Effects of a behavioural approach on lifestyle habits in a healthy Italian population: a before-after interventional study

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Abstract

Background. *The study aimed to assess the effectiveness of an educational intervention promoting adherence to healthy diet and physical activity.*
Study design. *Before-after interventional study.*
Methods. *Participants were healthy volunteers, 18-70 y old, from Bologna. They followed a training course consisting of seven meetings and signed a contract to comply with the promoted habits, verified through questionnaires at the engagement phase (T0), three months later (T1) and one year later (T2).*
Results. *One hundred, fifty-three subjects were involved, 75.8% were evaluated at T1 and 41.2% at T2. More than 80% of the subjects involved at T1 achieved an improvement of planned goals. Moreover, 77% of T1 compliants retained healthy eating and physical activity at T2.*
Conclusions. *The proposed pathway of empowerment positively affected nutrition and promotion of physical activity at 3 months after the intervention (T1) and were maintained even after a year. The results appear to be promising for primary prevention across the spectrum of a healthy lifestyle educational approach.*

Introduction

Lifestyle factors are among the main determinants of the burden of diseases, but not always they are sufficiently promoted by the Healthcare Systems, where investments in healthcare are more devoted to treatment than to prevention (1). The World Health Organization (WHO) estimated that diet and lifestyle-related risk factors (among which high blood pressure, high blood glucose, physical inactivity, overweight and obesity, high cholesterol, and low fruit intake) accounted for 19.1% of deaths and 7% of disability-adjusted life years (DALYs) (2). Insufficient intake of fruit and vegetables is estimated to cause about 14% of gastrointestinal cancer death, 11% of ischemic heart disease deaths and 9% of stroke death worldwide (2). Most of the benefits of consuming fruits and vegetables comes from reduction in cardiovascular

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diseases, but they exert a role also in cancer prevention. Physical activity – whose absence is estimated to cause 21-25% of breast and colon cancer burden, 27% of diabetes and 30% of ischemic heart disease burden – is able to reduce the risk of cardiovascular disease, some types of cancer and type 2 diabetes (3). Since 2004, the World Cancer Research Fund (WCRF) and the American Institute for Cancer Research (AICR) issued recommendations on diet, physical activity, and weight management for cancer prevention on the basis of the most comprehensive collection of available evidence (4). In a systemic review by Maresso and Hawk (5), a total of nine studies in seven cohorts, including nearly 1.25 million individuals across the United States (US) and Europe, have specifically examined the relationship between cancer prevention recommendations and incidence of cancer and overall mortality for cancer and cardiovascular diseases either from American Cancer Society (ACS) or from WCRF/AICR. In another multicentric study, Kirkegaard et al. (6) have recruited 55,487 men and woman aged 50-64 y at baseline not previously diagnosed with cancer. All participants filled in a lifestyle questionnaire including questions about social factors, health status, reproductive factors, and lifestyle habits, as well as a 192-item-semi-quantitative food frequency questionnaire (FFQ) developed to assess the average intake of foods over the past 12 months. Adherence to the five proposed recommendations (physical activity, waist circumference, smoking, alcohol intake, and diet) may reduce colorectal cancer risk considerably, and 23% of all the cancer cases in the cohort might be attributable to a lack of adherence (6). WCRF/AICR recommendations have been also used in the European Prospective Investigation into Cancer and Nutrition (EPIC) cohort (378,864 men and woman aged 25-70 y, recruited in

23 centers within the European countries) (7), and the adherence to them determine a positive effect on the global hazard ratio of death as well as on the specific risk of dying from cancer, circulatory, and respiratory disease. Results of this study suggest that following WCRF/AICR recommendations could significantly increase longevity (7). In the meta-analysis (8) conducted by the Consortium on Health and Ageing: Network of Cohorts in Europe and in the United States (CHANCES) on European and US adults aged 60 y, a lower risk of 6% or more to develop cancer was found for each one-point increase in adherence to the WCRF/AICR recommendations. The greatest risk reduction (16%) was observed for the association between the adherence to one additional WCRF/AICR dietary recommendation and colorectal cancer risk (8). The ten WCRF/AICR recommendations are reported in the 2018 Continuous Update Project (CUP) (9).

Based on the WCRF/AICR recommendations (4) and on the above cited evidences in the scientific literature, we have designed an educational intervention aimed at promoting and maintaining the adherence to positive lifestyle habits in a sample of healthy adults from Bologna. Specifically, it was based on adhering to the following behavioral actions: eating at least five portions of vegetables and fruit every day or two-three times a week; eating at least one portion of low glycaemic index (GI) foods two-three times a week; eating at least three antioxidant foodstuffs per day; doing 30 minutes or more of moderate physical activity every day (10-12). The aim of this project was to assess the effectiveness of an educational intervention on modifying lifestyle habits in a healthy population at baseline (Time 0 = T0) and in maintaining them at two different time points, after 3 (Time 1 = T1), and 12 months (Time 2 = T2).

Methods

This is a monocentric, interventional, before-after study, investigating the lifestyle habits regarding food and physical activity in a convenience sample of healthy people from Bologna and its surroundings. A total number of 181 people from six different towns (Bologna, Budrio, Casalecchio, Marzabotto, San Lazzaro, San Giovanni in Persiceto) joined the program and were recruited in a period of sixteen months.

The inclusion criteria were: the voluntary participation of each subject; an age between 18 and 70 years-old; the presence of at least one among the following risk behaviours: less than five portions/day fruit and vegetables consumption for at least two-three times a week; low glycaemic index carbohydrates consumption for less than two-three times a week; less than three antioxidant food consumption per day; less than 30 minutes a day or less than 150 minutes a week of physical activity; BMI>24.9 kg/m^2; waist circumference >94 cm in males, >80 cm in females.

The exclusion criteria were represented by: an age under 18 or over 70 years; suffering from acute or chronic diseases or conditions/lifestyles that required specific dietetic prescriptions or behaviours (for instance: pregnancy, night job, competitive athletic practice); having missed the second appointment (T1). The subjects included in the final sample were re-assessed during each of the fixed appointments to verify the persistency of the criteria. The whole process is shown in Figure 1.

The study complies with the principles laid down by the Helsinki Declaration and obtained the approval of the Ethics Committee of the Local Health Unit of Bologna (Prot. N. 797/CE Bologna, 19 September 2014). To participate, each recruited subject subscribed the informed consent. The educational program, named "Nutrition and healthy lifestyles", was
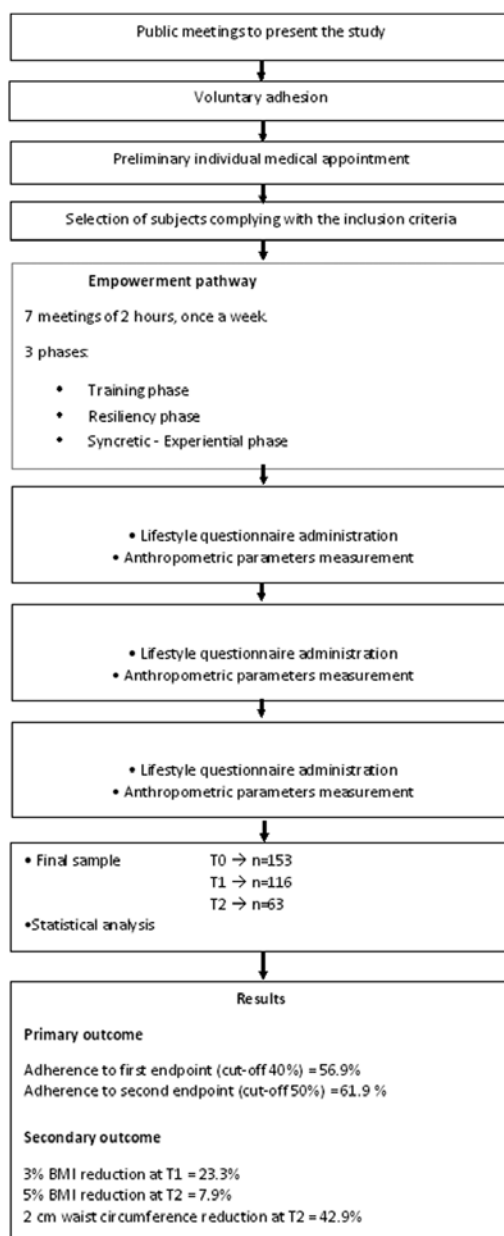

Figure 1 - Flowchart of the study

launched in the territory of the Local Health Unit of Bologna, on the basis of a project, "Med-Food Anticancer program", previously implemented in the city of Foggia, Apulia (13). A multi-professional team, made up of a physician, a biologist,

Table 1 - Descriptive statistics of the collected data at T0 (baseline), T1 (3 months later) and T2 (one year later).

Variables	T0 N[a] = 153		T1 N = 116		T2 N = 63	
Age in years (mean ± SD)	55.1 ± 10.4		55 ± 9.8		56.1 ± 9.2	
Body Mass Index in kg/m²	25.5 (median)		25 (median)		24.7 (median)	
Waist circumference in cm	92.2 (median)		91.4 (median)		91 (median)	
	N	% of the total sample at T0	N	% of the total sample at T1	N	% of the total sample at T2
Gender						
Female	115	75.2	89	76.7	43	68.3
Male	38	24.8	27	23.3	20	31.7
Consumption of five portions of fruit and vegetables 2-3 times a week or every day	19	12.4	35	30.2	17	27
Consumption of low glycaemic index carbohydrates consumption 2-3 times a week or every day	66	43.1	78	67.2	46	73
Consumption of antioxidants food for a minimum of 3 per day	129	84.3	110	94.8	62	98.4
Moderate physical activity for 45 minutes per day or for a total of 150 minutes a week	60	39.2	65	56	37	58.7

a N= Number

a dietitian, an educator and a psychologist was formed to lead the project. The first phase consisted in a series of public meetings devoted to present and describe the project to the general population and collect the contacts of the subjects who intended to participate. After each meeting, the subjects who wanted to voluntarily adhere and had at least one at-risk behaviour regarding food and/or physical activity, provided their contacts. During the second phase, these subjects underwent an individual examination at the Food and Nutrition Service of the Local Health Authority, where a physician assessed all the subjects. During the examination, he gave the participants a questionnaire collecting socio-demographic details as well as lifestyles and feeding habits. In addition, the measurement of Body Mass Index (BMI), waist circumference (WC), systolic and diastolic pressure, were recorded and a medical prescription to test the C-Reactive Protein concentration was given to each participant. In the third phase, the recruited subjects took part in seven meetings, during each of which three subsequent stages were proposed:

1) *the educational stage:* the participants were informed on cancer prevention through nutrition and physical activity, and the Mediterranean Diet was proposed as a healthy model. The contents of the educational intervention came from the 2007 international guidelines "Food, Nutrition, Physical activity and Cancer prevention" of the WCRF/AICR.

Table 2 - Distribution of the subjects according to the achievement of the defined goals at T1 (3 months later) and T2 (one year later). The percentages are calculated considering the number of subjects assessed at T0 and T1 (N=116), and at T0 and T2 (N=63), respectively. FVC = fruit and vegetables consumption; G.I. = Glycaemic Index; AOF = Antioxidant Food; PA = Physical Activity.

		% of population at T1 with respect to T0 (N=116)					% of population at T2 with respect to T0 (N=63)				
		FVC five portion 2-3 times a week or every day $p=0.003*$	Low G.I. carbohydrates consumption 2-3 times a week or every day $p=0.002*$	AOF consumption for a minimum of 3 foods per day $p=0.167*$	45 minutes per day or a total of 150 minutes in a week of PA $p=0.002*$	At least of 2 healthy behaviours $p=0.035*$	FVC five portion 2-3 times a week or every day $p=0.383°$	Low G.I. carbohydrates consumption 2-3 times a week or every day $p=0.001°$	AOF consumption for a minimum of 3 foods per day $p=0.021°$	45 minutes per day or a total of 150 minutes a week of PA $p=0.023°$	At least of 2 healthy behaviours $p=0.035°$
population that modified the behaviour respect to the defined goal	Positive variation (goal achievement)	24.1	29.3	11.2	27.6	24.1	20.6	30.2	14.3	28.6	9.5
	Negative variation (loss of goal)	7.8	10.3	5.2	9.5	8.6	12.7	4.8	1.6	9.5	7.9
population that did not modified the behaviour respect to the defined goal	Unreached goal	62.1	22.4	0	34.5	10.3	60.3	22.2	0	31.7	3.2
	Reached goal	6	37.9	83.6	28.4	56.9	6.3	42.9	84.9	30.2	79.4
	Goal achievement in total	30.2	67.2	94.8	56	81	27.0	73	98.4	58.7	88.9

*McNemar test (T1 VS T0) for each goal.
°McNemar test (T2 VS T0) for each goal.

Table 3 - Classification of the subjects (%) according to BMI and waist circumference at T0, T1 and T2.

	Objectives	% at T0 (N=153)	% at T1 (N=116)	% at T2 (N=63)
Body Mass Index	≤ 24.9 kg/m^2	45.8	49.1	54
	> 24.9 kg/m^2	54.2	50.9	46
	Goal achievement (Reduction of 3% BMI at T1 or 5% BMI at T2)	-	23.3	7.9
Waist Circumference	>80 cm for women >92 cm for men	75.8	66.4	68.3
	$\leq$80 cm for women $\leq$92 cm for men	24.2	33.6	31.7
	Goal achievement (reduction of 2 cm of waist circumference at T2)	-	-	42.9

2) *the resilient stage*, during which the motivations for change were reinforced and the techniques to support good habits were explained.

3) *the syncretic-experiential stage*, where the participants were involved in cooking and sensory laboratories.

Stage 2 and 3 were largely interactive, and aimed at verifying the feasibility of the proposed changes, the acquisition of practical skills, and the reinforcement of the motivation for change to consolidate the acquired knowledge and skills over time. Techniques and strategies of the Motivational Interviewing were used. This approach was adopted according to its usefulness when associated to some medical interventions for specific clinical problems (14-17).

After this activity (T0), the participants were invited to a second appointment after 3 months (T1), during which the physician administered the same questionnaire and recorded the same anthropometric and clinical parameters collected during the first examination. Then, each participant was invited to return for a third - the final - examination (T2, one year after T0), to fill in the same questionnaire and be submitted to the same anthropometric measurements. Compliance was measured in accordance with McDonald *et. al* (18) and Sabaté (19).

The questionnaire included demographic, medical, dietary, and lifestyle sections, plus questions on alcohol use, smoking status, physical activity, education, and previous illnesses. The demographic section collected information on gender, date of birth, educational level (primary, middle or high school, university degree, PhD or post-graduate specialization), and job (apprentice, employee, chief worker, manager, retired). Lifestyle section explored habits related to physical exercise (regularly or not; the type of physical activity – run, walking, football, gym, swimming, bicycle, other; the duration - less than 30 minutes, from 30 minutes to 1 hour, from 1 to 2 hours, more than 2 hours), the mode of conveyance (walking, bicycle, moto, car, public transport, other); overall walking time in a day (less than 30 minutes, from 30 to 60 minutes, more than 60 minutes); food frequencies (when - never, less than one time in a month, one time in a week, two-three times in a week, every day) regarding cookies, bread, whole bread, cereal flakes, whole flakes, crackers, croissant, rusks, potatoes, pasta or cereals with legumes, pasta or cereals with vegetables, pasta or cereals with tomato sauce, red meat, white meat, fish, vegetables (one - two times a day, two or more times a day), fruit (one time/day, two or more times/day), cruciferous, liliaceous, citrus fruits, extra virgin olive oil, nuts,

almonds, flax seeds, turmeric, green tea, dark chocolate, eggs, fresh cheese, hard cheese, cured meat, desserts, packaged snacks, sandwiches, pizza, ready meals and sauces. Weight without dresses, height (in cm), waist circumference were measured by a trained physician at the end of the appointment.

The educational program aimed to reach two different outcomes: as regards to the primary outcome, it aimed to pursue two endpoints. The first one was the achievement in at least 40% of the sample, after 3 months (T1) from the recruitment (T0), of two or more of the following goals:

(a) five or more portions of vegetables and fruit consumed every day or two-three times a week (20);

(b) one or more portion of low glycaemic index (GI) foods (whole bread and whole oat flaks) consumed at least two-three times a week (21)

(c) starting from a minimum of three antioxidant foodstuffs consumed per day, to add at least one food with antioxidant properties daily (green tea, extra virgin olive oil, soy, crucifers, garlic, onions, berries, tomatoes, fish, oil seeds, dark chocolate, citrus fruit) (22);

(d) to reach a performance of 30 minutes or more of daily moderate physical activity (23-24).

The second endpoint was referred to the maintenance, after one year (T2), in at least 50% of the subjects who were compliant after 3 months, of two or more dietary and lifestyles behaviours obtained at T1.

The secondary outcome was set as a decrease in the BMI (21) -3 % or more after 3 months and -5% or more after 12 months (T2) – and/or in waist circumference (25) – a reduction of 2 cm or more at the third examination (T2).

All the variables referred to fruit and vegetables, low GI carbohydrates, antioxidant food consumption, were classified as five-level or, in case of physical activity, four-level categorical variables to assess the achievement of each of the endpoints (see letters a, b, c, d of the "study design" paragraph). To comprehensively assess the primary outcome, we created a new dichotomous variable with two values: 1 or 0, that is the achievement or the failed achievement of at least two of the endpoints, respectively. A descriptive analysis was conducted. Normal distribution of BMI and waist circumference were assessed by Kolmogorov-Smirnov test. McNemar test for paired samples was used to assess whether the distribution of the dichotomous variable varies at the three appointments, including the success and the failure for each goal of primary outcome. To assess the differences in BMI and waist circumference values at different time, Wilcoxon rank test for paired samples was used. The analyses were performed using IBM® SPSS® statistics version 25 for Windows. For each analysis, an α-level of 0.05 was considered.

Results

The recruited subjects were 181, but only 153 met the inclusion criteria. The exclusion of the 28 subjects was due to: missing data at T0 (15), diseases representing reason for exclusion (7) and exceeded age limits (6). One hundred and sixteen participants out of 153 (75.8%) were present at T1 (drop-out of 37 subjects). At T2, 63 participants out of 153 were assessed (41.2%). C-RP and blood pressure values are not presented because of the many missing data. Descriptive statistics about age, gender, food frequency consumption, physical activity level, BMI and waist circumference, at each T, is reported in Table 1.

The results of the primary outcome are reported in Table 2.

In the first assessment (T0), the sample was represented by 115 females (75.2%) and 38 males (24.8%). The mean age was 55.1 ± 10.4 years, with no differences by gender

($p>0.05$). Over half of the participants have a high school title (51.6%), followed by graduates (23.5%) and lower secondary school (17%); 5.9% had a PhD or post-graduate degree and just 2% had only a primary school license. Regarding the job, 35.9% was actively working, 35.3% retired, the rest was not occupied or in search of occupation.

About 46% referred to consume alcoholic beverages on a daily basis, and the 6.5% were smokers. Moreover, 20.9% referred to drink more than 1.5 litres water a day; 95 subjects (62.1%) drank tap water. BMI and WC were not normally distributed. The median BMI was 25.5 kg/m^2 (25.7 kg/m^2 for females, 25.6 kg/m^2 for males). The median waist circumference was 92.2 cm (90.5 cm in females, 97.2 cm in males); 84 women (73% of female sample) and 23 men (60.5% of male sample) had values above the cut-off.

For what concerns the assessment of the primary outcome, at T0, 12.4% consumed fruit and vegetables, 43.1% ate low glycaemic index carbohydrates, 84.3% ate antioxidant foods and 39.2% performed physical activity according to the established cut-off.

In the second assessment (T1), the sample included 116 subjects. At T1, BMI was not normally distributed, while WC was. The median BMI values was 25 kg/m^2 (26 kg/m^2 in females; 25.7 kg/m^2 in males). The mean waist circumference 91.4 ± 14 cm with (89.8 ± 14 cm in females, 96.8 ± 12.5 cm in males). At T1, 30.2% of the sample consumed fruit and vegetables, 67.2% ate low glycaemic index carbohydrates, 94.8% ate antioxidant foods and 56% performed the prescribed levels of physical activity.

Twenty-eight (24.1%) participants who did not refer, at T0, the consumption of the defined dose of vegetables and fruits, adhered the indications at T1 while, on the contrary, nine compliant (7.8%) subjects at T0, did not maintain the goal at T1 ($p<0.05$).

The 29.3% who did not achieve adequate low glycaemic index carbohydrates consumption at T0, did it at T1. On the contrary, 10.3% (18 subjects) who had these values at T0, did not maintain it at T1 ($p<0.05$).

At T1, the subjects that consumed at least 3 antioxidant foods increased by 11.2% ($p>0.05$), and 5.2% that already consumed at least 3 antioxidant food daily at T0, increased it at T1.

At T1, the percentage of subjects who declared to do physical activity in line with the expected cut-offs, increased from 34.5% to 56%. The 27.6% that did not reach the goal at T0, did it at T1 ($p<0.001$).

The first endpoint of the primary outcome can be considered as achieved, since it has been recorded in 56.9% of participants at T1 ($p=0.005$).

In the third assessment (T2), the sample was formed by 63 subjects. BMI and WC were not normally distributed. The median BMI values was 24.7 kg/m^2 (24.6 kg/m^2 for females; 25 kg/m^2 for males). The median waist circumference was 91 cm (85 cm for females; 95 cm for males). The vegetables and fruits consumption, low glycaemic index carbohydrates consumption, and at least three antioxidant foods per day were referred, respectively, by 27%, 73% e 98.4% of the participants. The adherence to the established physical activity level was found in 58.7%. No statistically significant differences resulted between genders for any variable.

The second endpoint of primary outcome concerns the maintenance, in at least 50% of compliants after 12 months from the first examination, of two or more dietary behaviours and lifestyles required by the program and already achieved it at 3 months. After 1 year, 79.4% of compliants at T1 preserved at least two eating behaviours and physical activity ($p<0.05$)

The secondary outcome concerns the improvement in anthropometric parameters (BMI and WC) compared to the chosen thresholds:

1) BMI reduction of 3% at 3 months and 5% at 1 year

2) waist circumference reduction of 2 cm at 1 year.

1) At T0, the percentage of overweight/ obese (BMI>24.9 kg/m^2) population was 54.2%. At T1 the percentage was 50.9%; at T2, 46%. Twenty-seven subjects (23.3%) have reduced their BMI of 3% or more at T1. The 5% BMI reduction at T2 has been achieved by 5 subjects (7.9%).

2) Twenty-seven participants have reduced their waist circumference of at least two cm at T2; among them, one subject lowered his waist circumference of 28 cm in one year.

The above results are reported in Table 3.

Discussion

The aim of this research was to test the potential effectiveness of an educational intervention based on Motivational Interviewing in changing dietary and lifestyle habits.

Following this approach, the primary outcome aimed to improve the adherence to four behaviors regarding nutrition and physical activity in healthy Italian people; the secondary outcome aimed to reach a decrease in BMI and/or in waist circumference.

As regards to fruit and vegetables consumption for at least five daily portions, two-three times a week or every day, we observed a significant increase of 24.1% after three months from examination, and a positive variation of 23.8% after 1 year in people that had not reached this goal at T0 (though this second result was not statistically significant). Our results are in line with those described in a meta-analysis of Lara *et al.* (26), that showed how, using behaviour change techniques (BCTs), they recorded increases in fruit and vegetable intakes of 60 to 90 g/day greater than without BCTs. Likewise, in a work of Schneider *et al.* (24), the effect of motivational interviewing on fruit and vegetables consumption was examined in adults with a mean age ≥60; overall, MI dietary interventions had a small (ES= 0.221) but significant effect on fruit and vegetable consumption. In the programme Appetite for Life (a primary care-based healthy lifestyle programme for overweight women with a 12-month follow-up period) (27), fruit and vegetable consumption increased during the programme and was significantly maintained 12 months later, while low glycaemic index carbohydrates (bread and cereal) consumption increased after 6 months, but diminished after 12-month follow-up.

Regarding the level of physical exercise, our sample responded positively to our indications, with significant variations (*p<0.05*) after 3 months (+27.6%) and after 1 year (+27.7%).

In a systematic review by French (28), a positive but non-significant effect was found between the change in self-efficacy (defined as the belief in one's capabilities to organize and execute the courses of action required to produce the given attainments) and physical activity. In another review (29), the effectiveness of nurse-delivered physical activity interventions conducted in primary care settings with supportive or motivational contacts led to an increase in the frequency and/or duration of walking, overall physical activity, leisure time physical activity, and moderate or vigorous physical activity (30). In literature, maintenance at 1 year of increase in physical activity and weight loss is a matter of debate according to different intervention programs and subjects with different problems of health. In fact, in a review of Swift *et al.* (31), the significant weight loss obtained at 3 months, disappeared in 80% of individuals after a minimum of 1 year. In a systematic review and meta-analysis of randomized controlled trials, Armstrong *et al.* (32) concluded that motivational interviewing interventions showed an enhanced, but non-significant reduction in BMI of 0.25 kg/m^2

over controls. Greaves *et al.* (33), assessing the effectiveness of a low-cost intervention to reduce the risk of diabetes through weight loss and physical activity, found a higher proportion – but not significant - in the intervention group achieving the 150-minutes physical activity target, a significant difference in weight, and a small, but not significant, difference in waist circumference. Positive behavioural changes in clinical outcomes for the MI intervention group were reported in other studies that assessed sick study populations (34-39). In a lifestyle program for obesity that involved one-hundred overweight outpatients, in obese subjects with and/or without type 2 diabetes mellitus, the behavioral intervention provided, at 3 month-follow up, BMI, weight and waist circumference reductions (40). In a systematic review (41) to explain the heterogeneity in results of interventions aimed at promoting physical activity and healthy eating for overweight and obese adults, the differential effects of behavioural change techniques (BCTs) and other intervention characteristics were explored: behaviour and self-monitoring of behaviour were associated with positive intervention effect at short and long-term.

Limitations of the study

This study has some limitations, mainly represented by the drop-out of participants after 3 and, particularly, after 12 months. Another important limitation lays in the definition of food frequency consumptions, which have limited the precise calculation of the amount of food consumed.

Conclusions

The study showed that behavioural changes on lifestyle and diet by means of a multidisciplinary and structured approach can effectively be reached. The results appear to be promising in terms of primary prevention, for cancer as well as for other chronic diseases, across the spectrum of a healthy lifestyle system approach (42-43).

The creation and the support of a multidisciplinary team in primary healthcare settings could be a valid option to contrast risk behaviours and the onset of chronic diseases as well, at affordable costs. The promising evidences, nonetheless, should be confirmed by other similar experiences, in more consistent samples, and avoiding the limitations outlined in our work.

People's empowerment, appropriately adapted, can be used effectively in many diagnostic therapeutic pathways, as for breast cancer and colon cancer survivors.

Conflict of interest
There is no potential conflict of interest to disclose

Riassunto

Risultati di un approccio comportamentale sulle abitudini di vita di una popolazione italiana sana: studio interventistico *before-after*

   Introduzione. Lo studio mira a valutare l'efficacia di un intervento educativo volto a promuovere l'adesione a una corretta alimentazione e attività fisica.
   Disegno dello studio. Studio di intervento before-after.
   Metodi. I partecipanti erano soggetti volontari, di età compresa tra 18 e 70 anni, bolognesi. Hanno seguito un percorso di 7 incontri formativi e sottoscritto un contratto che li impegnava al rispetto delle abitudini promosse, la cui adesione è stata successivamente verificata tramite la somministrazione di questionari in fase di arruolamento (T0), a tre mesi (T1) e a un anno (T2).

Risultati. Centocinquantatre soggetti sono stati arruolati; il 75,8% è stato valutato a T1 e il 41,2% a T2. Oltre l'80% dei soggetti coinvolti a T1 ha fatto registrare un miglioramento rispetto agli obiettivi sottoscritti. Inoltre, il 77% di coloro che hanno partecipato alla rilevazione a T2 ha mantenuto un'alimentazione sana e un adeguato livello di attività fisica.

Conclusioni. Il percorso di empowerment proposto ha influenzato positivamente l'alimentazione e l'attività fisica sia a breve termine (a 3 mesi dal reclutamento), sia a medio termine (a un anno). I risultati sembrano indicare una efficacia dell'approccio educativo sistemico a uno stile di vita sano in termini di prevenzione primaria.

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