The Effects of Religion and Spirituality on Postoperative Pain, Hemodynamic Functioning and Anxiety after Cesarean Section

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Abstract- Spiritual elements play an important role in the recovery process from acute postoperative pain. This study was conducted to assess the effect of pray meditation on postoperative pain reduction and physiologic responds among muslim patients who underwent cesarean surgery under spinal anesthesia. This double-blinded randomized clinical trial study was conducted among muslim patients who underwent cesarean surgery under spinal anesthesia during 2011-2013 at tertiary regional and teaching hospital in Lorestan, Iran. The patients were randomly divided into interventional group (n=80) and control group (n=80). For about 20 minutes using a disposable phone mentioned and listened to pray meditation "Ya man esmoho davaa va zekroho shafa, Allahomma salle ala mohammad va ale mohammad" in interventional group and phone off in control group. Before and during pray meditation, 30, 60 minutes, 3 and 6 hours after pray meditation pain intensity, blood pressure, heart rate and respiratory rate were measured. No statistically significant improvement in pain score was found before and during pray meditation, 30, 60 minutes after pray meditation (P>0.05). Statistically significant improvement in pain score was found at 3 and 6 hours after pray meditation than control group (1.5 ± 0.3 vs. 3 ± 1.3, P=0.030) and (1.3 ± 0.8 vs. 3 ± 1.1, P=0.003). However, there was no significant difference in the physiological responses (systolic and diastolic blood pressure, respiration, and heart rate) any time between the groups. Religion and spirituality intervention such as pray meditation could be used as one of non-pharmacological pain management techniques for reducing pain after cesarean surgery. Also, Pray meditation provides less postoperative nausea and vomiting (PONV) and more relaxation.

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Keywords: Pray meditation; Pain management; Postoperative pain; Cesarean surgery

Introduction

Today, cesarean section is one of the most common surgeries in women of childbirth age. During early postoperative period, pain, anxiety, and stress are the most reported problems. In these patients, opioid drugs are routinely administered for postoperative pain management. Opioid drug side-effects and postoperative pain can affect relation of mother and infant and impair mother's ability to optimally care for her infant, immediately in postpartum period. Opioid drug has the common side effects such as, dizziness, drowsiness, headache, nausea, insomnia, vomiting and weakness. Any side-effect in association with postoperative pain could lead to delayed hospital discharge, increased recovery time and contributes to increased cost of care. Therewith, postoperative pain has a negative physiological and psychological well-beings impact on patients and delays the postoperative recovery (1). Postoperative pain management is crucial for surgical patients.

Spinal anesthesia might lead to hypotension, itching, nausea, vomiting and urinary retention (2) Furthermore, medications cannot be used in all patients and inflict costs in health care system (3). Also, there is concern regarding opioid passing to the infant through

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breastfeeding that can lead todecreased neonatal Apgar scores, respiratory depression and low tone, so reducing opioid use is favorable (4). Currently, non-pharmacological strategies for reduction of pain are growing rapidly (5). Non-pharmacological pain management can decrease the emotional effect of pain, enhance adjustment and make patients believe that they can control their pain and improve their sleep (6). One of the non-pharmacological strategies is psychological interventions, for instance spiritual intervention with pray meditation. Pray meditation as an adjunctive therapy in the postoperative period is a non-pharmacological technique that is low-cost, non-invasive and has no side-effects to mother or neonate. Also, Pray therapy could reduce psychological problems. Mardiyono *et al*., reported that Pray therapy for 25 minutes reduce preoperative anxiety (7). Sitepu found that Pray therapy for 30 minutes could improve postoperative pain 6-8 hours and 24-30 hours in Muslim patients undergoing abdominal surgery (8). Pray meditation has perpetuity and brings spiritual and physical benefits.

Pray sings of remembrance of Allah and the doctrinal testimony of faith. Pray benefits to patient to elicit a relaxation response of calmness, mindfulness, and peacefulness. Pray therapy resulting to optimal harmonization, which enhances psychological, social, spiritual, and physical health status (9-10). There are limited numbers of published studies on the effect of pray therapy on pain after cesarean surgery.

As well as, pray has a spiritual and Islamic implication and limited studies have been conducted in many countries such as Iran. However, no similar study has been conducted in Iran. Therefore, considering the above mentioned facts and according to the cultural, social and economic differences in Iran, we tried to conduct a study without the mentioned limitations to investigate the effects of preferred pray on pain intensity among patients after cesarean delivery. Furthermore, mothers usually develop anxiety and pain during deliverythus, pray therapy should be investigated in maternal patients.

Materials and Methods

In this study that had been made through a double-blinded randomized clinical trial performed on patients undergoing elective cesarean section under spinal anesthesia during 2011-2013 at tertiary regional and teaching hospital in Khorramabad, Iran. The investigation was a prospective randomized clinical trial. The study was approved by the Committee for Ethics of Lorestan University of Medical Sciences. All patients and their husbands provided their written informed consent. The inclusion criteria included muslim women candidated for cesarean surgery under spinal anesthesia, with mild pain (1-3). The exclusion criteria were patients with VAS >3, hearing disorder, history of drug abuse, administration of analgesics, with any complications during anesthesia or the surgery and being unable to answer questions. Patients were randomly allocated into two groups of 80 using computer generated random numbers. For about 20 minutes listened to Pray meditation by headphones. The name of pray was "Ya man esmohu davaa va zekrohu shafaa, Allahomma salle ala mohammad va aale mohammad" in intervention group and phone off in control group. Before and during pray meditation, 30, 60 minutes, 3 and 6 hours after listened to pray meditation pain intensity, blood pressure, heart rate and respiratory rate were measured. Pain intensity measured by Visual analog score (VAS) (0 = no pain, 10 = worst pain imaginable).

Data were analyzed with SPSS software for Windows V. 11 (SPSS Inc., Chicago, IL). Descriptive indices including frequency, percentage, mean and its standard deviation (±SD) were used to present data. Comparison between quantitative variables of different times was performed by t-test and Paired t- test for continuous variables, and the comparison of the qualitative variables mean had been respectively accomplished by a “X2 test “ $P<0.05$ was considered as significant level.

Results

No statistically significant differences were found between interventional and control groups in terms of the demographic characteristics (Table 1).

No statistically significant improvement was found in pain score before and during pray meditation, 30, 60 minutes after pray meditation ($P>0.05$). Statistically significant improvement was found in pain score 3 and 6 hours after pray meditation (1.5±0.3 vs. 3±1.3, $P=0.030$) and (1.3±0.8 vs. 3±1.1, $P=0.003$). Comparison of mean pain intensity between the two groups in different times of study are presented in figure 1.

No statistically significant difference was found in systolic changes of blood pressure before and during pray meditation, 30, 60 minutes after pray meditation ($P= 0.473$). Comparison of mean of systolic changes of blood pressure between the two groups in different times of study are presented in figure 2.

No statistically significant difference was found in

diastolic changes of blood pressure before and during pray meditation, 30 , 60 minutes after pray meditation (*P*=0.585). Comparison mean of diastolic changes of blood pressure between the two groups in different times of study are presented in figure 3.

No statistically significant changes in heart rate was found before and during pray meditation, 30, 60 minutes after pray meditation (*P*=0.585). Comparison mean of heart rate changes' between the two groups in different times of study are showed in figure 4.

No statistically significant difference in changes of respiratory rate was found before and during pray meditation, 30, 60 minutes after pray meditation (*P*=0.569). Comparison mean of respiratory rate changes' between the two groups in different times of study are showed in figure 5.

The incidence of postoperative nausea and vomiting (PONV) was significantly more in control group (*P*=0.001). Comparing incidences of PONV between the two groups in different times of study is showed in figure 6. The frequency of relaxation was significantly more in interventional group (*P*=0.0001).

Comparisons of relaxation between the two groups in different times of study are showed in figure 7.

Table 1. Comparison of the demographic characteristics in interventional and control groups

		Interventional (n=80)	Control (n=80)	*P*.Value
Age (years)		27±4	28±4	0.483
Pariety		2±1	8.1±7	0.776
Family Income (Rials)		3200000±1078540	3593750±1034800	0.068
Education	**Elementary school**	7 (14%)	10 (20.8%)	0.533
	Secondry school	17 (34%)	12 (25%)	
	Junior to high school	18 (36%)	20 (41.7%)	
	University	8 (16%)	6 (12.5%)	
Occupation	**Governmental**	4 (8%)	1 (2%)	0.169
	Non – governmental	46 (92%)	49 (98%)	

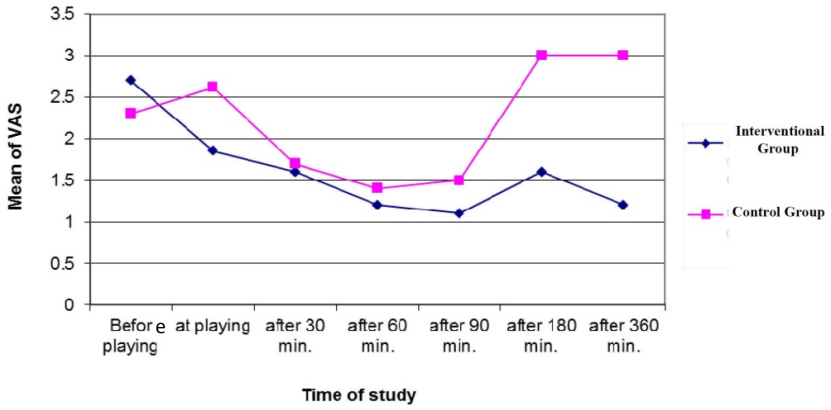

Figure 1. Comparison mean of pain intensity between the two groups in different times of study

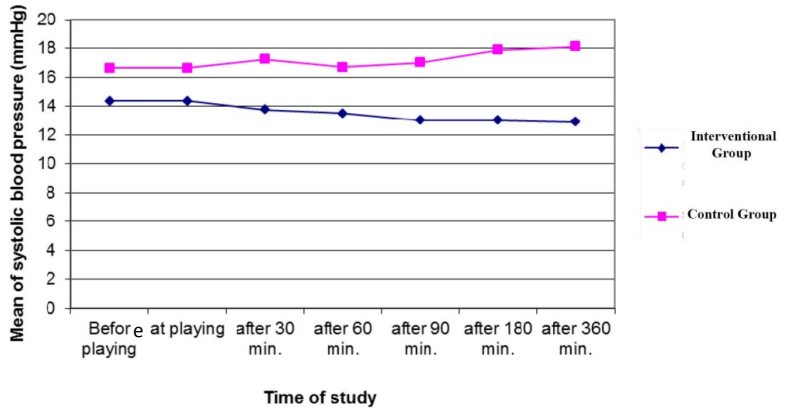

Figure 2. Comparison mean of systolic changes of blood pressure between the two groups in different time of study

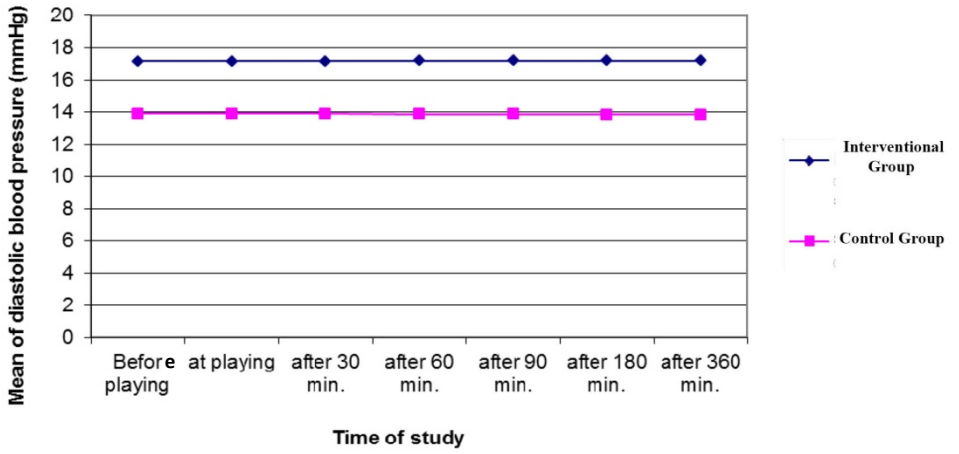

Figure 3. Comparison mean of diastolic changes of blood pressure between the two groups in different times of study

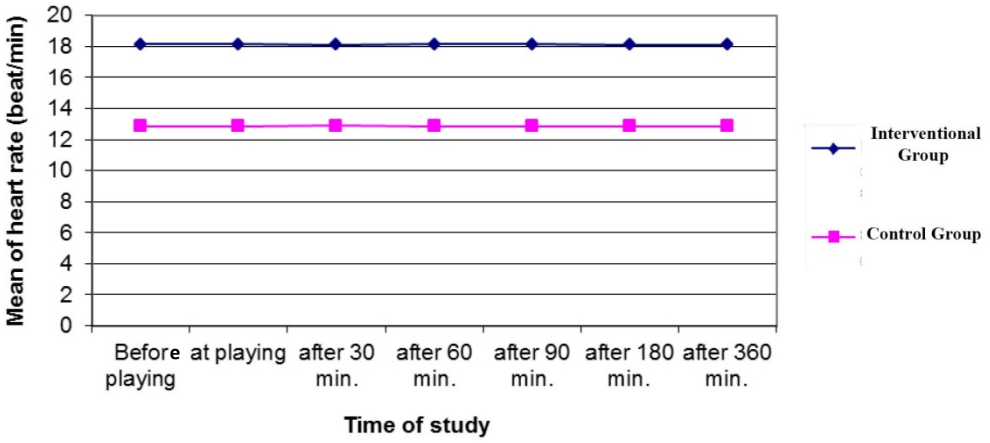

Figure 4. Comparison mean of heart rate changes' between the two groups in different times of study

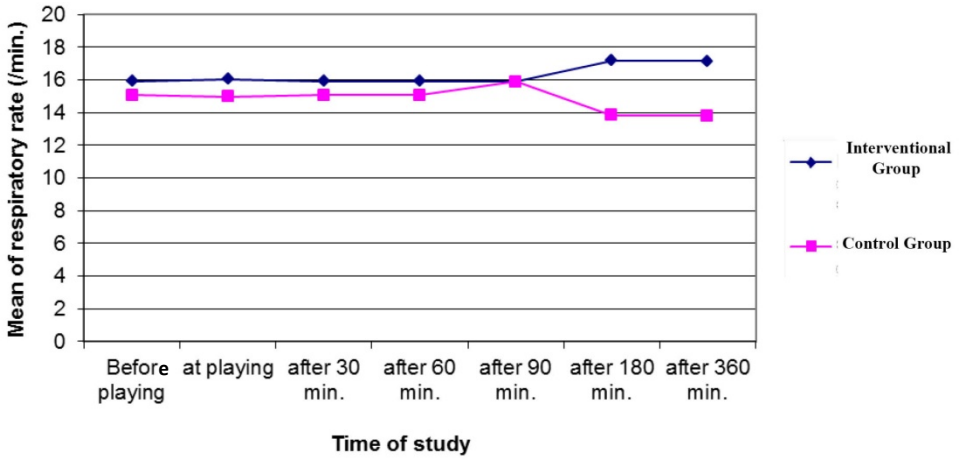

Figure 5. Comparison mean of respiratory rate changes' between the two groups in different times of study

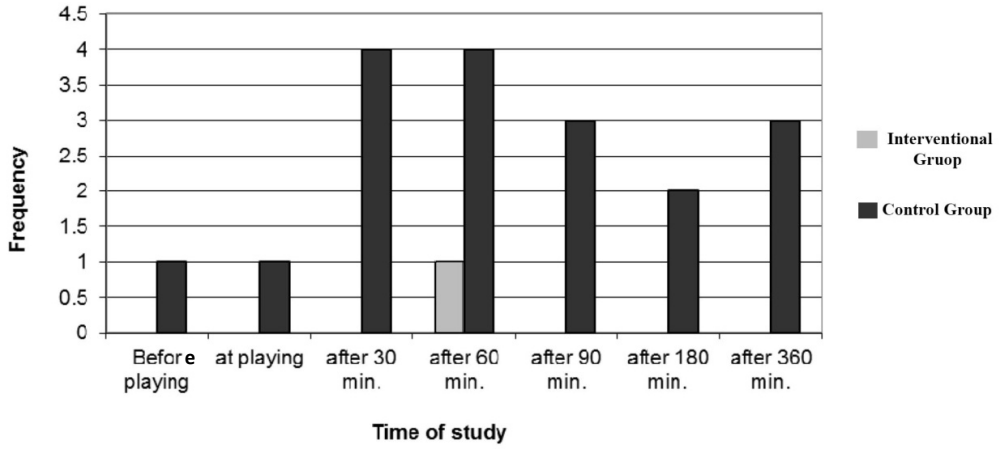

Figure 6. Comparison incidence of nausea and vomiting between the two groups in different times of study

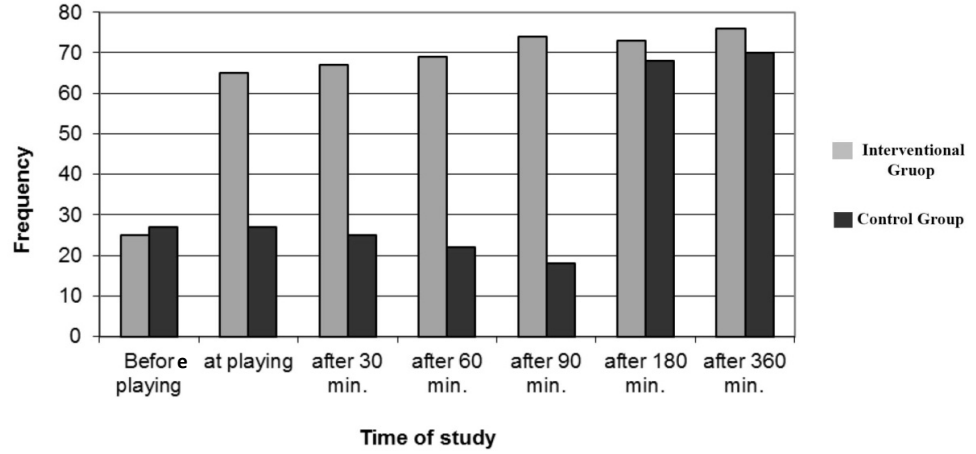

Figure 7. Comparison of relaxation between the two groups in different times of study

Discussion

Present study examined the effects of listening to pray meditation on pain intensity after cesarean surgery under spinal anesthesia. Pain and anxiety are the most common distressing adverse effects in the early postoperative period. Pain management is decisive for surgical patients to decrease patient discomfort and anxiety. Some studies have reported that Pray therapies can relieve perioperative pain and anxiety (7) and postoperative pain and anxiety (11).

Other study, suggested that meditation is one of the non-pharmacological techniques that lead to better physical health, alleviate pain, raise immune responses, ameliorate emotional well- being, and strengthen spiritual growth (12). Based on the results of current study, pray meditation didn't significantly reduce postoperative pain till three hours after cesarean surgery than control group, but significantly decreased postoperative pain at three and six hours after pray meditation in interventional group. This may be due to the fact that all the patients in this study were Muslims and they practiced Pray meditation on the routine basis in their daily life and analgesia related to spinal anesthesia.

Therefore, Pray meditation and cesarean delivery evidenced to foster the soul, body, and mind which in turn helped the patients in control group to reduce sensation of pain after surgery. However, pain severity in interventional group was significantly lower than control group because the interventional group practiced the program of Pray meditation and cesarean delivery for 30 minutes longer than the control group. These findings confirm that patients who practiced pray meditation have significantly less postoperative pain. Pray therapy has been approved to reduce postoperative pain (11).

Several studies reported that Pray therapy, breast

from pain to the remembrance of the God almighty make patients to feel more comfortable and peaceful (13-15). Results of this study revealed that, there was no significant difference between the two groups in the physiological responses during postoperative period. These responses included the systolic and diastolic blood pressure, heart rate, and respiratory rate. They were measured either before Pray meditation, during, and after the practice of Pray meditation. Mardiyono *et al*., confirmed this finding (7).

Inconsistently, some studies showed that prayer provides physiological responses, such as decreased heart rate, decreased blood pressure, or increase in the immune function and decreased episodes of angina in cardiology patients (16-17). Present results showed statistically significant differences in the incidence of nausea and vomiting and anxiety level during different times of the study between two groups. Mardiyono *et al*., reported that Pray therapy for 25 minutes can reduce anxiety level in major surgery (7). Moreover, some studies have suggested that prayer and exposure to pray meditation can be an effective way to strengthen happiness and physical health relieve anxiety, and depression among Muslim students in Iraq, Kuwait and USA (18).

In conclusion, the results of this study indicate that pray meditation has good effects on pain and anxiety control after cesarean surgery. Listening to pray meditation for 20 minutes is a simple, low cost, and side effect free intervention which could be simply provided by an MP3 player and headphone, we recommend extensive use of pray therapy for reducing postoperative pain, postoperative anxiety, nausea and vomiting frequency which does not lead to change in the physiological responses including systolic and diastolic blood pressure, heart rate, and respiratory rate at the first six hours after cesarean surgery under spinal anesthesia. Thus, authors suggest that religion and spirituality intervention such as pray therapy (meditation) could be entered into clinical practice as a routine intervention after cesarean surgery under spinal anesthesia.

References

1. Yorke J, Wallis M, McLean B. Patients' perceptions of pain management after cardiac surgery in an australian critical care unit. Heart Lung 2004;33(1):33-41.
2. Foruzan Nia K, Hosseini H, Mir hoseyni J, et al. Survey effects of the Cryoanalgesia on reduction of post median sternotomy pain and paresthesia after coronary artery bypass surgery. J Shahid Sadoughi Univ Med Sci 2009;17(3):115-21.
3. Ildarabadi E, Saleh Moghadam AR, Mazlum R. The Effect of Holy Quran Recitation on the patients' vital signs before Open Heart surgery. Q J Sabzevar Univ Med Sci 2003;10(1):52-8.
4. Reynolds F. Labour analgesia and the baby:good news is no news. Int J Obstet Anesth 2011;20(1):38-50.
5. Nilsson U, Rawal N, Enqvist B, et al. Analgesia following music and therapeutic suggestions in the PACU in ambulatory surgery; a randomized controlled trial. Acta Anaesthesiol Scand 2003;47(3):278-83.
6. Schaffer SD, Yucha CB. Relaxation & pain management: the relaxation response can play a role in managing chronic and acute pain. Am J Nurs 2004;104(8):75-82.
7. Mardiyono Angraeni M, Sulistyowati DI. Pengaruh terapi dzikir terhadap penurunan kecemasan pasien bedah mayor [Effects of pray therapy in reducing preoperative anxiety for patients undergoing major surgery]. Unpublished Lecturer National Grant, the Ministry of Education. Gen Soedirman Univ., 2007.
8. Sitepu NF. Effect of zikir meditation on postoperative pain among mulsim patients undergoing abdominal surgery, Medan, Indonesia [Dissertation]. Prince of Songkla University, Hat Yai, Thailand, 2009.
9. Abdel-Khalek AM, Lester D. Religiosity, health, and psychopathology in two cultures: Kuwait and USA. Ment Health Relig Cult 2007;10(5):537-50.
10. Syed IB. Spiritual medicine in the history of Islamic medicine. J Int Soc History Islamic Med 2003;2(1):45-9.
11. Sitepu NF. Effect of zikir meditation on postoperative pain among mulsim patients undergoing abdominal surgery, Medan, Indonesia [Dissertation]. Prince of Songkla University, Hat Yai, Thailand, 2009.
12. Ikedo F, Gangahar DM., Quader M., et al. The effect of pray relaxation technique during general anesthesia on recovery outcomes following cardiac surgery. Complement Ther Clin Pract 2007;13(2):85-94.
13. Schaffer SD, Yucha CB. Relaxation & pain management: the relaxation response can play a role in managing chronic and acute pain. Am J Nurs 2004;104(8):75-82.
14. Pellino TA, Gordon DB, Engelke ZK, et al. Use of nonpharmacologic interventions for pain and anxiety after total hip and total knee arthroplasty. Orthop Nurs 2005;24(3):182-90.
15. Kakigi R, Nakata H, Inui H, et al. Intracerebral pain processing in yoga master who claims not to feel pain during meditation. Eur J Pain 2005;9(5):581-9.
16. Benson H. The faith factor. Am Health 1984;5(1):50-3.
17. Meisenhelder JB, Chandler EN. Prayer and health outcomes in church members. Altern Ther Health Med

2000;6(4):56-60.
18. Abdel-Khalek AM. Religiosity, happiness, health, and psychopathology in a probability sample of Muslim adolescents. Ment Health Relig Cult 2007;10(6):571-83.