

Author's response to reviews

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Patient satisfaction of primary care for musculoskeletal diseases: A comparison between Neural Therapy and conventional medicine

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Abstract

Background

The main objective of this study was to assess and compare patient satisfaction with Neural Therapy (NT) and conventional medicine (COM) in primary care for musculoskeletal diseases.

Methods

A cross-sectional study in primary care including patients diagnosed with musculoskeletal disorders. 77 conventional primary care providers (241 patients) and 18 physicians certified in NT (164 patients). Patients and physicians documented consultations and patients completed questionnaires at one-month follow-up. ~~Main outcome measures for Pp~~ physicians ~~documented~~ were duration and severity of symptoms, diagnosis, and procedures. Main outcomes for patients were: ~~fulfilment~~ fulfillment of expectations, perceived treatment effects, and patient satisfaction.

Results

The most frequent diagnoses belonged to the group of dorsopathies (39% in COM, 46% in NT). We found significant differences between Neural Therapy and conventional medicine with regard to patient evaluations. Patients in NT documented better fulfilment of treatment expectations and higher overall treatment satisfaction. More patients in NT reported positive side effects and less frequent negative effects than patients in COM. Also, significant differences between NT and COM patients were seen in the quality of the patient-physician interaction (relation and communication, medical care, information and support, continuity and cooperation, facilities availability, and accessibility), where patients in NT showed higher satisfaction. Differences were also found with regard to physicians' management of disease, with fewer work incapacity attestations issued and longer consultation time in NT.

Conclusions

Our findings show a significant higher treatment and care-related patient satisfaction with primary care for musculoskeletal diseases provided by physicians practising Neural Therapy.

Background

Musculoskeletal diseases represent a major health problem throughout the world. No other class of disorders affects more people, leads to a higher prevalence of disability, or places a higher financial burden on health systems [1]. In Switzerland, diseases of the musculoskeletal system and connective tissue account for more than 20 percent of the recorded main diagnoses [2], and as populations age, the prevalence of musculoskeletal diseases is expected to rise rapidly [1, 3]. For various reasons, patients with musculoskeletal disorders increasingly are choosing complementary medicine to seek cures for their problems. The Swiss Federal Department of Home Affairs thus decided in 1998 to add five methods of complementary medicine, including NT, to the benefit catalogue of basic health insurance for a trial period of five years. Reimbursements of expenditures for alternative medicine were covered by

basic health insurance only when these methods were provided by physicians with appropriate CAM training approved by the Swiss Medical Association. A nationwide evaluation of several CAM procedures including anthroposophical medicine, homeopathy, traditional Chinese medicine, phytotherapy, and Neural therapy ~~several studies~~ was performed to decide about the inclusion of CAM procedures in compulsory health plans beyond the trial period. The project was funded by the Swiss Federal Office of Public Health [4] and a project description and the respective results were published in a final report[5] in 2005.

As a part of this project, the goal of this study was to use patients' evaluations ~~patient satisfaction~~ -as a measure of the effectiveness of Neural therapy ~~complementary medicine~~ in ambulatory care for musculoskeletal diseases ~~primary care~~. The specific research question was, What are the differences between Neural Therapy and conventional medicine in patient ~~evaluations~~ ~~satisfaction~~ and in patient based evaluation of the quality of patient-physician relationships ~~in primary care~~?

Neural Therapy, according to Huneke, is a treatment that uses precise injections of local anaesthetics for diagnosis and therapy [6, 7][4, 5], in which pathological stresses (e.g., a vicious circle in pain) are interrupted [8][6]. This treatment uses the auto-regulatory mechanism of the autonomic nervous system [6-8][4-6] mainly on two levels: in segmental reflectory processes and in the so-called interference field, which can cause or maintain pathological processes beyond any segmental order [6, 7][4, 5]. This implies that Neural Therapy is divided into a local therapy (e.g., infiltration of trigger points) and a segmental therapy (e.g., therapy of the Head zones, as well as sympathetic ganglia, nerve roots, and peripheral nerves) on the one hand and in interference field therapy on the other hand. Impulses of the interference field may influence every system of the organism beyond of segmental order [6, 7, 9-12][4, 5, 7-10]. The mechanism of the effects of NT is derived from the pathophysiology of pain [8, 13-16][6, 11-14] and from neurophysiological experiments [13, 17, 18][11, 15, 16]. Acute and chronic pain and functional abnormalities [6, 7][4, 5], all common findings in patients with musculoskeletal disorders, are the main indications for Neural Therapy.

Within the field of complementary medicine, a considerable amount of research has been done, including the assessment of patient satisfaction [19, 20][17, 18], although little has been done specifically for NT and musculoskeletal disorders. We defined patient satisfaction with the following items: patient-rated symptom relief, ~~fulfilment~~ fulfillment of treatment expectations, overall treatment satisfaction, frequencies of adverse side effects, and a broad range of aspects of the quality of the patient-physician interaction covered in the EUROPEP questionnaire [21][19].

Methods

We examined data related to musculoskeletal diseases using as part of a cross-sectional study conducted between 2002 and 2004. The study was designed to be purely observational, without interference into treatment choices of patients and diagnostic/therapeutic procedures of physicians, in order to provide a picture of routine care. ~~The study was funded by the Swiss Federal Office of Public Health [20].~~

Physicians and patients

The project consisted of two ~~recruitment phases~~ practice studies; a description of sampling procedures and of how this study with this smaller study is as embedded in the main project is given in Figure 1. Primary care physicians (including conventional

physicians and physicians certified by the Swiss Medical Association for Neural Therapy (SANTH) were invited to participate in ~~an~~ the initial study (practice study 1) to evaluate differences in the structure of care. Data regarding professional qualification and certification were obtained in this phase. The second ~~phase study~~ (Practice study 2) was aimed at processes and outcomes of care, and participating physicians were invited to recruit patients ~~[4][20]~~ (Figure 1). The eligibility criteria for all participating physicians were training and license in conventional medicine and medical activity in primary care for at least two days per week. A membership list of the SANTH was obtained, and all 41 members with an additional qualification in NT recognized by the Swiss Medical Association (FMH) were asked to participate. These physicians were defined in the study as NT physicians. A random sample taken from the complete list of all Swiss primary care providers not listed by any medical society for complementary and alternative medicine was also asked to participate in the project (defined as COM physicians). The final sample included 18 practitioners who were certificated in Neural Therapy and 77 practitioners who were using exclusively conventional medicine.

~~Only patients over 16 years of age with musculoskeletal disorders (M chapter of ICD-10) were included for this study. Written informed consent was obtained from all participating patients. The ethics committee of the Canton Bern raised no objection to the study.~~

Data collection

Physicians and their staff were instructed to sample consecutive patients consulting their practices on four given days during a 12 month period in 2002/03. Sampling days of individual practices were defined by the study coordination and were equally distributed across seasons and week days. Patients were sampled irrespective of the type of appointment they had with their physicians. Patients were informed about the study by leaflets, and prior to a consultation were asked to fill out forms aimed at demographic and health status, and frequency of and reasons for health care utilization.

Physicians documented the same consultations with reference to symptoms, diagnoses, duration of problems, comorbidities, diagnostic and therapeutic procedures. Study design and data management ensured that physicians remained unaware of the patient answers.

Outcomes were measured using a questionnaire mailed to patients three to four weeks after the initially documented consultation. Outcomes specifically assessed included symptom relief, fulfilment of treatment expectations, satisfaction with treatments, presence of adverse and other side effects, and perceived causality of symptom relief. They also were given the EUROPEP questionnaire. This questionnaire has 23 extensively and internationally validated questions [22]23 questions, each on a five point answer scale covering relation and communication, medical care, information and support, continuity and cooperation, and facilities availability and accessibility. All questionnaires (except EUROPEP) used in this project were developed in close cooperation with an expert group of Swiss primary care providers specialized in conventional and/or complementary medicine. Questionnaires were sent to patients in their mother tongue—in either German, French, or Italian and written informed consent was obtained from all participating patients. The ethics committee of the Canton Bern raised no objection to the study.

Data management and data analysis

Only patients over 16 years of age with musculoskeletal disorders (M chapter of ICD-10) were selected from the original patient sample and included for the analysis (Figure 1). Data analysis was performed in two steps. The first step included descriptive analyses using tables and graphs. Analytical procedures were applied in a second step. Continuous target variables were analyzed with multivariate linear models. Ordinal outcomes were reduced to two level scales with the most favorable answer category coded as one and all other non-missing categories as zero. These data were analyzed using multivariate logistic regression models. Covariables of multivariate models were defined a priori and were aimed to adjust for demographic factors of patients and duration of health problems. All analytical procedures accounted for clustering of observations at the practice level. Taylor series expansion procedures were used for 2*2 tables, and mixed effects models [23, 24][21, 22] for multivariate procedures [23, 24][21, 22]. 95% confidence intervals (95% CI) of means, proportions and odds ratios were calculated accordingly. The level of significance was set at $p < 0.05$ throughout the study, and SAS 9.1 (SAS Institute Inc., Cary, NC, USA) was used for all calculations. Text for this section.

Results

Characteristics of patient population

The participating physicians initially recruited 4093 patients, among whom 789 patients overall (19.2%) were diagnosed with musculoskeletal disorders (494 in COM, 292 in NT). A significant difference between COM and NT was observed for the frequency of patients that returned questionnaires (241 COM patients (48.8%) and 164 (56.2%) NT patients). We enrolled these 405 patients with complete treatment and outcome information. The proportion of female patients was 62% in COM and 77% in NT. Average age was 55.4 years in COM and 53.3 years in NT (table 1). Prior to the consultation, patients were asked to rate their general health on a five-point Likert-answer scale ranging from excellent to poor. Answer patterns indicate significant differences in unadjusted general health status between patient groups (table 1). For statistical analysis, the Likert-answer scale was dichotomized into “excellent/very good/good” and “less well/bad.” Gender- and age-adjusted differences indicate no significant differences in self-rated general health. Patients recorded the duration of their main health problem. Patients were classified as acute (duration < 3 months) or chronic (≥ 3 months), and the proportion of chronic patients was analyzed using a logistic regression model adjusted for age and gender. These procedures indicated a significantly higher proportion of chronic patients in the NT group (70.7%) than in the COM (48%). Patients were further asked to rate the severity of their major health problem using a three-level scale (minor, moderate or serious). A multivariate logistic regression model with patient-reported severity as outcome (answer level minor coded as 0, and levels moderate and serious coded as 1) indicated no difference in the severity of problems between NT and COM after adjusting for gender, age and chronicity of disease.

Prevalence of musculoskeletal disease

The most frequent main diagnoses were categorized into six disease groups (table 2).

In both the COM and the NT group, the most frequent diagnoses belonged to the group of dorsopathies (39% in COM, 46% in NT). Table 2 shows the recorded sub-diagnoses in the group of dorsopathies. Using this classification, there were no significant differences between the frequencies of back problems in COM and in NT patients.

Dorsopathies were followed by soft tissue disorders (30% in both groups), arthropathies (25% in COM, 19% in NT), osteopathies and chondropathies, other disorders of the musculoskeletal system and connective tissue, and systemic connective tissue disorders. The most frequently recorded ICD-10M diagnoses for COM were radiculopathy, low back pain, and cervicgia, and the most frequent diagnoses for NT were cervicgia, myalgia (not elsewhere classified), and cervicobrachial syndrome.

Another aspect of severity is the concomitance of comorbidities. The distribution of the frequency of comorbidities is shown in table 2. There was no statistically significant difference between COM and NT.

Patient attitudes and expectations (table 3)

The patient expectations showed no differences between the two patient samples with reference to expectations for healing, ~~or~~ symptom relief, agreeable method, side effects and lower cost.; ~~but NT patients significantly expected fewer adverse side effects than COM patients.~~

Management of disease (physicians)

No significant differences between groups were observed for diagnostic and therapeutic referrals to other physicians and specialists (10.5% in NT, 13.3% in COM). However, NT physicians had significantly longer consultations than their COM peers (19.1 minutes in NT, 17.1 minutes in COM). Our results also show that NT physicians issued work incapacity attestations for a population of patients under 65 less often than COM physicians (3.2% in NT, 17.0% in COM).

Patient evaluations (table 4)

Unadjusted results for symptom relief indicated generally poorer outcomes for NT patients. However, after adjusting the analysis for gender, age, and chronicity of disease no significant differences were observed.

Fulfilment of treatment expectations was rated using a four-point scale ranging from complete fulfilment to not at all. Unadjusted comparison of frequency indicated no significant difference in the fulfilment of expectations in both groups. After analysis with an age, gender, and chronicity adjusted logistic regression model of complete fulfilment of expectations, a significantly better outcome was observed for NT patients.

Unadjusted general treatment satisfaction, rated from very satisfied to not satisfied at all, showed significant differences between groups, and age, gender, and chronicity adjusted frequencies of very satisfied answers indicated significantly higher treatment satisfaction in NT patients.

The majority of COM (87%) and NT (89.4%) patients did not report treatment-related adverse side effects, and the difference between groups was not significant. However, more patients in NT reported additional positive effects not directly related to their main health problems, and they less frequently observed no other, additional effects. Causality of symptom relief was analysed by asking patients to what degree they considered symptom amelioration to be the consequence of a specific treatment.

There were significant differences; NT patients were more often confident that amelioration of their symptoms was a result of the treatment performed one month earlier (table 4).

EUROPEP questionnaire (table 5)

For all EUROPEP questions, with the exception of 10, 19, and 20, NT patients indicated higher satisfaction; the differences between groups for questions 2, 3, 6, 7, 8, 9, 12, 13, 15, 17, and 18 were statistically significant.

Discussion

This study was part of a nationwide evaluation of complementary medicine in Swiss primary care. Its specific objective was to assess patient satisfaction for musculoskeletal diseases in Neural Therapy in comparison to conventional medicine. Although Neural Therapy accounts for only a small fraction of Swiss primary care—in 2002 only 1.2% of all primary care providers (69 practitioners) had the respective certification—our results may nevertheless have some importance for the treatment of musculoskeletal diseases, and spine problems in particular. The considerable difference we observed between COM and Neural Therapy in treatment frequencies for patients with musculoskeletal problems indicates a particular attractiveness of Neural Therapy that other research confirms [6, 7, 25-29][4, 5, 23-27]. Our study may be criticized for data that are mainly based on the perceived health status and self-reported, subjective assessments of patients, but such measures have proven to be valid measures of health in general populations [30, 31][28, 29]. A related, important finding is that NT patients considered their general health and severity of major health problems to be the same as those of COM patients, whereas other findings on complementary medicine report poorer general health and more severe disease conditions for NT patients compared to COM patients [9][7]. However, in accordance with the literature NT patients more often reported chronic health problems than COM patients [32-35][30-33].

The management of musculoskeletal disorders appeared to be different in NT and conventional primary care. NT physicians had longer consultations, but they issued work incapacity attestations less often than their conventional colleagues. These have consequences on direct and indirect treatment costs. Longer consultations, which are likely the result of the invasive character of Neural Therapy, increase direct costs, whereas fewer work incapacity attestations may result in lower indirect costs. Musculoskeletal disorders, and especially back-pain, cause an enormous economic burden on health care [1], and back-pain appears to be a major component of the loss of work productivity [36][34]. Our data therefore provide some empirical evidence that increased application of NT in primary care may result in a lower socio-economic burden of disease.

Our interpretation of patient satisfaction data discriminated between treatment-related outcomes (symptom relief, fulfillment of treatment expectations, adverse side effects, and other effects) and care-related outcomes (overall satisfaction with treatment, EUROPEP questionnaire). The study thus shows equal or better outcomes with reference to treatment-related items, and consistently better outcomes for all items related to the process of care.

However, some contradictions were visible in patients' evaluations of symptom relief. No difference between groups was obtained when patients were asked about symptom relief, but significantly more NT patients reported quick relief of symptoms in the EUROPEP questionnaire (question 7).

We did not find a difference between NT and COM with respect to reports of adverse side effects. The observations that patients in NT more often reported positive effects and COM patients more often perceived negative effects may reinforce the relation between patient expectations and outcomes [37, 38][35, 36]. The consistently higher satisfaction expressed in the EUROPEP questionnaire by NT patients is likely the result of longer consultations in NT.

Limitations of the study

Several limitations of the study should be acknowledged. With reference to external validity, the extent to which the study results can be generalized is limited by the small sample size of physicians (77/18) and patients (241/164) with musculoskeletal diseases. It remains also impossible to assess the validity of the sample as the overall distribution of patients with musculoskeletal problems in Swiss primary care is unknown. However, other research within the entire project showed that the original samples of physicians and patients, irrespective of diagnosis related inclusion criteria were reasonably representative of their respective base populations[39] [40]. Other limitations of the study are related to the fact that outcome measures such as the EUROPEP are not specific for musculoskeletal disorders and may not be appropriate for assessing patient satisfaction with Neural Therapy. The broad range of outcomes assessed in the survey, which was not originally intended to evaluate specific diseases in NT, made it impossible to investigate essential issues as deeply as they would have been in a survey designed specifically to assess patient satisfaction with NT. An evaluation of long-term effects and chronic disease which is also important was not in the scope of the overall project. Another problem of the study relates to limitations in diagnosing musculoskeletal diseases in a primary care setting where sophisticated imaging is usually not available. Such limitations are, however, present in both COM and NT. Bias as a result of uneven diagnostic certainty across study groups may therefore not be a concern.

Patient questions other than the Europep questionnaire were not validated. Limited temporal and financial resources allocated to the project made a respective psychometric validation for three different languages almost impossible. The literature provides, however, information that patients' evaluations of care give valid estimates of their experiences and respective satisfaction in a primary care setting[41]. It may also be criticized that outcomes were dichotomized into the best possible and all other answer options. This approach is based on a commonly applied concept that standards of excellence attained by top performers should be used as benchmarks of quality in the health care sector[42].

Finally, it can be argued to adjust the analysis of our outcome data for the problem of multiple tests. The literature in this field is inconclusive[43] and the decision whether to view the europep data as a group or as individual questions remains arbitrary. This study has the character of a pilot study and we therefore promote a more informal use of hypothesis tests which implies that results are important but p-values per se have little meaning. Consequently it is possible that our results accidentally mislead the interpretation of individual questions as significant p-values can occur by chance alone. However, the europep results showed consistently better outcomes for NT in almost all questions and we consider it as unlikely that the overall interpretation of the data was affected by accidentally significant p-values.

Furthermore, outcome measures such as the EUROPEP are not specific for musculoskeletal disorders and may not be appropriate for assessing patient

~~satisfaction with Neural Therapy. An evaluation of long-term effects and chronic disease is important, but the overall project did not allow such a study.~~

Clinical implications

Better patient satisfaction and better fulfillment of expectations along with an equally patient perceived efficacy in the treatment of musculoskeletal disorders in Neural Therapy make NT treatment option for primary care- or referring physicians and an increased integration of NT in medical education would be reasonable. High needs and some evidence for the importance of the neuraltherapeutic concept were shown in a recent study [4][20] reporting long waiting times to obtain appointments and overfilled waiting rooms of NT practitioners. This can be hardened by indications of a at least equal cost-efficiency ratio in NT and conventional care.

Conclusions

In light of the high prevalence of musculoskeletal disorders, our result showing significantly higher patient satisfaction in NT may have practical importance. Increased application of neuraltherapeutics by primary care physicians could therefore be reasonable. However, further research is needed to establish outcomes that are more evidence based, and to provide a more in-depth analysis of cost-effectiveness.

Competing interests

The Swiss Federal Office of Public Health funded the project and by contract researchers were independent from the funder. The authors declare that they have no competing interests.

Authors' contributions

JM wrote the first draft of the manuscript. LR and LS reviewed and completed the manuscript and provided considerable input with reference to neuraltherapy and musculoskeletal health problems. AB obtained the mandate of the project, performed all statistical analyses and completed the manuscript in this context.

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Tables

Table 1 - Socio-demography and health status of patient population

		#	COM %	95% CI ^a	#	NT %	95% CI ^a
Patients	<i>Number</i>	241			164		
Patient age	<i>All Mean</i>		55.42			53.28	
Female Patients	<i>Proportion</i>	150	62.24	55.9-68.6	126	76.83	71-82.7
Education	<i>Proportion of higher education</i>		20.5	14.9-26.1		24.7	16.4-32.9
General health ^{ab}	<i>excellent</i>	8	3.45	1.03-5.86	4	2.52	0.00-5.32
	<i>very good</i>	33	14.22	10.19-18.26	27	16.98	11.95-22.01
	<i>good</i>	126	54.31	47.95-60.67	63	39.62	33.48-45.76
	<i>fair</i>	53	22.84	17.75-27.94	59	37.11	27.06-47.15
	<i>poor</i>	12	5.17	2.40-7.94	6	3.77	0.00-8.15
Duration of the main health problem ^{ba}	<i>Month (Mean)</i>		47.7	32.5-63		72.9	48.5-97.2
Chronic conditions ^{ba}	<i>> 3 month</i>	116	48.1	42.1-54.2	116	70.7	62.8-78.7
Severe conditions ^{ba}		77	34.4	29.3-39.5	60	37.7	31.3-44.1

^a 95% confidence limits

^{a-b} patient rated

Table 2 - Main Diagnoses

Diseases related to the musculoskeletal system (ICD-10)		COM			NT		
		#	%	<u>95% CI^a</u>	#	%	<u>95% CI^a</u>
M00-25	Arthropathies	60	24.9	18.7-31.1	30	18.3	10.8-25.8
M30-36	Systemic connective tissue disorders	4	1.66	0.1-3.2	3	1.8	0.2-3.4
M40-54	Dorsopathies	95	39.4	32.5-46.3	76	46.3	35.1-57.6
M60-79	Soft tissue disorders	72	29.9	23.3-36.4	49	29.9	20.2-39.5
M80-94	Osteopathies and chondropathies	5	2.07	0.4-3.8	2	1.2	0.0-3.0
M95-99	Other disorders of the musculoskeletal system and connective tissue	5	2.07	0.4-3.8	4	2.4	0.0-5.4
Back-pain diagnoses (M40-M54)		95	39.4	32.5-46.3	88	53.7	35.1-57.6
M43	Other deforming dorsopathies	4	1.7		1	0.6	
M45	Ankylosing spondylitis	1	0.4		0	0	
M47	Spondylosis	3	1.2		3	1.8	
M48	Other spondylopathies	3	1.2		1	0.6	
M51	Other intervertebral disc disorders	6	2.5		4	2.4	
M53	Other dorsopathies, not elsewhere classified	3	1.2		15	9.2	
M54	Dorsalgia	75	31.1		52	31.7	
Comorbid conditions							
	<i>None</i>	101	41.9	34.3-49.6	51	31.1	20.8-41.4
	<i>1</i>	61	25.3	19.8-30.8	58	35.4	29.4-41.3
	<i>>1</i>	79	32.8	25-40.6	55	33.5	21.7-45.4

^a [95% confidence limits](#)

Table 3 - Patient expectations

		COM			NT		
		#	%	<u>95% CI^a</u>	#	%	<u>95% CI^a</u>
Expectations*	<i>Healing</i>	112	46.5	19.2-36.1 <u>40.1-53.8</u>	82	50.0	41.1-35- <u>58.7-29.0</u>
	<i>Alleviation</i>	128	53.1	47.5-58.8 <u>22.3-40.9</u>	86	52.4	11.7-30.7 <u>42.4-62.5</u>
	<i>Agreeable method</i>	5	2.1	0.1-2.3 <u>0.3-3.8</u>	2	1.2	0.0-1.4 <u>3.5</u>
	<i>Less adverse side effects</i>	22	9.1	2.6-8.2 <u>5.1-13.1</u>	30	18.3	3.3-11.5 <u>11.2-25.4</u>
	<i>Lower costs</i>	2	0.8	0.0-1.2 <u>2.0</u>	4	2.4	0.1-1.3 <u>1.9-4.5</u>

^a 95% confidence limits

Table 4 - Patient evaluations

		COM			NT		
		#	%	<u>95% CI^a</u>	#	%	<u>95% CI^a</u>
Symptom relief	<i>Complete resolution</i>	30	12.9	7.8-18.1	12	7.4	3.1-11.7
	<i>Considerably weaker</i>	68	29.3	23.5-35.2	64	39.5	32.9-46.1
	<i>Somehow weaker</i>	63	27.2	20.8-33.5	47	<u>29.0</u>	<u>22.0-36.0</u>
	<i>Unchanged</i>	61	26.3	20.7-31.9	34	21	16.2-25.8
	<i>Very intense</i>	9	3.9	1.4-6.4	4	2.5	0.2-4.7
	<i>Unsupportable</i>	1	0.4	0-1.3	1	0.6	0-1.8
Fulfillment of treatment expectations*	<i>Proportion of "complete fulfilled"</i>	33	15	9.6-20.5	40	24.8	18.5-31.2
Overall Satisfaction*	<i>Proportion of "very satisfied"</i>	66	29.5	22.7-36.2	66	41.3	35.9-46.6
Adverse side effects	<i>yes</i>	29	13	8.4-17.5	17	10.6	8.2-12.9
Other effects*	<i>Positive</i>	38	17.7	13.1-22.3	59	37.6	29.1-46.1
	<i>Negative</i>	16	7.4	3.8-11.1	9	5.7	2.5-9.0
	<i>No effect</i>	161	74.9	70.3-79.5	89	56.7	47.0-66.4
Perceived causality of symptom relief*	<i>Very sure</i>	59	29.7	22.2-37.1	62	44.3	36.0-52.6
	<i>Sure</i>	77	38.7	31.0-46.4	55	39.3	29.9-48.7
	<i>Not sure</i>	39	19.6	13.7-25.5	12	8.6	4.1-13.1
	<i>Don't know</i>	24	12.1	7.0-17.1	11	7.9	3.1-12.6

*significant difference (p<0.05) in the proportion of the most favorable answer option between NT and to-COM-group in a multivariate logistic model (age, gender and chronicity controlled)

^a 95% confidence limits

Table 5 - Patient satisfaction (EUROPEP)

Questions / items	COM		NT	
	%	95% CI ³ CI	%	95% CI ³ CI
Relation and communication				
1. Making you feel you had time during consultation?	60.6	53.9-67.3	70.3	53.3-87
2. Interest in your personal situation?*	58.6	52.1-65	72	60-83.9
3. Making it easy for you to tell him or her about your problem?*	61.1	53.2-69	71.9	59-84.8
4. Involving you in decisions about your medical care?	55.7	48.1-63.4	64.7	54.2-75.1
5. Listening to you?	65.8	59.1-72.5	73.7	61.1-86.3
6. Keeping your records and data confidential?*	69.5	62.4-76.7	83.1	74.6-91.6
Medical care				
7. Quick relief of your symptoms?*	16.1	10.3-22	26.6	20.3-32.9
8. Helping you to feel well so that you can perform your normal daily activities?*	27	20.2-33.8	40.7	32.7-48.8
9. Thoroughness?*	50.5	43.1-57.8	68.4	59.6-77.1
10. Physical examination of you?	47.1	40.7-53.4	55.7	38.8-72.6
11. Offering you services for preventing diseases (screening, health checks, immunizations)?	43	34.2-51.9	54.3	41.9-66.7
Information and support				
12. Explaining the purpose of tests and treatments?*	57.1	50.2-64.1	72.7	64.9-80.5
13. Telling you what you wanted to know about your symptoms and/or illness?*	55.4	48.1-62.7	71.2	60.4-81.9
14. Helping you deal with emotional problems related to your health status?	47.8	40.3-55.2	57.9	44.6-71.2
15. Helping you understand the importance of following his or her advice?*	44.1	37.2-51.1	61.7	51.4-71.9
Continuity and cooperation				
16. Knowing what s/he had done or told you during earlier contacts?	53.2	45.2-61.2	63.5	50.3-76.7
17. Preparing you for what to expect from specialist or hospital care?*	53.4	44.9-61.8	76.8	64.9-88.6
Facilities availability and accessibility				
18. The helpfulness of the staff (other than the doctor)?*	64.3	57.9-70.7	74.8	65.8-83.9
19. Getting an appointment to suit you?	1.3	0-2.7	1.2	0.0-3.1
20. Getting through to the practice on telephone?	73.5	65.9-81.1	69.1	56.5-81.8
21. Being able to speak to the general practitioner on the telephone?	54.9	46.4-63.3	58.9	42.3-75.6
22. Waiting time in the waiting room?	36.3	27.8-44.8	42.8	31.4-54.2
23. Providing quick services for urgent health problems?	67.7	59.7-75.6	70.2	61.5-79.0

*significant difference in the proportion of the most favorable answer option (p<0.05) ~~to~~ between NT and COM-group in a multivariate logistic model (age, gender and chronicity controlled) a 95% confidence limits

Figure 1 Flowchart of sampling procedures

