

An intervention study to assess knowledge and attitude about reproductive health among Turkish Armed Forces

Alper Tunga Kokcu,¹ Omur Sayligil²

Abstract

Objective: To evaluate the influence of reproductive health training given in Turkish Armed Forces on recruits' knowledge.

Methods: This interventional study was conducted at the Basic Military Training Centre, Kutahya, Turkey, from September to October 2009, and comprised recruits of armed forces. Data was collected and assessed before and after the training sessions. The intervention programme consisted of education focusing on anatomy of the reproductive system, contraceptive methods, sexually transmitted infections, responsible parenthood, gender and violence against women. A knowledge evaluation form of 25 true-false questions and an attitude scale of 20 Likert-type items were used to collect data. SPSS 15 was used to analyse data.

Results: Of the 1,218 forms distributed, 1,109(91%) were returned duly filled. The overall mean age of the participants was 20.8±1.8 years (range: 20-30 years). The knowledge score mean was 66.57±12.28 before the training, and increased to 80.89±12.66 after the training with an increase of 14.32% (p<0.001). The attitude score mean was 3.72±0.45 before the training and increased to 3.95±0.49 after the training with an increase of 5.75% (p<0.001).

Conclusion: The reproductive health training increased knowledge level of recruits in a military setting.

Keywords: Military personnel, Reproductive health, Training programmes, Unwanted pregnancies, Induced abortion. (JPMA 66: 1571; 2016)

Introduction

Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. At a conference in Cairo, 179 countries adopted a forward-looking, 20-year programme of action. Innovative programmes must be developed to make information, counselling and services for reproductive health accessible to adolescents and adult men, as indicated in the programme of action.¹

In women's reproductive health-related decisions, men usually play a decisive role, particularly with regard to contraceptive methods. Current studies have shown that male participation rendered reproductive health programmes for women more effective.² On the other hand, we cannot disregard the anxiety that men's involvement in reproductive health programmes risks increasing male control over fertility of women and

supports the continuation of a male-dominant structure in the society.³

In Turkey, the majority of male population does compulsory military service before getting married. Every year, about 350,000 men become a member of the army for 12 months. In order to provide social contribution regarding reproductive health, the Ministry of Health launched a project targeted at recruits in the Turkish Armed Forces (TAF), in collaboration with the United Nations Population Fund (UNFPA). The main departure point of the project was to target the young male adult population, particularly before marriage. With the launch of this project, primary physicians, nurses and medical petty officers were trained as field trainers and counsellors by one-week courses on interactive training skills. All military posts were furnished with training classrooms with standard training materials. Since 2004, recruits have been receiving one-day reproductive health training (RHT) in groups of 20 members each. The content of these trainings was designed in view of demands and failures in service provision in the country.^{4,5}

According to a 2005 study, young adult males do not have an adequate knowledge of family planning in Turkey. Their view towards male-oriented family planning methods was prejudiced. The data particularly

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¹Primary Health Care Centre, Gendarmerie Training Battalion Command,

¹Department of History of Medicine and Ethics, Canakkale Onsekiz Mart University Faculty of Medicine, Canakkale, ²Department of History of Medicine and Ethics, Eskisehir Osmangazi University Faculty of Medicine, Eskisehir, Turkey.

Correspondence: Alper Tunga Kokcu. Email: alpertungakokcu@comu.edu.tr

demonstrates the importance of education and counselling in reproductive health in young men.⁶

Abortion is the ending or termination of a pregnancy before the developing foetus is ready to be born or be able to survive. Abortion laws in different countries may limit the number of weeks at which an abortion can be carried out, or may only allow certain types of abortion - or not allow them at all.⁷ Abortion until the end of the 10th week of pregnancy has been legal since 1983 in Turkey.⁸

According to the proponents of abortion, committing abortion is morally justified. Some women's organisations emphasise that a woman has a fundamental right to decide for herself as to whether pregnancy should be terminated or not.⁹ Extreme opponents of abortion argue that abortion is equivalent to murder and that, no matter how much women may suffer, they cannot be allowed to "kill their children".¹⁰

Women experience an unwanted pregnancy and seek to terminate it for many reasons. Unwanted pregnancies constitute a serious public health responsibility.¹¹ It is estimated that around 208 million pregnancies take place worldwide each year, of which about 31 million (15%) end in miscarriage or foetal death from natural causes, and about 41 million (20%) end in abortion. This means that about one in five pregnant women will have an abortion.⁷ According to data from the Turkey Demographic and Health Survey (TDHS)-2008, there were 10 induced abortions per 100 pregnancies during 2003-2008 period. Overall, 71 per cent of births in the five-year period preceding the survey were planned, 11 per cent were mistimed, and 18 per cent were unwanted.¹² According to the statistics, unwanted pregnancies and abortions cannot be disregarded in Turkey.

The existing data on men's views, attitudes and behaviour concerning unwanted pregnancies and abortion as important parts of reproductive health is very limited in Turkey. In the literature, there are some researches about the effect of RHT given in the TAF on recruits' knowledge. It was observed in these researches that the knowledge levels of recruits increased after the RHT.^{5,13} However, there is no study dealing with the influence of RHT on attitudes. The current study was planned to evaluate the influence of RHT on recruits' attitudes and knowledge about unwanted pregnancies and abortion. Our hypothesis was that the RHT given in the TAF increases knowledge level of recruits and results in positive changes in their attitudes with respect to the ethical problem area of unwanted pregnancies and abortion.

Subjects and Methods

The one-group pre-test, post-test interventional study

without control group was conducted at the Basic Military Training Centre, Kutahya, Turkey, from September and October 2009, and comprised recruits of armed forces. Data was collected and assessed before and after the training sessions (Figure).

The main intervention of the programme was a 1-day RHT course with the following content: module 1: anatomy of the reproductive system of males and females; module 2: regulation of fertility, including the reversible contraceptive methods; module 3: sexually transmitted infections and human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), particularly signs, symptoms and protection measures; module 4: responsible parenthood including safe motherhood; and module 5: gender and violence against women.

The participants of this study were doing their compulsory military service in the third training period of 2009. A sample was not selected from this universe, and the whole universe was involved in the study.

Data was collected through a basic information form which was designed to collect socio-demographic data from respondents through information about marital status, place of residence, educational background and so on.

A pilot attitude scale based on literature review and theoretical model was prepared by researchers. Twenty-six items of 5-point Likert scale were administered to some of the recruits. Six items were removed from the scale after analysis. The statistical evaluation of selected forms that had been totally completed showed that the internal consistency coefficient of the scale of 20 items was alpha (α): 0.74, which meant that the scale was reliable. The attitude scale, with 20 items of 5-point Likert scale, designed to be administered to respondents before and after the RHT, attempted to find out the effect of the training on the attitudes of recruits. In the scale, there were 8 positive statements and 12 negative statements on unwanted pregnancies and abortion. There were also statements about gender equality and family planning relating to research topic. The responses were scored from 1 to 5 according to negativity or positivity degree of statements. Low scores referred to negativity of attitudes, and the high scores referred to their positivity. The score of an item increased as the degree of agreeing positive attitude statements increased and the degree of agreeing negative attitude statements decreased. The responses of all respondents were scored from 1 to 5, and their means were calculated to obtain the "item attitude score mean" (IASM). The score means of all items were calculated to find the "attitude score mean". For all mean values, the lowest limit was 1 and the highest limit was 5 points.

The standard knowledge evaluation form with 25 true-false questions has been routinely applied to recruits before and after the RHTs since 2004 as a part of the training programme. This questionnaire intends to assess the contribution of training to reproductive health related-knowledge of recruits. The correct answer to each question is scored as 4, and the total number of correct answers resulted in the "knowledge score" of each participant. The highest score to be received is 100. In the evaluation, the "knowledge score mean" was used.

As the data was not distributed normally and not homogeneous, non-parametric statistical tests were used in analysis. Wilcoxon signed-rank test was used to analyse the data obtained to find out the difference in knowledge and attitudes following the training. Furthermore, Kruskal-Wallis test and Mann-Whitney U test were used to evaluate whether there was difference in knowledge and attitudes of respondents according to their socio-demographic features. SPSS 15 was used for data analysis. $P < 0.001$ was considered significant.

Permission to conduct the study was obtained from the Gendarmerie General Command, Ankara, Turkey. Informed consent was obtained from all participants. All information obtained from research volunteers were treated as confidential.

Results

Of the 1,218 forms distributed, 1,109(91%) were returned duly filled. Of them, 50(4.5%) were married, while

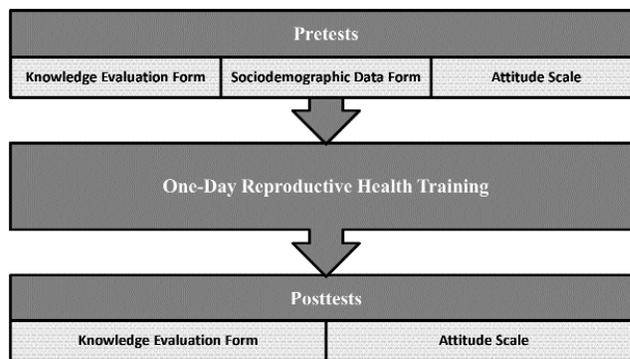


Figure: Flow of the study.

1,059(95.5%) were single. Besides, 74(6.7%) were illiterate or primary school dropouts, 80(7.2%) had education up to primary, 485(43.7%) up to secondary, 360(32.5%) up to high school whereas 110(9.9%) were in higher education. The overall mean age of the participants was 20.8 ± 1.8 years (range: 20-30 years).

The overall knowledge score mean before the training was 66.57 ± 12.28 and increased to 80.89 ± 12.66 after the training. Thus, the rate of score increase was 14.32% ($p < 0.001$).

The knowledge score means increased in all geographical regions after the training. The knowledge score means of respondents from the south-eastern Anatolia (62.11 ± 10.88 before and 76.71 ± 13.00 after training) and

Table-1: Socio-demographic data, knowledge score means and attitude score means (n=1,109).

Socio-demographic data	n	%	Knowledge score mean \pm SD			Attitude score mean \pm SD		
			Pre-training	Post-training	P	Pre-training	Post-training	P
Marital status								
Had a marriage	50	4.5	66.72 ± 10.98	80.48 ± 12.09	0.000	3.82 ± 0.41	4.10 ± 0.45	<0.01
Single	1,059	95.5	66.56 ± 12.34	80.91 ± 12.68	0.000	3.72 ± 0.45	3.94 ± 0.49	<0.001
Level of education								
Illiterate / primary school drop-out	74	6.7	61.14 ± 11.50	73.35 ± 14.85	0.000	3.44 ± 0.42	3.95 ± 0.61	<0.001
Primary school	80	7.2	61.70 ± 11.13	76.90 ± 12.47	0.000	3.50 ± 0.40	3.85 ± 0.52	<0.001
Secondary school	485	43.7	65.91 ± 11.90	80.96 ± 12.45	0.000	3.65 ± 0.45	3.89 ± 0.49	<0.001
High school	360	32.5	68.40 ± 12.47	82.18 ± 12.37	0.000	3.85 ± 0.41	3.99 ± 0.44	<0.001
Higher education	110	9.9	70.69 ± 12.06	84.40 ± 10.38	0.000	3.99 ± 0.38	4.12 ± 0.44	<0.01
Region								
Marmara	292	26.3	68.89 ± 12.29	82.84 ± 11.95	0.000	3.78 ± 0.44	3.98 ± 0.47	<0.001
Central Anatolia	165	14.9	66.98 ± 12.53	81.36 ± 13.17	0.000	3.70 ± 0.41	3.88 ± 0.45	<0.001
South-eastern Anatolia	140	12.6	62.11 ± 10.88	76.71 ± 13.00	0.000	3.59 ± 0.40	3.92 ± 0.55	<0.001
Eastern Anatolia	135	12.2	62.90 ± 12.10	77.30 ± 13.26	0.000	3.63 ± 0.45	3.93 ± 0.51	<0.001
Mediterranean	134	12.1	68.45 ± 11.79	81.19 ± 12.60	0.000	3.73 ± 0.47	3.95 ± 0.51	<0.001
Black Sea	128	11.5	66.63 ± 11.54	82.56 ± 11.70	0.000	3.77 ± 0.49	3.96 ± 0.46	<0.01
Aegean	115	10.4	67.58 ± 12.93	82.40 ± 11.83	0.000	3.82 ± 0.48	3.99 ± 0.47	<0.001

Wilcoxon Signed Ranks Test was applied to find out the differences in knowledge and attitudes following the training. SD: Standard deviation.

Table-2: Item attitude score means before and after the training (n=1,109).

Attitude statement	Positivity/Negativity of statement	Pre-training IASM \pm SD	Post-training IASM \pm SD	P
1. The male partner decides alone to continue or terminate the pregnancy (abortion) in case of unwanted pregnancy.	Negative	4.42 \pm 0.97	4.62 \pm 0.73	<0.001
2. Important decisions should be taken by men in the family.	Negative	3.38 \pm 1.35	3.97 \pm 1.24	<0.001
3. Unwanted pregnancy must be terminated.	Negative	3.60 \pm 1.21	3.59 \pm 1.34	0.931
4. Abortion is an ordinary medical intervention for women.	Negative	3.86 \pm 1.11	4.00 \pm 1.18	<0.001
5. In case of unwanted pregnancy, abortion shouldn't be done after 10th week of pregnancy.	Positive	3.75 \pm 1.32	4.06 \pm 1.26	<0.001
6. Knowing the gender of foetus simplifies the making abortion decision.	Negative	3.96 \pm 1.15	4.20 \pm 1.10	<0.001
7. Abortion can be done in case of rape, probability of handicapped child and mother's life at risk.	Positive	3.55 \pm 1.22	3.93 \pm 1.21	<0.001
8. Man should have a boy.	Negative	4.05 \pm 1.26	4.36 \pm 1.04	<0.001
9. God provides livelihood to every child born.	Negative	1.93 \pm 1.31	2.38 \pm 1.58	<0.001
10. Having more children provides social power in the society.	Negative	3.33 \pm 1.25	3.77 \pm 1.28	<0.001
11. It does not matter whether it is a boy or girl, both are auspicious.	Positive	4.47 \pm 1.02	4.56 \pm 0.97	<0.05
12. Couples should decide together in the family that how many children they will have.	Positive	4.31 \pm 1.03	4.55 \pm 0.86	<0.001
13. All families must have a boy.	Negative	3.18 \pm 1.30	3.51 \pm 1.39	<0.001
14. Unwanted pregnancy can be terminated at any time.	Negative	3.47 \pm 1.13	3.64 \pm 1.29	<0.001
15. It is always the responsibility of women to avoid unwanted pregnancies in the family.	Negative	3.27 \pm 1.16	3.86 \pm 1.21	<0.001
16. Men should know the family planning methods.	Positive	4.20 \pm 0.96	4.42 \pm 0.89	<0.001
17. Women should know the family planning methods.	Positive	4.07 \pm 1.03	4.35 \pm 0.95	<0.001
18. The decision of termination of unwanted pregnancy should be made by women only.	Negative	3.93 \pm 1.12	4.24 \pm 1.01	<0.001
19. Abortion influences women's physical and mental health.	Positive	3.82 \pm 1.09	4.06 \pm 1.10	<0.001
20. Abortion also influences husbands negatively.	Positive	3.84 \pm 1.01	4.00 \pm 1.09	<0.001

Wilcoxon Signed Ranks Test was applied to find out the differences in attitudes following the training.

SD: Standard deviation

IASM: Item attitude score mean.

eastern Anatolia (62.90 \pm 12.10 and 77.30 \pm 13.26) were lower than those from other regions, both before and after the training. The highest knowledge score mean belonged to privates from Marmara region (68.89 \pm 12.29 and 82.84 \pm 11.95), both before and after the training. The difference in knowledge by geographical regions of the respondents was significant, both before and after the training ($p < 0.001$). The knowledge score means by educational level increased as the level of education increased. The difference in knowledge by educational level of the respondents was significant ($p < 0.001$). The knowledge score means of single (66.56 \pm 12.34 before and 80.91 \pm 12.68 after the training) and married (66.72 \pm 10.98 and 80.48 \pm 12.09) groups were close to each other. There was no significant difference in knowledge by marital status of respondents ($p > 0.05$).

The overall attitude score mean was 3.72 \pm 0.45 before the training and increased to 3.95 \pm 0.49 after the training. Thus, the rate of increase was 5.75%. It was noted that the difference in attitude score between pre-training and post-training was significant ($p < 0.001$). The data collected through the RHT was analysed with regard to socio-demographic features of the respondents.

The attitude score means increased in all geographical regions after the training. The pre-training attitude score

means of recruits from the south-eastern (3.59 \pm 0.40) and eastern Anatolia (3.63 \pm 0.45) were lower compared to those from other regions, but were at the same level as recruits from other regions after the training (3.92 \pm 0.55 and 3.93 \pm 0.51, respectively). The respondents' attitude score means differed significantly before the training by the geographical region where they resided, while these differences were removed after the training (pre-training $p < 0.001$; post-training $p > 0.05$). As the level of education increased, attitude score means increased before the training. After the training, the attitude score mean of the respondents in the "illiterate and primary school drop-out" group (3.95 \pm 0.61) was higher than the mean of the respondents in "primary school" (3.85 \pm 0.52) and "secondary school" (3.89 \pm 0.49) groups. The highest score increase occurred in this first group with a rate of 12.75%. Further, there was a negative relationship between the rate of increase in attitude scores and the level of education. The respondents' attitudes yielded a significant difference by educational level ($p < 0.01$). The rate of score increase was 7% among the married group and 5.5% among the single group. The respondents' attitude score means did not differ before the training by whether they were married or not, while the difference was found after the training (pre-training $p > 0.05$, post-training $p < 0.05$) (Table-1).

IASMs were analysed in order to find out the differences in attitudes following the training. All but one IASM (unwanted pregnancy must be terminated; 3.60 ± 1.21 pre-training and 3.59 ± 1.34 post-training) increased after the training (Table-2).

Discussion

The most significant departure point of the RHT programme in the TAF was to target the young male adult population, particularly before marriage. The majority of the respondents in this study were unmarried (95.5%) and the average age was 20.8 ± 1.8 years. The research data showed that the programme fulfilled its initial purpose. After the RHT, the mean score for knowledge and attitude increased 14.32% and 5.75%, respectively ($p < 0.001$).

According to the findings of our study, it may be said that the RHT does not eliminate knowledge differences resulting from geographical regions, but eliminates attitude differences. On the other hand, it can be concluded that reproductive health-related knowledge and attitude differences resulting from educational level cannot be removed with short trainings. Positive change in the attitudes of married and low-educated groups was much more than others, reflecting that they benefited a lot more from the RHT.

Although a change occurred in attitudes after training, it was evaluated that religious teachings were highly effective on participants' attitude determinations. The participants' awareness intended for gender equality was considered to be fairly good. The participants did not internalise an approach based on male domination about decision of terminating the pregnancy.

In 2005, Sahin conducted a study to determine male university students' views, attitudes and behaviour towards family planning and emergency contraception as an important aspect of reproductive health. This study was carried out with 278 men in Turkey. The study found that taking a shared responsibility for contraception among students was high (79.3%) while 13% of the participants thought contraception was only women's responsibility and 7.7% thought it was only men's responsibility.⁶ In our study, some of the recruits — pre-training 315 (28.4%); post-training 199 (17.9%) — expressed that avoiding unwanted pregnancies was only women's responsibility. Our participants' educational levels were lower than the participants of this study. It was evaluated that the difference between two studies resulted from educational levels of the participants.

Gungor et al. conducted a study in 2006 involving 248,796 recruits through the reproductive health website of the TAF.

A knowledge tool of 25 true-false questions was used to collect data. Every correct answer was scored with 4 points with a maximum score of 100. The knowledge score mean before the training was 65.7 ± 15.4 and increased to 83.5 ± 12.7 after the training ($p < 0.001$).⁵ In 2007, Gocgeldi et al. conducted another study of 1,837 recruits given RHT in the TAF. The same knowledge tool was used to collect data in this study. The knowledge score mean before the training was 64.0 ± 18.5 and increased to 77.1 ± 17.2 after the training ($p < 0.05$).¹³ It was observed in both researches that the knowledge levels of participants residing in Turkey's eastern regions and low-educated participants were lower than others. Likewise in our research, the participants knowledge levels were assessed using the same test form, and similar findings were obtained.

According to data from the TDHS-2013, the rate of induced abortions fell to 5 per 100 pregnancies from 10 per 100 pregnancies in TDHS-2008. Overall, 74 per cent of births in the five-year period preceding the survey were planned, 11 per cent were mistimed and 13 per cent were unwanted. The percentage of unwanted births has decreased since the TDHS-2008 in which 18 per cent of births were unwanted.¹⁴ RHTs have been ongoing since 2004 in the TAF. Thus, it may be said that there has been a contribution of RHTs given in the TAF to these developments relating to abortion and unwanted pregnancies in Turkey.

In the US, using in-depth interviews with 20 men involved in 30 abortions, Reich and Brindis examined how men assign responsibility for the occurrence of unintended pregnancy and describe the decision-making process that led to the termination of a pregnancy they co-conceived. In accounting for how the accidental pregnancy happened and what their roles were in preventing pregnancy, men's responses ranged from assigning total responsibility to women, to ignoring the issue entirely, to seeing it as a shared duty.¹⁵ A study involving in-depth interviews was carried out in 2003 with 61 women aged 18-60 years and 21 men aged 20-50 years from Kampala and Mbarara, Uganda, where abortion is illegal except to save the life of the woman. When questioned generally about men's attitudes towards abortion, male respondents stated that men were not supportive of women having abortions. They believed that the aborted child could be an important member of society; that the woman could die undergoing the abortion, and they feared that they themselves might be arrested.¹⁶ Men's reproductive health-related attitudes are influenced by socio-cultural norms, religion and legal environment. In the light of the findings obtained in our research, as long as men's knowledge about reproductive health increases, they will not want women to decide on termination of pregnancy on her own. It is considered that due to RHT, this attitude

change in the participants results from learning their rights as candidate fathers and responsibility to support women.

The issues regarding reproductive health are accompanied by many ethical discussion topics. This field covers a wide range of issues with significant ethical concerns such as women's right to give birth, abortion, sex determination in mother's womb, sexually transmitted infections and ethical aspects of assisted reproductive techniques. Governments have adopted a policy in order to reduce the reproductive health-related problems by fulfilling the deficit in individuals' knowledge and changing their negative attitudes through trainings.

Not determining the correct target group for reproductive health training has caused not to obtain expected results exactly in performed programmes. It has been observed that it is difficult to succeed for reproductive health programmes aiming at only women, and not including men. Therefore, the target group of reproductive health training programmes should involve men as well as women.

Conclusion

The RHT given in the TAF helped increase knowledge level of the recruits and resulted in positive changes in their attitudes with respect to the ethical problem area of unwanted pregnancies and abortion. However, the effect of this training on attitudes was somewhat limited. RHT given in the military may contribute to the reduction of ethical problems in this field, especially in countries where the military service is compulsory. The Turkish model for male involvement in RHT may set a precedent for other countries.

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