



Sex Education

Sexuality, Society and Learning

ISSN: 1468-1811 (Print) 1472-0825 (Online) Journal homepage: <http://www.tandfonline.com/loi/csed20>

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To cite this article: Jeno Martin, Hedyeh Riazi, Armin Firoozi & Maliheh Nasiri (2018): A sex education programme for mothers in Iran: Does preschool children's sex education influence mothers' knowledge and attitudes?, Sex Education, DOI: [10.1080/14681811.2018.1428547](https://doi.org/10.1080/14681811.2018.1428547)

To link to this article: <https://doi.org/10.1080/14681811.2018.1428547>



Published online: 23 Jan 2018.



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A sex education programme for mothers in Iran: Does preschool children's sex education influence mothers' knowledge and attitudes?

Jeno Martin^a , Hedyeh Riazib^b, Armin Firoozic^c and Maliheh Nasirid^d

^aDepartment of Midwifery and Reproductive Health, Students Research Committee, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran; ^bDepartment of Midwifery and Reproductive Health, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran; ^cClinical Psychologist and Researcher, Tehran, Iran; ^dDepartment of Biostatistics, School of Paramedical Science, Shahid Beheshti University of Medical Sciences, Tehran, Iran

ABSTRACT

Mothers have an important role to play in teaching their children about sexual issues and shaping children's sexual knowledge, attitudes and behaviours. In many cases, however, mothers themselves need help and support. This study was conducted to examine the effects of a sex education programme on the knowledge and attitudes of the mothers of pre-school children. Eighty mothers of pre-school children were randomly divided into an experimental and a control group. The experimental group received an education and training programme delivered over two 2-h sessions. The control group received no such intervention. Researcher-constructed knowledge and attitude questionnaires were completed by both groups before and one month after the intervention. Findings showed no significant differences between the two groups in terms of knowledge and attitudes before the training. After the education and training intervention, however, there was a significant increase in the mean score for both knowledge and attitudes in the experimental group compared to the control group. Study findings suggest that the sex education programme for the mothers of pre-school children can improve their knowledge and attitudes.

ARTICLE HISTORY

Received 16 October 2017
Accepted 12 January 2018

KEYWORDS

Sex education; knowledge; attitudes; mothers; pre-school children; Iran

Introduction

Sex education is one of the most important aspects of education. Contrary to what some may think, it does not provide instruction on how to have sex (Rahman, Elieen, and Mohammadi 2007), but instead covers a wide range of issues and topics related to sex and gender, maturity, chastity, ethics, respectful and safer sexual behaviour. One of its key goals is to familiarise people with cultural and religious norms (Farmahini Farahani 2006). Given the diversity of cultures globally, different values and beliefs exist in different parts of the world (Forozi-Azizadeh and Mohammad-Alizadeh 2007). The pre-school years are one of the most important stages in human development (Hurtado et al. 2014). Children are curious at this age of development and ask different questions. Sexual questioning often begin at

this age (Kurtuncu et al. 2015), and answering children's sexual questions honestly and accurately is part of sex education (Ghorbani et al. 2015). Today's children are frequently exposed to sexual messages through films, television, the media and the Internet, stressing the importance of good quality sex education (Morawska et al. 2015).

Parents have an important role to play in the sex education of their children (El-Shaieb and Wurtele 2009; Walsh and Brandon 2012) conveying among other things an awareness of relevant cultural values and beliefs (Lukolo and van Dyk 2015). Given that mothers often spend more time with children compared to the rest of the family, they are frequently the first person to be asked questions about sexual issues (Brcar 2008; Dairo and Adeomi 2011). There exists controversy about the best time to begin sex education for children (Zhina and Dingchu 2013), and many parents say they only talk to their children about sexual issues when the children themselves ask a question (Davies and Robinson 2010). Some parents worry about how much information to give to their children about sexual issues and where and how they should discuss these issues with them (Stone, Ingham, and Gibbins 2013). Some also believe erroneously that if a child does not ask anything about sexual matters, she or he is still not ready to receive the information (Martin and Torres 2014). Some mothers also believe that pre-school children are too young to learn about sexual issues and early education is inappropriate (Nyarko et al. 2014). Nevertheless, studies have shown that good quality sex education does not encourage sexual activity; rather, it encourages its prevention (Motalip and Mohamed 2012). Parents need to know that learning about sexual issues is a gradual and step-by-step process. Discussion about sexual issues and answering the sexual questions of the children should be tailored to their age, understanding and method of education (Farmahini Farahani 2008).

Although parents are often responsible for children's sex education, they may need help and support in terms of information, motivation and strategies to achieve optimal results (Pop and Rusu 2015). If mothers cannot answer children's sexual questions due to a lack of skill and knowledge, children are likely to learn about these topics from other resources such as magazines, films, the Internet and peer groups (Dairo and Adeomi 2011). Without good quality preparation, mothers may provide inappropriate and problematic responses to children's questions (Stone, Ingham, and Gibbins 2013). Research in Iran shows that only 25.9% of mothers are able to correctly answer their children's questions (Sadeghmoghaddam et al. 2006). Parents' modesty, inadequate knowledge and the belief that there is a need to preserve the child's innocence act as barriers to proper sexual education (Rahman, Elieen, and Mohammadi 2007; Stone, Ingham, and Gibbins 2013).

Given the key role of parents, and especially mothers, in children's sex education, education and empowerment programmes have been developed for this group (Turnbull, Wersch, and Schaik 2008). The adequate preparation of parents, especially mothers, is particularly important, and providing an education with specific content and protocol should be made a priority if the goal is to provide children with good quality sex education (Turnbull, Wersch, and Schaik 2008; Abolghasemi, MerghatiKhoei, and Taghdissi 2010; Mirzaei Najmabadi et al. 2014).

A review of literature showed no studies of the knowledge and attitudes of mothers of pre-school children towards sex education in Iran. Studies conducted on this subject have mostly concerned adolescents (see, for example, Latifnejad, Javad Nouri, and Hasanpour 2012; Simbar et al. 2017). Considering the importance of sex education for children and the mothers' need for appropriate educational content, this study was conducted to determine

the effect of a newly developed sex education programme on the knowledge and attitudes of mothers of pre-school children.

Materials and methods

Study design and participants

This study was conducted in 2017 with 80 mothers with pre-school children (40 in the experimental group and 40 in the control group) selected from kindergartens in Tehran. The sample size was calculated as 38 per group based on the results of a similar study (Lee and Kweon 2013) with a test power of 85% and a type 1 error of 0.05. To take account of potential sample loss, 40 subjects were ultimately assigned to each group.

The inclusion criteria consisted of living with the husband (the child's father), having at least one child aged 3–6 years, being Iranian, having at least reading and writing literacy, not having attended previous classes on sex education for children, and being interested in attending these classes. Exclusion criteria consisted of unwillingness to cooperate and missing a training session.

Methods

Sampling

The city of Tehran was divided into five geographical areas (north, south, east, west and centre) on a map. Next, a municipality region was randomly selected from each area. Two kindergartens (one experimental and the other the control) were then randomly selected from the list of kindergartens in each of the selected regions, and eight mothers were selected from each kindergarten according to the random selection of names from the classes' lists. All the mothers who were selected agreed to participate in the education programme.

After obtaining participants' written consent, knowledge and attitudes questionnaires were completed by the mothers in both the experimental and control groups. The training programme for the experimental group was then held. It consisted of two 2-h sessions with a one-week interval. Training was provided through lectures, question and answer, and group discussion. At the end of each session, a question and answer session was held about the issues discussed in that same session. The control group received no such intervention. Four weeks after the intervention, the knowledge and attitude questionnaires were completed again by the mothers in both groups and were compared with the pretest results.

Programme

The pre-school children's 'sex education package' was prepared specially for the mothers, based on books and papers related to the subject of children's sex education and in accordance with the Iranian cultural context. A draft curriculum was presented to a number of reproductive health and psychology specialists, and after taking on board their proposed modifications, the content validity of the package was confirmed.

The training content in the first session included introducing the mother to the goals and importance of sex education, stages of sexual development in children aged 3 to 6, sexual identity and the parents' role in the formation of sexual identity in line with the child's gender,

the proper method of sex education for children on topics such as the place of sleeping, bathing, touching and caressing, and how to familiarise the child with his or her genital organs while emphasising the privacy of these organs. The training content in the second session included how to provide appropriate responses to children's sexual questions, children's proper and improper identification with their parents, masturbation in children, and ways to safeguard children against sexual abuse.

The training sessions were delivered by a female researcher, a master's level student in midwifery with certification in organising children's sexual education workshops.

Measurement

Data were collected using researcher-designed questionnaires with items enquiring about the mothers' demographic characteristics such as age, education, occupation, their child's age and gender together with items about their knowledge and attitudes with regard to sex education for their children

The knowledge questionnaire consisted of 31 items, each with three response options – 'True', 'False' and 'I don't know'. Total possible scores ranged from 0 to 31 (with one point being awarded for each correct response, and higher scores indicated higher knowledge levels). This questionnaire was organised around six themes: principles of sexual education (4 questions), sexual identity (3 questions), stages of sexual development and correct approaches to sex education (7 questions), children's sexual questions (4 questions), masturbation in children (5 questions) and child sexual abuse (8 questions).

The attitudes questionnaire consisted of 26 items scored based on a five-point Likert scale from 'strongly disagree' (5) to 'strongly agree' (1). Items 24 and 25 were scored in reverse. Each subject's total score could range from 26 to 130. Higher scores indicated a more positive attitude. This questionnaire was organised around six themes: principles of sexual education (4 questions), sexual identity (3 questions), stages of sexual development and correct approaches to sex education (8 questions), children's sexual questions (5 questions), masturbation in children (3 questions) and child sexual abuse (3 questions).

Content validity of the researcher-constructed questionnaires was assessed by presenting them to 10 faculty members of the Department of Midwifery and Reproductive Health in the School of Nursing and Midwifery at Shahid Beheshti University of Medical Sciences. Both a Content Validity Ratio (CVR) and Content Validity Index (CVI) were calculated for the questionnaires. For the knowledge questionnaire, the CVR and CVI were 0.93 and 0.97, respectively. For the attitudes questionnaire, they were 0.9 and 0.99. The internal consistency of the questionnaires was also confirmed with a Cronbach's alpha coefficient of 0.79 for the knowledge questionnaire and 0.77 for the attitudes questionnaire. The test-retest reliability of the questionnaires was established using Cronbach's alpha coefficient following a pilot study on a sample of 30 preschoolers' mothers.

Ethical considerations

The study was approved by the ethics committee of Shahid Beheshti University of Medical Sciences (IR.SBMU.PHNM.1395.446). The project was registered at the Iranian Registry of Clinical Trials (IRCT 2016122320854N5). An informed consent form was completed by all the mothers participating in the study after they had been briefed on the study objectives.

Data analyses

Data were analysed using SPSS-18. Means, range, frequency and percentages were used to describe the data. The paired *t*-test, the independent *t*-test, Mann-Whitney's test and the Chi-square test were used to compare the two groups using a significance level of $p < 0.05$.

Results

The mean age of the mothers was 35.15 years and the standard deviation (SD) = 6.24 in the experimental group. In the control group, they were 34.39 and 4.55, respectively. Most of the mothers in both groups had a bachelor's degree. A total of 52.5% of the mothers in the experimental group and 65% of those in the control group were employed. The economic status of most families was self assessed as moderate in both the experimental (75%) and control (87.5%) groups. Most of the families in both groups had only one child. There were no statistically significant differences between the two groups in terms of demographic characteristics (Table 1).

Table 2 presents the means and standard deviations of the mothers' knowledge score before and after the intervention in the two groups. The results of the paired *t*-test showed a significant difference between the mean knowledge score of the mothers before and after the intervention in the experimental group ($p < 0.001$); however, no significant differences were observed in the control group ($p = 0.46$). The results of the independent *t*-test showed no significant differences in the mean score of knowledge before the intervention between the two groups ($p = 0.91$), while the difference was significant between them after the intervention ($p < 0.001$).

There was a significant difference between the mean mothers' attitudes score before and after the intervention in the experimental group ($p < 0.001$), but not in the control group ($p = 0.7$). Comparison of the two groups showed no significant differences in the mean attitudes score between the two groups before the intervention ($p = 0.92$), while the difference in this score was significant after the intervention ($p < 0.001$).

As shown in Table 3, assessment of the 6 themes of mother's knowledge showed that there was no significant difference in the mean score on each theme between the experimental and control group before the intervention. After the intervention, the differences were significant between these groups ($P < 0.001$). The results of the paired *t*-test showed that the mean scores of the experimental group at post-test were higher than pre-test ($P < 0.001$) in all themes but no significant differences were observed in the control group. A comparison of the mean differences in the two groups showed that the experimental group had a higher score than the control group for all 6 themes. The greatest impact of education was observed in the theme of stages of sexual development and correct approaches to sex education (effect size = 2.24).

Separate assessment of the attitudes themes showed was no significant difference between the experimental and control group in mean scores before the intervention, however, after the intervention, the difference between the groups was significant ($p < 0.001$) (Table 4). In the experimental group, the mean score of all the themes differed significantly after the intervention ($p < 0.001$), but no significant differences were found in the control group. The largest effect of education in mother's attitudes was seen in the theme of masturbation in children (effect size = 4.11).

Table 1. Demographic characteristics of the experimental and control groups.

		Experimental group (<i>n</i> = 40)	Control group (<i>n</i> = 40)	
Characteristic		<i>n</i> (%)	<i>n</i> (%)	<i>P</i> -Value
Mother's age	Less than 30	9 (22.5)	8 (20)	0.85 Independent <i>t</i> -test
	30–35	13 (32.5)	14 (35)	
	36–40	10 (25)	16 (40)	
	More than 40	8 (20)	2 (5)	
Father's age	Less than 30	1 (2.5)	1 (2.5)	0.38 Independent <i>t</i> -test
	30–35	14 (35)	7 (17.5)	
	36–40	12 (30)	18 (45)	
	More than 40	13 (32.5)	14 (35)	
Mother's education	Beneath high school	1 (2.5)	0	0.34 Mann-Whitney test
	Diploma level	7 (17.5)	12 (30)	
	Diploma level	3 (7.5)	4 (10)	
	Associate degree	19 (47.5)	15 (37.5)	
	Bachelor's degree	6 (15)	7 (17.5)	
	Master's degree PhD	4 (10)	2 (5)	
Father's education	Beneath diploma	0	2 (5)	0.44 Mann-Whitney test
	Diploma	5 (12.5)	7 (17.5)	
	Associate's degree	8 (20)	7 (17.5)	
	Bachelor's degree	19 (47.5)	15 (37.5)	
	Master's degree	4 (10)	9 (22.5)	
	PhD	4 (10)	0	
Mother's occupation	Housewife	19 (47.5)	14 (35)	0.25 Chi Square test
	Employed	21 (52.5)	26 (65)	
Father's occupation	Self-employed	16 (40)	14 (35)	0.45 Fisher's exact test
	Employee	18 (45)	18 (45)	
	Employer	5 (12.5)	5 (12.5)	
	Labourer	0	3 (7.5)	
	Other	1 (2.5)	0	
Family economic status	Lower than moderate	10 (25)	4 (10)	0.06 Mann-Whitney test
	Moderate	30 (75)	35 (87.5)	
	Higher than moderate	0	1 (2.5)	
Family size	3	26 (65)	27 (67.5)	0.83 Chi Square test
	4	14 (35)	13 (32.5)	
Child's gender	Boy	22 (55)	19 (47.5)	0.5 Chi Square test
	Girl	18 (45)	21 (52.5)	
Child's age	3 years old	8 (20)	6 (15)	0.12 Mann-Whitney test
	4 years old	11 (27.5)	7 (17.5)	
	5 years old	13 (32.5)	13 (32.5)	
	6 years old	8 (20)	14 (35)	

Table 2. Knowledge and attitudes between the two groups before and after the intervention.

Variable		Experimental group Mean \pm SD*	Control group Mean \pm SD*	Independent <i>T</i> -test results
Knowledge	Before the intervention	19.6 \pm 4	19.7 \pm 4.56	<i>p</i> = 0.91
	After the intervention	28.72 \pm 1.6	19.57 \pm 4.3	<i>p</i> < 0.001
	Paired <i>t</i> -test results	<i>p</i> < 0.001	<i>p</i> = 0.46	
Attitudes	Before the intervention	96.27 \pm 9	96.45 \pm 7.18	<i>p</i> = 0.92
	After the intervention	110.25 \pm 6.26	96.20 \pm 7.17	<i>p</i> < 0.001
	Paired <i>t</i> -test results	<i>p</i> < 0.001	<i>p</i> = 0.7	

*Standard deviation.

Table 3. Comparison of the mean scores of the knowledge's themes before and after the intervention.

Themes	Group	Before interven- tion Mean ± SD*	After interven- tion Mean ± SD*	Mean difference	Paired t-test	Effect size
Principles of sexual education	Experimental	2.82 ± 1.05	3.80 ± 0.40	0.98	$P < 0.001$	1
	Control	2.82 ± 1 $P^{**} = 0.99$	2.80 ± 0.96 $P^{**} < 0.001$	-0.02	$p = 0.71$	
Sexual identity	Experimental	0.87 ± 0.91	2.72 ± 0.45	1.85	$P < 0.001$	1.88
	Control	0.80 ± 0.85 $P^{**} = 0.70$	0.80 ± 0.82 $P^{**} < 0.001$	0	$P > 0.99$	
Stages of sexual development and correct approaches to sex education	Experimental	4.28 ± 1.15	6.50 ± 0.59	2.22	$P < 0.001$	2.24
	Control	4.37 ± 1.64 $P^{**} = 0.75$	4.32 ± 1.49 $P^{**} < 0.001$	-0.05	$p = 0.53$	
Children's sexual questions	Experimental	3.02 ± 0.91	3.82 ± 0.38	0.8	$P < 0.001$	0.94
	Control	2.92 ± 1.04 $P^{**} = 0.65$	2.82 ± 1.15 $P^{**} < 0.001$	-0.1	$p = 0.21$	
Masturbation in children	Experimental	3.02 ± 0.97	4.87 ± 0.33	1.85	$P > 0.001$	1.72
	Control	3.12 ± 0.93 $P^{**} = 0.64$	3.20 ± 0.85 $P^{**} < 0.001$	0.07	$p = 0.08$	
Child sexual abuse	Experimental	5.57 ± 1.40	7 ± 0.84	1.43	$P < 0.001$	1.42
	Control	5.65 ± 1.27 $P^{**} = 0.80$	5.63 ± 1.35 $P^{**} < 0.001$	-0.02	$p = 0.74$	

*Standard deviation;

**Independent samples t-test.

Analysis of covariance (ANCOVA) was used to assess the effect of demographic variables on the knowledge and attitudes of mothers. According to Table 5, there was no significant relationship between demographic characteristics and the knowledge of mothers. As shown in Table 6, in regards to attitudes, the analyses showed that mother's age, level of education and the child's age had a significant relationship with mother's attitudes. For each year of increase in the mother's age, the mean score of attitudes was reduced by 0.26. With each year of increase in the level of mother's education, the mean score of attitude increased by 1.27 and for each year increase in the age of the child, the mean score of attitudes increased by 0.98.

Discussion

This study was conducted to examine the effects of a sex education programme for the mothers of pre-school children on their knowledge and attitudes in Tehran, Iran. The study is the first of its kind to explore the effects of a sex education programme on the mothers of pre-school children.

Findings show that educational interventions can increase the knowledge and awareness of mothers, which is in line with the results documented in other studies (Bahrami, Simbar, and Soleimani 2013; Lee and Kweon 2013; Mirzaei Najmabadi et al. 2014; Mostofi et al. 2016). On the whole, parents are aware of the importance of their role in educating their children about sexual issues, but their level of knowledge may not be sufficient to provide the right information to their children. Study findings emphasise the importance of training

Table 4. Comparison of the mean scores of the attitudes themes before and after the intervention in the two groups.

Themes	Group	Before intervention Mean \pm SD*	After inter- vention Mean \pm SD*	Mean difference	Paired <i>t</i> -test	Effect size
Principles of sexual education	Experimental	14.10 \pm 2.84	16.95 \pm 1.23	2.85	$P < 0.001$	2.59
	Control	13.97 \pm 2.25 $P^{**} = 0.83$	14.3 \pm 2.13 $P^{**} < 0.001$	0.33	$p = 0.13$	
Sexual identity	Experimental	11.70 \pm 1.35	12.62 \pm 1	0.92	$P < 0.001$	0.95
	Control	11.47 \pm 1.35 $P^{**} = 0.43$	11.52 \pm 1.26 $P^{**} < 0.001$	0.05	$p = 0.68$	
Stages of sexual development and correct approaches to sex education	Experimental	29.73 \pm 3.32	33.90 \pm 2.12	4.17	$P < 0.001$	3.91
	Control	30.23 \pm 3.23 $P^{**} = 0.50$	30.35 \pm 3.63 $P^{**} < 0.001$	0.12	$p = 0.64$	
Children's sexual questions	Experimental	20.43 \pm 1.73	21.55 \pm 1.55	1.12	$P < 0.001$	1.16
	Control	20.57 \pm 1.87 $P^{**} = 0.71$	20.50 \pm 1.85 $P^{**} = 0.007$	-0.07	$p = 0.54$	
Masturbation in children	Experimental	9 \pm 1.37	12.47 \pm 0.75	3.47	$P < 0.001$	4.11
	Control	8.60 \pm 1.99 $P^{**} = 0.30$	8.15 \pm 1.83 $P^{**} < 0.001$	-0.45	$p = 0.025$	
Child sexual abuse	Experimental	11.33 \pm 2.53	12.75 \pm 1.73	1.42	$P < 0.001$	1.55
	Control	11.60 \pm 1.58 $P^{**} = 0.56$	11.38 \pm 1.83 $P^{**} = 0.001$	-0.22	$p = 0.13$	

*Standard deviation;

Independent-samples *t*-test.Table 5.** Results of analyses of covariance: the effect of intervention and demographic variables on mother's knowledge.

Variable	Estimated coefficients	Std. Error	<i>t</i>	<i>p</i> -value
Control group	-9.103	.381	-23.90	< 0.001
Mothers occupation (housewife)	.40	.399	1	.319
Number of family members ($n = 3$)	-.037	.414	-.088	.930
Child's gender (girl)	-.273	.393	-.695	.489
Mean score of knowledge(pre-test)	.676	.045	15.143	< 0.001
Mother's age	-.066	.041	-1.587	.117
Mother's education	.004	.190	.022	.983
Child's age	-.162	.191	-.847	.400

Notes: Reference category = case group, employee mothers, number of family members ($n = 4$), child's gender (boy).

programmes on sex education for children that aim to enhance parents' knowledge, awareness and skills.

Without such advance preparation, mothers' inadequate knowledge about the importance of sex education for children may encourage to avoid answering their children's questions or may encourage them to provide inappropriate and sometimes inaccurate responses. It is better for mothers to take on the responsibility of educating their children after they themselves have learned about the different aspects of sex education (Faghihi, Shokohiyekta, and Parand 2009; Alzoubi et al. 2017). Enhancing mothers' knowledge about sex education for children enables them to respond more appropriately to their children's sexual questions (Mirzaei Najmabadi et al. 2014).

Table 6. Results of analyses of covariance: the effect of intervention and demographic variables on mother's attitudes.

Variable	Estimated coefficients	Std. Error	t	p-value
Control GROUP	−14.136	.965	−14.647	< 0.001
Mothers occupation (housewife)	.141	1.015	.139	.890
Number of family members (n = 3)	−.363	1.057	−.343	.732
Child's gender (girl)	−.620	1.005	−.617	.539
Mean attitudes score (pre-test)	.601	.063	9.552	< 0.001
Mother's age	−.264	.105	−2.528	.014*
Mother's education	1.268	.498	2.546	.013*
Child's age	.981	.484	2.026	.047*

Notes: Reference category = case group, employee mothers, number of family members (n = 4), child's gender (boy).

*P-value < 0.05.

In this study, the intervention had the largest effect size with respect to the mother's knowledge of stages of sexual development and correct approaches to sex education theme. Mothers should be able to identify both typical and problematic sexual behaviours based on the child's age in order to respond appropriately to these behaviours (Ey, McInnes, and Rigney 2017). Iranian research too emphasises the importance of training to promote parents' knowledge and awareness about child sexual development (Ghorbani et al. 2015).

Study findings reveal the success of an educational intervention targeting the attitudes of mothers toward sex education for pre-school children, a finding which is consistent with the broader literature on the subject (Lee and Kweon 2013). The results of Iranian studies of parents' attitudes toward sex education for children show some variation however. Vaghari et al. found that most parents were fairly ready to provide this training to their school-aged children (Vaghari Zamehriri, Hejazi, and Saedi Rezvani 2015), but other studies point to a negative attitude of parents towards sex education (Forozi-Azizzadeh and Mohammad-Alizadeh 2007; Jalali Aria et al. 2010). Mirzaei Najmabadi et al. (2014) showed that only a small percentage of mothers respond to their children's questions about sex. This negative attitude prevents children from asking sexual questions, so children resort to peers and uninformed others to find answers (Dairo and Adeomi 2011). Educating mothers can help create a more positive attitude toward sex education and a more positive interaction between parents and the children (Forozi-Azizzadeh and Mohammad-Alizadeh 2007).

It was found that the programme had a particular impact on mothers' attitudes towards talking to their children about masturbation. Others studies show that mothers find it difficult to talking to their children about masturbation and require training in order to do so (Morawska et al. 2015). They may display a negative attitude towards children's masturbation and in prohibit or even punish their children for it. However, mothers should realise that from a medical point of view, masturbation does not have a negative impact on the health of children (Birol and Gömeçli 2010). Children's masturbation is a common, age-related behaviour that decreases with age (Kellog 2010).

Findings show there is no significant relationship between demographic variables and mother's knowledge, confirming the results of Sadeghmoghaddam et al's (2006) earlier study. The attitudes of mothers are however significantly affected by the mother's age and education and by child's age. This finding is in line with the results of Makol-Abdul et al's (2010) work which showed that mothers with more academic education had a positive attitude toward sex education. (Makol-Abdul et al. 2010).

Overall, the results of this study show that the sex education programme for pre-school children's mothers improved maternal knowledge and attitudes. Family policy-makers are recommended to use the results of this study to design programmes in the form of training workshops, classes and counselling for mothers on the topic of sex education for children. In order to make such training widely available to all mothers, there may be value in holding these classes in health and neighbourhood community centres.

Acknowledgements

This paper was developed from a master's thesis in midwifery at Shahid Beheshti University of Medical Sciences (IR.SBMU.PHNM.1395.446). The authors express their gratitude to the university supervisors, the Tehran branch of the State Welfare Organization of Iran and the mothers who participated in this research.

Disclosure statement

No potential conflict of interest was reported by the authors.

ORCID

Jeno Martin  <http://orcid.org/0000-0001-9467-5356>

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