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Does dissatisfaction with physicians lead patients to alternative practitioners?

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Abstract

Objectives: To test the dissatisfaction hypothesis by focusing on the use of CAM practitioners by low back pain patients. Moreover, we have distinguished between the complementary use and the alternative use of a CAM practitioner to medical care.

Methods: We conducted a cross-sectional study of a sample of 2,056 adults living in metropolitan France.

Results: The likelihood of the alternative use of a CAM practitioner decreased with increasing satisfaction with the general practitioner (OR: 0.990, 95% CI 0.984-0.996). The likelihood of the complementary use of a CAM practitioner (excluding osteopaths) decreased with increasing satisfaction with medical care (OR: 0.984, 95% CI 0.972-0.996).

Conclusions: Our results support the dissatisfaction hypothesis to explain the use of CAM practitioners for low back pain, whether this use is alternative or complementary to medical care. However, concerning the complementary use, our study shows that this hypothesis is invalid for osteopaths.

Keywords: patient satisfaction; health personnel; decision making; complementary therapies; cross-sectional studies; France.

1. Introduction

Complementary and alternative medicines (CAMs) are heterogeneous health products and practices such as acupuncture, auriculotherapy, ayurveda, Bach flower remedies, homeopathy or chiropractic. Because CAMs are an important source of care for many people¹ and a potential source of risks², healthcare professionals should provide their patients with reliable information on these therapies³. Moreover, satisfactions of both patients and clinicians are higher during consultations where a discussion about CAMs takes place⁴. However, discussing the topic with patients is not necessarily easy. As a result, many health professionals want to learn more about CAMs to better communicate with their patients, partly to dissuade them from using unsafe or ineffective therapies⁵. Therefore, to effectively change patient behaviours, it is necessary to better understand these behaviours, including the use of CAMs. This understanding is particularly important because many patients do not reveal their use of CAMs to their physician, partly for fear of being misunderstood⁶. Consequently, to enable professionals and any health institution or organization to communicate effectively about CAMs, it is necessary to understand why patients use them.

Several explanations for the use of CAMs have been proposed such as the search for a less authoritarian therapeutic relationship, or a relationship more in line with certain philosophical conceptions of health and illness⁷. The most studied explanation is that patients are dissatisfied with conventional medicine, which is supported only partially by quantitative studies. We reviewed and summarized these studies in Table 1 (see Supplementary Material 1 for a more extensive table). Out of 16 studies testing the association between dissatisfaction with conventional medicine and use of CAMs, eight succeeded in showing an association for all the satisfaction variables considered (n = 10), four for only part (n = 12, out of 39) and four failed for all variables (n = 6).

INSERT TABLE 1 HERE

This inconsistency can be explained in at least two ways. First, the use of CAMs includes two distinct categories of behaviour⁸: the *use of CAM practitioners* (e.g., acupuncturists, chiropractors,

osteopaths, *etc.*), and the *use of CAM self-care*, which itself includes the self-administrations of CAM products (*e.g.*, dietary supplements, homeopathic products, herbs, *etc.*) and the self-practices of CAM activities (*e.g.*, yoga, tai chi, *etc.*). Of the 16 studies reviewed, seven asked their participants about their use of CAMs in general, without distinguishing between these different categories of behaviours. Yet the psychological pathways leading to either of these behaviours are likely to be different⁸. Consequently, to test the dissatisfaction hypothesis, it seems necessary to distinguish between the use of CAM practitioners and the use of CAM self-care.

A second way to explain this inconsistency is that if the hypothesis of dissatisfaction is true, it should be true specifically for the purpose of consultation. For example, if a person consults a physician for back pain and is dissatisfied with their care, then this patient may be tempted to visit a chiropractor for the *same health problem*. On the other hand, it is unlikely that this dissatisfaction will lead this person to see a chiropractor for a common cold. Therefore, to test the dissatisfaction hypothesis, it seems necessary to compare dissatisfaction with conventional medicine for a *given health problem* between users and non-users of CAMs for this *same health problem*.

Of the 16 studies examined, only two of them adopted the methodological precautions described above^{9,10}. In these two studies conducted in Canada on patients with gastroenterological disorders, the dissatisfaction hypothesis was confirmed for all variables ($n = 4$). However, they focused only on the *complementary use* of a non-medical CAM practitioner in addition to medical care. To our knowledge, no hypothesis has been tested quantitatively for *alternative use* without any medical treatment. Moreover, patients with gastroenterological disorders are not the most typical users of CAM practitioners¹¹, which raises the question of the transferability of these results. Therefore, the aim of this study was to test the dissatisfaction hypothesis for low back pain, which is the most typical health reason for consulting a CAM practitioner^{11,12}. Furthermore, we aimed to test the dissatisfaction hypothesis for both the complementary *and* alternative use of a CAM practitioner. For this, we tested the following sub-hypotheses:

Hypothesis (1) For low back pain, the *complementary use* of a non-medically trained CAM practitioner is explained by *dissatisfaction with medical care* for this health problem.

Hypothesis (2) For low back pain, the *alternative use* of a non-medically trained CAM practitioner is explained by *dissatisfaction with the referring general practitioner* (because by definition no medical care has been provided).

We also performed additional analyses by removing osteopaths from the groups of CAM practitioners. Indeed, osteopaths in France constitute the essential part of the use of CAM practitioners^{13,14}, and this recourse occurs mainly to treat low back pain¹⁵. Moreover, osteopaths are the only CAM practitioners (together with chiropractors) for whom French law recognizes a *professional title*^{16,17} (although this same law *does not recognize* osteopaths and chiropractors as *health professionals*²⁰)¹, and although the majority of osteopaths are without medical training, 7% of them are also physicians¹⁹. Finally, patients can consult directly osteopaths and be reimbursed by many private health insurances, which is not possible when visiting many other alternative or conventional health practitioners (*e.g.*, physiotherapists). Consequently, for low back pain, it is possible that part of the French population automatically considers visiting an osteopath in addition to medical care. As a result, in France, the dissatisfaction hypothesis may not be valid to explain the use of this kind of professional.

Therefore, we tested the following additional sub-hypotheses:

Hypothesis (3) *Except for osteopaths*, for low back pain the complementary use of a non-medically trained CAM practitioner is explained by dissatisfaction with medical care for this health problem.

Hypothesis (4) *Except for osteopaths*, for low back pain the alternative use of a non-medically trained CAM practitioner is explained by dissatisfaction with the referring general practitioner.

1 Osteopaths are also considered as CAM practitioners in all other countries of the European Union¹⁹.

2. Method

2.1. Participants

Ethics approval for the study was granted by the French Clinical Research Centers Ethics Committee (CRCEC; Clermont-Ferrand, IRB 5891). This study was cross-sectional. Participants were recruited by sending an online questionnaire by e-mail to associations of all types throughout France between December 2018 and March 2019. Participants were required to be at least 18 years old and reside in metropolitan France.

Nearly 115,000 e-mails were sent, with 88.3% being successfully delivered, representing more than 100,000 associations. The email addresses were collected from French municipalities of more than 2,500 inhabitants and having a website. A total of 8,992 people started the questionnaire and 6,132 of them completed it. Of these, 251 were excluded, including 215 duplicates and 36 not meeting the inclusion criteria, providing a total of 5,883 valid questionnaires. From the dataset constituted (and intended for use also in other studies), we selected only subjects who consulted a CAM practitioner or a physician for low back pain within the past 12 months ($n = 2,056$).

To test our hypotheses, four subgroups of participants were defined:

- Group (A) *physician only* ($n = 921$). This subgroup included individuals who visited only a physician. This is the reference group to which the other groups were compared.
- Group (B) *complementary use* ($n = 641$). This subgroup included individuals who first saw a physician and then a CAM practitioner without medical training.
- Group (C) *alternative use* ($n = 494$). This subgroup included individuals who consulted only a CAM practitioner without medical training.
- Groups (D) ($n = 72$) and (E) ($n = 31$) were formed by removing osteopaths from groups (B) and (C), respectively.

2.2. Procedure

The email sent to potential participants contained: the context and purpose of the study, the anonymity of the questionnaire, its completion time, the people concerned, the method for collecting e-mail addresses, the researchers' identity, and a link to access the questionnaire online.

On the first page on the online questionnaire, the information contained in the e-mail was recalled, with several additional legal notices. Its second page was a *no objection form*, in accordance with French law. Its third page contained two questions, on age and the place of residence, to select participants who met the inclusion criteria.

2.3. Materials

Each participant completed a three-page questionnaire that measured the following variables.

2.3.1. The use of CAM practitioners

The recourse to CAM practitioners was measured with the CAM Practitioner Questionnaire (CAMP-Q), which has good face validity and excellent test-retest reliability²¹.

In this questionnaire, the participants were asked:

- whether they consulted, in the preceding 12 months, one or more of the following six CAM practitioners: acupuncturist, chiropractor, homeopath, magnetizer, osteopath, bonesetter (these six CAM practitioners were chosen because of their high prevalence of use in France^{13,22});
- for each CAM practitioner visited, whether this practitioner was also a physician;
- for each CAM practitioner visited and regardless of the answer to the previous question, the reason for consultation;
- when a non-medically trained CAM practitioner was seen, if a physician was consulted before or after the CAM practitioner.

2.3.2. *Satisfaction with the general practitioner*

If applicable, the following statement was proposed to the participants: “In general, I am satisfied with my current general practitioner: [...]”

The answer was given using a Visual Analogue Scale (VAS) providing a score between 0 and 100, with the response modalities *strongly disagree* and *strongly agree* respectively on the left and right of the scale.

2.3.3. *Satisfaction with medical care for low back pain*

All participants were asked if they had consulted, in the preceding 12 months, a physician for low back pain. Then, they were asked to respond to the statement: “For my back pain, I was satisfied with my medical care: [...]” The response modalities were similar to those presented in the previous paragraph.

2.3.4. *Demographic and other variables*

Demographic and other variables were collected: age, sex, income, educational attainment, the presence of a chronic disease, the presence of chronic pain and self-rated health (justifications in the section below).

As the questionnaire employed was part of a larger research project, it included other items that were not reported here because they were not used in the analyses. To consult the entire questionnaire without its conditional structure, see here: <https://eduniv.github.io/querta/> (in French).

2.4. *Statistical analysis*

For each hypothesis tested, we used bivariate and multivariate logistic regression. This approach was preferred over propensity score matching because the number of events by covariates was high (>50). In these circumstances, analyses using logistic regression are precise and less biased than the propensity score estimates²³.

Therefore, covariates for multivariate logistic regression were selected based on two systematic reviews, the first on the determinants of recourse to CAM practitioners²⁴, and the other on the

determinants of patient satisfaction²⁵. To reduce the risk of confusion bias, we chose the co-variables associated with both patient satisfaction and the use of CAM practitioners. These covariates were: sex, educational attainment, income, the presence of a chronic disease, the presence of chronic pain and self-rated health.

To address the issue of missing data, we applied multiple imputation by chained equations (MICE) to the main analyses (10 imputed datasets) under the assumption of data missing at random.

For supported hypotheses, we repeated the analyses by dividing the satisfaction measures into five equal categories. This division also allowed us to compare our effect sizes with other studies in the field, in which the satisfaction variables were measured only categorically (mainly with 5-point scales).

All tests were two-tailed, with a significance level of 5%.

3. Results

The code used for data manipulation and analysis is presented in Supplementary Material 2.

Table 2 presents the descriptive characteristics of the population, in absolute number and percentage for categorical variables, with mean and standard deviation for continuous variables. Missing data are also reported in this table. The self-reported variable of chronic pain is not presented as it is a perfect duplicate of the self-reported variable of a chronic disease. For this reason, it was also not included in the analyses.

INSERT TABLE 2 HERE

Table 3 presents the results of the regression analyses with satisfaction variables treated as continuous variables. The results are presented as follows (top to bottom): the results of the bivariate analyses, then the results for each co-variable added, and finally, in the bottom row of the table, the results of the complete multivariate models. Odds ratios (ORs), 95% confidence intervals (CIs) and p-values are provided for each model.

INSERT TABLE 3 HERE

The complete model indicated that:

- Hypothesis (1) The likelihood of the complementary use of a CAM practitioner *increased* with increasing satisfaction with medical care (OR: 1.001, 95% CI 0.996-1.006). This result is contrary to our theoretical prediction and was not significant ($p = 0.6$).
- Hypothesis (2) The likelihood of the alternative use of a CAM practitioner *decreased* with increasing satisfaction with the general practitioner (OR: 0.990, 95% CI 0.984-0.996). This result is consistent with our theoretical prediction and was significant ($p = 0.0007$).
- Hypothesis (3) The likelihood of the complementary use of a CAM practitioner excluding osteopaths *decreased* with increasing satisfaction with medical care (OR: 0.984, 95% CI 0.972-0.996). This result is consistent with our theoretical prediction and was significant ($p = 0.01$).
- Hypothesis (4) The likelihood of the alternative use of a CAM practitioner excluding osteopaths *increased* with increasing satisfaction with the general practitioner (OR: 1.009, 95% CI 0.988-1.031). This result is contrary to our theoretical prediction and was not significant ($p = 0.40$).

Figures 1 and 2 present the analyses after categorialization of the satisfaction variables for Hypotheses (2) and (3), respectively. Each figure shows from left to right: the size of the group for each satisfaction modality, the adjusted ORs from the complete multivariate model, and the corresponding forest plot. For each model, the reference category corresponds to a satisfaction score within the interval (80, 100].

INSERT FIGURE 1 HERE

INSERT FIGURE 2 HERE

4. Discussion

The purpose of this study was to test whether being dissatisfied with one's physician can explain the use of a CAM practitioner without medical training. To this end, we have distinguished between *complementary use* of a CAM practitioners in addition to medical care, and *alternative use* of a CAM practitioner without any medical care. Overall, our results confirm the dissatisfaction hypothesis, although they limit its scope.

Concerning the complementary use of CAM practitioners, the hypothesis holds only after removal of osteopaths from the group of CAM practitioners. Consequently, dissatisfaction with medical care cannot explain the complementary use of an osteopath. What other explanation can there be? As stated in the introduction, it is possible that part of the French population considers the complementary use of an osteopath for low back pain as a matter of course. Therefore, a patient may decide *at the same time* to consult both a physician and an osteopath. In this case, dissatisfaction with the physician's care is independent of the decision to visit an osteopath.

Regarding the alternative use, the results support the hypothesis for the group of CAM practitioners as a whole. On the other hand, the removal of osteopaths from this group eliminates the overall effect observed for the entire group. We have no theoretical reasons to explain this result. In our view, it is due to insufficient statistical power given the size of the effects involved.

4.1. Effect sizes

Concerning the complementary use, two studies employed a similar methodology to ours, with patients with gastroenterological disorders^{9,10}. In both cases, their data support the dissatisfaction hypothesis. To rate the importance of our effects, we created a scale divided into three equal parts, ranging from one (left), to the value of the maximum effect size obtained for all the variables considered in these studies (right – OR max: 6.69; see Figure 3A for the rating scale). Because the authors of these studies did not provide a measure of their effect sizes, we calculated it on the basis of the information available in the publications, choosing the odds ratio as for our own results (see

Supplementary Material 4 for the details of the calculation). Compared to these studies, we consider that we have obtained high effect sizes (OR min: 4.42 and OR max: 7.90; see Figure 2). However, these comparisons should be considered with caution because the data available in these studies were insufficient to calculate adjusted effect sizes.

INSERT FIGURE 3 HERE

To our knowledge, only one study examined the alternative use of a CAM practitioner²⁶, but did not address the role of satisfaction with physicians. In this study, ORs are adjusted for all covariables (OR max: 2.5). On this basis, we consider that we have obtained small to high effect sizes, depending on the level of satisfaction (ORs: 1.31 and 2.54, respectively; see Figure 1; see Figure 3B for the rating scale). Nevertheless, it should be noted that among the associations we controlled in our study, we observed ORs 24 to 46 times higher concerning the association between alternative use and self-rated health (OR max: 60; complete model in Supplementary Material 3). Therefore, this observation leads us to consider that satisfaction accounts for only a small part of the explanation for the alternative use of a CAM practitioner.

4.2. Limitations and strengths

A first limitation of our study is its case-control nature, which is conducive to the risk of confusion bias. Second, its cross-sectional design complicates the interpretation of the direction of causality, although our questionnaire allowed respondents to specify the chronology of their consultations. Another limitation is that we did not distinguish between patients with acute and chronic back pain. Because the psychologies of chronic and acute pain are different²⁷, our results could be applied differently to these two categories of patients. Finally, due to our non-probabilistic sample, we cannot statistically infer from our results to a larger population.

On the other hand, our study has several strengths. First, to our knowledge the dissatisfaction hypothesis had not yet been tested for low back pain patients, despite the fact that they are the largest consumers of CAM practitioners^{11,12}, what was confirmed by our data (see Supplementary

Material 5). A second strength is that to measure the different forms of recourse to CAM practitioners, we used a reliable and valid questionnaire²¹ – which has been made available online for the sake of transparency. Moreover, we avoided two common methodological pitfalls by distinguishing the *use of CAM practitioners* from the *use of CAM self-care*, as well as taking into account the reason for consultation (see Introduction for more details). Finally, to our knowledge, this is the first quantitative study to test an explanation for the alternative use of a CAM practitioner.

4.3. *Future directions for research*

It would be useful that our results are replicated both by addressing their limitations and by using independent samples. Furthermore, regarding the complementary use of a CAM practitioner, the effect sizes are important enough to split the variable “satisfaction with medical care”. Is it satisfaction with the medical outcome or the physician-patient relationship that matters the most? Further research is needed to answer this question. On the other hand, dissatisfaction with the general practitioner accounts for a small part of the explanation for the alternative use of a CAM practitioner. Which factors could have stronger explanatory power? In our statistical models, we incidentally observed a strong association between alternative use and self-rated health: The higher subjects rated their health the more likely they were to consult only a CAM practitioner (see Supplementary Material 3). It would be interesting to propose and test an explanation of this result.

Finally, we suggested that part of the French population considers the complementary use of an osteopath for low back pain as a matter of course. This hypothesis deserves to be tested directly. More generally, it would be interesting to study patients’ beliefs about the health practitioners in their country, as well as how these beliefs influence their decision to visit a given practitioner.

5. Conclusion

A better understanding of why patients use CAMs will help any health professional, institution or organization to better communicate about CAMs. Our study supports the dissatisfaction hypothesis to explain the use of CAM practitioners for low back pain, whether this use is alternative or

complementary to medical care. However, concerning the complementary use, our results show that this hypothesis is invalid for osteopaths. For the other CAM practitioners, dissatisfaction with medical care explains a substantial part of the complementary use, inviting future research to examine which aspects of satisfaction are involved. Conversely, dissatisfaction with the general practitioner accounts for only a small part of the alternative use, inviting researchers to find better explanations.

Conflict of interest

All authors declare no competing interests.

Source of funding

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Ethical approval

Ethics approval for the study was granted by the French Clinical Research Centers Ethics Committee (CRCEC; Clermont-Ferrand, IRB 5891).

Dataset

The dataset used during the current study is available from the corresponding author.

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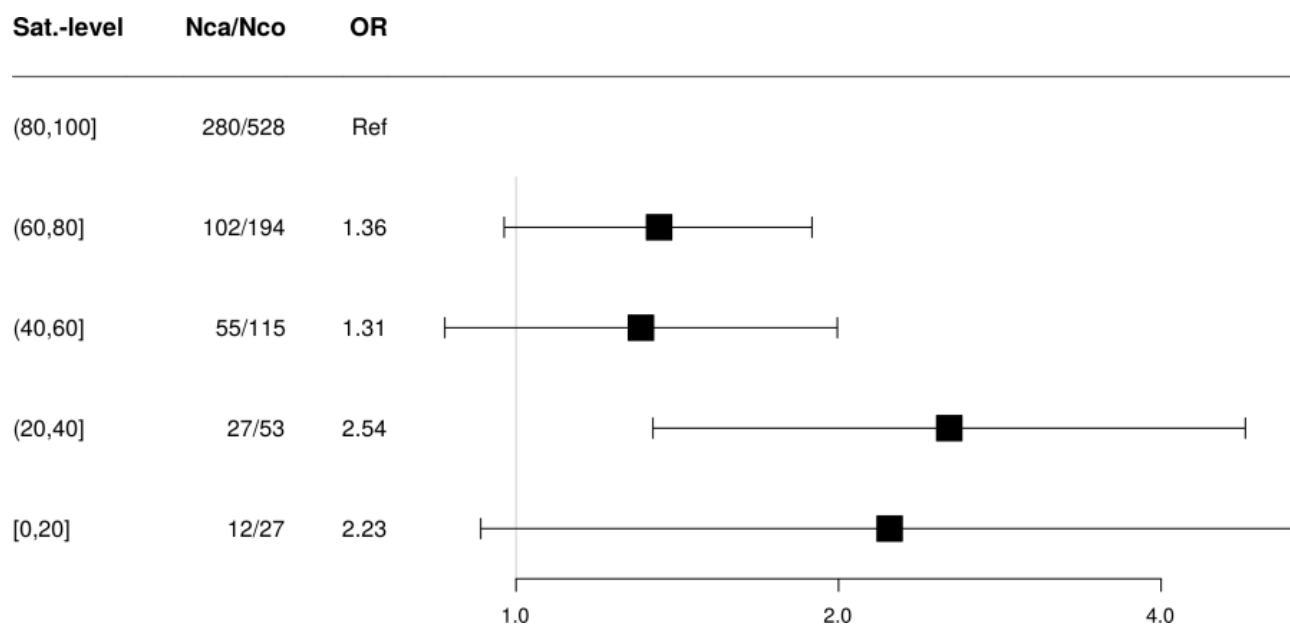


Figure 1. Analysis after categorialization of the variable *satisfaction with the general practitioner* (second hypothesis testing; complete model). Sat. level: Satisfaction level; Nca: the number of cases (alternative use of a CAM practitioner); Nco: the number of controls (use of a physician only); OR: odds ratio; Ref: reference level.

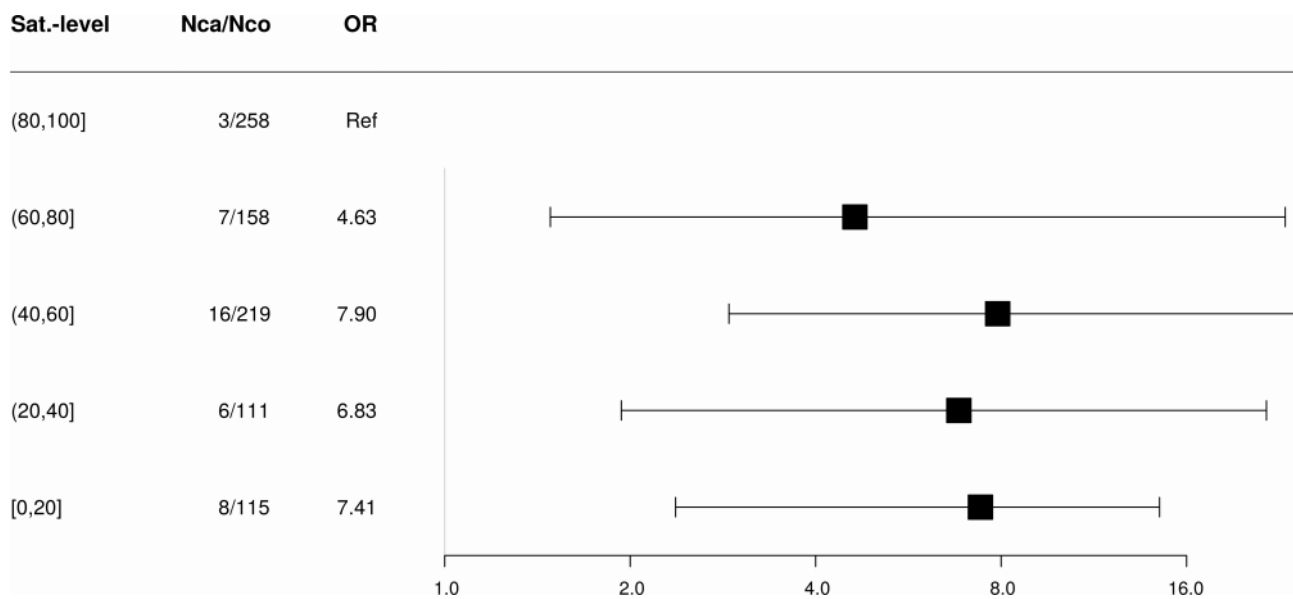
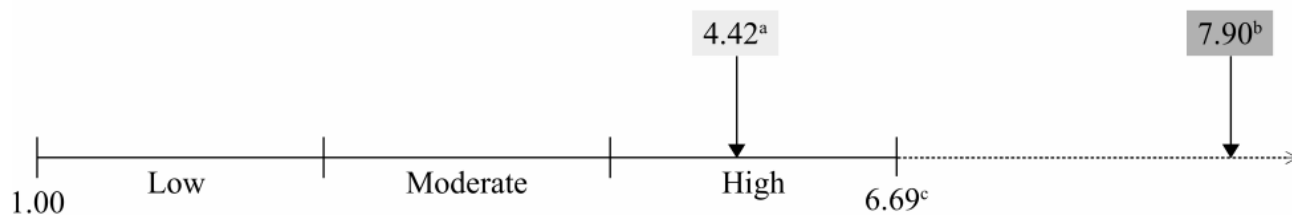


Figure 2. Analysis after categorialization of the variable satisfaction with medical care (third hypothesis testing; complete model). Sat. level: Satisfaction level; Nca: the number of cases (complementary use of a CAM practitioner; without osteopaths); Nco: the number of controls (use of a physician only); OR: odds ratio; Ref: reference level.

3A.



3B.

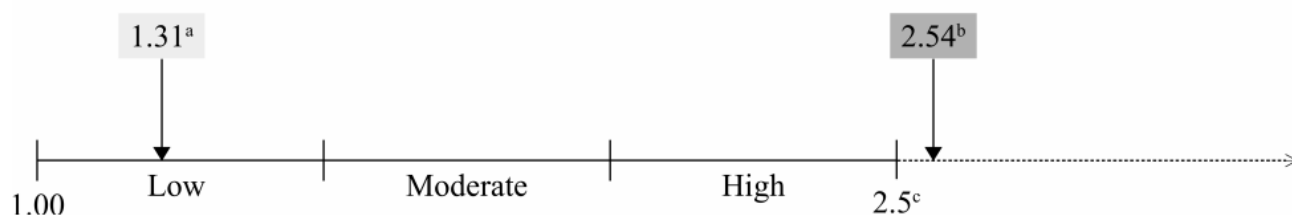


Figure 3. Rating scales of the importance of our effect sizes compared to those obtained in previous studies. *3A.* Complementary use of a CAM practitioner (without osteopaths). *3B.* Alternative use of a CAM practitioner. a: our minimum effect sizes; b: our maximum effect sizes; c: maximum effect sizes of the reference studies.

Table 1

Review and Synthesis of Studies in the Research Field (Shortened Version).

Study	Population	Dependent variable	Results
Downer (1994)	Cancer patients	CAM in general, any motive	+
Begbie (1996)	Cancer patients	CAM in general, any motive	+
Astin (1998)	General population*	CAM in general, any motive	Ø
Rawsthorne (1999)	IBD patients	CAM in general, any motive	+
Shumay (2002)	Cancer patients	CAM in general, cancer	Ø
Sirois (2002)	Ambulatory care patients	CAM in general, any motive	+
Testerman (2004)	Family practice outpatients	CAM in general, any motive	Ø
Cleary (1982)	General population*	Chiropractors, any motive	Ø
Furnham (1988)	GP patients vs. homeopath patients	Homeopaths, any motive	+
Verhoef (1990)	Patients attending a gastroenterology clinic	CAM practitioners, gastroenterological disorders	+
Furnham (1993)	GP practice patients vs. homeopathic hospital outpatients	Homeopaths, any motive	+
Furnham (1994)	GP patients vs. CAM practitioners patients	CAM practitioners, any motive	~
Sutherland (1994)	Patients attending a gastroenterology clinic	CAM practitioner, gastroenterological disorders	+

McGregor (1996)	General population*	CAM practitioners, any motive	~
Shmueli (2006)	General population*	CAM practitioners, any motive	~
Sirois (2008)	Ambulatory care patients	CAM practitioners, any motive	~

CAM: complementary and alternative medicine; +: expected association between satisfaction and the dependent variable; Ø: no association; ~: mixed results; IBD: inflammatory bowel disease; GP: general practitioner. * “General population” means a population without specific health problem.

Table 2

Descriptive Characteristics of the Total Sample and Subgroups.

Variable	Total sample (N = 2,056)	Physician only (N = 921)	Complementary use (N = 641)	Alternative use (N = 494)	Complementary use, without osteopaths (N = 72)	Alternative use, without osteopaths (N = 31)
Age	54 (±13)	55 (±13)	55 (±13)	51 (±14)	56 (±13)	49 (±15)
Sex*						
Female	1391 (68%)	655 (71%)	430 (67%)	306 (62%)	50 (69%)	19 (41%)
Male	665 (32%)	266 (29%)	211 (33%)	188 (38%)	22 (31%)	12 (39%)
Monthly income						
<1135€	315 (15%)	178 (20%)	90 (14%)	47 (10%)	15 (21%)	5 (16%)
1135-1800€	516 (25%)	241 (26%)	152 (24%)	123 (25%)	17 (24%)	4 (13%)
1800-3000€	667 (32%)	261 (28%)	229 (36%)	177 (36%)	27 (38%)	11 (35%)
>3000€	322 (16%)	120 (13%)	99 (15%)	103 (21%)	5 (7%)	9 (29%)
MD	236 (11%)	121 (14%)	71 (11%)	44 (9%)	8 (11%)	2 (6%)
Educational attainment*						
Upper secondary education / less	454 (22%)	242 (26%)	135 (21%)	77 (16%)	20 (28%)	4 (13%)
Bachelor's degree / short cycle tertiary education	980 (48%)	443 (48%)	321 (50%)	216 (44%)	32 (44%)	15 (48%)
Master's degree / doctorate	622 (30%)	236 (26%)	185 (29%)	201 (41%)	20 (28%)	12 (39%)
Chronic disease*						
Yes	1151 (56%)	293 (62%)	386 (60%)	357 (72%)	31 (43%)	17 (55%)
No	904 (44%)	607 (38%)	255 (40%)	137 (28%)	41 (57%)	14 (45%)
Self-rated health						
Poor	203 (10%)	144 (16%)	54 (8%)	5 (1%)	8 (11%)	0 (0%)

Fair	484 (24%)	305 (33%)	155 (24%)	24 (5%)	16 (22%)	2 (6%)
Good	790 (38%)	326 (35%)	273 (43%)	191 (39%)	31 (43%)	14 (45%)
Very good	452 (22%)	122 (13%)	130 (20%)	200 (40%)	16 (22%)	11 (35%)
Excellent	127 (6%)	24 (3%)	29 (5%)	74 (15%)	1 (1%)	4 (13%)
Satisfaction with the GP	79 (±23)	79 (±23)	81 (±21)	79 (±23)	79 (±22)	31 (±21)
MD	27 (1%)	4 (0%)	5 (1%)	18 (4%)	1 (1%)	2 (6%)
Satisfaction with medical care	60 (±29)	59 (±29)	63 (±27)	NA	47 (±24)	NA
MD	837 (41%)	59 (7%)	283 (46%)		32 (44%)	

MD: missing data; GP: general practitioner; NA: not adapted. * No missing data.

Table 3

Results of the Regression Analyses with Satisfaction Variables Treated as Continuous Variables.

	Comparison for the first hypothesis Physician only vs. Complementary use	Comparison for the second hypothesis Physician only vs. Alternative use	Comparison for the third hypothesis Physician only vs. Complementary use (without osteopaths)	Comparison for the fourth hypothesis Physician only vs. Alternative use (without osteopaths)
	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]
Variable inclusion in the model				
Bivariate analyses (Crude OR)				
Satisfaction with medical care (SM)	1.005* [1.001, 1.010]	NA	0.989 [0.979, 1.000]	NA
Satisfaction with the GP (SG)	NA	1.001 [0.996, 1.006]	NA	1.019 [0.998, 1.040]
Multivariate analyses (Adjusted OR)				
(SM or SG) + Chronic disease (CD)	1.004 [1.000, 1.010]	0.997 [0.992, 1.003]	0.988* [0.976, 0.999]	1.016 [0.996, 1.038]
(SM or SG) + CD + Educational attainment (EA)	1.004 [1.000, 1.009]	0.998 [0.992, 1.003]	0.988* [0.976, 0.999]	1.017 [0.996, 1.038]
(SM or SG) + CD + EA + Income (I)	1.004 [0.999, 1.010]	0.997 [0.992, 1.002]	0.987* [0.976, 0.999]	1.016 [0.995, 1.038]
(SM or SG) + CD + EA + I + Self-rated health (SH)	1.001 [0.996, 1.006]	0.990*** [0.984, 0.996]	0.984* [0.972, 0.996]	1.009 [0.987, 1.031]
(SM or SG) + CD + EA + I + SH + Sex (complete models)	1.001 [0.996, 1.006]	0.990*** [0.984, 0.996]	0.984* [0.972, 0.996]	1.009 [0.988, 1.031]

SM: satisfaction with medical care; SG: satisfaction with the GP; CD: chronic disease; EA: educational attainment; I: income; SH: self-rated health; NA: not adapted. *p<.05, **p<.01, *** p<.001.