



# Effectiveness of Sexual Education Based on Mindfulness Training and Islamic Teachings in Improving Female Adolescents' Self-Esteem

Fatemeh Azarkhordad <sup>1,\*</sup>, Hossein Jenaabadi <sup>2</sup> and Vali Mehdinezhad <sup>3</sup>

<sup>1</sup>Department of Psychology, Zahedan Branch, Islamic Azad University, Zahedan, Iran

<sup>2</sup>Professor, Department of Psychology, Faculty of Education and Psychology, University of Sistan and Baluchestan, Zahedan, Iran

<sup>3</sup>Department of Education, Faculty of Education and Psychology, University of Sistan and Baluchestan, Zahedan, Iran

\*Corresponding author: Department of Psychology, Zahedan Branch, Islamic Azad University, Zahedan, Iran. Email: azarkhordadf@gmail.com

Received 2019 February 17; Revised 2019 October 30; Accepted 2019 December 10.

## Abstract

**Background:** Today, sexual education as an instinctive need is a lost circle in the educational system of our society.

**Objectives:** This research was carried out to investigate the effectiveness of sexual education based on mindfulness and Islamic teachings in increasing self-esteem and its related components among female adolescents.

**Methods:** This quasi-experimental research was conducted using a pretest-posttest design with a control group. A total of 60 subjects were selected by cluster random sampling method and assigned into three groups of 20 individuals. The groups were tested and matched before the intervention. Then, the experimental groups were trained using mindfulness and Islamic teaching-based sexual education in eight sessions of 90 min. The Pops' self-esteem questionnaire was used for data collection. The reliability of the questionnaire was obtained between 0.51 and 0.75 and the validity of the questionnaire was confirmed by internal consistency.

**Results:** The mean score was higher in the Islamic teachings group than in the other groups and the mean score of the mindfulness group was higher than that of the control group. Therefore, research hypotheses were confirmed regarding the effectiveness of sexual education based on mindfulness and Islamic teachings in increasing self-esteem and its components. The results showed that mindfulness and Islamic teaching-based sexual education are effective in increasing the components of adolescents' self-esteem.

**Conclusions:** Therefore, it can be concluded that the implementation of sexual education is essential in the curriculum context.

**Keywords:** Sexual Education, Islamic Teachings, Mindfulness, Self-Esteem, Female Adolescents

## 1. Background

Rapid physical, cognitive, and psychosocial changes in adolescence may involve the individual with a wide range of needs. Adolescents may experience severely reduced self-esteem and self-confidence in this period, leading to specific problems and needs (1). Self-esteem is defined as the trust in your ability to think and adapt to challenges, trust in your right to succeed and be happy, feeling worthy and competent, expressing your needs and desires, and achieving the result of your efforts.

Biological, psychological, and interpersonal experiences and environmental and cultural factors are among the factors influencing the adolescents' self-esteem (2). Research results in Iran show that more than 60% of high school female students have moderate and low self-esteem (3-5). Also, the results of the pretest of the present study showed that more than 95% of female students had moderate and low self-esteem.

Low self-esteem leads to behaviors such as loss of performance, feeling of incompetent, loneliness, drug abuse,

avoidance of reality, and self-centered behaviors. There is a strong significant relationship between low self-esteem and depression (6). Increasing adolescents' self-esteem is one of the predisposing and preventing factors in relation to social harm such as non-suicidal self-injury. Also, increasing adolescents' self-esteem leads to the prevention of alcohol consumption and the use of drugs such as marijuana and cigarette smoking (7). Puberty changes and sexual development during adolescence are associated with low self-esteem and the lack of attention to them will cause serious damages in the future. The results of various studies have emphasized sexual education, in accordance with gender and age, to prevent sexual deviations and improve the health condition of the community and individuals (8). Attention to the sexual and reproductive health of children and adolescents has been identified as an important issue in studies (9-12). There are different opinions for sexual education, including educating adolescents at puberty. Prophets and scholars have emphasized sexual education and they have focused on this type of education in different

periods. Psychologists such as Freud, Jung, Adler, Horney, Forlere, and Frankl have made different views about sexual issues. Freud believes that libido is not just related to adulthood and the sexual personality of the child is formed in the first five years of life consisting of five stages; also, sexual pleasure at each stage is concentrated at one point of the body. An appropriate level of child's satisfaction at any stage does not pose a problem, but excess or disability at each stage will result in the child's instability and lack of sexual progress. Sullivan introduces sexual desire as lust, manifesting itself with the tendency of a person to enjoy. He considers lust a powerful movement during adolescence, reducing the sense of value and self-esteem (13).

In fact, from the Islamic point of view, the purpose of sex education is to educate the individual in a way that he can recognize legitimate sexual practices and forbidden things at puberty, become aware of marital life and wife duties, and be able to avoid unrestrained and Islamic chastity, which is a kind of temperament. Educating sexual issues in the right way in each period, along with learning about values and religious norms and developing control skills, leads people toward goodness and makes them avoid deviation; it also causes responsibility, awareness, and correct understanding of sexual matters, delays sexual intercourse and decreases the pregnancy rate and the incidence of sexual and mental diseases in adolescents (9, 14).

Mindfulness is referred to as a set of skills that are useful for physical and mental health (14). Mindfulness-based interventions aim at reducing the psychological symptoms and distress and increasing the quality of life and psychological well-being and they are increasingly used for improving both mental and physical health (15, 16). This approach was introduced in the 1970s by Cabat Zain as the third-wave behavioral therapies and continued in the 1990s with the study by Linhan (1993) (17).

Considering available evidence and the results of prior research, it can be said that the weakness in the educational system about the appropriate model of sexual education for students has opposing effects on their individual and social dimensions (18-20).

## 2. Objectives

This study was carried out to investigate the effectiveness of sexual education based on mindfulness and religious teachings in increasing self-esteem and its components among female adolescents.

## 3. Methods

This quasi-experimental study was conducted using a pretest-posttest design with a control group.

### 3.1. Participants

The statistical population included all female adolescents aged 12 - 15 years living in Zahedan, Iran, selected through a cluster random sampling method. A sample consisting of 60 female adolescents was matched and they were randomly assigned to experimental and control groups (20 subjects per each group). Before project implementation, informed consent was obtained from all participants and those with complete consent forms participated in the study.

The inclusion criteria were adolescents with low self-esteem aged 12 - 15 years. The exclusion criteria were absence from more than one training session.

### 3.2. Instruments

The Pops' self-esteem questionnaire was used as the research tool, consisting of 60 questions measuring five types of self-esteem including general, educational, physical, family, and social self-esteem.

The reliability of the questionnaire was obtained as 0.86 and 0.94 in the studies by Akbari and Arozaman and Ghafari and Ramezani, respectively. The validity of the questionnaire was obtained between 0.52 and 0.83 in the study by Ghaffari and Ramezani. In this study, Cronbach's alpha coefficient was obtained as 0.75 for the whole questionnaire and 0.72, 0.51, 0.61, 0.67, and 0.75 for general, educational, social, physical, and family sub-types of self-esteem, respectively. The validity of the questionnaire was confirmed by internal consistency. The self-esteem test was performed before the intervention in the groups and its results showed low self-esteem among adolescents.

### 3.3. Procedure

Since there was no educational curriculum for adolescents' sexual education in Iran, the researchers decided to implement this course using two methods of mindfulness and Islamic teachings. The first experimental group received mindfulness training for eight sessions of 90 min based on the Kabat-Zinns protocol (1992). Weekly meetings were held for eight sessions of 90 min and the content of mindfulness training was taught to focus on the present. Decentralization was the goal of mindfulness sessions formed on past and future thoughts and it was attempted to focus on emotions and thoughts at the present moment along with self-awareness, relaxation training, and teaching the way of breathing and guiding it to all parts of the body and meditation (Table 1). At the same time, the second group received training based on Islamic teachings for eight sessions of 90 min based on the Islamic Scientists protocol (Faghihi, 2008; Mazidi, Khedmatiyani, 2018) (Table 2) (21). The educational content was prepared

based on the teachings related to adolescents' sexual education in Islam. Adolescents acquired the knowledge about puberty issues and features, menstrual syndrome, sexual roles, gender roles, the purpose of forming a family, the role of women in strengthening the foundation of the family, the ways to control sexual desire, sexual immorality consequences, and religious orders in puberty. The control group did not receive any training. After the selection of participants, they were asked to complete all the questionnaires in the pretest and posttest. Then, the data were analyzed by SPSS version 20 software using descriptive statistics including mean and standard deviation and inferential statistics including multivariate covariance analysis.

**Table 1.** Content Summary of Mindfulness Education Sessions

	Summary
<b>Session 1</b>	Introducing participants, performing a pretest and a brief description of eight sessions; teaching the technique of eating raisins, attending moments, and expanding it to other activities; giving homework
<b>Session 2</b>	Training the breathing and guiding it around the body; talking about the feelings of these exercises. Presentation of homework
<b>Session 3</b>	Scanning the body in a lying state and discussing this experience; discussing the difference between thoughts and feelings.
<b>Session 4</b>	Sitting; tasks: mindfulness, a pleasant event, sitting meditating and scanning of the body and mindful of a daily activity.
<b>Session 5</b>	Exercising and focusing on feelings, attention to exercise at the moment, attention to breathing and attention to the body.
<b>Session 6</b>	Performing meditation; practicing self-admission and self-feelings; tasks: seated meditation and positive experience of a relationship with admission.
<b>Session 7</b>	Practicing the breathing space. A negative experience of a position with acceptance, without judgment, practice of not judging emotions and events
<b>Session 8</b>	Performing a combination of meditation and knowledge about everything that comes to mind at the moment; reviewing experiences and performing posttest

#### 4. Results

According to the research design, multivariate covariance analysis (MANCOVA) was used to control the effect of the pretest. The independent variable was two-level and the dependent variable was multi-level. Therefore, the first step included the evaluation of this method's assumptions. To survey the normality of distribution, the Kolmogorov-Smirnov and Shapiro-Wilk tests were used at  $P > 0.05$ . Based on the normality of distribution, the null hypothesis was confirmed with respect to the homogeneity of variance using the Leven test at  $P > 0.05$ . The test results of MBox (MBox = 19.32,  $P = 0.23$ ) also confirmed the homogeneity of variance-covariance matrices. To confirm the homogeneity of the regression line slope, the F value

**Table 2.** Content Summary of Training Sessions on Sexual Education Based on Islamic Teachings

	Summary
<b>Session 1</b>	Adolescence and developmental changes due to puberty and menstrual syndrome
<b>Session 2</b>	Explaining the psychological characteristics and adolescent needs
<b>Session 3</b>	Gender patterning, sexual identity and acceptance of sexual identity.
<b>Session 4</b>	Familiarity with gender roles and preparation for acceptance of sexual roles.
<b>Session 5</b>	The importance of forming a family, the purpose of sexual desire, and its desired direction.
<b>Session 6</b>	Consequences of unobligation and the ways of sexual desire control
<b>Session 7</b>	The need for attention and self-esteem
<b>Session 8</b>	The need to follow religious orders and the expression of some adolescent religious sentences

was considered as 0.89 at  $P < 0.05$ . To survey the linearity of the regression slope, the F value was considered as 18.8 at  $P = 0.05$ . After confirming the assumptions, the results of multivariate covariance analysis showed the significant effect of independent variables in the groups (Table 3). There was a significant difference between the scores of self-esteem and its components between the groups. The effect size also showed that about 25% of variations in the dependent variables were due to the intervention, which was a very large effect size (small = 0.01, average = 0.06, and large = 14.1), according to Cohen's guidelines (1988). The statistical power value (0.7) also showed the adequacy of the sample size in generalizing the results and verifying or rejecting the research hypotheses.

As shown in Table 4, the number of participants in each group was 20 people. The mean scores of self-esteem and all its components were found to be higher in the mindfulness and Islamic teaching groups than in the control group in the posttest.

Regarding the significant main effect of the group, covariance analysis (ANCOVA) was performed as a follow-up test on each of the dependent variables. To reduce the type 1 error, it was necessary to use the Bonferroni correction. Then, by dividing the significance level (0.05) by the number of dependent variables, the acceptable level was measured as 0.0083. The results presented in Table 5 show that the groups' scores on all dependent variables had significant differences, except for the family self-esteem score ( $P < 0.0083$ ). The comparison of the study groups showed that the mean score of all dependent variables was higher in the Islamic teachings group (202.1) than in other groups and the mean score of the mindfulness group (11.43) was higher than that of the control group (80). Therefore, the research hypotheses were confirmed based on the effect

**Table 3.** Results of Covariance Analysis of Pillai's Trace and Wilks' Lambda

	Value	F	df	Error df	Partial Eta Squared	Sig.
<b>Pillai's trace</b>	51	6.2	12	90	0.25	0.005
<b>Wilks' lambda</b>	51	8.2	12	88	0.28	0.002

**Table 4.** Comparison of Mean Scores of Self-Esteem and its Components in Pretest and Posttest (N = 20)<sup>a</sup>

Self-Esteem Types Groups	Family	Social	Physical	Educational	General	Self-esteem
<b>Mindfulness</b>						
Pretest	3.1 ± 5.1	1.1 ± 4.1	2.1 ± 2.2	3.2 ± 6.1	5.4 ± 3.5	4.8 ± 3.4
Posttest	5.1 ± 2.4	3.2 ± 2.3	3.1 ± 3	7.1 ± 4.5	8.2 ± 3.2	7.4 ± 3.5
<b>Islamic Teachings</b>						
Pretest	5.1 ± 2.1	3.1 ± 3.1	1.1 ± 2.2	3.1 ± 7.1	3.4 ± 3.8	3.7 ± 4.1
Posttest	8.2 ± 2.4	8.2 ± 1.3	4.1 ± 2.1	9.3 ± 3	8.9 ± 3.1	8.4 ± 3.6
<b>Control</b>						
Pretest	4.1 ± 4.1	4.1 ± 5.1	6.1 ± 3.2	3.6 ± 3	3.6 ± 5.2	6.4 ± 3.2
Posttest	4.2 ± 5.4	3.1 ± 6.3	3.2 ± 2.3	4.2 ± 2	3.8 ± 5.6	6.2 ± 5.6

<sup>a</sup>Values are expressed as man ± SD.

of mindfulness and Islamic teaching-based sexual education on increasing self-esteem and its components. The results obtained from ANCOVA in the MANCOVA and the paired comparison of significant differences are presented in Table 6, showing a significant difference in the scores of self-esteem and all its components between the Islamic teachings and mindfulness groups and the control group. Also, there was a significant difference in the general, physical, and social components of self-esteem between the two experimental groups. Although there was no significant difference in the educational and family sub-types of self-esteem between the two experimental groups, the mean scores were higher in the Islamic teachings group.

### 5. Discussion

Adolescence and its changes for girls are associated with a lack of self-esteem, anxiety, and a tendency toward the opposite sex. Comprehensive sexual education can help children and adolescents to adapt the complex and critical issues within a framework of health, social, and ethical issues. Therefore, achieving a better life and self-care in order to prevent high risk sexual behaviors in this period requires adolescents to be aware of puberty issues (22, 23) The period before puberty is a perfect time for parents to transmit prevention messages regarding sexual risks to their children before starting sexual activity (23, 24).

Research results have shown that the educational environment has an effect on educational outcomes such as

academic achievement, well-being, and self-esteem, especially in girls (14, 25). Most adolescents acquire sexual information from inappropriate sources and through inaccurate methods and they do not have enough information about it (22, 26). Therefore, the present study, for the first time, focused on this issue in Iran and implemented sexual education for adolescents aged 12 - 15 years. The results obtained concerning the first research hypothesis showed that mindfulness-based sexual education had a significant effect on increasing the adolescent girls' self-esteem and had a positive effect on its components including general, educational, physical, social, and family self-esteem; thus, the first research hypothesis was confirmed. Various studies have confirmed the effectiveness of mindfulness in various variables. The results of the studies showed that mindfulness interventions had an effect on self-esteem and reduced social anxiety in adolescents (27). Also, Veringa et al. (16) reported the effectiveness of mindfulness training in children's mental health. Self-esteem is one of the mental health components directly related to timely sexual education. In this study, mindfulness-based sexual education increased self-esteem, which was consistent with the results of a study by Ebrahiminejad et al. (27). Byrne et al. (15) and Chadi et al. (28) also stated that psychological well-being increased with increasing the components of mindfulness and decreased the level of stress and related physical and psychological illnesses. Considering self-esteem as one of the components of psychological well-being, the results of this study are in agreement with these studies.

**Table 5.** Analysis of Mancova Post Hoc Test (Analysis of Variance) of Self-Esteem and its Components

Variables	Sum of Squares	Averages of Squares	Df	f	Sig.
<b>Self-esteem</b>	9.2	4.6	2	8.1	0.000
<b>General self-esteem</b>	5.4	2.7	2	3.8	0.001
<b>Educational self-esteem</b>	3.4	1.7	2	3.1	0.000
<b>Physical self-esteem</b>	6.3	3.2	2	1.1	0.000
<b>Social self-esteem</b>	7.3	3.6	2	1.1	0.000
<b>Family self-esteem</b>	4.1	2.1	2	4	0.02

**Table 6.** Paired Comparison of Groups Mean Differences

	Sig.	Std. Error	Average Difference
<b>Mindfulness</b>			
Religious	0.000	7.6	-8.6
Control	0.000	3.7	4.3
<b>Islamic teachings</b>			
Control	0.000	7	9.1
<b>Mindfulness</b>			
Religious	0.000	7.1	-5.3
Control	0.000	8.1	7.5
<b>Islamic teachings</b>			
Control	0.000	5.2	8.3
<b>Mindfulness</b>			
Religious	0.15	3.1	0.8
Control	0.002	4.1	3.5
<b>Islamic teachings</b>			
Control	0.000	7.1	4.6
<b>Mindfulness</b>			
Religious	0.000	4.1	-3.1
Control	0.008	5.1	4.6
<b>Islamic teachings</b>			
Control	0.000	1.2	7.7
<b>Mindfulness</b>			
Religious	0.000	3.1	-7.2
Control	0.000	5.1	9.5
<b>Islamic teachings</b>			
Control	0.000	2.1	8.6
<b>Mindfulness</b>			
Religious	1	2.1	-0.7
Control	0.000	8.1	7.2
<b>Islamic teachings</b>			
Control	0.000	9	7.9

Therefore, with respect to explaining the first hypothesis, it could be said that sexual education as an important and essential issue in the education of children and adolescents can have a positive effect on their mental health and well-being-related components.

The second hypothesis of the research stated that the girls' sexual education based on religious teachings had a positive effect on their self-esteem. It also had a positive effect on the components of self-esteem including general, educational, physical, social, and family self-esteem; thus, the second research hypothesis was confirmed.

To the best of our knowledge, there was no research investigating the effect of sexual education in adolescence, especially based on religious teachings, but the results of some studies (29, 30) showed that sexual education along with religious teachings and religious beliefs had a positive effect on marital adjustment, agreement, integration of emotions in life, and marital satisfaction.

For explaining this hypothesis, it could be inferred that sexual education during adolescence is an introduction to marital life in the future; according to this perspective, the results of this study are comparable with the results of studies on the effect of sexual education based on religious teachings on increasing self-esteem and its components in adolescents. The results obtained regarding this hypothesis showed that, religious teachings are important to inform increase the knowledge of the teenagers about sexual issues, and oppose the direct learning of sexual issues for adolescents. The comparison of the groups in terms of all the dependent variables showed that the mean scores were higher in the Islamic teachings group than in other groups. Therefore, the role and effect of Islamic teachings were found to be more intense.

5.1. Conclusions

The findings of the present study provide evidence regarding the effectiveness of sexual education based on mindfulness and Islamic teachings in adolescents' self-esteem. Thus, it can be integrated into the school curricula as a step toward the growth and excellence of teenagers

and preventing social harm, as by strengthening the self-esteem of girls as the main pillar of life, we will have a healthy and happy family.

Research restrictions were as follows:

The issue was taboo for some school principals and they did not allow to run the project in schools;

There was no standard content based on Islamic teachings for education;

There were no resources and books to cite;

There is no direct investigation in this regard.

### Acknowledgments

We would like to thank the honorable professors of Sistan and Baluchestan University and respected professors of Tehran, Mashhad, and Qom and all dear colleagues and students who helped us in this endeavor.

### Footnotes

**Authors' Contribution:** This article was written by Fatemeh Azarkhordad. Hossein Jenaabadi and Vali Mehdinezhad contributed to the analysis and interpretation of the results.

**Conflict of Interests:** No conflicts of interest are reported by the authors.

**Ethical Approval:** The authorization to carry out the research project with the introduction of Zahedan Branch, Islamic Azad University has been obtained from the General Department of Education of Sistan and Baluchestan province. This article is licensed under code: 4902/85579/542.

**Funding/Support:** This article did not receive any financial support.

**Informed Consent:** Informed consent was obtained from all participants and those with complete consent forms participated in the study.

### References

- Lavell CH, Webb HJ, Zimmer-Gembeck MJ, Farrell LJ. A prospective study of adolescents' body dysmorphic symptoms: Peer victimization and the direct and protective roles of emotion regulation and mindfulness. *Body Image*. 2018;**24**:17-25. doi: [10.1016/j.bodyim.2017.11.006](https://doi.org/10.1016/j.bodyim.2017.11.006). [PubMed: 29247735].
- Pope AW, McHale SM, Craighead WE. *Self-esteem enhancement with children and adolescents*. Elmsford, NY, US: Pergamon Press; 1988. 166 p.
- Kheirkhah M, Mokarie H, Nisani Samani L, Hosseini AF. Relationship between anxiety and self-concept in female adolescents. *Iran J Nurs*. 2013;**26**(83):19-29.
- Sahebzamani M, Fesharaki M, Abdollahi Mofrad Z. Association of life style and self-esteem among adolescent girls of daily public high schools of Tehran. *Med Sci J Islam Azad Univ Tehran Med Branch*. 2010;**20**(1):45-51.
- Tanhaee Reshvanloo F, Keramati R, Saadati Shamir A. [Optimism and self-esteem in adolescent girls: The role of identity styles]. *Appl Psychol*. 2012;**6**(2):73-90. Persian.
- Hu J, Ai H. Self-esteem mediates the effect of the parent-adolescent relationship on depression. *J Health Psychol*. 2016;**21**(6):897-904. doi: [10.1177/1359105314541315](https://doi.org/10.1177/1359105314541315). [PubMed: 25030796].
- Forrester RL, Slater H, Jomar K, Mitzman S, Taylor PJ. Self-esteem and non-suicidal self-injury in adulthood: A systematic review. *J Affect Disord*. 2017;**221**:172-83. doi: [10.1016/j.jad.2017.06.027](https://doi.org/10.1016/j.jad.2017.06.027). [PubMed: 28647667].
- Achora S, Thupayagale-Tshweneagae G, Akpor OA, Mashalla YJS. Perceptions of adolescents and teachers on school-based sexuality education in rural primary schools in Uganda. *Sex Reprod Healthc*. 2018;**17**:12-8. doi: [10.1016/j.srhc.2018.05.002](https://doi.org/10.1016/j.srhc.2018.05.002). [PubMed: 30193714].
- Aleman-Diaz AY, Backhaus S, Siebers LL, Chukwujama O, Fenski F, Henking CN, et al. Child and adolescent health in Europe: Monitoring implementation of policies and provision of services. *Lancet Child Adolesc Health*. 2018;**2**(12):891-904. doi: [10.1016/s2352-4642\(18\)30286-4](https://doi.org/10.1016/s2352-4642(18)30286-4).
- Fair CD, Albright J, Culy L. Factors that influence sexual and reproductive health information offered to adolescents with perinatally acquired HIV: An ecological analysis of provider perspectives. *J Assoc Nurses AIDS Care*. 2018;**29**(6):822-34. doi: [10.1016/j.jana.2018.06.002](https://doi.org/10.1016/j.jana.2018.06.002). [PubMed: 30369413].
- Lichty LF, Gowen LK. Youth response to rape: Rape myths and social support. *J Interpers Violence*. 2018;**8**:8626051880578E+14. doi: [10.1177/0886260518805777](https://doi.org/10.1177/0886260518805777). [PubMed: 30318974].
- Obach A, Sadler M, Cabieses B. Intersectoral strategies between health and education for preventing adolescent pregnancy in Chile: Findings from a qualitative study. *Health Expect*. 2019;**22**(2):183-92. doi: [10.1111/hex.12840](https://doi.org/10.1111/hex.12840). [PubMed: 30369026]. [PubMed Central: PMC6433321].
- Stoleru S. Reading the Freudian theory of sexual drives from a functional neuroimaging perspective. *Front Hum Neurosci*. 2014;**8**:157. doi: [10.3389/fnhum.2014.00157](https://doi.org/10.3389/fnhum.2014.00157). [PubMed: 24672467]. [PubMed Central: PMC3957062].
- Xu X, Wu D, Zhao X, Chen J, Xia J, Li M, et al. Relation of perceptions of educational environment with mindfulness among Chinese medical students: A longitudinal study. *Med Educ Online*. 2016;**21**:30664. doi: [10.3402/meo.v21.30664](https://doi.org/10.3402/meo.v21.30664). [PubMed: 27118582]. [PubMed Central: PMC4846787].
- Byrne J, Hauck Y, Fisher C, Bayes S, Schutze R. Effectiveness of a mindfulness-based childbirth education pilot study on maternal self-efficacy and fear of childbirth. *J Midwifery Womens Health*. 2014;**59**(2):192-7. doi: [10.1111/jmwh.12075](https://doi.org/10.1111/jmwh.12075). [PubMed: 24325752].
- Veringa IK, de Bruin EI, Bardacke N, Duncan LG, van Steensel FJ, Dirksen CD, et al. 'I've changed my mind', mindfulness-based childbirth and parenting (MBCP) for pregnant women with a high level of fear of childbirth and their partners: Study protocol of the quasi-experimental controlled trial. *BMC Psychiatry*. 2016;**16**(1):377. doi: [10.1186/s12888-016-1070-8](https://doi.org/10.1186/s12888-016-1070-8). [PubMed: 27821151]. [PubMed Central: PMC5100329].
- Black DS, Sussman S, Johnson CA, Milam J. Trait mindfulness helps shield decision-making from translating into health-risk behavior. *J Adolesc Health*. 2012;**51**(6):588-92. doi: [10.1016/j.jadohealth.2012.03.011](https://doi.org/10.1016/j.jadohealth.2012.03.011). [PubMed: 23174469]. [PubMed Central: PMC3505281].
- Ajayi AI, Ismail KO, Adeniyi OV, Akpan W. Awareness and use of pre-exposure and postexposure prophylaxes among Nigerian university students: Findings from a cross-sectional survey. *Medicine (Baltimore)*. 2018;**97**(36):e12226. doi: [10.1097/MD.0000000000001226](https://doi.org/10.1097/MD.0000000000001226). [PubMed: 30200145]. [PubMed Central: PMC6133481].
- Estivalis ML, Amat AF. Educating for sexual and reproductive health in an information society. *Proced Soc Behav Sci*. 2014;**116**:3026-9. doi: [10.1016/j.sbspro.2014.01.701](https://doi.org/10.1016/j.sbspro.2014.01.701).
- Schaefer R, Barbiani R, Nora CRD, Viegas K, Leal SMC, Lora PS, et al. Adolescent and youth health policies in the Portuguese-Brazilian context: Specificities and approximations. *Cien Saude Colet*. 2018;**23**(9):2849-58. doi: [10.1590/1413-81232018239.11202018](https://doi.org/10.1590/1413-81232018239.11202018). [PubMed: 30281723].

21. Mazidi M, Khedmatiyani M. Presenting a model for sexual education based on the views of muslim thinkers. *Biquarterly J Islam Educ*.
22. Cribb VL, Haase AM. Girls feeling good at school: School gender environment, internalization and awareness of socio-cultural attitudes associations with self-esteem in adolescent girls. *J Adolesc*. 2016;**46**:107-14. doi: [10.1016/j.adolescence.2015.10.019](https://doi.org/10.1016/j.adolescence.2015.10.019). [PubMed: [26684660](https://pubmed.ncbi.nlm.nih.gov/26684660/)].
23. Nelson KM, Pantalone DW, Carey MP. Sexual health education for adolescent males who are interested in sex with males: An investigation of experiences, preferences, and needs. *J Adolesc Health*. 2019;**64**(1):36-42. doi: [10.1016/j.jadohealth.2018.07.015](https://doi.org/10.1016/j.jadohealth.2018.07.015). [PubMed: [30292649](https://pubmed.ncbi.nlm.nih.gov/30292649/)]. [PubMed Central: [PMC6309651](https://pubmed.ncbi.nlm.nih.gov/PMC6309651/)].
24. Wyckoff SC, Miller KS, Forehand R, Bau JJ, Fasula A, Long N, et al. Patterns of sexuality communication between preadolescents and their mothers and fathers. *J Child Fam Stud*. 2007;**17**(5):649-62. doi: [10.1007/s10826-007-9179-5](https://doi.org/10.1007/s10826-007-9179-5).
25. Haruna H, Hu X, Chu SKW, Mellecker RR, Gabriel G, Ndekaio PS. Improving sexual health education programs for adolescent students through game-based learning and gamification. *Int J Environ Res Public Health*. 2018;**15**(9). doi: [10.3390/ijerph15092027](https://doi.org/10.3390/ijerph15092027). [PubMed: [30227642](https://pubmed.ncbi.nlm.nih.gov/30227642/)]. [PubMed Central: [PMC6163657](https://pubmed.ncbi.nlm.nih.gov/PMC6163657/)].
26. Green AE, Willging CE, Ramos MM, Shattuck D, Gunderson L. Factors impacting implementation of evidence-based strategies to create safe and supportive schools for sexual and gender minority students. *J Adolesc Health*. 2018;**63**(5):643-8. doi: [10.1016/j.jadohealth.2018.06.004](https://doi.org/10.1016/j.jadohealth.2018.06.004). [PubMed: [30205932](https://pubmed.ncbi.nlm.nih.gov/30205932/)]. [PubMed Central: [PMC6289584](https://pubmed.ncbi.nlm.nih.gov/PMC6289584/)].
27. Ebrahiminejad S, Poursharifi H, Bakhshpour Roodsari A, Zeinodini Z, Noorbakhsh S. The effectiveness of mindfulness-based cognitive therapy on iranian female adolescents suffering from social anxiety. *Iran Red Crescent Med J*. 2016;**18**(11). e25116. doi: [10.5812/ircmj.25116](https://doi.org/10.5812/ircmj.25116). [PubMed: [28191335](https://pubmed.ncbi.nlm.nih.gov/28191335/)]. [PubMed Central: [PMC5292141](https://pubmed.ncbi.nlm.nih.gov/PMC5292141/)].
28. Chadi N, Kaufman M, Weisbaum E, Malboeuf-Hurtubise C, Kohut SA, Viner C, et al. In-person versus ehealth mindfulness-based intervention for adolescents with chronic illness: Protocol for a randomized controlled trial. *JMIR Res Protoc*. 2017;**6**(11). e241. doi: [10.2196/resprot.7700](https://doi.org/10.2196/resprot.7700). [PubMed: [29180345](https://pubmed.ncbi.nlm.nih.gov/29180345/)]. [PubMed Central: [PMC5725624](https://pubmed.ncbi.nlm.nih.gov/PMC5725624/)].
29. Masoumi SZ, Kazemi F, Nejati B, Parsa P, Karami M. Effect of sexual counseling on marital satisfaction of pregnant women referring to health centers in malayer (Iran): An educational randomized experimental study. *Electron Physician*. 2017;**9**(1):3598-604. doi: [10.19082/3598](https://doi.org/10.19082/3598). [PubMed: [28243412](https://pubmed.ncbi.nlm.nih.gov/28243412/)]. [PubMed Central: [PMC5308500](https://pubmed.ncbi.nlm.nih.gov/PMC5308500/)].
30. Novin J, Bahrami Ehsan H. Designing and evaluating the effectiveness of teaching religious-psychological teachings on marital satisfaction. *Cultural Couns Psychother*. 2017;**7**(28):61-83. doi: [10.22054/qc-cpc.2017.7091](https://doi.org/10.22054/qc-cpc.2017.7091).