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Original article

Attitudes to, and practice of, unconventional medicine by physicians in Italy ☆

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Abstract

Background: Given the great public demand for unconventional medicines (UM) in most Western countries, the aim of this study was to assess the attitudes to, and supply of, UM by physicians in Italy.
Methods: A cross-sectional survey of all of the physicians belonging to the *Ordine dei Medici* of the province of Parma was carried out by means of an anonymous questionnaire mailed to 2631 physicians and returned by 1734 (66%). The outcome measurements were the prevalence of opinions concerning UM, the prevalence of its practice, and the extent to which demographic and practice characteristics influenced it.
Results: The majority of the physicians (53%) attributed some efficacy to UM. This belief was significantly more frequent amongst female physicians ($p<0.01$). A small proportion of physicians (8%) claimed to practice some form of UM. The following types of physicians were also more likely to practice UM: rural physicians ($p=0.01$), those working as National Health Service (NHS) general practitioners or in private practice ($p<0.0001$) and those specialized in areas relating to the musculoskeletal apparatus or anesthesia/intensive care ($p<0.01$).
Conclusions: This Italian survey found a smaller proportion of physicians practicing UM on their patients than those indicated by other published surveys.
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Keywords: Complementary therapies; Alternative medicine; Health care surveys; Questionnaires; Delivery of health care

1. Introduction

A number of population surveys have suggested that there is a considerable demand for unconventional medicines (UM) in the industrialized world. Since it includes a broad spectrum of practices and beliefs, the term UM is more general and less binding than the more common term "complementary" and/or "alternative" medicines.

The percentage of the population that uses UM has been reported to be 16% in The Netherlands [1], 33% in Finland [2], 33% in the UK [3] and 36% in France [1]. A survey in Canada found that 15% of the population had seen an alternative therapy practitioner during the previous 6 months [4]. A 1997 survey in the USA found that 40% of the population had used some type of UM during the previous year [5] and another in 2002 found that 62% of adults (36%, excluding prayer) had used some form of UM during the previous 12 months [6]. Furthermore, the use of UM and expenditure on it increased dramatically from 1990 to 1997 [5,7].

The wide range of the reported utilization rates can be explained by differences in survey methodology and disparities in the range of therapies included within the definition of UM. In addition to demographics and health status, it has been reported that other possible predictors of UM use are: (a) dissatisfaction with conventional treat-

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ments; (b) the fact that it is more compatible with patients' values, world views or beliefs regarding the nature and meaning of health and illness; or (c) the fact that it allows more personal autonomy and control over health care decisions [8].

The 1999 multipurpose investigation of health carried out by the Italian Institute of Statistics (ISTAT) in cooperation with the National Health System (NHS) reported that about 9 million Italians used UM at least once during the period 1997–1999, a figure that corresponds to 16% of the total population and is more than double that recorded in 1991. The most widely used types of UM were homeopathy, manipulative treatments, herbal therapy and acupuncture. The use of homeopathy more than tripled between 1991 and 1999 [9], while the use of other types of UM was considerably less.

Given this demand for UM in Italy, it became important to assess the opinions and behavior of physicians towards UM. This paper reports the results of a survey of the attitude to, and practice of, UM by physicians belonging to the *Ordine dei Medici* of Parma, a medium-sized province in northern Italy with a total population of about 400,000 inhabitants. This was the first large study of its kind ever carried out in Italy.

2. Methods

2.1. Survey methodology

Italian law states that anyone practicing a professional medical activity must be a member of the *Ordine dei Medici.* For this survey, the physicians belonging to the *Ordine dei Medici* of Parma were invited to complete and anonymously return a mailed questionnaire in a freepost envelope (A), together with a card declaring that they had done so in a second freepost envelope (B).

The first page of the questionnaire contained 10 questions, seven of which concerned personal data and professional information including the main type of professional activity, to what extent respondents were actively practicing physicians and their main area of interest. Three questions asked if they believed that UM has some efficacy (question 8), if their patients seek UM (question 9) and if they directly practiced UM on their patients (question 10). Physicians who practiced UM were asked to reply to a further 10 questions asking if their practice of UM was full-time, the types of UM practiced, their UM education and training, their membership in scientific UM societies and the clinical conditions they used UM to treat. The varieties of UM listed included homeopathy, homotoxicology, anthroposophic medicine, traditional Chinese medicine, acupuncture, herbal therapy, ayurvedic medicine, manipulative treatments (chiropractic, applied kinesiology, osteopathy), posturology and any other treatment.

In order to achieve a high response rate, the survey was publicized among physicians by:

(a) an ad hoc meeting of the *Ordine dei Medici* describing the questionnaire and its items;
(b) a personal letter to all of the physicians playing leading roles in the public and private health services of Parma from the President of the *Ordine dei Medici* asking them to respond to the questionnaire themselves and to encourage their staff members to do so;
(c) an ad hoc article in the medical journal of the *Ordine dei Medici* of Parma;
(d) an ad hoc article in the local daily newspaper.

Furthermore, the questionnaire was mailed together with a short accompanying letter, signed by the President of the *Ordine dei Medici* of Parma and the Chairman of the Ad Hoc Committee on UM, stressing the scientific nature of the initiative and assuring anonymity.

2.2. Statistical analysis

This was a cross-sectional survey of all of the physicians belonging to the *Ordine dei Medici* of Parma aged 70 years or younger. The main outcome measures were the prevalence of opinions that UM has some efficacy, the prevalence of UM practice and the influence of demographic and practice characteristics (age, sex, residence, specialization, main type of professional activity) on such opinions and use.

In order to avoid a selection bias, we compared some of the demographic and practice characteristics of the responding and non-responding physicians in order to analyze the relationship between those attributing some efficacy to UM and those who did not. The χ^2 test and exploratory multivariate regression analyses were used to confirm the findings of the bivariate analyses and to assess their relative strength. Multivariate logistic regression was used to identify the relevant predictors of the dichotomous outcomes of believed efficacy or not, and direct practice or not [10]. The variables used in these analyses were sex, age, years since graduation in medicine, place of residence, main professional activity and specialization. Statistical significance was assumed when the p level was below 0.05. The data were analyzed using SAS version 6.11 [11].

2.3. Information concerning the main professional activities of Italian physicians

Given the multiplicity of the types of medical activity and the fact that individual physicians may be engaged in more than one at any time, the questionnaires asked the physicians to identify themselves as (principally) belonging to one of the several categories. In Italy, most health care provision is financed by the State. The physicians working in public hospitals (the vast majority of all hospitals) are

paid by the State as employees of the National Health Service (NHS) or as employees of State-run universities (teachers of undergraduates in medicine) whose salaries are supplemented by the NHS. These physicians are referred to in this paper as "NHS hospital doctors" and may have full-time contracts (in which case they carry out their private practice inside the hospital employing them) or part-time contracts (in which case they carry out their private practice outside the hospital employing them).

Non-hospital NHS physicians are mainly general practitioners (family doctors). Their number is limited and they are paid by the NHS on an annual per capita basis according to the number of patients in their practice, and not on a fee per item of service rendered. These physicians are referred to as "NHS general practitioners".

Physicians who are not paid by the State work in private clinics (most of which have agreements with the NHS) or private surgeries and are referred to as "private practice physicians". This paper also refers to "postgraduate trainee" physicians, who work in hospitals during their speciality training, and a few doctors working outside of hospitals in "duty medical units" that provide out of hours cover for general practitioners at night, on weekends or during public holidays.

3. Results

The questionnaire was sent to the 2631 physicians aged 70 years or younger belonging to the *Ordine dei Medici* of Parma in April 2001. Forty-nine percent (1289) had been returned by June 2001. In July 2001, a reminder questionnaire was sent to the 1342 physicians who had not replied to the first one and a further 445 completed questionnaires (17%) were received. The questionnaire was therefore completed by 1734 of the 2631 invited physicians (66%).

Statistical comparisons of some of the characteristics of the responders ($n = 1734$, 66%) and non-responders ($n = 899$, 34%) showed that there were no significant differences in terms of age, sex or site of residence (the only known characteristics of the responding and non-responding physicians).

Table 1 shows the responses to the three main questions (missing responses were not considered). More than half of the physicians attributed some efficacy to UM, about three-quarters stated that their patients asked for UM-based treatments and less than 10% personally practiced some types of UM on their patients.

Table 2 shows the distribution of some of the characteristics of the respondents in relation to their opinion concerning the efficacy of UM. The only difference related to gender was that UM was attributed some efficacy significantly more frequently by female than male physicians ($p < 0.01$).

Table 1
Responses to the three main questions

Questions	Response			
	Yes		No	
	No.	%	No.	%
Question 8				
Do you think UM has some efficacy?	908	53	802[a]	47
Question 9				
Do patients want UM?	1277	76	410	24
Question 10				
Do you practice UM on your patients?	143	8	1588	92

[a] Total of "no" and "don't know" responses.

Table 2
Distribution of some characteristics of the responding physicians by their opinion concerning the efficacy of UM (percentages)

Characteristics	Opinion		
	Efficacious	Inefficacious[a]	
	$n = 906$	$n = 799$	*P* value
Mean age (years)	45 ± 8	46 ± 8	NS
Females	36	29	<0.01
Residence (out of town)	33	33	NS
No clinicotherapeutic functions	10	11	NS
Main professional activity			NS
NHS hospital doctors	42	42	
NHS general practitioners	19	21	
Private practice physicians	27	27	
Other	12	10	
Specialization			NS
No	20	21	
Yes			
Related to musculoskeletal apparatus	7	7	
Anesthesia/intensive care	6	5	
Other	87	88	

[a] Including "don't know".

Table 3
Distribution of some characteristics of the responding physicians by their practice of UM (percentages)

Characteristics	Practice UM		
	Yes	No	
	$n = 143$	$n = 1588$	*P* value
Mean age (years)	46 ± 8	46 ± 8	NS
Females	28	33	NS
Residence (out of town)	45	32	0.01
Not actively practicing	11	18	0.02
Main professional activity			<0.0001
NHS hospital doctors	20	43	
NHS general practitioners	32	19	
Private practice physicians	40	26	
Other	10	12	
No specialization	24	20	NS
Main specialization			<0.01
Related to musculoskeletal apparatus	22	6	
Anesthesia/intensive care	10	5	
Other	78	89	

Table 3 shows the distribution of some of the characteristics of the respondents in relation to their practice or otherwise of UM. There were no differences in terms of age or sex. However, physicians practicing UM were less often actively practicing physicians ($p = 0.02$), NHS hospital doctors, NHS general practitioners or private practice physicians ($p < 0.0001$) and were more likely to be rural residents ($p = 0.01$) or to specialize in musculoskeletal or anesthesia/intensive care medicine ($p < 0.01$).

Table 4 shows some of the professional characteristics of physicians who practiced UM. The overall mean proportion was 8%, but only 3% of the non-actively practicing physicians, 4% of the NHS hospital doctors and 3% of the physicians working in duty medical units practiced UM as opposed to 12% of the physicians working in private practice and 13% of the NHS general practitioners.

Table 5 shows the proportions of physicians practicing UM by type of postgraduate specialization. The highest proportions corresponded to those whose specializations related to the musculoskeletal apparatus (25%) or anesthesia/intensive care (14%), but higher proportions than the overall average of 8% were found among pediatricians (12%), oncologists/radiotherapists (11%), neurologists (10%) and obstetricians/gynecologists (9%).

Of the 143 physicians who declared that they practice any type of UM on their patients, only 8% practice UM alone; the remaining 92% provide UM together with conventional medicine. Fifty percent of the physicians practicing UM on their patients stated that they prescribed UM medications. A large majority of the UM practitioners (77%) had been trained to practice UM by means of formal educational courses; the other 23% said that they were self-educated. Some 41% declared that they subscribe to one or more UM journals and 36% that they belonged to at least one UM society.

The questionnaires reported the UM disciplines offered by the group of UM practitioners (the sum of the percentages is more than 100% because each physician could indicate more than one type of UM). Homeopathy was the most widely practiced discipline (44%), followed by acupuncture (34%), herbal therapy (29%) and manipulative treatments (20%). Of the different manipulative treatments mentioned in the questionnaire, most physicians declared that they practiced applied kinesiology and a minority chiropractic or osteopathy. Less than 20% but more than 10% of the UM practitioners reported practicing homotoxicology, posturology and traditional Chinese medicine. Almost insignificant proportions said they practiced ayurvedic or anthroposophic medicine.

The questionnaires reported the types of clinical conditions treated with UM by the group of UM practitioners. Eighty-two percent treated conditions of the musculoskeletal system, 32% psychological or somatic disorders, 28% headaches and 18% allergic conditions or digestive disorders. A smaller proportion treated female endocrine or genital disorders, lung disease or disorders of the oral cavity.

Multiple backward regression analysis of the opinions concerning the efficacy of UM only revealed a significant influence of gender, with female physicians being more likely to perceive UM as having some efficacy (OR = 1.38, 95% CI = 1.07–1.78, $p = 0.01$). Multiple backward regression analysis of the practice of UM identified two significant variables: private practice (OR = 3.19, 95% CI = 1.84–5.51, $p < 0.0001$) and specializations related to the musculoskeletal apparatus (OR = 5.19, 95% CI = 2.86–9.41, $p < 0.0001$) or to anesthesia/intensive care (OR = 3.56, 95% CI = 1.62–7.82, $p = 0.0015$).

Table 4
Proportions of physicians practicing UM by different professional characteristics

Type of professional activity	No.	Physicians (%)
Actively practicing physicians		
Yes	1397	9
Partially	139	9
No	176	3
Main professional activity		
NHS hospital doctors	712	4
NHS general practitioners	355	13
Private practice physicians	463	12
Postgraduate trainees	104	9
Duty medical units	34	3

Table 5
Proportion of physicians practicing UM by type of specialization[a]

Type of specialization	No.	Users (%)
Any relating to musculoskeletal apparatus	81	25
Anesthesia/intensive care	65	14
Pediatrics	90	12
Oncology/radiotherapy	18	11
Neurology	42	10
Obstetrics/gynecology	56	9

[a] The similar individual specializations reported in the questionnaires were grouped together in the database.

4. Discussion

In May 2002, the National Federation of the *Ordini dei Medici e degli Odontoiatri* (FNOMCeO), the professional body of all Italian physicians, stated that the practice of nine UM disciplines have to be considered “medical acts” that cannot be practiced by non-physicians [12]. The nine UM disciplines are: acupuncture, herbal therapy, ayurvedic medicine, anthroposophic medicine, homeopathic medicine, traditional Chinese medicine, homotoxicology, osteopathy and chiropractice. As in most of the European Union, medicine can only be practiced in Italy by statutorily recognized health professionals. Italy has no officially accepted registration for any type of UM, none of which is available from the NHS. However, the Italian deontological code does allow physicians to practice UM under certain conditions, the first and foremost of which is the informed consent of the patient.

We deliberately chose the term UM rather than the more common "complementary" and/or "alternative" medicines because it is more general and less binding. The term "complementary" is not so clear as it implies a non-conventional diagnostic or treatment medical practice that is used in addition to conventional medicine but does not exclude its use whenever indicated. Likewise, the term "alternative" is not so clear as it implies a medical practice that challenges conventional medicine, or one that is not scientifically proven, or one that requires the unique personal ability of whoever practices it, or one based on magic or religion, etc. In the final analysis, the terms "unconventional", "complementary" and "alternative" are only statements and not conceptual definitions. Moreover, devising a concise conceptual definition of conventional medicine is equally problematic.

This study is amongst the largest of its kind ever performed (over 2500 physicians surveyed), yet the response rate to this survey was 66% (i.e., about two-thirds of all the contacted physicians), similar to most other reports in the literature [13]. We found that, overall, only 8% of physicians practice UM on their patients. Other surveys have consistently reported higher figures: 24% in the USA [14], 27–30% in New Zealand [15,16], 47% in The Netherlands [17], between 13% and 30% in the UK [18–23], and 13–17% in Canada [24]. This may indicate that Italian physicians are, by and large, conservative and orthodox in their practice of medicine. On the other hand, it may be that the selection of physicians in other surveys was biased toward practitioners of UM. Our survey was addressed to all of the physicians belonging to the *Ordine dei Medici* of Parma, without any selection criterion other than age. This choice was different from that adopted by other surveys, which have usually selected specific categories, mainly general practitioners [13]. It was, therefore, possible to evaluate the results in relation to the type of professional medical activity practiced. Furthermore, the survey methodology allowed a comparison of some demographic characteristics of respondents and non-respondents. The fact that there were no significant differences excludes any major bias from the categories of physicians selected.

Although much of the literature dealing with UM selectively concentrates on potentially life-threatening or debilitating illnesses, such as cancer [25,26], our survey (like other non-selective surveys) shows that the clinical conditions most frequently treated with UM are chronic, not life-threatening, incurable or not substantially improvable by conventional medicine. This confirms that different types of UM are used to treat a rather similar group of clinical conditions. It is also probable that most of the physicians practicing UM also use orthodox medicine. Only 7% of the practitioners in our survey practice UM full-time, and so it is likely that nearly all the user physicians adopt sequential, alternate or combined approaches. It is also possible that UM is paradoxically reserved to treat some conditions for which conventional medicine is considered ineffective and is used as a sort of last resort based on hope or faith.

Female physicians attributed some efficacy to UM significantly more often than did their male counterparts. This may simply be a reflection of the fact that general population surveys have repeatedly found that UM is preferred by a higher percentage of females than males and that female physicians are more likely to recommend UM [5].

A well-publicized national survey of several forms of UM undertaken in the USA in 1993 reported several forms of UM infrequently or never used or mentioned in our survey. These included aromatherapy, biofeedback, energy healing, folk remedies, hypnosis, special diets, spiritual or religious healing and yoga [7]. Although not listed in our questionnaire, this was probably not the reason they were not mentioned. Quite simply, it is more likely that they were not mentioned because neither Italian physicians nor their patients had ever heard of them. It seems the spectrum of UM modalities practiced depends on geographically pre-determined factors such as education and culture. Homeopathy and the more modern homotoxicology are the most widely applied types of UM in Italy. This may reflect the high and increasing demand for homeopathy, as reported in a recent Italian public opinion poll [9]. Acupuncture, herbal therapy and manipulative treatments were practiced frequently, whereas other types of UM (particularly those based on old Eastern medical traditions or religious or philosophic premises) are rarely practiced.

Our survey was carried out in a single geographic area of Italy, and its results may therefore not be generally applicable. However, the questions were global rather than specific and the response rate was very high. Furthermore, to the best of our knowledge, few if any surveys of attitudes towards, and the practice of, UM among physicians have been carried out in southern Europe, and none in Italy. We therefore believe that our results may be useful in documenting the current situation in Italy and also relevant to the rest of Europe [27].

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