

Development and Validation of the Sex Education Confidence Scale (SECS)

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Abstract

Sex education is a highly discussed, controversial topic in the literature. Instruments measuring knowledge about sexual health exist, but none measure how comfortable educators are teaching sex education. The purpose of this study was the development and validation of items for the Sex Education Confidence Scale (SECS). This Scale was intended for use with teacher preparation students and practicing teachers in health and physical education. Overall, the psychometrics of the SECS were quite sound, with evidence for internal structure demonstrated through strong factor loadings. Strong reliability estimates were evident on the three scales across a representative and diverse sample.

Background

Sex education is a controversial topic in today's society. Americans have a variety of views in regard to the type of curriculum taught, with 82% supporting programs teaching both abstinence and additional pregnancy-prevention methods (Bleakley, Hennessey, & Fishbein, 2006). Current curriculums may be taught by a variety of individuals including school nurses, community educators, and teachers of various disciplines. One logical choice may be the health or physical education teacher.

Many instruments have been created to measure knowledge about sexual health, but few (i.e. Alldred, David, & Smith, 2003) measure how comfortable educators are teaching this subject. Several youth and college sexual health surveys (i.e. International Communications Research, 2008; Olsen & Weed, 1991; Synovitz et al., 2002; YouthNet UK, 2008) determine the knowledge, attitudes, and/or practices of adolescents. Several more surveys (i.e. Horner et al., 1994; Sulak et al., 2005) reveal the knowledge and/or attitudes of adults toward adolescents and the sex-related issues they face. According to Lester and Allan (2006), "teenagers need more comprehensive sex education at an earlier age, delivered by individuals who are expert in the subject and comfortable in its delivery" (p. 315).

Sulak et al. (2005) administered a survey to 3605 school employees, parents, health care professionals, teachers, and other adults. The researchers sought to determine their knowledge about, and attitudes toward, adolescent sexual activity. The participants were given 10 knowledge questions and three opinion questions. After a 62-session educational series, the participants exhibited increased knowledge about adolescent sexual activity and exhibited more positive attitudes toward delaying sexual activity in adolescence.

Pokharel, Kulczycki, and Shakya (2006) conducted a study to determine the extent to which sex education was taught in Nepal. The researchers also examined educators' attitudes toward teaching sensitive topics. After gathering information from 451 students through focus groups, they concluded that students were not receiving the basic sex education required. They also found that educators were uncomfortable teaching sensitive topics and/or lacked the general skills to teach them.

Some instruments (i.e. Sulak et al., 2005) have been created to survey adults before and after sex education workshops to determine changes in knowledge and attitudes; but few (i.e. McFayden, 2004) have been developed to target the instructors who would actually be teaching sex education. In Scotland, school nurses are the major source of sex education and teach most sex education classes in schools. McFayden (2004) developed a questionnaire along with a University of Glasgow expert on sexual and reproductive health. The researcher administered that questionnaire along with an adapted version of the SHARE (sexual health and relationships) questionnaire to 263 female school nurses in Scotland. One-hundred-and-seventy questionnaires were completed and returned. One-hundred-and-sixty-seven were analyzed. The majority of respondents were over 40, and 75% currently delivered some form of sex education. The researcher found "many nurses in this study do not have the skills that are

necessary to deliver quality sex education to school pupils” (p. 118). The researcher also found that many had little training in sex education and lacked “confidence in this area of practice. Of those who do, the extent and content is questionable” (p. 118-119). While parents overwhelmingly support comprehensive sex education in schools, the preparation of individuals who teach sex education and their level of comfort are pertinent issues.

The Sex Education Confidence Scale (SECS) was developed to determine current knowledge and confidence in teaching sexual health topics. The Scale was targeted toward elementary, secondary, and college health and physical education teachers, as well as those who were training to become teachers.

Purpose

The purpose of this study was to develop and validate the items of the Sex Education Confidence Scale (SECS) for use with teacher preparation students and practicing teachers in health and physical education.

Methods

Development of Items for the Sex Education Confidence Scale (SECS).

The generation of items for the Sex Education Confidence Scale (SECS) was determined by three separate domains: demographics, knowledge questions, and confidence questions. Demographic questions were compiled based on research of factors that may affect knowledge and attitudes related to sex. Knowledge questions were compiled from several websites and health textbooks. Confidence questions were created from analyzing current, timely, sexual health topics as well as current controversial topics in sexual health. All three domains were developed by two doctoral-level teachers and researchers who taught in teacher preparation programs.

Participants

The SECS was administered to current and future teachers in health, physical education, and related fields: (a) college students preparing to be health and physical education teachers; (b) current K-12 health and physical educators (HPE); and (c) university faculty in departments of health, physical education, exercise science, kinesiology, and related fields. Participants were 325 volunteers from across the United States.

Instrumentation

The SECS contained 22 topics related to sexual health. Participants were asked to respond to each item regarding confidence in their own ability to talk about the topic in the context of classroom teaching, using the following 7-point Likert scale: 7-very confident, including leading discussion and answering questions; 6-confident, may need to use lecture style; 5-confident with a little time for preparation; 4-not sure I could do it; 3-would not want to teach it; 2-do not think it is an appropriate topic; and 1-prefer not to answer.

Procedures

Responses were collected online for 12 weeks. During that time, no changes were made to the survey itself and data were not analyzed. The survey was created in surveymonkey.com, a website designed to collect information via questionnaire. All data were collected anonymously, and all responses were recorded in a database that the researchers downloaded for data analysis at the end of the collection period.

Results

Demographic Data

Data were gathered from 325 participants from across the United States. Responses primarily came from university faculty; undergraduate and graduate students; and practitioners (teachers) whose job or education focused on health, physical education, or a closely related field. Males and females were almost equally represented as undergraduates; but females were more highly represented in the graduate, K-12 health and physical educators (HPE), and university faculty. The majority of students were single, while the majority of teachers and university faculty were married. The majority of participants had no children. Further breakdown of demographic information is depicted in Table 1.

Table 1.

Demographic Information on All Individuals Who Completed the Sex Education Confidence Scale (SECS)

	Undergrad (n=174)	Grad (n=23)	K-12 HPE (n=90)	Univ faculty (n=27)
Males	45%	26%	24	17
Females	55%	74%	76	83
Married	16%	0%	60	69
Single	75%	70%	30	17
Divorced	5%	n/a	n/a	5
Domestic Partnership	3%	n/a	3	3
Children at home	18%	13%	34	34
Grown children	2%	n/a	12	17
No children	80%	87%	54	48

The majority of undergraduate student respondents were health and kinesiology majors. Most graduate students were in a master's program; and the majority of professionals were K – 12 health and physical education teachers. Further information on participants' occupations is depicted in Table 2.

Table 2.

Occupational Data on All Individuals Who Completed the Sex Education Confidence Scale (SECS)

	Undergraduate students (n=174)	Graduate students (n=23)	Professionals (n=128)
Health/Kinesiology	75%	Doctorate	35%
			Medical profession
Education	9%	Masters	61%
			Classroom teacher
Other	17%	Other	4%
			K-12 HPE
			70%
			University faculty (HPE)
			21%

Evidence Based on Test Content

Knowledge items were developed based on information in current health textbooks and educational websites. The researchers wanted to ascertain how knowledgeable the participants' were about sexual health. Confidence items were developed based on current controversial topics in sex education. These items were gleaned from a health textbook (Taverner, 2006), current issues in today's media, and current research (Ahern & Kiehl, 2006; Kaestle, 2006; Lynch, 2002; McKay, 2004; Miller, 2007). The researchers wanted to determine how comfortable the participants were discussing these topics.

Evidence of Internal Structure

An exploratory factor analysis was conducted on the 22 confidence items. The principal factor method was used to extract the factors followed by a promax rotation. Three factors with eigen values greater than 1.0 were identified by the scree test, so these factors were retained for the rotation.

Factor loadings greater than .40 on a given factor and less than .40 on the other factors were used for interpretation on the rotated factor pattern matrix. Eleven items were found to load on the first factor, which was subsequently labeled the knowledge factor. Six items loaded on the second factor, which was labeled the controversial topics subscale. Five items loaded on the third factor, which was labeled the other sexual activity factor. The scales were all highly positively correlated: (a) knowledge to controversial topics ($r = .72$); (b) knowledge to other sexual activity ($r =$

.72); and (c) other sexual activity to controversial topics ($r = .65$). Items and corresponding factor loadings are presented in Table 3. Given the high intercorrelations of the scales, items that load on one factor were also correlated to other factors as evidenced by the factor structure.

Table 3.
Confidence Items and Corresponding Factor Loadings from the Rotated Factor Pattern Matrix and Factor Structure Matrix

Items	Factor Patterns			Factor Loadings		
	Knowledge	Controversial Topics	Other Sexual Activity	Knowledge	Controversial Topics	Other Sexual Activity
A&P of the sex organs	0.97	-0.26	0.11	0.86	0.48	0.56
Pregnancy and birth	0.99	-0.23	0.05	0.86	0.49	0.54
Taking care of sexual health	0.89	-0.08	0.07	0.88	0.58	0.59
HIV/AIDS	0.94	-0.07	-0.05	0.85	0.54	0.51
STI's other than HIV/AIDS	0.85	0.01	0.03	0.87	0.62	0.58
Pregnancy prevention methods	0.62	0.38	-0.10	0.82	0.74	0.55
Buying and using contraceptives	0.42	0.45	0.03	0.75	0.76	0.59
Abstinence	0.67	0.24	-0.06	0.80	0.67	0.53
Getting tested for STI's/STD's	0.72	0.21	-0.03	0.84	0.68	0.57
Emotional issues related to sex	0.61	0.32	-0.03	0.81	0.73	0.57
How to discuss sex with partner	0.50	0.40	0.01	0.78	0.75	0.59
Talking to parents about sex	0.28	0.52	0.14	0.73	0.80	0.66
Abortion	-0.14	0.99	0.01	0.55	0.90	0.56
Adoption	-0.04	0.99	-0.14	0.56	0.87	0.48
Homosexuality	-0.19	0.81	0.20	0.50	0.81	0.61
Sex in other cultures	-0.02	0.72	0.13	0.56	0.79	0.58
Sexual choices based on values	0.28	0.44	0.23	0.74	0.79	0.70
Oral sex	0.02	0.03	0.91	0.63	0.64	0.94
Masturbation	-0.04	0.06	0.94	0.61	0.65	0.95
Anal sex	-0.12	0.10	0.94	0.55	0.63	0.93
Heavy petting	0.11	-0.07	0.93	0.66	0.60	0.95
Kissing	0.20	-0.03	0.79	0.69	0.63	0.90

Note. $N = 325$

Reliability

Cronbach's alpha was used to compute reliability coefficients for the three subscales derived from the exploratory factor analysis. Reliability estimates were strong for all three scales: (a) knowledge scale $\alpha = .96$; (b) controversial topics scale $\alpha = .92$; and (c) other sexual activity scale $\alpha = .97$.

Discussion

The primary purpose of the current study was to develop and validate the Sex Education Confidence Scale (SECS) for use with teacher preparation students and practicing teachers in health and physical education. Administrators, clinicians, and researchers could potentially benefit from accessing an instrument specifically created to assess knowledge and attitudes of individuals who teach or may teach sex education. The Scale consists of three domains: (a) demographic information; (b) true/false and multiple-choice questions designed to assess knowledge about sexual health issues; and (c) questions on a 7-point Likert scale regarding confidence in teaching sexual health topics. Overall, the psychometrics of the SECS are quite sound, with evidence for internal structure demonstrated through strong factor loadings. Strong reliability estimates were evident on the three scales across a representative and diverse sample. Since many individuals teaching sex education may be comfortable covering basic physiology of sex and uncomfortable teaching about more sensitive issues (Pokharel et al, 2006; Price et al., 2003), the SECS may be useful to screen sex educators for their knowledge and willingness to cover a required sex education curriculum. School administrators could then administer more training, if needed, or use the tool to determine who would be most suited to teach this subject. The SECS could also be used to make educators aware of their shortcomings related to sex education.

Limitations

Despite the positive results, limitations of the SECS are apparent. Some variability may exist among different ethnic groups, as this information was not collected. Also, the majority of respondents were female. More research should be conducted to gain information from male respondents as they may have different attitudes toward teaching sex education. The number of undergraduate students far outnumbered any other group, and K-12 health and physical educators outnumbered other professionals 2 to 1. All information was obtained through self-report which may be vulnerable to inaccuracy due to discomfort with disclosure, imprecise recall, or lack of information. Further research is needed to address these issues.

Conclusion

According to the results of this study, the Sex Education Confidence Scale (SECS) should be useful in screening school employees who may teach sex education to determine their knowledge and willingness to cover a required sex education curriculum. The psychometrics of the SECS were reliable with evidence for internal structure. Strong reliability estimates were evident on the three scales across a representative and diverse sample. Further research with larger, more diverse samples is needed.

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