

The Mosque Campaign: a cardiovascular prevention program for female Turkish immigrants

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Die Moscheen-Kampagne: Ein Herz-Kreislauf-Präventionsprogramm für türkischstämmige Migrantinnen

Zusammenfassung. *Hintergrund:* Das Frauengesundheitsbüro des Landes Tirol, Österreich, führt regelmäßig Informations- und Präventionskampagnen speziell für Frauen zum Thema Herz-Kreislauf-Erkrankungen durch. Türkischstämmige Frauen nahmen bislang jedoch nicht an den zahlreichen Veranstaltungen teil. Das Ziel der Moscheen-Kampagne war es, ein türkischsprachiges kultursensibles Herz-Kreislauf-Präventionsprogramm speziell für Türkinnen durchzuführen, um eine Verbesserung des Wissens um Risikofaktoren zu erzielen und bestehende kulturelle und sprachliche Barrieren abzubauen.

Methodik: Das Pilotprojekt wurde während der Schuljahre 1999/00, 2000/01 sowie 2001/02 in allen 28 Moscheen in Tirol durchgeführt. Nach einem türkischsprachigen Vortrag und der Möglichkeit eines ärztlichen Beratungsgesprächs beantworteten insgesamt 2446 Frauen einen Fragebogen zur persönlichen Einschätzung eigener Herz-Kreislauf-Risikofaktoren. Zusätzlich wurden 1992 Blutdruckmessungen durchgeführt.

Ergebnis: Die überwiegende Mehrzahl zählte zur ersten Generation weiblicher Migrantinnen und gab an, keine deutschsprachigen Medien zu nutzen. Ein Drittel empfand sich selbst als übergewichtig. Mehr als 13% zeigten entweder einen erhöhten systolischen und/oder diastolischen Blutdruck. Von 1999/00 bis 2001/02 nahm die Unwissenheit der befragten Türkinnen um Herz-Kreislauf-Erkrankungen signifikant ab: Gesamtcholesterin von 57,4% auf 32,4% ($p < 0,001$), Blutdruck von 41,3% auf 29,6% ($p < 0,001$) und Blutzucker von 49,7% auf 25,2% ($p < 0,001$).

Schlussfolgerungen: Obwohl in Österreich ein freier Zugang zum Gesundheitssystem gewährleistet wird, war eine große Zahl der befragten türkischstämmigen Migrantinnen nicht über Risikofaktoren von Herz-Kreislauf-Erkrankungen informiert. Die Moscheen-Kampagne bewährte sich als eine effektive Methode, um Aufklärungs-

arbeit zu leisten und türkischstämmige Frauen zu erreichen. Sprachlich angepasste und kultursensible Programme sind notwendig um die Situation ethnischer Minderheiten zu verbessern und die notwendige Gleichstellung zu sichern.

Summary. *Background:* The Women's Health Office of the State of Tyrol, Austria, provides cardiovascular disease (CVD) prevention programs for women. However, local Turkish women have not participated in our programs. The aim of the so-called Mosque Campaign was to conduct a Turkish-language, culture-sensitive CVD prevention program tailored to the needs of Turkish women to improve their knowledge of CVD risk factors and to minimize ethnic differences in participation rates for preventive programs.

Methods: The pilot program was conducted in all 28 mosques in Tyrol during the years 1999/00, 2000/01 and 2001/02. A Turkish educational lecture and the opportunity for a private medical consultation were provided, and 2,446 Turkish women completed a questionnaire on their personal knowledge of CVD. In addition a total of 1,992 blood pressure readings were taken.

Results: Most of the women belonged to the first generation of female immigrants and reported not using German-language media. About one-third of the women considered themselves to be obese. More than 13% had raised systolic and/or diastolic blood pressure. We observed a significant decrease in unawareness of the main CVD risk factors from 1999/00 to 2001/02: unawareness of cholesterol level decreased from 57.4% to 32.4% ($p < 0.001$), of blood pressure from 41.3% to 29.6% ($p < 0.001$) and of blood glucose from 49.7% to 25.2% ($p < 0.001$).

Conclusions: Even though Austria provides free access to healthcare services, a large number of Turkish women were not aware of their CVD risk factors. The Mosque Campaign reached female Turkish migrants and was effective in reducing their level of unawareness about CVD. Language-adapted and culture-sensitive pro-

grams are necessary to ensure greater equality for ethnic minority groups.

Key words: Female Turkish immigrants, cardiovascular risk factors, culture-sensitive prevention program, equality, Austria.

Introduction

Cardiovascular disease (CVD) prevention programs based on a multifactorial approach and evidence-based guidelines are successful and necessary for reduction of women's heart mortality risk [1, 2]. Such programs should be conducted for the whole community and also reach minorities [3, 4]. Previous studies have indicated that ethnic and gender differences exist in access to healthcare services [5] and uptake of preventive healthcare [6, 7].

The availability and uptake of appropriate healthcare services are of increasing importance and are influenced by economic, social and cultural factors [8, 9]. Austria has a public healthcare system that provides free access to medical services for all residents including all ethnic and social minorities. Nevertheless minorities are disadvantaged by barriers to accessing healthcare.

In 2001 there were 127,226 Turkish citizens in Austria, with Turks forming one of the largest ethnic minority groups in the country [10]. At 25.2% they make up the largest group of foreigners in Tyrol, where in 2001 there were 71,185 Turkish women [11]. Turkish is the non-German language in common use by the largest number of Tyrol's residents holding Austrian or other citizenship.

There is limited information on the health situation of the Turkish ethnic group in Austria [12]. Onat reported a rising trend in the prevalence of CVD in women living in Turkey and one of the highest coronary mortality rates in Europe [13]. The incidence and prevalence of CVDs, especially coronary heart disease, is also increasing in Turkish migrants [14] living in Germany. The Giessen Study Group found a higher prevalence of coronary heart disease in Turkish women, especially in the lower age group [15].

CVD risk factors are different for ethnic minorities and should be taken into account when preventive campaigns are offered [16, 17]. Migration plays an important part in the development of hypertension, one of the main risk factors for CVD, and acculturation processes appear to increase the prevalence of hypertension in migrant populations [18, 37]. A high prevalence of obesity and a high degree of physical inactivity have been observed in female Turkish immigrants [19, 20]. The Giessen Study Group also reported higher levels of dyslipoproteinemia and cigarette smoking among Turkish migrants in Germany than in their home country [15]. Compared with the indigenous population, Turkish women also showed a higher rate of diabetes mellitus [21, 22].

The health of female Turkish immigrants and the availability and uptake of appropriate health services are gaining in importance and are influenced by economic and sociocultural factors [23, 24]. The numbers of older female "guest workers" and those who came for reasons of family reunification are increasing and are in parallel with age-related health problems [25].

We, as the Women's Health Office of the State of Tyrol, together with the public healthcare system, see it as our duty to provide low-threshold public health promotion programs for women. The aim is to offer free information on prevention of death from heart disease, and in addition to offer women anonymous on-site screening for important risk factors. We present our heart disease prevention programs primarily at public health events held by communities and large companies. Our information and screening campaign reaches a large number of women and identifies those with risk factors for heart disease. Nevertheless, we noticed that our CVD prevention programs did not reach all the women in our community [12], especially not female Turkish immigrants. These women did not attend our German-language prevention programs or information campaigns because the programs were not adapted to the cultural circumstances of the Turkish population in our community.

Language and other cultural barriers are the main reasons for disadvantages in accessing healthcare services for ethnic minorities [26–28]. Ethnic differences in the participation rates of prevention programs can also be explained by these factors. Sociocultural diversity, lack of information about preventive medicine and fear of racism should be taken into account when campaigns reach out to migrant populations in an attempt to bridge the gap between ethnic minorities and the public healthcare system [29–30]. Culture-sensitive CVD prevention programs tailored to the needs of the Turkish population are essential to achieve equality of access and to improve knowledge and health behavior.

To reach Turkish women of all generations living in Tyrol and to minimize barriers to accessing healthcare services, the Women's Health Office developed and conducted a Turkish-language prevention program. The so-called Mosque Campaign was the first prevention program of its kind in Austria.

We defined the following aims:

- to increase participation rates through a culturally sensitive setting
- to reduce unawareness of the main cardiovascular risk factors
- to reduce access barriers to healthcare services

Methods

The Women's Health Office optimized previous campaigns to the circumstances of the female Turkish population and developed a feasible and widely accepted Turkish language CVD prevention program. We performed three cross-sectional studies to evaluate participation rates, to conduct personal appraisals of cardiovascular risk factors and to measure resting blood pressure.

Design and development

Existing programs were modified and tailored to the preferences of the Turkish women, using an ethnocentric orientation at the center of our study design. The program was supported by bilingual Turkish medical students working as community interpreters at Innsbruck Medical University Hospital and as our Turkish peer-educators during the campaign.

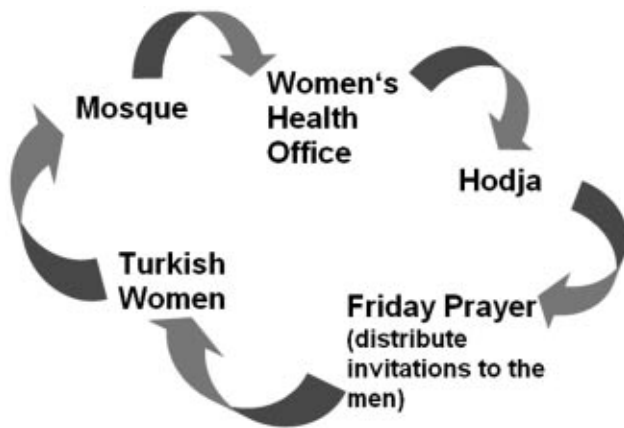


Fig. 1. “The Mosque Campaign”: circular distribution pattern. The Women’s Health Office of Tyrol contacted all the mosques in Tyrol to obtain permission to use the mosques as a socio-cultural center for a cardiovascular disease prevention program for Turkish women. The hodjas were asked to distribute our Turkish-language invitation to the men following the weekly Friday prayer session in order for them to give it to their wives

The first step was to establish a suitable place to present a health prevention program. We identified the adherence to Islam and the role of the mosque as a sociopolitical center as common ground for the Turkish Muslim migrant communities in Tyrol, especially for the first generation. Tyrol has 28 mosque communities, which belong to five umbrella organizations. We contacted the Turkish embassy and the head of each mosque (hodja), who is responsible for all local cultural and religious events in the community. The hodja was asked for permission to use the prayer room of the mosque as a place to present a health prevention program.

Most of the mosques in Tyrol consist of one prayer and social room. Because of these spatial restrictions only men are allowed to enter and pray. For these reasons the hodja of each mosque was asked to distribute the invitations to the male spouses or relatives of our female target group (Fig. 1).

Implementation and participants

The Mosque Campaign was repeated three times during the school years 1999/00, 2000/01 and 2001/02 and was held in all 28 mosques in Tyrol. A female second-year resident physician and female Turkish medical students working as community interpreters from Innsbruck Medical University Hospital held all 84 Turkish-language prevention program presentations. A 60-min lecture including a Power Point presentation on the main CVD risk factors for women (smoking, hypertension, obesity, hypercholesterolemia, diabetes, sedentary lifestyle) and prevention opportunities was given by a Turkish peer-educator. Turkish-language information material was offered in addition.

Participants were asked to answer a Turkish-language questionnaire on basic demographic data and self-assessed personal risk factors. A blood pressure measurement was also offered.

A female second-year resident provided personal medical consultations and recommendations for reducing CVD risk factors. If the condition of the participant was serious, she was referred to her primary care physician for further treatment.

Process of gathering information

For this pilot prevention project a Turkish-language questionnaire consisting of basic demographic data (3 items) and personal appraisal of cardiovascular health characteristics (6 items) was developed.

The age of the study sample was measured in years and was broken down into six groups: up to 19 yr; 20–29 yr; 30–39 yr; 40–49 yr; 50–59 yr and 60 yr and over. A Turkish woman

Table 1. Sociodemographic data – Mosque Campaign 1999/2000 to 2001/2002

Characteristics	Results 1999/00		Results 2000/01		Results 2001/02	
	n	%	n	%	n	%
<i>Gender</i>						
Female	878	100	658	100	910	100
<i>Age (Years)</i>						
≤ 19	63	7.2	37	5.6	2	0.3
20–29	219	24.9	139	21.1	89	14.0
30–39	231	26.3	165	25.1	162	25.5
40–49	224	25.5	155	23.6	204	32.1
50–59	117	13.3	137	20.8	131	20.6
≥ 60	24	2.8	25	3.8	47	7.4
<i>Immigrant status</i>						
First Generation	621	70.7	517	78.6	635	69.8
Second Generation	257	29.3	141	21.4	275	30.2
<i>German media</i>						
Yes	361	41.1	269	40.9	430	47.3
No	512	58.3	389	59.1	478	52.5
No answer	5	0.6			2	0.2

was defined as being a second-generation immigrant if she had attended school in Austria. To identify media, publication and language preferences, participants were asked if they read German-language newspapers or watched German-language television.

Physical activity was assessed with the question: "Do you do any kind of physical activity three times a week (that lasts at least 30 minutes)?" Smoking information was obtained by asking whether the women currently smoked or not. To examine knowledge and personal appraisals of CVD risk factors, all women were asked to give their body mass index (BMI > 30 kg/m²; BMI < 30 kg/m²; do not know); fasting blood glucose levels (> 126 mg/dl; < 126 mg/dl; do not know); total cholesterol levels (> 200 mg/dl; < 200 mg/dl; do not know) and their blood pressure (> 160/90 mmHg; < 160 mmHg"; do not know). In addition, blood pressure at rest was measured using a stethoscope, blood pressure cuff and a standard sphygmomanometer

(one measurement per person). The cutoff for high-risk was SBP > 160 mmHg or DBP > 90 mmHg.

Frequency distributions were calculated using chi-squared tests (SPSS 13.0 software). All analyses were two-tailed, and a p-value less than 0.05 was considered statistically significant.

Results

During three years of the Mosque Campaign (school years 1999/00 to 2001/02), 2446 female Turkish immigrants attended our pilot CVD prevention program and completed the questionnaire (1999/00: 878; 2000/01: 658; 2001/02: 910).

Table 1 presents the characteristics of each study group. The majority of the participants were between 30 and 39 years old. The percentage of first-generation immigrants ranged from 70.7% in 1999/00 to 78.6% in 2000/01

Table 2. CVD Self-Assessed Risk Factors and Blood Pressure 1999/2000 to 2001/2002

Characteristics	Results 1999/00		Results 2000/01		Results 2001/02	
	n	%	n	%	n	%
<i>Gender</i>						
Female	878	100	658	100	910	100
<i>Physical activity (3 x 30 min/week)</i>						
Yes	233	26.5	170	25.8	383	42.1
No	638	72.7	488	74.2	526	57.8
Missing data	7	0.8			1	0.1
<i>BMI (Body Mass Index: kg/m²)</i>						
< 30	543	61.8	412	62.6	614	67.6
> 30	268	30.5	243	36.9	287	31.5
Missing data	67	7.6	3	0.5	8	0.9
<i>Smoking</i>						
Yes	127	14.5	70	10.6	173	19
No	748	85.2	588	89.4	737	81
Missing data	3	0.3				
<i>Total cholesterol (mg/dl)*</i>						
< 200	293	33.4	268	40.7	492	54.1
> 200	81	9.2	89	13.5	123	13.5
Not known	504	57.4	298	45.3	295	32.4
Missing data			3	0.5		
<i>Fasting blood glucose (mg/dl)**</i>						
< 126	387	44.1	377	57.3	587	64.5
> 126	55	6.3	60	9.1	94	10.3
Not known	463	49.7	215	32.7	229	25.2
Missing data			6	0.9		
<i>Blood pressure (mmHg)***</i>						
< 160/90	427	48.6	352	53.5	560	61.5
> 160/90	88	10.0	108	16.4	189	20.8
Not known	363	41.3	195	29.6	161	17.7
Missing data			3	0.5		
<i>Measured blood pressure (mmHg)***</i>						
≤ 160/90	381	43.4	542	82.4	780	85.7
SBP > 160 and/or DBP > 90	49	13.5	115	17.5	125	13.7
Missing data	372	42.4	1	0.1	5	0.5

* normal values 120–200 mg/dl; ** normal values < 126 mg/dl; *** normal to high normal values < 139/89.

and 69.8% in 2001/02. German-language media were used by fewer than half the Turkish women in each study group.

Table 2 shows the results of the self-appraisal of CVD risk factors and physical activity. Only 26.5% (233), 25.8% (170) and 42.1% (383) of each study group reported engaging in physical activity for at least 30 min three times per week. About one-third of all female participants assessed themselves as obese (BMI > 30 kg/m²). The percentage of current smokers ranged from 10.6% in 2000/01 to 19% in 2001/02.

Figure 2 shows the number of women who reported being unaware of their total cholesterol, their fasting blood glucose level or blood pressure. The figure shows a highly significant decrease in unawareness of the main CVD risk factors from the first Mosque Campaign conducted in 1999/00 to the third in 2001/02. The percentage of women unaware of their cholesterol level significantly decreased from 57.4% (504) in 1999/00 to 45.3% (298) in 2000/01 and 32.4% (295) in 2001/02; for blood glucose from 49.7% (463) to 32.7% (215) and 25.2% (229) and for blood pressure from 41.3% (363) to 29.6% (195) and 17.7% (161), respectively. A total of 1992 blood pressure readings were taken and showed that 13.5% of all Turkish women measured had an SBP > 160 mmHg and/or DBP > 90 mmHg in 1999/00, 17.5% in 2000/01 and 13.7% in 2001/02.

Discussion

The goal of the Mosque Campaign of the Women's Health Office of Tyrol was to design and conduct a culture-sensitive and language-adapted pilot prevention program for Turkish women in Tyrol. The prevention of cardiovascular disease, the number-one killer of women, requires implementation of effective culture-sensitive prevention programs that also reach ethnic minority groups [2, 31].

Lectures and information material in Turkish and the opportunity for a Turkish-language medical consultation in a community setting increased the acceptance of the target group, who mainly consisted of first-generation immigrants. Mosques seem to be suitable places to contact Turkish women and conduct prevention campaigns in rural areas, where other places of social identification are lacking. The literature shows mosques to be places with a high level of Turkish identification [32] and highly accepted sociopolitical centers of the Muslim community [33]. German-language media are used by only a minority of the immigrants, which also underlines the need for Turkish-language prevention programs. Ethnically sensitive strategies and multifactorial approaches in medical settings, especially in preventive care, are essential to ensure success of such programs [34–36]. The large number of participants in the first year of our program motivated us to continue the campaign and clearly showed that Turkish women were willing to participate.

In agreement with the literature, we found obesity and physical inactivity to be common among female Turkish immigrants [37, 38]. One key aspect of our findings was the enormous number of women who were not aware of their personal CVD risk factors, especially their blood pressure, blood glucose and total cholesterol levels. Our results also indicate a relatively high amount of potential

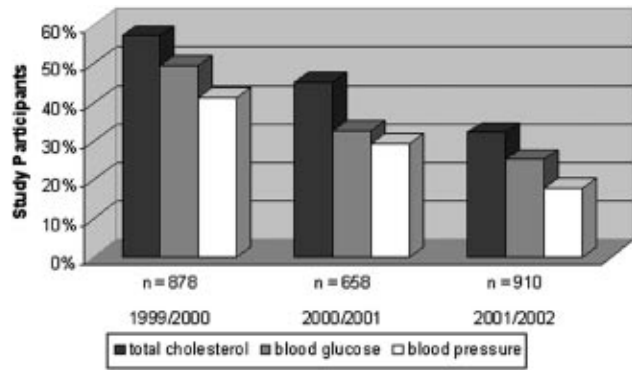


Fig. 2. Decrease in unawareness of total cholesterol, blood glucose and blood pressure values from 1999 to 2002. Time-dependent decrease in unawareness from 1999/00 to 2000/01 of total cholesterol ($p < 0.001$; $X^2 = 22.1$); blood glucose ($p < 0.001$; $X^2 = 61.4$); blood pressure ($p < 0.001$; $X^2 = 31.0$). Time-dependent decrease in unawareness from 2000/01 to 2001/2002 of total cholesterol ($p < 0.001$; $X^2 = 26.99$); blood glucose ($p < 0.01$; $X^2 = 10.6$); blood pressure ($p < 0.001$; $X^2 = 22.3$).

hypertension, where remeasurement and referral to primary care physicians were recommended. This lack of awareness and high levels of potential hypertension are especially remarkable in the light of Austria's free access to health services.

A lack of Turkish doctors, community interpreters and Turkish-language information material at the primary care office and outside hospitals, where prevention should take place or at least start, prevents Turkish immigrant women from having equal access to healthcare facilities. Communicational and cultural non- and misunderstandings are still the main reasons for health gaps.

Acceptance by ethnic minority groups of prevention programs offered by official or private institutions can be assessed from the number of participants in this study. The Mosque Campaign as a pilot project on CVD prevention for Turkish immigrant women reached high acceptance among the Turkish population of Tyrol.

We demonstrated a highly significant decrease in our target group's lack of knowledge of personal CVD risk factors between 1999 and 2001. The improvement can be attributed to a general increase in awareness among both the migrant and indigenous populations; however, because our programs were periodically repeated in the same small environments, the 28 mosques, we also interpret this trend as a positive result of our Mosque Campaign.

We are aware that this pilot study presents only descriptive results. Because the study was limited by its almost complete lack of resources and staff, which consisted of volunteers working during their free time, we were not able to design a controlled randomized follow-up study. Further investigations are needed to evaluate the CVD risk factors of various minority groups and to show improvement through preventive intervention programs tailored to ethnic minorities in Europe. Turkish men and women are an important factor in health decision-making and in the health system in general.

There is clearly a moral commitment to adapt preventive programs to the needs and wishes of minority groups in Tyrol. The Mosque Campaign as a comprehensive culturally adapted prevention program permits public health and preventive care organizations to reach Turkish women in order to improve their knowledge of health risk factors and reduce the barriers to healthcare access. In March 2005 the Women's Health Office set up an outpatient department for Turkish women at Innsbruck Medical University Hospital, where a female Turkish physician provides primary care and referrals in a culturally sensitive setting. We look forward to presenting further achievements in reducing ethnic disadvantages in accessing healthcare services in Austria.

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