Original Article

Health promotion in the "Cancer Early Diagnosis, Screening and Education Centers" in Ankara: Mixed methods research among women

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Abstract

Objective: Prevention remains the most cost-effective long term strategy for cancer control. This study assessed health services delivered by the "Cancer Early Diagnosis, Screening and Education Centers" (CEDSECs), with a special focus on health promotion. **Methods:** The study group included 332 women, aged 30-70 years, who had attended any of the three centers in Ankara and had volunteered to participate in the study with a follow-up. A mixed methods design (before and after surveys, medical records and focus groups) was used for data collection. Descriptive statistics, the chi-square test, Fisher's exact test, McNemar's chi-square test, Bowker's test for symmetry and the paired samples t test were used for quantitative data analysis, whereas, manifest content analysis was used for qualitative data. **Results:** Of the participants surveyed after they had used the services of the centers (n=319), 97.5% were satisfied with the centers' services. After service delivery, participants' knowledge on cancer preventive measures was significantly higher ($p<0.001$). Despite an increase in knowledge, educational activities in the centers were not associated with any improvement in health behaviors ($p>0.05$), except for an increase in breast self-examination ($p<0.001$). **Conclusion:** Most women were satisfied with the CEDSEC services and did not encounter problems with cancer screening; however current services seem only to increase cancer awareness without any significant effect on health behaviors. Within the scope of health promotion services, a multidimensional approach is needed including evidence-based educational and behavioral interventions with follow-ups.

Key Words: Cancer screening, health promotion, health education, health behavior, preventive health services

Ankara'da Kanser Erken Teşhis Tarama ve Eğitim Merkezlerinde sağlığı geliştirme: Kadınlar ile yürütülen karma yöntemli bir araştırma

Özet

Amaç: Kanser kontrolünde korunma, halen en maliyet-etkili ve uzun dönemli strateji olmayı sürdürmektedir. Bu çalışmada, Kanser Erken Teşhis, Tarama ve Eğitim Merkezleri'nin (KETEM) hizmetlerinin, özellikle hizmetlerin sağlığı geliştirme boyutuna odaklanarak değerlendirilmesi amaçlanmıştır.

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Yöntem: Araştırma grubunu, Ankara'da bulunan KETEM'lere başvuran ve izleme dönemi ile birlikte çalışmaya katılmayı kabul eden 30-70 yaş arası 332 kadın oluşturmaktadır. Çalışmada, karma veri toplama yöntemi (hizmet öncesi ve sonrası anket formları, tıbbi kayıtlar ve odak grup görüşmeleri) kullanılmıştır. Niceliksel verilerin analizinde tanımlayıcı istatistikler, ki-kare testi, Fisher'in kesin ki-kare testi, McNemar`ın ki-kare testi, Bowker'in simetri testi ve bağımlı gruplarda t-testi kullanılmış, niteliksel verilerin analizinde ise görünür/açık içerik analizi yapılmıştır. **Bulgular:** Hizmet sonrası görüşülen katılımcıların (n=319) %97.5'i KETEM'lerin sunduğu hizmetlerden memnun kalmıştır. Katılımcıların kanserden korunmak için alınabilecek önlemler konusunda bilgi düzeyi, hizmet sonrasında anlamlı düzeyde artmıştır ($p<0.001$). Merkezlerde verilen eğitimler, kanserden korunmaya yönelik önlemler konusundaki bazı bilgileri artırmakla beraber, kendi kendine meme muayenesi sıklığının artması ($p<0.001$) dışında, diğer sağlık davranışları ile ilişkili bulunmamıştır ($p>0.05$). **Sonuç:** KETEM'lerden hizmet alan kadınların çoğu hizmetlerden memnun kalmış ve kanser taramaları ile ilgili sorun yaşamamıştır; ancak bulgular, merkezlerin mevcut hizmetlerinin, kanser konusunda farkındalığı arttırmakla birlikte sağlık davranışlarını önemli düzeyde etkilemediğini göstermektedir. Sağlığı geliştirme hizmetleri kapsamında; kanıta dayalı eğitim ve davranış müdahaleleri ile bu müdahaleleri izleme dönemlerini de içeren çok boyutlu bir yaklaşıma gereksinim vardır.

Anahtar Kelimeler: Kanser taraması, sağlığı geliştirme, sağlık eğitimi, sağlık davranışı, koruyucu sağlık hizmetleri

Introduction

Cancer, as one of the leading causes of death, is a public health problem of increasing significance at the global level.[1-3] Scientific evidence shows that prevention still remains the most cost-effective and long term strategy in cancer control.[1,2] According to the World Health Organization (WHO), more than 30% of cancer deaths could be prevented by modifying or avoiding key risk factors, including tobacco use, being overweight or obese, unhealthy diets with low fruit and vegetable intake, lack of physical activity and alcohol use among others[1]. However, preventive measures, especially those focusing on health behaviors, are still far behind what is needed in most countries.

Today, it is widely known that health professionals are among the most influential groups with respect to positive behavioral changes among individuals and communities.[4] Therefore, within the scope of public health services, health education and promotion have special significance. A vast array of studies show that utilization of health services in health promoting centers or hospitals are associated with an increase in healthy behaviors, better control of chronic diseases, increase in quality of life, decreased need for inpatient treatments, and hence decreased health care expenditures.[4,5]

In the planning and delivery of health services, community participation is also one of the key public health principles.[5,6] Accordingly, individuals should not be viewed as passive service-users, but as valuable contributors to the quality of health care.[5] Therefore, beliefs, traditions, and perceptions of health and illness, as well as priorities and expectations of individuals or communities with respect to health services should be sought and included in the planning, implementation and evaluation phases of health care.

Today, Turkey is one of the countries with an increasing burden of non-communicable diseases and cancer is the second most common cause of death (21.1%) after cardiovascular diseases.[7] Cancer control in Turkey, which includes primary, secondary and tertiary prevention

efforts, is mainly coordinated under the National Cancer Control Program (2009-2015). As part of this Program, the Ministry of Health (MoH) has established 123 CEDSECs, which deliver free cancer prevention services as integrated units to the state hospitals in 81 provinces.[8] The services provided in these centers cover both primary (prevention of risk factors) and secondary (early diagnosis and screening) cancer preventive measures, as well as health promotion efforts such as promotion of healthy lifestyles and personal cancer preventive measures through health education sessions for service-users.[8] Since services for early detection of cancer cover breast, cervix and colorectal cancers, women constitute the majority of service-users, and hence the target group in the present study was women.

In parallel to the goal of the MoH in Turkey to have at least one CEDSEC per 250,000 population by the year 2015, this study aimed to assess the health promotional dimension of the health services at these centers, for service improvement. Accordingly, opinions and suggestions of service-users with respect to the services of the centers` were assessed, in addition to the associations between service utilization and the knowledge and behaviors available relative to cancer prevention.

Materials and Methods

Study Group: The study group included 332 women aged 30-70 years, who had attended any one of the three CEDSECs in Ankara for the first time in October or November 2010, and volunteered to participate in the study. Among these, focus group participants constituted of a group of 13 women.

Methodology: The study was conducted in partnerships between the MoH, academia, health services, and the health service users. After data collection and analysis, the study findings and recommendations were presented to the policy and decision makers in the MoH for policy changes and actions.

Data collection: Mixed methods design was used for data collection. All participants were informed about the study aims and written consents were taken before data collection.

Quantitative data were obtained through medical records of the centers and three surveys, which were conducted before, right after and three months after service utilization. The structured questionnaires were pre-tested with 10 participants in each center. The first survey was conducted face-to-face before service utilization with the participation of 332 women. The second survey was conducted face-to-face right after service utilization with 319 women (96.1%), whereas the third survey was conducted three months later as a telephone survey with 292 women (88.0%). The first and second surveys were carried out by trained nurses, whereas the final survey was carried out by the researchers.

Qualitative data were obtained through three focus group discussions conducted after service utilization in each center. Randomly selected participants, who had participated in the first survey, were invited by telephone to participate in the focus groups. The phone calls were terminated after 10 participants were identified for each focus group. The group discussions were held with a total of 13 participants, who arrived at the centers on the agreed days. The researchers used a semi-structured interview guide to conduct the focus groups. Each focus group lasted 80-90 minutes and was tape-recorded.

After the groups' sessions, opinions of participants were taken to shape the rest of the study, including how to discuss the preliminary findings and to structure the third quantitative part of the study. After initial data analysis by the researchers, several informal meetings were held with six focus group participants, who volunteered to discuss and interpret the findings, and to develop recommendations for policy makers. After writing the report,

the final study findings and further actions were shared with this group of volunteers.

Finally, a study report including recommendations for service improvement was presented and discussed in a meeting with the policy makers in the MoH and the health personnel working in the three study sites.

Surveys and focus group:

Survey before service utilization: This included sociodemographics, having chronic diseases, perceived health status, weight and height, family history of cancer, knowledge of/ about cancer prevention, perceived risk of cancer, health behaviors with respect to cancer prevention (tobacco use, prevention of secondhand tobacco smoke, alcohol use, diet, physical activity, sleep, breast self-examination) and knowledge and expectations about the center's services.

Survey right after service utiliation: This included knowledge on cancer prevention, opinions with respect to the services (early diagnosis and screening tests, health education sessions) and staff, recommendations for service improvement.

Survey three months after service utilization: This included having_chronic diseases, perceived health status, weight and height, health behaviors with respect to cancer prevention, reasons for changing or not changing behavior, intentions to attend future screenings, additional recommendations for service improvement.

Focus groups: The interview form included opinions with respect to the services and staff, opinions on health education sessions, barriers with respect to health behavior change, and recommendations for service improvement.

Data Analysis: In the quantitative data analysis, SPSS was used to apply descriptive statistics, the chi-square test, Fisher's exact test, McNemar's chi-square test, Bowker's test for symmetry and the paired samples t test, where appropriate. The statistical significance level was set at 0.05. In qualitative analysis of focus group discussions, manifest content analysis was used after transcription of the recorded data. In the final analysis, all findings were integrated and compared.

Ethical/ Institutional Approval and Funding: After approval by the MoH and the Hacettepe University Ethics Committee, the study was conducted with the financial support of Hacettepe University Scientific Research Center (Project no: 010DO9101001).

This article mainly presents findings about the general assessment of services provided in CEDSECs, with a special focus on health promotion.

Results

Before service utilization: Of the 332 women with a mean age of 51.6±8.6 years, 31.0% were primary school graduates, 32.8% were employed, and 82.5% were married (Table 1).

Two thirds (66.6%) of the women had at least one chronic disease, and 72.5% were overweight or obese (mean BMI for all women 28.7±5.4 kg/m^2). The proportion of current smokers was 27.2%, whereas 43.4% were exposed to tobacco smoke at home. The proportion of alcohol users was 13.2%, all of whom stated using alcohol occasionally. Of the participants, 55.9% had a daily vegetable intake, 73.4% had a daily fruit intake, 12.1% had fast-food consumption at least once per week, 59.8% had regular sleep hours, 2.1% had moderate to high physical activity on five or more days per week, and 37.3% performed regular breast self-examination.

Upon arrival, 58.1% of the women were unaware of the type of services delivered in the centers. Focus groups also revealed similar findings indicating low level of awareness of available services, coupled with the participants` recommendations to increase awareness among the general public.

Participant 1 (P1) (Woman, 56 yrs.): *"I always pass by this hospital, but I didn't*

know that there was a cancer prevention center here. Women do not know these centers. There should be TV ads or pamphlets to be distributed in postboxes."

P11 (Woman, 50 yrs.): *"No one knows these centers... They should be advertised..."*

P10 (Woman, 55 yrs.): *"The most effective tool is TV... Newspapers and internet are also good to increase awareness… People can also be informed in workplaces, schools…"*

Table 1. Distribution of participants' sociodemographic features (CEDSECs in Ankara, October-November 2010)

Sociodemographic features	n	%
Age (years) (n=331)		
30-39	37	11.2
40-49	77	23.3
50-59	157	47.4
≥60	60	18.1
Educational attainment (n=332)		
< 5 years	23	6.9
Primary school	103	31.0
Secondary school	31	9.3
High school	93	28.0
College/University	82	24.7
Employment status (n=332)		
Unemployed	185	55.7
Employed	109	32.8
Retired	38	11.5
Marital status (n=332)		
Married	274	82.5
Widowed	43	13.0
Single	15	4.5
Number of children (n=329)		
None	22	6.6
1	44	13.6
2	152	46.4
≥3	111	33.4

The proportion of participants with a family history of cancer was 55.4%. The results showed that 35.8% of the women perceived their risk of developing cancer as similar to that of the general population, while 26.8% perceived their risk as higher, and 18.4% as lower.

Of the participants, 63.9% believed that there were personal preventive measures that could be taken to prevent cancer, while 84.1% perceived their level of knowledge on these measures as inadequate. Main sources of information for cancer prevention were reported as the media (80.4%), health professionals (42.8%), and acquaintances (29.2%).

Right after service utilization: Of the participants surveyed after service use (n=319), 97.5% were satisfied with the centers' services, and 98.1% reported that they would recommend these centers to their friends. Focus groups also revealed similar findings indicating high level of satisfaction.

P8 (Woman, 54 yrs.): *"The staff was very thoughtful and well-mannered. We didn't have to wait for long hours…"*

P5 (Woman, 42 yrs.): *"My husband is surprised to see me visiting this center so frequently and joyfully. I told him that physicians in this center were very concerned about my health and I just love them" (laughing).*

P10 (Woman, 55 yrs.): *"I would like to thank everyone for delivering such a good service free of charge. We are grateful."*

P13 (Woman, 55 yrs.): *"The stool test, smear, mammography... They did it all. I didn`t experience any problem… Everything was so organized."*

The proportion of any test uptake for either screening or early diagnosis was 98.4%. Of these women, 93.4% thought that they were adequately informed about their test results.

Nine out of ten (92.2%) participants reported attending educational sessions on cancer prevention, while 95.0% reported receiving some advice on healthy life behaviors. Most educational sessions included short lectures, mainly based on slide presentations of breast, cervix and colon cancer prevention, followed by

demonstration of breast self-examination on breast models.

Of the participants, 97.9% found the content of the trainings satisfactory, whereas 28.4% asked for more detailed information on cancer prevention (Table 2).

Comparison of the duration and content of sessions as well as the number of participants showed variations both within and between the centers. Focus group discussions also indicated that duration and content of the sessions were different and mostly focused on breast cancer.

P1 (Women, 56 yrs.): *"The session was very useful. The nurse talked about everything from breasts and examination to a healthy diet and staying away from tobacco smoke."*

P7 (Woman, 56 yrs.): *"They gave information about breast cancer. They also mentioned cervix cancer, but mostly talked about breasts. I think tobacco could also be one of the topics."*

P10 (Woman, 55 yrs.): "*The training was very good. They told us how to examine our breasts, which food was good for health..."*

P9 (Woman, 49 yrs.): *"They only mentioned breast cancer and the examination..."*

P13 (Woman, 55 years): *"They showed us how to examine our breasts. They also talked about healthy diet and the importance of physical exercise."*

Both the perceived level of knowledge and before-after comparison of the responses to the questions on cancer prevention showed that participants` overall knowledge increased significantly ($p<0.001$) (Table 3).

Table 2. Distribution of participants` responses with respect to the health education sessions (CEDSECs in Ankara, October-December 2010)

Health education experience		**n**	**%**
Participation (n=319)	I participated in an educational session	294	92.2
	No education was offered	17	5.3
	Education was offered, but I did not participate	8	2.5
Number of participants in the sessions (n=289)	One-to-one session	100	34.6
	2-5 people	120	41.5
	6-10 people	35	12.1
	11-15 people	18	6.2
	16-20 people	10	3.5
	>20 people	6	2.1
Duration of the sessions (minutes) (n=286)	≤15 min.	69	24.1
	16-30 min.	156	54.5
	31-45 min.	48	16.8
	46-60 min.	10	3.5
	>60 min.	3	1.0
Adequacy of information delivered (n=289)	Adequate	283	97.9
	Not adequate	6	2.1
	Undecided	-	-
Adequacy of session duration (n=288)	Adequate	270	93.8
	Not adequate	14	4.9
	Undecided	4	1.4
Clarity/comprehensibility of language used (n=288)	Adequate	287	99.7
	Not adequate	1	0.3
	Undecided	-	-
Need for more information (n=296)	No	208	70.3
	Yes	84	28.4
	Undecided	4	1.4

Table 3. Distribution of participants' perceived level of knowledge and responses to the knowledge questions on cancer prevention before and after the sessions (CEDSECs in Ankara, October-December 2010)

Opinions and responses with respect to cancer prevention		**Before service**	**After service**	**Bowker's/ McNemar's Test; p**
		%	**%**	
Perceived level of knowledge (n=296)	Adequate	15.2	70.9	192.112*; **<0.001**
	Partially adequate	42.6	27.0	
	Inadequate	42.2	2.0	
Are there any personal preventive measures to prevent cancer? (n=315)	Yes	63.8	93.0	81.029*; **<0.001**
	No	12.7	4.4	
	I don't know	23.5	2.5	
Is lung cancer preventable? (n=229)	Mostly/partially preventable	75.1	90.4	**<0.001**
	Not preventable	24.9	9.6	
Is breast cancer preventable? (n=213)	Mostly/partially preventable	77.9	95.8	**<0.001**
	Not preventable	22.1	4.2	
Is cervix cancer preventable? (n=213)	Mostly/partially preventable	77.6	96.2	**<0.001**
	Not preventable	23.0	3.8	
Is colo-rectal cancer preventable? (n=212)	Mostly/partially preventable	73.6	94.3	**<0.001**
	Not preventable	26.4	5.7	

*Bowker's test value

Table 4. Distribution of participants' health behaviors before and after the sessions (CEDSECs in Ankara, October 2010-May 2011)

Health behaviors		Before service %	After service* %	Bowker's/ McNemar's Test; p
Tobacco use (n=246)	Regular/occasional user	27.6	25.6	0.063
	Non-user	72.4	74.4	
Prevention from secondhand tobacco smoke (n=119)	Warned about indoor smokers at home	82.4	80.7	0.815
	Did not warn about indoor smokers	17.6	19.3	
Alcohol use (n=292)	Non-user	85.3	85.3	0.000**;
	Occasional user	13.7	13.7	1.000
	Regular user (at least once per week)	1.0	1.0	
Vegetable intake (n=260)	< 1 week	0.4	0.4	4.000**;
	1-3 days/week	26.9	26.5	0.261
	4-6 days/week	15.4	16.5	
	Everyday	57.3	56.5	
Fruit intake (n=258)	< 1 week	3.9	3.9	2.000**;
	1-3 days/week	12.0	11.2	0.368
	4-6 days/week	6.6	7.4	
	Everyday	77.5	77.5	
Fast food intake (n=259)	< 1 week	87.6	88.8	0.375
	≥ 1 week	12.4	11.2	
Medium/high intensity physical activity (n=258)**	None	88.8	86.4	7.444**;
	< 1 week	1.6	0.8	0.114
	1-4 days/week	7.4	10.5	
	≥ 5days/week	2.3	2.3	
Regular sleep hours (n=260)	None	18.8	17.3	9.333**
	1-3 days/week	9.6	8.8	0.156
	4-6 days/week	9.6	12.3	
	Everyday	61.9	61.5	
Breast self-examination (n=261)	Yes (regular/irregular)	36.4	76.6	**<0.001**
	No	63.6	23.4	

*Three months after
**Bowker's test value
***Activity that increases the heart beat and lasts at least 30 minutes

Three months after service utilization: The follow-up period did not show any improvement in health behaviors, except for a significant increase in regular breast self-examination ($p<0.001$). That is, differences in behaviors, such as tobacco use ($p=0.063$), prevention from exposure to secondhand smoke, such as warning indoor smokers at home ($p=0.815$), alcohol use ($p=1.000$), dietary habits, such as fruit intake ($p=0.368$), vegetable intake ($p=0.261$), and fast-food intake ($p=0.375$), moderate to high physical activity ($p=0.114$) and regular sleep ($p=0.156$), before and three months after service delivery were found not to be significant (Table 4). Of the participants surveyed after three months, 47.0% stated that the services they received at the centers did not have any positive effect on their lifestyle, whereas 35.2% reported some effect, and 7.1% reported a significant effect on their lifestyle.

In the quantitative analysis, the main recommendations of the participants with respect to the services were; to improve physical conditions (23.1%), to include other women's/reproductive health services (12.5%), to include diagnostic/screening tests for other cancers (10.6%), and to undertake all diagnostic/screening tests in one building (10.6%). Recommendations derived from focus group discussions were also similar.

P1 (Woman, 56 yrs.): *"The place is a bit dark. I really wouldn't want to hear that I have cancer in this dark place."*

P2 (Woman, 51 yrs.): "*They told me that the mammography device was broken… I don't want to go to the other building to use the other device for (breast cancer) patients."*

P4 (Woman, 60 yrs.): *"After screening for breast, cervix, colon cancers, we`re confident that we don't have cancer in these organs, but what if we have cancer in other organs?"*

Of the participants, 86.1% received advice from the health personnel on attending future screenings, and 83.7% reported their intention to attend future screenings regularly.

Discussion

Today, factors such as aging of the populations, tobacco use, changes in dietary habits, sedentary life styles, obesity, increasing age at first birth and decreasing parity in women lead to increases in cancer rates in low and medium resource countries, including Turkey.[2] National projections also indicate that if current trends persist, cancer related morbidity and mortality will increase,[9] which clearly shows the need to scale up efforts at primary and secondary cancer prevention. In relation to this, the present study revealed some noteworthy findings about to the current services of cancer prevention centers in Turkey, which aim to serve for both primary and secondary cancer prevention.[8]

In the present study, one of the key findings was that women's knowledge on cancer preventive measures and awareness on cancer prevention services were very low. One third of the participants (36.1%) did not know there were personal cancer preventive measures, while 84.1% perceived their level of knowledge on these measures as inadequate. In addition, almost six out of ten women (58.1%) upon arrival at the centers were unaware of the type of services delivered in the centers. The present findings are in accordance with previous studies in Turkey, which also indicated that awareness on cancer prevention and utilization of cancer early detection services were very low.[10,11] According to a nationally representative survey in 2008, more than three fourths of women in the 35-64 age group did not have any smear test, whereas more than 70% of women in the 55-74 age group had not had any mammography in their lifetime.[12] The recent literature emphasizes the importance of a multi-level approach to increase utilization of cancer early detection services, which include large scale public education campaigns, mass media, reminder systems,

and clinical interventions to make sure that health professionals give strong messages about the importance of cancer screening.[13] The present study also showed the need to scale up interventions to increase awareness and uptake of freely available cancer early detection services.

Another key finding was that despite the intentions of most of the service users to use the centers for cancer screening purposes only, they mainly represented women who were in need of health promotion with respect to their health status and behaviors. Our findings showed that the proportions of women with chronic disease, who were overweight or obese, used tobacco, or were exposed to second hand tobacco smoke were very high, and that daily vegetable intake, physical activity, regular sleep, and regular breast self-examination were low. These indicators of poor health, clearly indicated that besides early detection tests for cancer, women would benefit from interventions targeting behavioral changes, which would contribute to the primary prevention of cancers, as well as to the prevention of other chronic diseases. According to the WHO, four of the most prominent chronic diseases – cardiovascular diseases, cancer, chronic obstructive pulmonary disease and type 2 diabetes – are linked by common and preventable risk factors, and development of an integrated approach is the most cost-effective way to prevent and control them.[14]

The present study showed that nine out of ten (92.2%) participants attended educational sessions on cancer prevention, and 97.9% of those found the content of the trainings satisfactory. Despite the high level of overall satisfaction, comparison of the duration and content of the educational sessions showed variations both within and between the centers, where 28.4% of the participants asked for more detailed information on cancer prevention. Hence, there is a need to develop minimum standards for educational contents, duration and materials in the centers, which would enable of a more standard service. This study also showed that most sessions (78.6%) lasted less than half an hour, and thus might not be adequate to include interactive educational techniques to change behavior.[15] In relation to this, although the participants` overall knowledge on cancer prevention increased, the follow-up period did not show any improvement in health behaviors, except an increase in breast self-examination. The increase in self-examination might have occurred as a result of the special emphasis on this topic in the educational sessions, including demonstrations using breast models. The increase in examination might also be associated with the women`s special attention on early detection of cancer.[5,16]

The WHO reports that tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity are the main risk factors for cancer.[1] In addition, a vast array of studies show that healthy lifestyles (that is, decrease in tobacco use, healthy diet, physical activity etc.) will be the most significant contributors to a decline in cancer incidence and mortality.[17] Studies also show that minor behavioral changes at the individual level might have significant impacts at the population level.[15,18] Therefore, it is of utmost importance that early detection services for cancer should be delivered in conjunction with interventions to promote healthy behaviors.[19,20]

The previous literature shows that didactic training and one-dimensional approaches are not adequate to change behaviors, so that interventions for behavioral changes should be based on behavior change theories and be multi-dimensional including health education materials, individual or group counseling etc. Studies also show that interventions to promote healthy behaviors are more successful if they are culturally appropriate.[13]

The role of CEDSECs in existing regulations are defined as screening cancers and also promoting health behaviors among

the public.[21] However, the present study did not find significant improvement in health behaviors. Likewise, the proportion of participants who reported a significant effect on their lifestyle was only 7.1%. These findings indicate that there is a need to revise the health promotion dimension of these centers' services, as to adequately respond to the needs of service users for primary prevention.

Strengths and Limitations

The present study was the first study to assess CEDSECs` services and the changes in knowledge and behaviors of service users with a follow-up. Partnership among the university, the MoH, the local health authority, and the service users was another strength of this study. Mixed methods design and involvement of the study participants in data collection, interpretation of findings and development of recommendations contributed to a deeper understanding of the research topic and presentation to the policy makers.

The present study also had several limitations that need to be considered. Firstly, the findings cannot be generalized to all centers since the study did not represent all centers in Turkey. Self-reported data were another limitation of the study. Also, the researchers experienced difficulties in finding more participants to attend the focus groups and further contribute to the study in data collection, interpretation of findings, and development of recommendations.

Despite the above-mentioned limitations, the present study revealed several important findings and recommendations with respect to cancer prevention centers in Turkey and other countries with similar health services.

Conclusion

The study findings showed that women`s awareness on CEDSECs and cancer preventive measures were low. Most women were satisfied with the centers` services, and did not encounter problems with cancer screening; however, current services only increase cancer awareness without any significant effect on health behaviors, except breast self-examination. Within the scope of health promotion services, a multidimensional approach is needed, combining assessments of individual risks and behavior, counseling services, and evidence-based educational and behavioral interventions with follow-ups.

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Conflict of interest

None declared.

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