The Effect of Solution-Focused Counseling on Violence Rate and Quality of Life of Pregnant Women at Risk of Domestic Violence: A randomized Controlled Trial

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Abstract

Background: Domestic violence is considered as one of the most common social problems, which can affect the quality of life of women. The problem of preventing and controlling this problem, especially during pregnancy, is one of the basic challenges of health systems. The aim of this study was to determine the effect of counseling based on conflict solution on the rate of violence and quality of life of pregnant women at risk of domestic violence.

Methods: This study was a randomized controlled trial on 90 pregnant women, who were selected from maternity wards in health center number three in Zanjan city. Women who had inclusion criteria based on the domestic violence conflict tactics scale (CTS-2) selected with convenience sampling and randomly divided into two groups of intervention (45 people) and control (45 people) with a blocked randomization method. The intervention group received six counseling sessions with a solution-focused approach and the control group received no intervention. Study tool included demographic and reproductive questionnaires CTS- 2 and short form health survey (SF-36); which completed at baseline and six weeks follow-up in both groups. The results were analyzed by nonparametric ANCOVA using SPSS and R soft wares.

Results: The results showed that there was a significant difference in the physical violence (P=0.001), psychological violence (P=0.001), and sexual violence (P=0.001) in the intervention group compared to the control group at six weeks follow- up. There were significant improvements in negotiation scores in the intervention group (P□0.001). Moreover, there were significant differences in the quality of life scores (P=0.001), vitality (p=0.003), psychological health (p=0.004), bodily pain (p=0.014), physical functioning (p=0.023), and social functioning (p=0.019) between the two groups at the follow- up period.

Conclusion: According to the result, individual counseling based on a solution-based approach reduces the amount of domestic violence and increases the quality of life of pregnant women at risk of violence.

Trial registration: Iranian Registry of Clinical Trials IRCT2017040628352N4. Date of registration: August 20th 2017.

Background

According to the estimates published by World Health Organization (WHO), 35% of women worldwide are at risk of domestic violence and as many as 38% of women's homicides are committed by their spouses [1]. Domestic violence can take many forms among which the physical, psychological, and sexual violence are the main types [2]. Violence is commonly used in controlling and domineering women [3] which could happen by causing physical aggression or even death threats, physical assaults, activity limitation, denying women's autonomy, and restricting women's access to life facilities [4], this in return could cause physical and psychological traumas which would result in developing low self-esteem, hatred and fear from men [4,5]. Spousal violence specifically during pregnancy as an additional threat to

the mother and fetus health not only cause serious physical disorder but also causes serious fetal consequences such as abortion, pre-mature delivery, low birth weight, and low Apgar score at birth [6-9].

The quality of life scale especially in mental health area in women who had experienced violence is decreasing, while rates for mental health problems such as depression, anxiety, insomnia, violence, and suicide are rising among these women. The reasons for the declining quality of life among women who had experienced violence is psychological trauma caused by deprivation of liberty, verbal and emotional abuse caused by continuous insults, disregarding women's emotions, social and economic inequalities, and doctorial actions of spouses, eventually would result in low confidence and self-esteem in women [10-12].

Empowering women plays a significant role in decreasing domestic violence which could consolidate the emotional bonds between couples [13,14]; So, providing training and counseling sessions as an essential factor in this area is an important duty of health care workers [15]. Solution-focused brief counseling as one of the state-of-the- art and effective approaches in resolving marital problems was developed by a couple named Steve De Shazer and Insoo Kim Berg in Milwaukee brief family therapy center in Wisconsin, U.S.A., and is widely known as an ultra-modern brief therapy [1,16]. This approach helps clients find solutions to their problems, in addition to that; it helps them in identifying their capabilities in a way to become more hopeful about the future and create useful changes in their positions and perspectives in life [17,18]. The solution-focused approach claims that individuals are capable enough to promote the quality of their lives by creating appropriate solutions [19].

According to the searches conducted by researchers, there are no study on the effects of solution-focused approach on the quality of life in pregnant women who undergo violence in Iran or across the world. Thus, considering the high prevalence of violence, the harsh outcomes of violence during pregnancy and its impact on the quality of life of pregnant women, and due to the absence of similar studies conducted in Iran; the present study was conducted to determine the effects of solution-focused counseling on violence scale and the quality of life of pregnant women at risk of domestic violence.

Methods

The study was registered with the clinical trials network code (IRCT2017040628352N4), and all the required permissions have been obtained from Zanjan University of Medical Science with the registration code (ZUMS.REC.1396.37). Samples were collected from childbirth preparation class located in comprehensive urban health care center three in Zanjan, Iran.

Setting and participants

Overall, 267 pregnant women completed the conflict tactic questionnaire and 158 individuals had minor and medium levels of domestic violence based on conflict tactics scale (CTS-2). The rest of them were excluded from the study due to reasons such as absence of violence, unwillingness to participate in the study, the existence of extreme violence (n=2), not living in the city of Zanjan (n=3), and being diabetic

(n=1). Eventually, 90 pregnant women entered into the study and completed the demographic, reproductive, and the quality of life questionnaires (SF-36) from which 45 women were randomly assigned to the intervention group, and the other 45 women were assigned to the control group. In the intervention group four participants were excluded from the study, due to reasons of unwillingness to continue participation (n=3) and having eclampsia (n=1). Also, in the control group four participants were excluded from the study, due to unwillingness to continue participation. Eventually, the data from 82 pregnant women, which included 41 individuals in each group was analyzed (Figure 1).

The inclusion criteria comprised minor and medium levels of domestic violence in physical, psychological, and sexual sub- scales of the CTS-2 in mothers, being over 18 years old, being less than or equivalent to 27 weeks of pregnancy based on Last Menstrual Period (LMP) or ultrasound results, literacy, living in the city of Zanjan, being married for at least a year, having no participation in any other classes or counseling courses simultaneously, having cell phones, absence of underlying illnesses, lack of any known psychological illnesses, lack of psychoactive drug consumption, having no signs of addiction to drugs in pregnant women and their spouses, absence of past-year stressful life events to women or their spouses, absence of pregnancy complications such as preeclampsia, hemorrhage, etc., willingness to participate in counseling sessions and living together as a couple.

The exclusion criteria included unwillingness to continue participation in the study, absence of pregnancy complications such as preeclampsia, etc., and being absent in more than one counseling sessions.

Intervention

In the intervention group, counseling sessions based on solution-focused approach were held weekly for a period of six weeks in the form of 90- minute counseling sessions at childbirth preparation place. The themes in each session were as follows: the aims of the first counseling session include highlighting general principles of solution-focused counseling and providing proper definitions of problems to clients. The second session focused on the familiarity of participants with the concept of quality of life and solution-focused approach. During the third session, clients learnt that there are different interpretations for an event and that they can develop the best interpretation in their minds while in the fourth session, clients were encouraged to discover exceptional opportunities of living as a couple. In the fifth session, with the help of magical questions, participants were able to recognize their destructive behavior patterns; while in the sixth session, a conclusion was made from the whole previous sessions to help the clients replace and experience their former thoughts and behaviors with the new ones. However, the control group only received the routine care. Six weeks after the last counseling session, both groups were invited to complete the study tool for the second time. At this time the session was conducted in the presence of an interviewer who was completely unaware of the grouping procedure.

Random Allocation

Participants were selected through a convenience sampling method and divided into two intervention (A) and control (B) groups using, quadruple random blocks. At first, all sequences of participants in each

block was considered and then 23 blocks sequence was selected from random table number. The overall number of 90 pregnant women entered into the study from which 45 individuals were allocated to intervention and 45 individuals to the control group.

Data collection tools

Research tools for collecting data included demographic and reproductive checklist, CTS-2, and health-related quality of life questionnaire (SF-36); which were completed by qualified women. Demographic data included couple's age, couple's employment, couple's residential address and education status, marriage longevity, economic status, having cell phones, number of marriages and having children from the previous marriage. Reproductive data related to pregnancy status included pregnancy duration, frequency of pregnancy and delivery, intended and unintended pregnancies, and infertility history. In order to identify whether pregnant women were at risk of domestic violence; CTS-2 was applied. The questionnaire is the newly revised version of the conflict tactics scale in addressing marital conflicts which was developed by Straus et el. (1996) with the confirmed Cranach's Alpha of 79% for physical violence and 86% for psychological violence [20].

The applied questionnaire in the present study was validated by Eftekhar ardabili et el. (2010) with the Cronbach's Alpha of 80% [21] which comprised 36 questions studying the conflict tactics on different dimensions of negotiation, physical, psychological, and sexual violence that leads to injuries. Although, the applied criteria in measuring the frequency and severity of violence in the CTS-2 is considered to be from last year, according to the questionnaire designer, one year is predetermined and could be generalized to the desired time expected by the researchers [20]. Thus, in the questionnaire associated with the present study, instead measuring the previous year, three months' period was accounted for measurement. The SF-36 was applied for measuring the quality of life of participants, which included 36 questions and its validity in Iran has been verified by Montazeri et el. (2010) with the Cronbach's Alpha of 77% to 90%. This tool evaluates the quality of life in two dimensions of physical and psychological health. Each dimension contains four subscales. Physical subscales include physical function, role limitation-physical health, bodily pain and general health and psychological dimension include vitality, psychological health, role limitation-emotional health, and social functioning [22].

Study Outcomes

The outcomes of the present study included domestic violence and the quality of life in pregnant women who had been exposed to domestic violence which were measured and evaluated between the two intervention and control groups at six weeks follow ups.

Sample Size

According to the reported domestic violence difference between the two intervention (81.46±33.64) and control (113.40±64.71) groups in Tafreshi et al. [23] study, the error of 5%, and the power of 80%, 41

individuals needed in each group and by counting 10% drop-outs, 45 individuals were entered into each group.

Data Analysis

The collected data were analyzed using SPSS V.16 and R statistical software. In order to study the normal distribution of variables, Kolmogorov– Smirnov test was applied. Qualitative data were analyzed using Chi-square and Fisher tests. In order to compare conflict tactics scale and the quality of life sub-scales between the two groups of intervention and control at baseline, independent t-test and Mann- Whitney U test were used. Due to the non- normal distribution of variables and the absence of parametric ANCOVA defaults; non- parametric ANCOVA was applied to compare the differences between the two groups adjusted for baseline measures. Also, for comparing the conflict tactics scale, the quality of life, and their sub-scales between different phases of study, Wilcoxon and paired t-test were applied. The significance level of the aforementioned tests was based on P value <0.05. The economic class was calculated considering factors such as house foundation, housing, and transportation means. In addition to that, for calculating social and economic levels, factors such as job ranking, education, and economic class were taken into consideration.

Results

The mean± standard deviation for women's age was 27.55±5.13 in the intervention group and 27.26±4.46 in control group, and as for men; the mean value of the men's age was 31.44±5.72 in the intervention group and 31.82±4.72 in the control group. The mean for gestational age was 22.6±2.35 in the intervention group and 22.73±2.41 in control group. The majority of the participants socially and economically belonged to third class. The median of the frequency of pregnancy in both groups was one. The results of Chi-square, Fisher, independent t-test and Mann-Whitney U tests indicated that with regards to demographic and reproductive characteristics; there was no significant statistical differences between the two intervention and control groups (Table 1).

The mean of the negotiation subscale at baseline was 1.98±1.01 in the intervention group and 2.06±1.17 in the control group. The most observed violence in this study was associated with psychological violence. The median± interquartile range of psychological violence was 0.375±0.62 in the intervention and 0.25±0.38 in the control group. The results of the independent t-test and Mann- Whitney U test indicated that with regards to the conflict tactics subscales, there were no statistically significant baseline differences between the two groups of intervention and control (Table 2).

The mean score of the negotiation subscale at six weeks follow-up in the intervention group was 2.92 which in comparison to the mean baseline value of 1.98, there was a statistically significant increase, whereas in the control group this value had decreased from 2.06 to 1.93. Also, the mean score of psychological violence in the intervention group had decreased dramatically from 56% at baseline to 17% at follow up, while this score remained unchanged in the control group. After matching the nonparametric ANCOVA test with the conflict tactics scale variables at the baseline; the results indicated that there was a

significant difference between the two groups in negotiation (P<0.001), physical violence (P=0.001), psychological violence (P=0.001), and sexual violence (P=0.001), however with regards to severe physical violence, no significant difference had been observed at the follow- up period (Figure 2).

The baseline quality of life means score in the intervention group was 65.66± 19.76 and in the control group was 73.46±17.72. In the present study, the highest subscales scores were associated with physical functioning (The median of the physical functioning in the intervention group was 80±30 and in the control group was 85±20). The results collected from the independent t-test and Mann- Whitney U indicated that with regards to the quality of life and its components; there was no statistically baseline difference between the two intervention and control groups (Table 3).

The mean of the quality of life at follow-up was 71.39±11.99 in the intervention group which indicated a statistically significant increase in comparison to the baseline value of 65.66±19.76. After matching the nonparametric ANCOVA test with the quality of life variables and its associate components at baseline; it was showed that there was a significant difference between the two groups with regards to total quality of life (p=0.001), vitality (p=0.003), psychological health (p=0.004), bodily pain (p=0.014), physical functioning (p=0.023), and social functioning (p=0.019) at the follow- up period, however, there was no significant difference in other subscales of general health, role limitation-physical and role limitation-emotional health (Table 3).

In the intervention group, according to results of the paired t-test and Wilcoxon, the changes of the conflict tactics sub- scales of negotiation (p<0.001), physical violence (p=0.039), psychological violence (p<0.001), and sexual violence (p<0.001) at follow-up phase versus baseline was statically significant. However, no statistically significant difference was recorded for severe physical violence. While in the control group, no statistically significant difference was reported when comparing the subscales at follow- up phases versus baseline values.

Also, the results of the independent t-test and Wilcoxon indicated that. there were significant changes in quality of life subscales including general quality of life (p<0.001), vitality (p=0.002), psychological health (p<0.001), general health (p=0.003), role limitation-emotional health (p=0.006), and social functioning (p=0.045) at the follow- up period in comparison to baseline phase. However, there were no significant statistical differences in areas of bodily pain, physical functioning, and role limitation-physical health.

Discussion

The two groups of intervention and control at the baseline showed homogenous characteristics in terms of demographic, reproductive, conflict tactics subscales, general life quality and its components. Thus it seems that random allocation of the two groups has been successful.

With regards to the conflict tactics subscales, six weeks after the completion of the solution-focused counseling sessions, this study indicated that there was a statistically significant difference in the rate of negotiation, physical, psychological, and sexual violence. This difference happened in a way that

negation scale scores in the intervention group had increased significantly whereas in the control group, the scores had decreased. Also, the rate of physical and sexual violence in the intervention group decreased significantly, whereas in the control group this rate increased. Also, on the factor of severe physical violence, by comparing both groups prior to and after intervention; it was determined that this type of violence decreased in both groups; however, the difference of this variable between the two groups was not significant. Thus it seems that solution-focused counselling approach had decreased the amount of physical, psychological, and sexual violence on pregnant women. The results of the study on the effect of counseling and a training intervention in reducing violence scale had indicated that raising awareness and empowering women would reduce the rate of violence [24]. In line with the findings of this research, Tiwari et el. (2005) indicated that the rate of physical and psychological violence among Chinese women under the effects problem solving trainings has decreased [24]. Furthermore, Kiely et el. (2010) in America indicated that cognitive counseling has decreased the rate of domestic violence among pregnant women [25]. Also, Naim et el. (2017) indicated that women's anger management training contribute to reducing domestic violence [26]. Since the majority of women who had experienced violence lacked a sufficient psychological asset which is significant predictive factor in increasing the likelihood of spousal violence; therefore, empowering women had profound effects on reducing violence scale. Since the solution-focused approach is designed according to empowering and elevating self-confidence, women who had undergone this type of counseling became more capable to resolve their marital problems through positive negotiations; thus the rate of physical, psychological, and sexual violence reduced. Regarding the severe physical violence, the results of the current study indicated that the rate of violence in both groups of intervention and control has decreased and by comparing the two groups; no statistically significant difference was observed. Perhaps the reason behind could have been spouse's fear of complications during pregnancy following by severe physical violence.

At follow-up, statistically significant difference was observed between the two groups of intervention and control in terms of general quality of life and its components such as vitality, psychological health, bodily pain, physical and social functions. However, there was no statistically significant difference in factors such as general health component scores, role limitation-physical health and role limitation-emotional health between the two groups. Therefore, it seems that solution-focused counseling has been effective in improving the quality of life among women who had experienced violence. Align with the findings of the current research; Mahmoudi et el. (2015) indicated that the quality of life in women who received solution-focused counseling has been increasing [19]. Furthermore, solution-focused counseling improves the quality of marital relationship between the couples [27] and is effective on women who have been depressed and dissatisfied about their marital lives [28]. Also, conflict tactics counseling can lead to the reduction of marital conflicts between the couples [29]. The decline of violence rate and the increase of positive negotiations are two of the most likely reasons accounted for the increase of the quality of life in women who had undergone counseling and this has brought more emotional support from spouses.

The results of the current study indicated that solution-focused approach as an appropriate method can be applied to treat and prevent domestic violence and improve and elevate the quality of life in women

who have experienced violence and are eligible for counseling. It is better to use a larger and more diverse population for future studies whereby through extended follow-up periods; a thorough evaluation of counseling results would be possible. Also, it would be wise to have similar studies conducted on non-pregnant women.

Conclusion

Solution-focused individual counseling has been found to be significantly effective in reducing domestic violence and increasing the quality of life in the intervention group and has led to improvements following negotiation and reduction in physical, psychological, and sexual violence. Also, the quality of life scores in other dimensions such as vitality, psychological health, bodily pain, physical and social functioning have been improved; however, still some domain of functioning such as the reduction of severe physical violence, improvement of general health components, role limitation-physical health and role limitation-emotional health remained unchanged. Due to the reduction of the majority of violence components and general quality of life; the implementation of this approach by healthcare institutions or other organizations in contact with women at risk of violence is approved to be beneficial. According to the results of the current study, there hasn't been a significant increase on the quality of life subscales such as general health, role limitation-physical health and role limitation-emotional health. Conducting similar studies in non-pregnancy periods is suggested.

Abbreviations

CTS-2: Conflict Tactics Scales

SF-36: Short Form health survey

LMP: Last Menstrual Period

Declarations

Ethics approval and consent to participate

all the required permissions have been obtained from Zanjan University of Medical Science with the registration code (ZUMS.REC.1396.37). From all mothers who were willing to participate a written informed consent was obtained.

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analyzed during this study are included in this article.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

The first author SD has contributed in conceptualization, designing, collecting data, interpretation of data, writing this manuscript. MD has contributed in designing the study. EA participated in the designing and data collection. LJ participated in the designing and statistical analyses of the data. RKH designed and supervised all stages of the study, analyzed the data and revising drafts of this manuscript. All authors read and approved the final manuscript.

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Tables

Table 1: Comparison of demographic and obstetric date in intervention and control groups

Variable	Intervention (n=45)		Control (n=45)		p-value
	n	%	n	%	
Woman's age (y)	27.55	5.13	27.26	4.46	0.776
Man's age (y)	31.44	5.72	31.82	4.72	0.734
Female education (y)*	14	5.5	12	4	0.905
Male education (y)*	12	5	12	5	0.937
Duration of marriage(y)*	3	8	3	5	0.189
Woman's job (housekeeper)	42	93.3	42	93.3	1
Previous marriage (yes)	1	2.2	1	2.2	1
child from previous marriage (no)	45	100	45	100	1
Economic class First Second Third Fourth Fifth	 8 17 12 7 1	 17.8 37.8 31.1 15.6 2.2	 12 10 14 8 1	 26.7 22.2 26.7 17.8 2.2	0.586
Economic and social class First Second Third Fourth Fifth	 5 14 19 6 1	 11.1 31.1 42.2 13.3 2.2	 6 12 18 9 0	 13.3 26.7 40 20 0	0.759
Gestational age at enrollment (wk)	22.6	2.35	22.73	2.41	0.792
Wanting pregnancy Wanted Unplanned Unwanted	 12 30 3	26.7 66.6 6.7 	 15 30 0	 33.3 66.7 0	0.051
Infertility history (yes)	1	2.2	4	8.9	0.180
Gravidity*	1	1	1	1	0.075
Parity *	0	1	0	1	0.403

Duration of infertility (y)*	1	0	0.183

Data are mean± standard deviation or n (%)

* Median and interquartile range

Table 2: Comparison of the subscales of conflict tactics scales between intervention and control groups at baseline

Variable	Intervention (n=45)		Control (n=45)		p-value
	Mean	SD	Mean	SD	
Negotiation	1.98	1.01	2.06	1.17	0.715
Psychological abuse*	0.375	0.62	0.25	0.38	0.068
Minor physical violence*	0	0.833	0	0	0.431
Severe physical violence*	0	0	0	0	0.980
Sexual abuse*	0	0.50	0	0.125	0.096

Data are mean± standard deviation * Median and interquartile range

Table 3: Comparison of quality of life and its sub-scales between two intervention and control groups during different phases of the study

Variable		Intervention		control		p-value
		Mean	SD	Mean	SD	
Baseline	quality of life	65.66	19.76	73.46	17.72	0.052
	Vitality	65.60	36.94	77.77	30.72	0.092
	Mental health	73.62	20.30	68.68	19.91	0.184
	General health	64.46	17.76	69.49	15.26	0.153
	Bodily pain*	67.50	20	77.50	32.5	0.227
	Physical functioning*	80	30	85	20	0.188
	Role limitation-physical health*	75	62.5	100	25	0.146
	Role limitation-emotional health*	66.66	100	66.66	66.66	0.126
	Social functioning*	75	25	75	37.5	0.358
follow-up	quality of life	71.39	11.99	71.59	15.86	0.001 †
	Vitality	67.35	15.55	64.39	18.74	0.003 †
	Mental health	74.63	14.49	69.5	18.38	0.004 †
	General health	70.6	14.16	70.97	14.15	0.247 †
	Bodily pain*	70.66	16.2	70.7	21.27	0.014 †
	Physical functioning*	85	25	80	20	0.023 †
	Role limitation-physical health*	75	50	75	50	0.134 †
	Role limitation-emotional health*	66	67	100	77	0.541 †
	Social functioning*	75	12.5	75	25	0.019 †

Data are mean± standard deviation

* Median and interquartile range

† Nonparametric ANCOVA

Figures

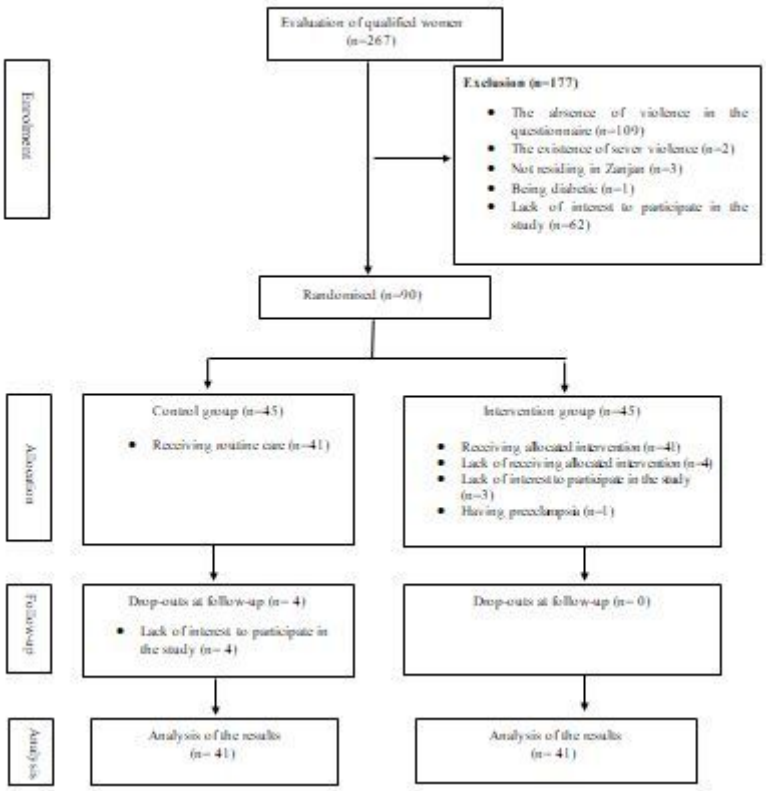

Figure 1

Flow diagram of the progress through the phases of a randomized controlled trial

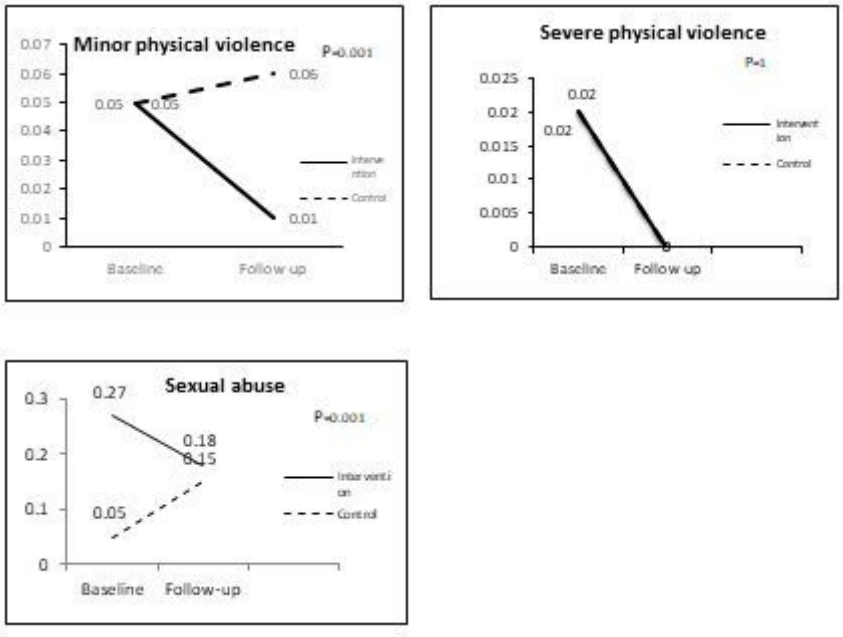

Figure 2

Comparison of the mean scales of conflict tactics scales between intervention and control groups at follow-up