Courses	Curricula of Graduation Required Courses & Electives	% Curricula of Graduation Required Courses & Electives
Date and acquaintance rape	6	66.67%	6	66.67%
How to protect oneself from rape	2	22.22%	2	22.22%
Health consequences of rape	1	11.11%	1	11.11%
How to seek help from rape	2	22.22%	3	33.33%
How to preventing rape	2	22.22%	2	22.22%
How to deal with rape	1	11.11%	1	11.11%
Mental health consequences sexual harassment	2	22.22%	3	33.33%
Harassment based on sexual orientation	1	11.11%	1	11.11%
Laws about reproductive services	1	11.11%	1	11.11%
Laws/court rulings about consensual sexual relationships and reproduction	1	11.11%	1	11.11%
Sexual harassment laws and legal consequences	2	22.22%	3	33.33%
Date and acquaintance rape laws	1	11.11%	1	11.11%

Total number of curricula: 9

Table D. Regarding your school's sexual education program, do you believe greater emphasis is given to abstinence over contraceptives?

Answer Options	Response Percent	Response Count
Yes, abstinence receives greater emphasis than contraceptives	25%	3
Abstinence and contraceptives receive equal emphasis	66.7%	8
No, contraception receives greater emphasis than abstinence	8.3%	1

Total Respondents: 12

Table E. Do you think your health program:

Answer Options	Response Percent
Exceeds the expectations of the Massachusetts Dept. of Ed	28.6%
Meets the expectations of the Massachusetts Dept. of Ed	64.3%
Does not meet the expectations of the Massachusetts Dept. of Ed	7.1%

Total Respondents: 14

Table F. How effective do you believe the sexual education components of your school's/district's health curriculum are in meeting the needs of the students?

Answer Options	Response Percent	Response Count
0 (not meeting needs)	15.4%	2
1	7.7%	1
2	7.7%	1
3	7.7%	1
4	38.5%	5
5 (very effectively meeting needs)	23.1%	3

Total Respondents: 13

as explained earlier, many curricula are not discussing various topics recommended by the Massachusetts Department of Elementary and Secondary Education in the Massachusetts Comprehensive Health Curriculum Framework; therefore possibly contributing to the lack of perceived effectiveness of the curricula.

Conclusion

This research study focused on the Massachusetts Comprehensive Health Curriculum Framework for public high schools located in the Greater Lowell area. The effectiveness of each high school curriculum was examined, as well as whether sexual education components of the Massachusetts Comprehensive Health Curriculum Framework standards are being met. Findings demonstrated that 92% of health educators in this study believe the emphasis on abstinence is equal to or greater than emphasis on contraceptives in their respective school's curricula; however, 22% of curricula did not include the topic of abstinence. When examining discussions of pregnancy prevention, 100% of curricula cover this, yet less than half of courses required for graduation discuss topics regarding pregnancy and becoming a parent. While 67% of curricula discuss the topics of date and acquaintance rape, less than one-third of curricula discuss how to protect oneself from rape and how to seek help from rape. It is these gaps in the curricula that potentially leave teens with incomplete information. By withholding such important information from teenagers, we are disadvantaging young lives and damaging generations to come. Students must learn how to properly protect themselves physically, mentally, and emotionally so that they will have every chance of living a long and healthy life. The better informed young minds are, the more likely they are to make healthy decisions that keep themselves and others safe.

The findings foster greater awareness of the current status of health and sexual education curricula in Greater Lowell, and offer insight into the growing issues that these communities face with teen pregnancy, STD and STI rates, and overall sexual health of teens. Further research on this topic in the future can track curricula improvements and/or changes. The hope is that with a greater awareness of curricular short-comings and the changing needs of teens today, Greater Lowell's Public Schools will move to offer their students more from the Massachusetts Comprehensive Health Curriculum Framework and in doing so will offer students a healthier future.

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