

Personalized Preventive Plan in General Medicine

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Abstract

Background: In recent years, prevention has become increasingly important in General Medicine (GM) and has become the focus of several debates worldwide. The evolution of the Tunisian society urges to seek a preventive approach then a Specific Preventive Consultation (SPC) became a necessity.

Objective: We aimed at determining the output of a SPC within a consultation of GM.

Method: A descriptive study was carried out for 9 months (from November 2016 to July 2017) in a primary care at Monastir governorate. A SPC was incorporated into the daily care consultations. An appropriate questionnaire, highlighting cardiovascular, carcinogenic and depressive risk factors, was sent to 313 consultants who agreed and adapted actions have been proposed to them. We have analyzed follow up results for screened participants according to personalized preventive plan (PPP).

Results: For 313 participants, 48 (15%) have high cardio vascular risk (HCVR). Obesity, physical inactivity, smoking and alcohol consumption were notified respectively among 30.5%, 19%, 19% and 7% of our population. Familial ATCD of breast cancer was present in 2.2%, anxiety in 32% and depression in 23% of our patients. All screened participants provided with a personalized prevention plan (PPP). Therapeutic education was performed for 140 patients; awareness to a tobacco free environment for 155 and 71 mammography was prescribed for women at risk from which one returned with cancer.

Conclusion: SPC has improved the knowledge and practices of patients. It also identified several risk factors and especially breast cancer at an early stage. We concluded that Personalized Preventive Plan can be performed in GM to improve and promote health.

Keywords: General medicine; Medical consultation; Preventive medicine

Introduction

The profession of family physician is changing. The European definition of general practice improves health promotion and education through appropriate and effective intervention. Each country or region seeks to find a "compromise" of what should be an appropriate and effective response to the demands and expectations of care of an aging population with chronic diseases and the inflationary financial cost of specialized medicine.

In recent years, prevention has become an increasingly important part of general medicine (GM) and has become the focus of several debates on new health laws in several countries [1]. Thus, the introduction of a specific preventive consultation (SPC) will aim to establish the risk factors that will prevent certain pathologies; to reach as many patients as possible, to improve the health of patients and especially to value general medicine. The establishment and systematization of these specific consultations would make it possible to link care and prevention and would be an important source of feedback on the health status of the population.

This would allow for a better understanding and assessment of the health needs of our country. We aimed at describing the contribution of the SPC on screening risk factor of cardiovascular diseases, cancer and depression and on educating population.

Method

Study area

Bembla is one of the 13 delegations of Monastir governorate. It covered 44,685 inhabitants representing 16% of Monastir population [2]. It is served by a local hospital and six primary health center which are provided by six family doctors, a pediatrician and a dentist.

In 2016, the number of consultants at these structures was 65086. We have performed our study in the GM center of the local hospital which assured 9763 consultations per year.

Study design

This is a cross-sectional descriptive study carried out during 9 months from November 2016 to July 2017 including 313 participants.

Study population

We have included subjects aged 18 to 65 years. During the study period 7231 patients have consulted from them 3253 have inclusion criteria. Information for SPC was performed by poster and during the interview.

An appointment was given according to patient agreement. The SPC was realized one day per week including 7 participants per day. Thus, 313 patients benefited from a SPC including a personalized preventive project (PPP).

Data collection

The data was collected using a questionnaire including the Socio-demographic information, clinical examination data (personal or family ATCDs, risk factors of cardiovascular diseases, cancer and depression, weight, height, waist circumference). Anxiety and depression were assessed using the HAD (Hospital Anxiety and Depression Scale) scale.

For the assessment of high cardiovascular risk (HCVR), the summative method was used [3]. A patient with HCVR is defined as

any patient with multiple vascular risk factors which when added together increase the risk of ischemic cardiovascular complications [4].

Statistical analysis

Data analyze was performed using SPSS 21.0. Qualitative variables were expressed as numbers and percentages, quantitative variables by means and standard deviation.

Results

Socio-demographic and psychological characteristics of the study population

A total of 313 patients have benefited of SPC. The average age was 40 ± 12 years. Women accounted for 73.8% of consultants and patients without partners represented 27.4% of the participants, 58.7% felt they had an unstable social life.

Anxiety and depression were expressed respectively, by 32% and 23% of our consultants (Table 1).

Characteristics		N	Percentage (%)
Age	18-40	155	49.5
	41-65	158	50.5
Sex	Female	231	73.8
	Male	82	26.2
Profession	Student	19	6
	Housewife	39	12.5
	Worker	195	62.3
	Middle/upper framework	43	25.7
	Retired	17	5.4
Marital status	Single	73	23.3
	Married	227	72.5
	Widowed/divorced	13	4.1
Social situation	Unstable work	106	33.8
	Insecurity at work	102	32
	Social isolation	32	10.2
	Unstable social life	184	58.7
Score HAD	HADA >11	100	32.1
	HADD >11	72	23

Table 1: Socio-Demographic and Psychological characteristics of the study population.

Cardiovascular risk factor

30% of the participants were obese, 5.7% were overweight and 19% were sedentary (practiced physical activity less than 30 min/week). Active smoking was notified in 54% of men. We have screened 39 cases

of hypertension, 7 cases of type 2 diabetes, 6 cases of moderate fasting hyperglycemia and 58 cases of dyslipidemia.

High risk for cardiovascular disease was detected in 15% of our study population (Table 2).

Characteristics		N	Percentage (%)
FRCVX not modifiable Age correlated with sex	Women 65 ans or older	4	1.2
	Men 55 ans or older	20	6.3
Atcd vascular accident	Personal	6	1.9
	Family	15	4.7
FRCVX indirectly modifiable Obesity	Overweight	18	5.7
	Moderate Obesity	49	15.6
	Severe Obesity	43	13.7
	Morbid Obesity	4	1.2
Inactivity	<30 min/week	60	19
	30 min-2 hour/week	197	62
	>2 hour 30 min/week	56	17.8
FRCVX directy modifiable Tobacco	Active	61	19
	Men	45	45/82
	Passive	94	30
Hta	HTA under treatment	23	7.3
	TAS \geq 14 and/or TAD \geq 9	11	11/23
	HTA detected*	39	39/290
Diabetes	Diabetes under treatment	14	4.4
	Hb glyated \leq 7%	8	8/14
	Hb glyated>7%	6	6/14
	Diabetes diagnosed**	7	7/299
	Moderate hyperglycemia on an empty stomach***	6	6/299
Dyslipidemia	ATCD Perso of dyslipidemia	11	3.5
	CH/HDL \leq 4	7	7/11
	CH/HDL>4	4	4/11
	Dyslipidemia detected (CH/HDL>4)	58	18.5
Protective factors diet	Rich in fruits and vegetables	253	81.1
	Rich in olive oil	184	58.9
Physical activity	>2 hour 30 min/week	56	17.8

*HTA detected among non-hypertensive patients (n=290): TAS \geq 14 and/or TAD \geq 9 mmHg. ;
** Diabetes detected among non-diabetics (299): dextro \geq 2 or 2 glycemia \geq 1.26 mmol/l
***Moderate hyperglycemia on an empty stomach: glycemia \geq 1.1 and \leq 1.25 mmol/l

Table 2: Distribution of cardio-vascular risk factors.

Cancer risk factors

The average exposure to passive smoking was over 2 hours per day for 30% of patients.

The half of patients consumed more than 15 times a month meat and protein products. Salts and nitrites were consumed on a daily basis between 15 and 30 times/month by 23% of the consultants.

Alcohol consumption was reported by only 7% of participants. Helical bacteria pylori infection was noted in 9.9% of participants.

Protective factors was notified among 81.2% (high fiber diet) and 17.8% (physical activity>2 hour 30 min/week) in our population.

Personalized Preventive Plan (PPP)

Several actions have been put in place following preventive consultations.

Then, 85% of smokers had minimal counseling and 15% were referred to smoking cessation clinic awareness to a tobacco free environment was offered for 155 participants (Tables 3 and 4).

Therapeutic education was performed for 140 patients. 71 mammography was prescribed for women at risk from which one returned with cancer and referred to specialists (Figure 1).

Characteristics		N	Percentage (%)
Smoking habit	Active	61	19
	Passive	94	30
Diet	Rich in meat	160	51.1
	Rich in salts and nitrites	72	23
Alcohol	Occasional	21	6.7
	Everyday	1	0.3
Inactivity	Physical activity<30 min/week	60	19
	Physical activity between 30 min and 2 hour /week	197	62
Infectious environmental factors	HP+	31	9.9
	IST	5	1.5
	Hepatitis B	3	0.9
Genetic factors	ATCD Personal breast cancer	7	2.2
	ATCD Breast cancer in the family	7	2.2
	ATCD Colorectal cancer in the family	1	0.3
	ATCD Prostate cancer in the family	2	0.6
Protective factors	Diet rich in fibres	253	81.2
	Physical Activity>2 hour 30 min/week	56	17.8

Table 3: Distribution of risk factors for cancer.

Characteristics		N	Percentage (%)
Anti-smoking intervention	Sensitization to a tobacco-free environment	155	49
	Minimal advice	52	52/61
	Anti-tobacco consultation	9	9/16
Physical activity		313	100
Food Hygiene		227	72
Therapeutic education		140	44
	Individual	140	44
	Group	47	15
Para clinical examinations		31	9.9

	Mammogram on normal breast exam	67	21.4
	Mammogram on pathological breast exam	4	1.2
	Breast Cancer detected	1	1/71
	Colonoscopy	2	0.6
	Fibroscopy	18	5.7
	Biological report	64	20.4
Vaccination*		4	1.2
Prescription of vitamin D		28	8.9
Psychological support		104	33.2
	Psychological care in the front line	102	32.5
	Psychological care in psychiatry	2	0.6
Homeopathic treatment		11	3.5
*Rubella, DAT, Hepatitis			

Table 4: Description of personalized preventive plan.

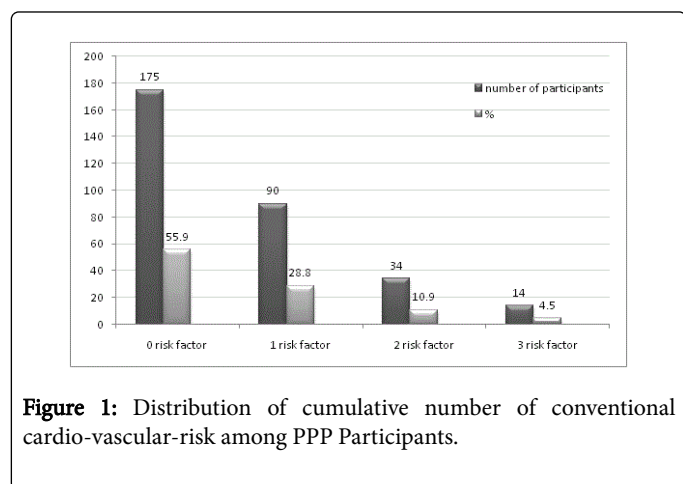


Figure 1: Distribution of cumulative number of conventional cardio-vascular-risk among PPP Participants.

Discussion

The most effective way to reduce the incidence of these diseases would be the establishment of a national collective prevention strategy. In our work, we have tried to circumvent the pathologies whose prevention is possible and especially relevant in general medicine [5]. Three subjects were explored and defined by their risk factors; vascular accidents, cancers and anxiety and depression.

Evaluation of cardiovascular risk

Few figures are available on the prevalence and management of patients with HRCV. Our study identified 48 patients among the 313 to HRCV with a rate of 15%. Destombe C has established a rate of 30.4% for HRCV in their study including population aged 50 to 85 years [6]. Taking into account the addition of risk factors, we will take the risk factors one by one and then propose a personalized prevention plan [7].

Obesity and sedentary lifestyle

Having 70% of women with a waist circumference >88 cm and 17% of men >102 cm represents a revealing indicator of a rather obese population. Our population is represented by 30.5% obese and the 5.7% overweight. At the same time, we found that 19% of the consultants maintain a daily physical activity of less than 30 min per week.

Smoking

In our population, tobacco affects 54% of men. Minimal advice or motivational supports were provided. According to the Heart and Stroke Foundation, by halting smoking, a person reduces the risk of a heart attack related to smoking by half after only one year [8,9].

The HTA

Since the questionnaire is not distributed on the day of chronic consultation, the patients generally come for acute pathologies. Among 23 patients with hypertension, we found 11 of them with systolic or diastolic greater than 14 or 9. Considering that adequate management of hypertension decreases the risk of stroke by 40% and that of infarction by 15%, our intervention was based mainly on therapeutic education. In addition, 39 of the 290 (13.5%) consultants who did not recognize themselves as hypertensive and in whom a 15 days profile under a salt free diet confirmed HTA.

Diabetes

Among our patients, 4.4% were diabetics, 42% of whom had HbA1c > 7%. In addition, this preventive consultation was able to detect 7 new diabetics among the 299 non diabetics, which represents 2.3% of our population, and 6 cases of moderate fasting hyperglycemia. Hence the need for screening which according to the American Diabetes Association should be systematically performed in adults of any age who are overweight or obese and who have one or more risk factors for diabetes [10].

Dyslipidemias

We defined dyslipidemia as any increase in the ratio of CH/HDL $>$ 4 (SCORE scale). Our study found 64 consultants with dyslipidemia of which 90% did not take an adequate daily treatment. The multicenter study MONALISA showed that despite recommendations, 53% of patients with hypercholesterolemia received no treatment. During our work we encourage a hypo-lipid and a drug therapy was recommended [11,12].

Evaluation of the carcinogenic risk

In Tunisia, cancer accounts for 16% of all deaths [13].

Smoking

Chronic smoking is one of the leading causes of preventable mortality and is the cause of one in three cancers. Our intervention was with 19% of our consultants of which 14% were addressed to the department of Preventive Medicine of the Fattouma Bourguiba Hospital of Monastir.

Alcohol

Only 22 patients (7%) reported drinking alcohol. It appears that alcohol consumption appears to be very limited among the population. Our role was mostly educational.

Food

The International Agency for Research on Cancer (IARC) evaluated the results of 800 studies that examined the consumption of red meats or meats and cancer. According to the report, the risk increases by 17% for each 100 g of red meat consumed per day and 18% for each 50 g of processed meat consumed each day. Our study, with 51% of consultants who consumed meat and cold meats more than 15 times a month, allowed us to emphasize education in order to reduce this consumption and divert it to food protectors [13].

Overweight, obesity and physical inactivity

Several studies have attempted to establish the relationship between obesity and cancer. Our intervention was mainly based on weight reduction and the preservation of daily physical activity.

Other environmental factors

Other factors were investigated in our study in relation to some specific cancers such as; stomach, liver and cervix cancer. Breast cancer, is the leading cause of cancer death in women and the fourth leading cause of death among Tunisian women of reproductive age. Our study found that 2.2% of consultants had a family-based ATCD for breast cancer. Our intervention was essentially a therapeutic education with regard to hormone therapy, and para-clinical screening tests in this population at risk, which allowed us to detect 1 case of breast cancer on 71 mammograms requested.

Evaluation of depressive risk

Depression is one of the most common psychiatric disorders in adults and especially a dramatic increase in suicide mortality. Our study was based on the HAD scale, which is a structured questionnaire of 14 items. We found that 32% of patients were anxious and 23% reported depressive responses with a HADD score greater than 11.

These data prompt us to systematically detect the psychological problems of our patients on the front line as this is a main pillar in the preventive consultation.

Personalized Prevention Plan (PPP)

We have focused on three main areas of prevention:

Primary prevention

The focus has been on health education, aimed at changing behavior, lifestyles or the environment, in order to protect health. In our work, 16% and 49% of the consultants benefited from minimal advice and awareness of a tobacco-free environment. Food hygiene advice was provided to 72% and an incentive for daily physical activity was 100% indicated.

Secondary prevention

Such as technical prescriptive acts. In our work, 49% of consultants have benefited from various clinical examinations.

Tertiary prevention

It aims to reduce recurrences, complications and squeals, especially through therapeutic education of the patient. Since the launch of our consultation, group education sessions have been implemented on a daily and targeted basis and have attracted 15% of our population.

Conclusion

The general physician is a major player in preventive medicine. He is able to ensure the link between the individual and the community through his knowledge of individuals, their ability to assess the health status of a population in which he works. He relays, contextualizes and personalizes the public health messages of collective dimension in individualized messages, audible by each one because they are emitted in the language of each one. SPC has improved the knowledge and practices of patients. It also identified several risk factors and especially breast cancer at an early stage. We concluded that individual and collective prevention can be performed in GM to improve and promote health.

Conflict of Interest

The authors have nothing to disclose concerning this manuscript.

Ethical Considerations

The study was conducted under good clinical practice conditions and according to the ethical standards collections. Each patient in the study is assigned a unique identifying code and all documents labeled accordingly to maintain anonymity.

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