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Research paper

Herbal remedies and the self-treatment of stress: An Italian survey

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ABSTRACT

Introduction: Increasingly, people with stress-related disorders seek alternative self-treatment remedies from pharmacies. The aim of the study was to survey the habits of Italians visiting pharmacies to obtain natural cures for stress, and investigate their short-term benefits in reducing perceived stress.
Methods: The study was conducted in 54 Italian pharmacies in 3 major cities. Participants older than 18 years, seeking remedies for stress manifestations were recruited and pharmacists recorded the herbal remedies participants chose. To assess whether the remedies effectively reduced perceived stress participants completed the Perceived Stress Scale-10 (PSS-10) at baseline and 15 days later (T1). A 10-point Likert self-assessment scale was used to measure the benefit experienced after treatment for 15 days.
Results: Of the 374 subjects who completed the study, 235 chose two herbal remedies: valeriana and hops and passiflora or melissa. Another group heterogeneously used other remedies. At T1, *t*-test for paired samples showed a significant reduction in PSS scores, and one-way ANOVA confirmed the reduction between all groups ($p = 0.001$). Self-reported benefits differed significantly between the three groups ($p < 0.0001$). A greater reduction in PSS scores and a significantly higher self-experienced benefit in participants who used valerian + hops was identified compared to the other groups ($p = 0.002$). The chosen herbal remedies appeared to reduce perceived stress to a greater extent in women than in men.
Conclusions: The short-term use of herbal remedies seems effective in reducing perceived stress. Valeriana and hops combined seem more helpful than other herbal remedies. These findings obtained in Italian city pharmacies merit confirmation in population studies.

1. Introduction

Stress is a process integrating complex physiological, emotional, and psychological adjustments to counterbalance noxious stimuli, or "stressors" [1].

The concept of "stress" has attracted growing speculative interest since the beginning of the 20th century, when Walter B. Cannon introduced the "fight-or-flight" response concept [2]. Nearly two decades later, Hans Selye defined stress as "the body's nonspecific response to any demand for change" namely a "general adaptation syndrome" [3–5]. The response to psychologically and physically stressful stimuli involves widespread brain structures and neuroendocrine pathways. Overall, these coordinated responses bring about behavioral and physical changes. Stress-related behavioral changes include increased arousal and alertness, heightened attention, and suppression of sexual and feeding behaviors. Physical changes include redirecting energy (i.e., oxygen and nutrients) to the stressed body site and central nervous system [6,7].

Stress-related responses may lead to several manifestations, such as anxiety, sleep disturbances, and somatizations all highly prevalent in the general population. The European Study on the Epidemiology of Mental Disorders (ESAMeD), conducted between 2001 and 2002 in six European countries, showed a 14% lifetime prevalence of anxiety disorders, and a 12-month prevalence twice as high in women as in men [8]. A recent review reported a high lifetime prevalence of anxiety disorders (26.3–33.7%) in Western countries (probably even underestimated given that the prevalence rates excluded individuals with "subthreshold anxiety") [9]. In Italy, from 2009 to 2011, the Italian League for Anxiety, Agoraphobia and Panic Attacks (Lidap) conducted a nationwide telephone survey about the responsible environmental factors. The study was unpublished, but had great notoriety both in the

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national press and health conferences because it identified as the main daily cause urban stress (traffic, parking and public transport), a problem reported by 4% of individuals living in large Italian cities (Rome, Milan and Naples).

Given the high prevalence of stress-related disturbances, affected people are common targets for pharmacological and non-pharmacological interventions. Over the past few years, people in Western societies suffering from the various stress-related afflictions have increasingly turned to self-treatment with natural or herbal remedies. Data from a nationally representative sample of 2055 people living in the US showed that 57% of participants suffering from anxiety attacks had used herbal medicines and complementary alternative medicine therapies during the previous 12 months [10]. Conversely, few individuals complaining of stress-related disturbances refer to their general practitioner for "traditional medical help" [8]. Despite limited scientific evidence proving their effectiveness [11,12], herbal remedies reportedly produce beneficial effects and are available as "over-the-counter" products. Nevertheless, their use is widely variable (ranging between 2.4% and 22% of the studied populations) and their growing popularity probably depends on being fairly safe and generally inducing fewer adverse effects than conventional pharmacotherapies (e.g., benzodiazepines and selective serotonin reuptake inhibitors—SSRIs) [13]. Because prevalence estimates have hitherto addressed persons with major psychiatric disorders no information is available on those with subthreshold anxiety disturbances [8,9]. One way to obtain information on this group would be to seek data from pharmacies, the place Italian people increasingly visit to seek alternative over-the-counter remedies for stress.

We designed this survey to find out whether and how the herbal remedies a sample of Italian adults living in three large cities chose from local pharmacies benefitted their stress-related anxiety. As our primary outcome measure we used the Perceived Stress Scale-10 (PSS-10) [14] to assess the short-term effectiveness of the remedies. As secondary outcome we used a 10-point Likert scale to measure the self-experienced effectiveness.

2. Methods

2.1. Participants and setting

The study was conducted in several pharmacies in Rome, Milan, and Naples, three large Italian cities. As participating centers we obtained consent from 54 pharmacies, 18 in each of the three cities. In each pharmacy, we posted notices explaining that we were conducting a survey on herbal remedies for managing stress.

The inclusion criteria were: age ≥18 years; living in Rome, Milan, or Naples; subjects answering "mostly agree" or "strongly agree" to at least 7 of 13 questions assessing the frequency of stress manifestations or exposures (e.g., "*have you recently complained of headache?*"; *"have you ever experienced attentional problems?*"); and directly seeking herbal remedies for stress manifestations (no pharmacist proposed remedies). Subjects were excluded if they had experienced major psychiatric and neurological disorders or were under treatment with sedatives or anxiolytics (i.e., benzodiazepines, muscle relaxants, and hypnotics); antidepressants (i.e., SSRI, noradrenaline reuptake inhibitors (NRI), and tricyclic antidepressants); antipsychotics; mood stabilizers; and antiepileptic drugs singly or combined.

Before entering the survey, each participant signed an informed consent.

2.2. Procedures

Subjects spontaneously asking for herbal remedies for stress manifestations were asked to participate to the present survey by pharmacists, who also collected their consents to participation. Pharmacists recorded the herbal remedies each participant chose. It is noteworthy that they did not propose or suggest any specific

Table 1
Socio-demographic characteristics.

	Total Sample (n = 374)		Group 1 (n = 172)		Group 2 (n = 63)		Group 3 (n = 139)		Chi-square
	n	%	n	%	n	%	n	%	
Age									
18–30	68	18.2%	25	14.5%	15	23.8%	28	20.1%	
31 – 44	101	27.0%	42	24.4%	23	36.5%	36	25.9%	
45 – 60	145	38.8%	74	43.0%	19	30.2%	52	37.4%	
>60	60	16.0%	31	18.0%	6	9.5%	23	16.5%	x^2 9.43
Median	46								n.s.
Gender									
Women	244	65.2%	115	66.9%	33	52.4%	96	69.1%	x^2 5.69
Men	130	34.8%	57	33.1%	30	47.6%	43	30.9%	n.s.
Education									
≤8 years	52	13.9%	22	12.8%	10	15.9%	20	14.4%	
9–13 years	214	57.2%	102	59.3%	39	61.9%	73	52.5%	
≥14 years	100	28.9%	48	27.9%	14	22.2%	46	33.1%	x^2 3.14
Median	12								n.s.
Job									
Professional	50	13.4%	14	8.1%	19	30.2%	17	12.2%	
Worker	17	4.5%	7	4.1%	3	4.8%	7	5.0%	
Employee	138	36.9%	72	41.9%	17	27.0%	49	35.3%	
Manager	12	3.2%	7	4.1%	0	–	5	3.6%	
Retired/housewife	91	24.3%	46	26.7%	12	19.0%	33	23.7%	
Student	35	9.4%	15	8.7%	6	9.5%	14	10.1%	
Unemployed	31	8.3%	11	6.4%	6	9.5%	14	10.1%	

Group 1: valerian + hops; group 2: melissa and/or passionflower; group 3: other herbal remedies.