ORIGINAL ARTICLE

Effect of an intervention on attitudes towards domestic violence among Iranian girls

Yalda Soleiman Ekhtiari,[1] Davoud Shojaeizadeh,[2] Abbas Rahimi Foroushani,[3] Fazlollah Ghofranipour,[4] Batoul Ahmadi[5]

Abstract

Objective: To evaluate the effect of an intervention based on the Precede-Proceed Model on attitudes towards prevention of Domestic Violence among Iranian girls.

Methods: The randomised controlled trial was conducted during 2010-11 at 10 high schools in District 17 of Tehran Municipality in Iran. The subjects were divided into two equal groups of cases and controls. Components of the Precede-Proceed Model for planning, implementation and evaluation of the study. After need assessment, an appropriate environmental and educational intervention was implemented in the intervention group. Changes in predisposing, reinforcing, enabling factors and especially attitudes towards prevention of Domestic Violence immediately and two months after the intervention were assessed in by questionnaires based on the Precede-Proceed Model. SPSS 18 was used for statistical analyses.

Results: There were 510 students who comprised the study population, with 255 individuals in each of the two groups. The intervention had significantly positive effect on predisposing, enabling and reinforcing factors immediately and two months after the intervention ($p<0.05$). Repeated measures analysis of variance showed a significant positive increase in attitude score in the intervention group from baseline to two months ($p<0.001$).

Conclusion: The Precede-Proceed Model is one of the most widely used health planning models for identifying factors that influence health behaviours associated with domestic violence. Implementation of an educational programme based on the model among young girls was effective in changing attitude towards domestic violence.

Keywords: Domestic violence, Precede-Proceed Model, Attitude, Prevention, Health education. (JPMA 64: 987; 2014)

Introduction

Domestic Violence (DV) is recognised as one of the public health problems among women that can present in any countries with any kind of social, cultural and regional characteristics.[1,2] In 1997, DV was defined by the World Health Organisation (WHO) as "the range of sexually, psychologically and physically coercive acts used against women by male intimate partners".[3] DV can affect women's health directly or indirectly through wide range of consequences for women's physical and mental health.[1,2]

Results of a 10-country study on women's health showed that between 15% and 71% of women had experienced physical and/or sexual violence by a partner in their lifetime.[4] Iran is no exception to the rule.[5] However, accurate statistics are not available in this regard.

[1,2]Department of Health Education and Promotion, [3]Department of Epidemiology and Biostatistics, [5]Coordinator of Women's Health Research Committee, Department of Health Management and Economics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran, [4]Department of Health Education, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran.

Correspondence: Davoud Shojaeizadeh. Email: shojaei@tums.ac.ir

Efforts by national and international organisations have drawn attention to this problem and led to the development and implementation of preventive programmes related to DV.[6,7]

To develop effective interventions it is important to know the determinants of DV. Among these, attitude towards DV is known to be associated with DV. According to studies in Iran, educational interventions aimed at promoting preventive behaviours among women should focus primarily on improving knowledge and attitudes towards DV.[8] Other studies have also shown that attitude towards DV is known as one of the predictors of justification and acceptance of DV.[9] Attitude is defined as "evaluative reactions or dispositions toward a situation, a person, or a group, as expressed in one's beliefs, feelings, or behaviour".[10] Measuring attitudes can lead to predicting behaviour.[11]

In the health education field, a planning model could be used as an organising framework for health promotion efforts to help us to explain and predict behaviours to conduct effective health education programmes for changing behaviours.[10,12] The Precede-Proceed Model (PPM) has been used often by health educators to develop and evaluate health promotion and policy

programmes.[13] This model involves a detailed series of eight phases. The Precede portion of the model (phases 1-4) focuses on programme planning, while the Proceed portion (phases 5-8) focuses on implementation and evaluation of the programme.[14]

However, because young girls spend several hours every day at school, this environment can influence most of their attitudes and behaviours and it has been identified as a key setting for violence prevention activities.[4,15] Hence, the current study was designed to assess the effect of an PPM-based intervention on changing attitudes towards prevention of DV among Iranian high school girls.

Subjects and Methods

The randomised controlled trial was conducted on third-grade high school girls in District 17 of Tehran Municipality in Iran during 2010-11. The study protocol conformed to the ethical guidelines of the 1975 Declaration of Helsinki, and it was approved by the Ethics Committee of Tehran University of Medical Sciences.

The district where the study was carried out is densely populated by people of low to moderate socioeconomic status. Third-grade students were selected because they leave high school a year later and usually get married soon afterwards.

Considering the percentage of adoption of preventive behaviours by uneducated women in similar studies,[16] it was hypothesised that an intervention based on PPM would result in 15% increase in preventive behaviours among high school girls. The sample size was calculated with a 95% confidence interval (CI) and 80% power of test. Therefore, considering a design effect on sample size, it was determined that the sample size in each of the intervention and control groups was 255. Based on stratified sampling, all high schools for girls in the district were selected and each school was identified as a stratum. Schools were randomly divided into two groups using toss. Then from among the third-grade students of each school, students were randomly selected using a random number table. The sole inclusion criterion was female third-grade students.

All the students furnished informed written consent before data collection. Verbal consent was also obtained from their mothers. The respondents were anonymous and participated willingly and voluntarily.

As it was a mixed qualitative-quantitative study, qualitative data was collected through four focus group discussions with 100 third-grade students other than the two main study groups from four high schools and five in-depth interviews with key personnel related to DV such as women's health specialists and consultants. Quantitative data was collected through the specific questionnaire based on PPM which included demographic characteristics, predisposing factors that included knowledge (seven items) and attitude (26 items based on the Likert scale), enabling factors (four items) and reinforcing factors (four items). Scores of variables were classified as weak (less than 50 per cent), moderate (50-70 per cent) and good (more than 70 per cent) levels. Ten health education professionals confirmed the content validity of the questionnaire. The reliability of the attitude questionnaire was confirmed with a Cronbach alpha reliability coefficient of 0.71 obtained in a pilot study on 30 students other than the two main study groups. Test-Retest method used for determining the reliability of the knowledge, reinforcing and enabling questionnaires in the pilot sample and correlation coefficient of 0.75, 0.80 and 0.77 were achieved respectively.

The social assessment was done by identifying factors which had impact on health outcomes and the quality of life (QOL) of the target populations. For epidemiological, behavioural and environmental assessment, we collected existing data related to DV such as types and prevalence rate, importance and factors associated with DV in Iran and other countries using data sources such as various online databases and national health surveys in other countries. Then, factors causally associated with DV were systematically identified and the most important and the most changeable behavioural and environmental factors associated with DV were found. Finally, behavioural objectives and environmental objectives were constructed for each risk factor.

Educational and ecological assessment facilitates determining the predisposing, enabling and reinforcing factors which can lead to behaviour change. For the purpose of the study, predisposing factors included knowledge, attitudes and beliefs towards DV. These factors provide the rationale or the motivation for health-related behaviour.[17] Getting influences from people such as parents, especially mothers, teachers, school counsellors and peers provide reward and feedback associated with the performance of health behaviours and these are considered reinforcing factors.[17] Enabling factors were availability and accessibility to counselling centres, educational classes, informational resources such as books and websites. We used the results of qualitative and quantitative study to determine these factors.

For administrative and policy assessment, we assessed resources, facilities and supports such as place and

timetable for activities, budgeting, personnel, organisational barriers, policies, necessary coordination for implementing intervention through interview with key individuals. After these quadric assessments, the programme's components were determined. Educational objectives, content of the educational programme, messages, concepts and materials were developed through finding experts' views and reviewing the scientific resources.

The proposed programme was subsequently implemented among students of the intervention group. To increase students' awareness about DV prevention, lectures were held for life skills education and verbal sessions about DV prevention twice a week until reaching the educational objectives. Educational pamphlets related to DV prevention were distributed among the students, creating the educational web-log about DV prevention.

To change students' attitude, focus group discussions were held with the subjects about issues related to DV, including consequences of DV on women' health, benefits and barriers of DV prevention, and ways to prevent exposure to DV. We tried to reach appropriate attitudes among the subjects towards issues related to DV.

To promote the reinforcing factors, advocacy and training sessions were held with high school counsellors to effectively conduct DV prevention education for the students. Educational booklets were distributed among parents to involve them, especially mothers, in violence prevention education to their daughters and reinforce messages learned at the school.

To promote the enabling factors, coordination was ensured with available and free counselling centres in the district and they were introduced to the subjects. Teachers and counsellors, as enabling factors to students, were provided with correct information to increase their awareness about DV prevention by introducing them to books and reliable websites related to DV prevention.

Process evaluation included programme components such as the programme staff, methods and materials used and activities and what they achieved in terms of educational objectives.

Impact evaluation consisted of assessing change in predisposing, reinforcing, enabling factor scores immediately after and two months after the interventional activities through analysis of the questionnaires. Data was analysed using SPSS 18. Baseline demographic characteristics, knowledge, attitude, enabling and reinforcing factor scores before the intervention in both groups were compared using the chi-square test for categorical variables. To determine the effects of the intervention, repeated measures analyses of variance (ANOVA) were done. Time was the within-subject factor with three levels (pre-test, post-test and post-post-test). Group was the between-subject variable with two levels (the intervention and control groups). When an interaction effect between group and time was found, the mean between the group difference and the 95% CI were reported. To further analyse the responses of the groups, the mean within group difference and the 95% CIs were calculated for all confounding factors. For each confounding factor, a repeated measure ANOVA was conducted separately. A p value <0.05 was considered significant.

Due to time restriction in having access to students because of the summer holidays, evaluation the effect of the interventional activities on indicators of QOL and health status in the log term has not been evaluated yet. The study is still continuing.

Results

There were 10 schools in the district where the study was conducted with 1020 third-grade female students. Of them 510 (50%) were selected as the sample. Demographic characteristics at baseline were noted (Table-1). There were no significant differences in any of the demographic characteristics between the two subjects and the controls ($p>0.05$).

Before intervention, there was no significant difference between the two groups regarding the mean scores of knowledge, attitude, enabling and reinforcing factors. Before intervention, the mean of knowledge scores were in weak level in the intervention and control groups (7.67±2.43 and 8.23± 2.89 respectively) but immediately after and two months after intervention they reached the good level in the intervention group (14.06±1.6 and 15.27±1.39 respectively) but no change was found in the control group (8.6±2.74 and 8.71±2.75 respectively). The mean of enabling and reinforcing factors scores were also at weak level in the two groups at baseline, but immediately after, and two months after intervention reached moderate level in the intervention group (2.08±0.75 and 2.34±0.83 respectively) but remained weak among the controls.

The mean of attitude score changed from 91.69±9.43 (moderate level) at baseline to 99.95±8.26 (good level) immediately after intervention, and finally to 112.13±6.98 (good level) two months after intervention in the subjects. But among the controls, there was no significant change over time.

Table-1: Demographic characteristics.

Characteristics	Intervention group (n=255)		Control group (n=255)		P-value
	n	%	n	%	
Field of education					0.16
Mathematics	69	27.1	74	29	
Experimental sciences	103	40.4	83	32.5	
Human sciences	83	32.5	98	38.4	
Family size					0.14
3	20	7.8	16	6.3	
4	102	40	94	36.9	
5	92	36.1	90	35.3	
6 and higher	41	16.1	55	21.6	
Birth order					0.11
First	131	51.4	109	42.7	
Second	56	22	71	27.8	
Third	41	16.1	37	14.5	
Forth and higher	27	10.6	38	14.9	
Father's occupation					0.84
Employee	86	33.7	76	29.8	
Worker	51	20	51	20	
Self employed	95	37.3	107	42	
Non employed	11	4.3	10	3.9	
Divorced or widowed	12	4.7	11	4.3	
Mother's occupation *					0.53
Housewife	225	88.9	222	87.1	
Employed	28	9.4	23	11.1	
Father's Education					0.31
Illiterate	11	4.3	22	8.6	
Less than High school	105	41.2	103	40.4	
High school Diploma	102	40	90	35.3	
Higher education	25	9.8	29	11.4	
Divorced or widowed	12	4.7	11	4.3	
Mother's education*					0.46
Illiterate	14	5.5	21	8.6	
(Less than) High school	138	54.5	128	52.2	
High school Diploma	84	32.2	75	30.6	
Higher education	17	6.7	21	8.6	
Housing					0.63
Rented	86	33.7	81	31.8	
Owned	169	66.3	174	68.2	
Having a specific room					0.32
Yes	129	50.6	140	54.9	
No	126	49.4	115	45.1	
Family status					0.69
Two-parent family	242	94.9	240	94.1	
Single-parent family	13	5.1	15	5.9	

*2students of the intervention group and 10 students of the control group didn't answer the question.

A repeated measures ANOVA was used to determine significant effect of intervention on the mean of attitude score over time. It was higher among the subjects than the controls (91.69±9.43 at baseline to 99.95±8.26 immediately after intervention, and finally to 112.13±6.98 two months after intervention; p<0.001) (Table-2). In addition, the mean of attitude score immediately after and two month after the intervention had significant difference between the two groups (p<0.001). The trend of changes in attitude score over time was very flat in the control group, but had abrupt increase in the intervention group. There was a significant interaction between groups and the mean of attitude score (p<0.001).

Table-2: Analysis of variance.

Sources	Sum of squares	df	F	P-value
Attitude	27180.04	1.546	768.244	<0.001
Group	22275.97	1	117.576	<0.001
Attitude*group	26777.20	1.546	756.858	<0.001
Error	17972.74	785.536	-	-

Table-3: Analysis of variance after adjustment for each confounding factor.

Model	Sum of squares for group	df	F	P-value
Model 1	22368.86	1	119.020	<0.001
Model 2	16593.44	1	87.140	<0.001
Model 3	16415.30	1	87.413	<0.001
Model 4	9491.14	1	49.409	<0.001
Model 5	6138.02	1	32.155	<0.001
Model 6	7242.83	1	38.141	<0.001
Model 7	8822.34	1	46.168	<0.001
Model 8	21100.64	1	111.290	<0.001
Model 9	21644.41	1	114.651	<0.001
Model 10	4888.70	1	25.754	<0.001

Model 1- Adjusted for field of education, Model 2- Adjusted for family size, Model 3- Adjusted for Birth order, Model 4- Adjusted for father's occupation, Model 5- Adjusted for mother's occupation, Model 6- Adjusted for father's education, Model 7- Adjusted for mother's education, Model 8- Adjusted for housing, Model 9- Adjusted for having a specific room, Model 10- Adjusted for family status.

Significant effect of the intervention on the mean of attitude score for confounding factors was adjusted (Table 3). After adjustment for each confounding factor, the intervention had still significant positive effect on the mean of attitude score (p<0.001).

Discussion

During the last few decades, planning models have been applied as a guiding framework to conduct multi-component activities to obtain large-scale behaviour changes. The PPM assumes that the multiple factors at multiple levels shape health behaviours and QOL.[13] It has been applied internationally in complex areas such as self-care, disease prevention, community nursing and immunisations.[17] Results of studies showed that it has been used to determine knowledge and those attitudes that are effective in behaviour changes in a wide variety of

settings, such as schools.[18-20] Our findings also indicated that PPM is an appropriate model for DV prevention activities.

Before the intervention, both the qualitative and quantitative study consistently confirmed lack of correct attitudes towards DV among target population. However, a significant increase in attitude scores was observed immediately and two months after the intervention was observed in the subjects. Attitude is an important concept for understanding and predicting human behaviour.[11] Studies have shown that attitude can influence acceptability of the act of DV and lead to tolerance and legitimisation of violence.[9] Most likely, the success of the programme in changing the attitudes towards DV is associated with improving reinforcing and enabling factors related to the prevention of DV among young girls. Young girls' attitude are shaped by multiple factors in their family, school and community. Access to informational resources such as counselling centres and media is also associated with a lower risk of acceptance of violence among women and girls.[21] In our study we provided the rationale or motivation for target behaviours through promoting predisposing, enabling and reinforcing factors. We tried to facilitate the practice of the preventive behaviours in the target population in the future.

The result of the study is concordant with other studies that have shown that educational and environmental interventions can be effective in improving factors related to the prevention of DV. The majority of the targeted segments should preferably be in a school setting.[22-25] These studies were focused on improving knowledge about different types of violence, including DV, and change inappropriate attitudes supporting violence. According to studies, multidisciplinary violence prevention programme can produce short-term improvement in knowledge and attitude towards violence among the youth.[23,24] In these studies, significant increase in knowledge levels and significant positive attitude and behavioural intention changes were found in the experimental group at post-test (immediate to six months after intervention) in comparison with the control group. In some of these studies even at long-term follow-up, participants in the intervention group showed significant positive changes in attitudes towards violence.[23] This was the first study that applied the PPM to change attitudes towards DV among Iranian high school girls. The effectiveness of this programme can be attributed to the use of the PPM as an organising framework which can identify the factors associated with individuals' attitude.

In terms of limitation, the study lacked follow-up to determine the long-term effects of the programme on health status of the target population. Further research needs to be done to examine the long-term effects of the programme on health and QOL indicators in high school girls.

Conclusion

An intervention protocol for high school girls on attitudes towards DV could be positively associated with changed attitudes. In addition, we can develop, implement and evaluate health education programmes through defined stages of planning models. Changing attitudes toward DV requires long-term commitment of all parts of society. More efforts are needed to focus on long-term changes. Implementation of such programmes may help reduce the number of DV cases against women in the future.

References

1. Flury M, Nyberg E, Riecher-Rossler A. Domestic violence against women: Definitions, epidemiology, risk factors and consequences. Swiss Med Wkly 2010; 140: w13099.
2. Rapp D, Zoch B, Khan MMH, Pollmann T, Kramer A. Association between gap in spousal education and domestic violence in India and Bangladesh. BMC Public Health 2012; 12: 467.
3. World Health Organization. WHO/WHD. Violence against women: A priority health issue. Geneva: World Health Organization; 1997. p1-28.
4. Abramsky T, Watts CH, Garcia-Moreno C, Devries K, Kiss L, Ellsberg M, et al. What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence. BMC Public Health 2011; 11:109.
5. Pournaghash-Tehrani S. Domestic violence in Iran: A literature review. Aggression and Violent Behavior 2011; 16: 1-5.
6. World Health Organization. WHO multi-country study on women's health and domestic violence against women: summary report of initial results on prevalence, health outcomes and women's responses. Geneva, World Health Organization, 2005; pp 22-25.
7. Pallitto CC, Garcia-Moreno C, Jansen HAFM, Heise L, Ellsberg M, Watts C; WHO Multi-Country Study on Women's Health and Domestic Violence. Intimate partner violence, abortion, and unintended pregnancy: results from the WHO Multi-country Study on Women's Health and Domestic Violence. Int J Gynaecol Obstet 2012; 120: 3-9.
8. Ahmadi B, Nasseri S, Alimohamadian M, Shams M, Ranjbar Z, Ebrahimpour A, et al. Views of Tehrani couples and experts on domestic violence against women in Iran: A qualitative research. J School Public Health Inst Public Health Resear 2008; 6: 67-81. [In Farsi].
9. Abeya SG, Afework MF, Yalew AW. Intimate partner violence against women in west Ethiopia: a qualitative study on attitudes, woman's response, and suggested measures as perceived by community members. Reprod Health 2012; 9: 14.
10. Modeste NN, Tamayose TS. Dictionary of public health promotion and education: terms and concepts. 2nd ed. New York: John Wiley & Sons, 2004; pp 85-6.
11. CranoWD, Prislin R. Attitudes and Attitude Change. London: Taylor & Francis Group, 2008; pp 74-305.
12. Crosby R, Noar SM. What is a planning model? An introduction to PRECEDE-PROCEED. J Public Health Dent 2011; 71: S7-15.

13. Glasgow RE. Planning models and theories: integrating components for addressing complex challenges. J Public Health Dent 2011; 7: S17.
14. Gielen AC, McDonal EM, Gary TL, Bone LR. Using the PRECEDE-PROCEED Model to apply health behaviour theories. In: Glanz K, Rimer BK, Viswanath K, Health behavior and health education: theory, research, and practice. 4th ed. New York: John Wiley & Sons, 2008; pp 407-33.
15. Taymoori P, Niknami S, Berry T, Lubans D, Ghofranipour F, Kazemnejad A. A school-based randomized controlled trial to improve physical activity among Iranian high school girls. Int J Behav Nutr Phys Act 2008; 5: 18.
16. McFarlane J, Parker B, Soeken K, Silva C, Reel S. Safety behaviors of Abused Women after an Intervention During Pregnancy. J Obstet Gynecol Neonatal Nurs 1998; 27: 64-9.
17. Tramm R, McCarthy A, Yates P. Using the Precede-Proceed Model of Health Program Planning in breast cancer nursing research. J Adv Nurs 2011; 68: 1870-80.
18. Moshki M, Atarodi BA, Moslem A, Taheri M. Applying an Educational-participatory Program based on the PRECEDE Model for Promoting Self-esteem and Mental Health of Students in Iran. Int J Prev Med 2012; 3: 241-8.
19. Howat P, Jones S, Hall M, Cross D, Stevenson M. The PRECEDE-PROCEED model: application to planning a child pedestrian injury prevention program. Inj Prev 1997; 3: 282-7.
20. Mirtz TA, Thompson MA, Greene L, Wyatt LA, Akagi CG. Adolescent idiopathic scoliosis screening for school, community, and clinical health promotion practice utilizing the PRECEDE-PROCEED model. Chiropr Osteopat 2005; 13: 25.
21. Antai D, Antai J. Collective violence and attitudes of women toward intimate partner violence: Evidence from the Niger Delta. BMC Int Health Hum Rights 2009; 9: 12.
22. Cornelius TL, Resseguie N. Primary and secondary prevention programs for dating violence: A review of the literature. Aggress Violent Behav 2007; 12: 364-75.
23. Whitaker DJ, Morrison S, Lindquist C, Hawkins SR, O'Neil JA, Nesius AM, et al. A critical review of interventions for the primary prevention of perpetration of partner violence. Aggress Violent Behav 2006; 11: 151-66.
24. Cunningham RM, Walton MA, Goldstein A, Chermack ST, Shope JT, Bingham CR, et al. Three-month follow-up of brief computerized and therapist interventions for alcohol and violence among teens. Acad Emerg Med 2009; 16: 1193-207.
25. Simon TR, Ikeda RM, Smith EP, Reese LE, Rabiner DL, Miller-Johnson S, et al. The multisite violence prevention project: impact of a universal school-based violence prevention program on social-cognitive outcomes. Prev Sci 2008; 9: 231-44.