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# COOP Charts in French: translation and preliminary data on instrument properties

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**This paper describes the procedure used to translate the COOP Charts into French and provides preliminary information on the instrument's acceptability, reliability and validity. The charts were translated in several steps: seven initial translations were combined into a first pilot version, which was then tested for acceptability, clarity and alternate wordings in two convenience samples taken from the general population ( $n = 53$ ). The modified version was then reviewed by a lay panel and another translator and submitted by mail to 209 congress participants to test several construct validity hypotheses through known-groups comparisons. A panel of public health professionals discussed the content validity of the charts. Finally, test-retest reliability and concurrent validity with SF-36 Health Survey scores were examined among 65 patients with end-stage renal disease. The translation process identified a wide variability in translation options for several items. The acceptability of the charts was excellent. The test-retest correlations ranged from 0.60 to 0.87. Content validity appeared to be appropriate, except for the chart on 'social support', which combines the questions of need and availability of social support. The utility of illustrations was questioned by some respondents: many claimed not to have used the illustrations in selecting their response, while others found them to be not expressive enough. Most preliminary tests of construct validity were consistent with theory. This French translation of the COOP Charts appears to be ready for more extensive testing in the intended target population of ambulatory patients.**

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**Key words:** Translation, health status indicators; quality of life; questionnaires.

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## Introduction

The Dartmouth COOP Charts aim to measure patients' health-related quality of life in ambulatory health care settings.<sup>1-3</sup> The instrument includes nine single-item subscales covering separate dimensions of health-related quality of life. Each item consists of a general header (such as 'pain'), a question ('During the past 4 weeks, how much bodily pain have you generally had?') and five illustrated response options, scored between 1 (best) and 5 (worst). An international network of primary care researchers (World Organization of Family Doctors, WONCA) has adopted this instrument as the main indicator of patient outcomes.<sup>4</sup> Adaptations of the COOP/WONCA Charts exist in several languages.

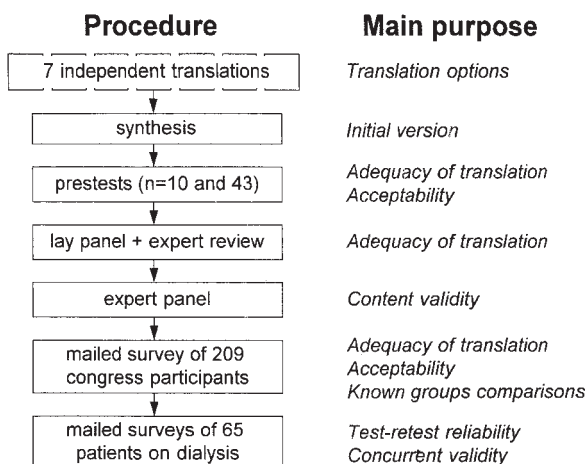
We set out to produce a French-language version of the COOP Charts using a translation procedure that would maximize the chances of maintaining the properties of the original instrument. This paper documents the translation process and provides preliminary evidence of the instrument's acceptability, reliability and validity.

## Methods

### Translation process and instrument acceptability

Authorization to translate the COOP Charts was obtained in 1993 from the developers of the instrument (Dartmouth Medical School, Hanover, NH, USA). We translated the 1989 version of the COOP Charts in a multiple-step process (Figure 1). We attempted to elicit early on a large spectrum of possible translations for each item and to base the selection of the final formulation more on empirical data than on expert argument. We did not plan to use

**Figure 1.** Flow chart of procedures used to translate and pre-test a French-language version of the COOP Charts.



back translations, because English–French bilinguals are very rare in the locally accessible general population. The translation activities (independent translations, synthesis, pre-tests and lay panel and expert review) were planned from the start, but the expert panel discussion and two mail surveys took advantage of opportunities to pre-test the instrument in convenience samples, thus the results regarding the psychometric properties of the instrument should be regarded as preliminary only. The following activities were conducted.

- (1) Initial translations. We obtained independent translations in French until no more alternative wordings appeared. Seven translations were produced: two from translators at the World Health Organization (WHO, Geneva, Switzerland), one from a professional translator of medical texts and four from bilingual researchers experienced in survey research (two from Switzerland, one from Quebec and one from France).
- (2) Synthesis. The seven translations were combined into an initial ‘best’ translation (version 0.1) by two experts at WHO (the head of French translation and a bilingual expert in survey research) who were not involved in the initial translations. The criteria for choosing a translation were semantic proximity with originality, brevity and simplicity of language. For most items, version 0.1 combined elements from several initial translations (e.g. a different source could be used for the header, the question and the response options).
- (3) Interactive pre-tests. Two rounds of pre-tests were conducted in convenience samples of ten and 43

persons (neighbours of interviewers, persons in shopping malls, etc.). Respondents first filled the COOP Charts, then responded to closed and open format questions about each chart. Ease of comprehension, possible ambiguity and alternative wordings were assessed for each item and response option while illustrations were assessed for ease of interpretation, consistency with the verbal response option and utility. In the second sample, respondents also evaluated the acceptability of using COOP Charts in doctor’s offices. The respondents also provided numerous other comments about the charts. The instrument was slightly modified after each round of pre-tests (versions 0.2 and 0.3).

- (4) Group discussion and expert review. The acceptability of the instrument was discussed further by a group of five persons (three men and two women who were employees of a non-governmental organization who had no formal training in health care) and two facilitators. In addition, this version was independently reviewed by a professional translator (Angela Verdier). Version 0.4 resulted from this review.
- (5) Mailed pre-test. The last step assessed the acceptability of the instrument among 297 participants of a meeting (Association Latine d’Analyse des Systèmes de Santé, ALASS) held in Lausanne, Switzerland in November 1994. Because the proceedings were to be held in French, we assumed that the participants would understand the charts. Responses were obtained by mail from 217 (73%) registered participants. Respondents indicated how long it took them to fill the charts and, for each question, whether it was confusing or difficult to answer and intrusive or annoying. Version 1.0 was finalized at this point (see the Appendix).

### Preliminary data on instrument properties

*Content validity.* During the ALASS conference, the first author held three workshops (attended by 47 participants) on the measurement of health-related quality of life during which participants submitted the most important dimensions of health-related quality of life not included in the COOP Charts; they also identified the least relevant of the charts.

*Reliability.* Test–Retest reliability was estimated by administering the charts 7 days apart in 65 patients with end-stage renal disease, treated at five dialysis facilities in Paris, Nancy, Lyon and Montpellier.

Patients received both questionnaires at home by mail.

*Concurrent validity.* The same patients with end-stage renal disease also completed the SF-36 health survey along with the first administration of the COOP Charts. Pearson correlations between the eight SF-36 scores and COOP Charts were examined before and after adjustment for attenuation due to limited reliability of both instruments (the crude coefficient was divided by the square root of the product of reliabilities of each score;<sup>5</sup> COOP Chart reliabilities were estimated by the test-retest and SF-36 reliabilities by internal consistency coefficients). Only unadjusted correlation coefficients are shown, to facilitate comparisons with published results.

*Known-groups comparisons.* The 217 congress participants (see point (5) above) provided data on the frequency of physical exercise, mother tongue, current health problems, whether they had had a medical visit or a hospitalization in the previous month and whether they had stayed in bed for  $\geq 1$  day in the past month. Mean scores in subgroups of respondents who differed on those variables were compared. Non-parametric (Mann-Whitney) exact tests were used for between-group comparisons.

## Results

### Initial translations

The seven initial translations varied considerably. For instance, 'feelings' was translated in five different ways ('sentiments, émotions, le moral, état émotionnel, and état psychologique'). Other examples

of disagreement included the response options 'fair' (variously translated as 'passable, moyen, correct and médiocre') and 'quite a bit' (translated as 'assez, plutôt, passablement and assez fortement'). In contrast, 'daily activities' and 'pain' received unanimous translations.

### Interactive pre-tests

Pre-test participants ( $n = 53$ ) were 45 years old on average (range, 14–87 years), 32 were women (60%) and 23 (43%) had received more than high school education. Wordings of seven out of nine questions were modified after the first round and changes were fewer after the second pre-test. Overall, 77–92% of the respondents had no difficulty in understanding a chart question as formulated in version 0.1 or 0.2. Most respondents (74–90%) had no problems with the response options, but several commented that each chart should specify how to mark an answer. The 'physical fitness' chart was found to be too complicated by several respondents, particularly if it was the first chart seen by the respondent. On the 'feelings' chart, the translation of 'bothered by emotional problems' proved difficult. Several respondents noted that one cannot be not bothered by being depressed or anxious, while others had not noticed the mention of 'bother' and skipped directly to descriptions of emotional distress. The chart on 'social support' was also found to be too complex. Several wondered what to answer, since they had not needed help. Some suggested an additional response 'I did not need help', while others tried to imagine whether help would be available should they need it.

**Table 1.** Responses to the French COOP Charts (version 0.4) given by 209 public health professionals attending a congress in Lausanne, Switzerland, 1994

	Response (%)					Missing	Mean	Standard deviation	Unclear (%)	Annoying (%)
	1 ceiling	2	3	4	5 floor					
Physical fitness	46	33	15	4	1	<1	1.8	0.9	14	1
Feelings	24	47	17	11	–	<1	2.2	0.9	9	4
Daily activities	48	28	21	3	<1	–	1.8	0.9	2	1
Social activities	66	22	10	2	–	<1	1.5	0.8	5	1
Pain	32	38	14	13	2	–	2.2	1.1	4	1
Change in health	9	19	67	4	–	<1	2.7	0.7	7	1
Overall health	23	38	31	6	1	–	2.2	0.9	1	1
Social support	28	37	14	11	8	2	2.3	1.2	19	2
Quality of life	28	50	19	3	–	–	2.0	0.8	3	1

### Lay panel discussion and expert opinion

The group discussion resulted in deleting the notion of bother from the 'feelings' chart and added several other minor wording changes. At this stage, the response options to the 'overall health' chart were chosen so as to match the identically worded question in the SF-36 Health Survey. The expert suggested changing two words deemed to be too regional ('passable') or unfamiliar ('en somme').

### Mailed pre-test among conference participants

The resulting instrument was tested among 209 public health professionals who attended a congress meeting (217 responded to the survey, but eight did not respond to validation questions). They were 42 years old on average (range 29–65 years) and included 119 women (57%). Respondents provided 126 written comments on the instrument, of which 50 concerned formulations of specific charts. Sixteen persons commented on the 'social support' chart, mostly on the difficulty to respond if no help had been needed. The repeated difficulty with this question (which really includes two questions: 'Did you need help?' and 'If yes, was help available?') led us to complete the most favourable response option. In the final version, it reads 'Yes, as much as I wanted (or I did not need any help)'. Among ten persons who commented

on 'physical fitness', many were unable to translate their experience into the examples provided by the chart. Other comments revealed no serious problems.

### Acceptability

Of the second interactive pre-test ( $n = 43$ ), only one respondent (2%) said that he would refuse to complete the charts if asked to do so in a physician's waiting room. A majority of respondents thought that using the COOP Charts in physicians' offices would be useful (70%), that it would improve patient-physician communication (79%) and that it would improve care (63%). Only 12% thought that completing COOP Charts in physicians' offices would be annoying. Completing the charts in the presence of the interviewer took on average 4 min and 45 s.

The charts were also easy to administer by mail. Of the 209 congress participants, the mean reported time taken to fill the COOP Charts was 3 min 20 s (quartiles: 2 min, 3 min and 4 min). As expected in this healthy group, considerable ceiling effects but no floor effects were observed for all nine dimensions (Table 1). The only question that had a centred distribution of responses was 'change in health'; however, more respondents reported improvement in health than deterioration. There were almost no missing data. Almost no respondents considered the questions to be annoying or intrusive, but substantial minorities

**Table 2.** Dimensions of health-related quality of life to be added to or deleted from the COOP Charts, as suggested by 31 French-speaking health professionals, Switzerland, 1994

To be added		To be deleted	
Dimension	<i>n</i>	Dimension	<i>n</i>
Work accomplishment	6	None	9
Sexuality	4	Social support	9
Intimate/Affective relationships	4	Quality of life	7
Fatigue/Vitality	4	Overall health	4
Aptitude to make projects	3	Physical fitness	2
Laughter/Pleasure	3	Social activities	1
Quality of environment	3	Feelings	1
Access to health care	2		
Leisure/Hobbies	2		
Contributions made to others	2		
Freedom	1		
Social status	1		
Living arrangements	1		
Material situation	1		
Spirituality	1		
Communication with others	1		

**Table 3.** Test–retest reliability and correlations of the COOP Charts (in French) among 65 patients with kidney failure, France, 1995

	Test–retest correlation (1 week)	Pearson correlation							
		Physical fitness	Feelings	Daily activities	Social activities	Pain	Change in health	Overall health	Social support
Physical fitness	0.70								
Feelings	0.60	0.07							
Daily activities	0.86	0.46	0.39						
Social activities	0.86	0.29	0.46	0.51					
Pain	0.87	0.45	0.34	0.57	0.35				
Change in health	0.74	0.14	0.29	0.22	0.41	0.10			
Overall health	0.80	0.37	0.46	0.54	0.44	0.39	0.51		
Social support	0.79	0.01	0.39	0.29	0.47	0.14	0.34	0.29	
Quality of life	0.62	0.22	0.52	0.45	0.45	0.37	0.50	0.70	0.42

found the questions on 'social support' (19%) and 'physical fitness' (14%) to be unclear or difficult to understand. In open-ended comments, 19 participants found the questionnaire to be easy to answer, simple and clear, while two thought it was fun. On the other hand, six respondents found the charts simplistic and not detailed enough, two thought the questions were complicated and three questioned the charts' utility in clinical settings. Six respondents were not sure how to respond or suggested that this be specified on each chart (we added the instruction 'please circle the best answer' onto each chart of the final version). Five respondents had difficulty dealing with a short episode of illness (such as a flu), as answers referred to the whole of the past month.

#### Value of illustrations

In the initial pre-tests ( $n = 53$ ), illustrations were rated as 'very good' or 'good' by 41–80% of the respondents. The ladder illustrating 'quality of life' drew the most spontaneous compliments (however several persons suggested that the size of the numbers should be the same as on the other charts). In contrast, 42% of the respondents thought that the illustration of 'change in health' was 'very bad': several respondents indicated that two sets of symbols were redundant, others thought that the illustrations had something to do with mathematics and two did not understand them at all.

Most respondents (54–90%) considered that the

**Table 4.** Correlations between the COOP Charts and SF-36 Health Survey scores among 65 patients with kidney failure, France, 1995

COOP Chart	SF-36 scores							
	Physical functioning	Role physical	Bodily pain	General health	Vitality	Social functioning	Role emotional	Mental health
Physical fitness	0.49	0.16	0.49	0.33	0.47	0.30	0.07	0.07
Feelings	0.40	0.35	0.46	0.47	0.48	0.58	0.32	0.73
Daily activities	0.52	0.41	0.60	0.59	0.51	0.49	0.34	0.54
Social activities	0.41	0.24	0.41	0.49	0.41	0.54	0.24	0.53
Pain	0.38	0.33	0.71	0.50	0.54	0.47	0.26	0.46
Change in health	0.02	0.02	0.37	0.36	0.27	0.11	0.09	0.25
Overall health	0.34	0.25	0.49	0.68	0.50	0.53	0.26	0.55
Social support	0.18	0.20	0.25	0.27	0.08	0.33	0.20	0.34
Quality of life	0.33	0.22	0.48	0.58	0.47	0.54	0.27	0.56

**Table 5.** Mean COOP Chart scores in subgroups of congress participants who differed in use of services in previous month, current health problems or usual exercise, Lausanne, Switzerland, 1994

	<i>n</i>	Physical fitness	Feelings	Daily activities	Social activities	Pain	Change in health	Overall health	Social support	Quality of life
Medical visit in previous month										
Yes	52	1.9	2.5**	2.3***	1.6	2.7***	2.4***	2.6***	2.2	2.2**
No <sup>a</sup>	157	1.8	2.1	1.6	1.4	2.0	2.8	2.1	2.3	1.9
Hospitalization in previous month										
Yes	4	1.8	3.0	3.2**	2.2	2.8	2.5	3.5**	2.2	3.0*
No <sup>a</sup>	205	1.8	2.1	1.8	1.5	2.1	2.7	2.2	2.3	2.0
Day in bed in previous month										
Yes	21	1.6	2.6*	2.5***	1.8	2.9**	2.4*	2.5	2.1	2.3
No <sup>a</sup>	188	1.8	2.1	1.7	1.5	2.1	2.7	2.2	2.3	1.9
Current acute health problem										
Yes	7	2.3	2.2	2.4	1.7	3.7***	2.3	2.6	2.3	2.3
No <sup>a</sup>	202	1.8	2.1	1.8	1.5	2.1	2.7	2.2	2.3	2.0
Current chronic health problem										
Yes	35	1.9	2.6**	2.1	1.7	2.7**	2.7	2.7**	2.3	2.2
No <sup>a</sup>	173	1.8	2.1	1.7	1.4	2.0	2.7	2.1	2.3	1.9
Physical exercise										
Never <sup>a</sup>	72	2.2	2.1	2.0	1.5	2.3	2.6	2.4	2.4	2.0
Once a week	89	1.7*	2.2	1.7	1.5	2.1	2.7	2.2	2.3	2.0
Twice or more a week	48	1.4***	2.1	1.7	1.5	2.0*	2.7	1.9**	2.2	1.8

<sup>a</sup>Reference level. *p* values (exact Mann–Whitney test): \**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001.

illustrations matched the response options well or very well. The worst score was obtained by the illustrations for 'pain': the respondents saw little contrast between the images and some suggested that the figure in no pain should be dancing, while others suggested zigzags representing lightnings for severe pain. With respect to 'overall health', three respondents volunteered that the smiley face should actually smile for those in 'good' health (the current drawing shows a straight mouth). More generally, the respondents often regretted that the illustrations were not expressive enough and several contrasted them with graphical elements used in comics books. The respondents voted to maintain the illustrations for all charts except 'change in health', for which the majority were strongly (51%) or rather (7%) in favour of dropping

them. Most respondents (56–80%) said that the illustrations did not help in selecting their response.

### Content validity

Among the open-ended comments given by 209 congress participants, few spontaneously questioned the validity of the instrument: three persons suggested that physical and mental aspects of health should be distinguished for all dimensions of health-related quality of life addressed by the charts and two regretted that 'fatigue' was not explicitly mentioned.

Content validity of the COOP Charts was further addressed in a workshop on the measurement of health status, attended by health care and public

health professionals; 31 responded in writing to the question 'If you could add a dimension of health status to the COOP Charts, which would it be?'. Their 39 suggestions indicate that realization of self, in every aspect, is considered to be important for health-related quality of life (Table 2). To the question 'If you had to remove one dimension from the COOP Charts, which would it be?', 'none' and 'social support' were the most frequent answers.

### Reliability and correlations between charts

Test-Retest reliability was assessed among 65 patients with end-stage renal disease (Table 3). There were 36 men, and 29 women and their mean age was 66 years (range 20–89 years). Reliability coefficients had a mean of 0.76 and ranged from 0.62 to 0.87.

Uncorrected correlations between charts ranged from 0.01 (between 'physical fitness' and 'social support') to 0.70 (between 'quality of life' and 'overall health'); 19 were < 0.40 and 17 were > 0.40 (Table 3).

### Concurrent validity

In comparing the COOP Charts and SF-36 scores (Table 4), we anticipated that five correlations would be high: those between (1) 'physical fitness' and 'physical functioning', (2) 'feelings' and 'mental health', (3) 'social activities' and 'social functioning', (4) 'pain' and 'bodily pain' and (5) 'overall health' and 'general health'. These correlations were between 0.49 and 0.73. However, many more correlations were in the same range, chiefly involving charts representing 'quality of life', 'feelings', 'daily activities' and 'overall health'. In contrast, the chart for 'social support' had low correlations with all SF-36 scales.

### Known-groups comparisons

Mean scores were examined across subgroups of patients who differed in self-reported health problems, past use of services or amount of regular exercise (Table 5). 'Physical fitness' scores improved progressively with increasing amounts of usual physical exercise, but varied little between the other subgroups. 'Feelings' scores were generally worse in sicker persons. 'Daily activities' scores were most affected by hospitalizations, bed days and doctor visits. 'Social activities' scores were only modified by a recent hospitalization. The greatest increase in 'pain' scores was seen in persons reporting a current acute

health problem. Decreases in health were noted by persons who had had a recent health problem. 'Overall health' scores were most affected by hospitalizations, medical visits, chronic health problems and absence of regular exercise. 'Quality of life' in general was worst among persons reporting a recent hospitalization, doctor visit or who had spend a day in bed.

## Discussion

We used an iterative procedure to translate the COOP Charts into French. The instrument evolved through several preliminary versions before maturing into its final form. Multiple initial translations identified areas of consensus and disagreement between translators; the production of initial translations was stopped only when no more new wordings appeared. The diversity in translation options that we observed suggests that a single translation of any instrument, however careful, is likely to be inadequate. During the course of our translation process, another French version of six of the COOP Charts was published,<sup>6</sup> based on a forward translation checked by a back translation and the face validity of which was confirmed by discussions with general practitioners.<sup>7</sup> Because only our version has been subjected to pre-tests, we do not know how the latter and our version compare in terms of acceptability, reliability and construct validity. Other translations of health status instruments were based on fewer initial translations.<sup>8–13</sup> We believe that generating early on a broad range of possible wordings improved the quality of the first version of the instrument, so that pre-tests converged fairly quickly towards an acceptable version of the instrument.

Contrary to common practice,<sup>10–14</sup> we did not perform back translations, mostly because bilingual members of the general population are hard to find in continental Europe (this limitation may not arise in Quebec). Furthermore, the value of back translations made by professional translators has never been convincingly demonstrated. In our experience, the chief difficulty in translating instruments arises when there is no single equivalent in the target language that has exactly the same semantic content as the source item. When this happens, back translation can only confirm the semantic dissimilarity, but cannot provide a solution. In practice, foregoing back translations has previously proved effective in a preliminary French version of the SF-36 Health Survey, translated using procedures even simpler than those described here, which was shown to have similar properties to those of the original US instrument.<sup>15</sup> However, until an instrument is translated both with and without

back translations and the performances of the resulting instruments are compared, we will not know whether this aspect of the translation process is essential or unnecessary.

When discussing the COOP Charts, respondents made several useful comments and critiques. Several respondents were confused by the chart on 'social support', because the question violates one of the basic rules of survey research: it asks two questions instead of one. This issue may go unnoticed among moderately or severely ill patients, all of whom will require at least a modicum of outside help, but it may threaten the content validity of the charts in general population surveys, or in evaluations of interventions aimed at changing need of social support (as opposed to availability of support) in patients with chronic diseases. To alleviate this problem, we added an extension ('or did not need help') to the most favourable response option, but perhaps this should be a response option in its own right.

We incorporated two other users' suggestions into version 1.0: on each chart we added how to answer (by adding 'please circle the best answer' above the column of response numbers) and we changed the size of response numbers on the 'quality of life' chart so that they would be consistent with other charts.

The importance of chart illustrations remains uncertain. Most respondents claimed not to have used the illustrations in selecting their response, but a subconscious effect of the illustrations cannot be excluded. Whether illustrations truly increase the acceptability of the charts, clarify the content of the response options or influence the distributions of responses is still unclear. One previous study suggested that ambulatory patients given a choice between the COOP Charts and a standard questionnaire do not favour the former;<sup>16</sup> while other studies have shown that removing the illustrations from COOP Charts does not affect the results.<sup>17,18</sup>

On the other hand, many critical or creative comments contributed during pre-tests concerned the illustrations (which we chose not to modify). Critiques of illustrations are a good example of comments questioning the cultural adequacy of the instrument and not merely issues of translation. Interestingly, the illustrations have not caused any reported difficulty during translations into languages other than French. One peculiarity of French-speaking Europeans is their high consumption of comic books, which are considered as an artistic medium in their own right and not as a marginal subtype of popular literature. French comic books use a variety of graphic conventions to express feelings such as happiness or intense pain. Our respondents may have expected similar

conventions to be used in the COOP Charts, where illustrations are rather subdued. While the COOP Charts could be optimized to suit the French-speaking European public, the trade-off of such modifications would be reduced comparability with other countries.

Inferences regarding the properties of the translated instrument are limited, as we did not test the instrument in the intended target population (i.e. ambulatory patients), but our preliminary data are encouraging. Acceptability, ease of administration and perceived usefulness of the charts were high and missing data were few. Content validity appeared to be satisfactory, even in a population culturally distinct from the North American population in which the charts were developed. This extends previous successful use of the COOP Charts in numerous countries.<sup>7,19,20</sup>

One-week test-retest reliability was slightly better than the 2-week test-retest performed with the original instrument (mean 0.67 and range 0.42–0.88).<sup>21</sup> Between-charts correlations were similar to those obtained among patients enrolled in the Medical Outcomes Study (which did not include charts for change in health and for quality of life):<sup>21</sup> for the 21 correlation coefficients, the mean difference between our estimate and the published estimate was only 0.02 (standard deviation 0.07 and range –0.08 to +0.20). Similarly, correlations between the COOP Charts and RAND scales (precursors of the SF-36 Health Survey) were similar:<sup>21</sup> for 35 correlation coefficients, the mean difference was 0.05 (standard deviation 0.09 and range –0.10 to +0.28). These results suggest that our translation process preserved the properties of the original instrument.

Most known-groups comparisons were consistent with theory. One exception was that among congress participants; 'physical fitness' scores did not differ based on past use of health services or on current chronic or acute health problems. The chart appeared to be valid, since physical fitness was strongly associated with the usual amount of exercise. A *post hoc* explanation is that our population suffered mostly from mental ailments (as suggested by the important differences on the 'feelings' score) or diseases, such as hypertension, which do not affect physical fitness. In addition, the broad time frame (of 1 month) may have diluted the impact of transient health problems. Furthermore, the 'social support' chart did not discriminate between groups of respondents. This was expected, as none of the subgroup comparisons we performed were intended to uncover differences in social support. Thus, our study provides no evidence of the validity of the 'social support' chart, which is unfortunate, as this chart was the one which caused the most problems during pre-tests.



In summary, this translation into French of the COOP Charts produced an instrument that is acceptable both to members of the general population and to patients with a chronic illness. Despite cultural differences with the population in which the COOP Charts were developed, the instrument had an acceptable content validity for European French speakers. In addition, the instrument performed well on the test-retest and yielded promising results in construct validity tests. These preliminary data justify further testing of the French COOP Charts, particularly among ambulatory patients and the general population.

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## Appendix: COOP Charts in French

### CONDITION PHYSIQUE

Au cours des 4 dernières semaines, quel est le plus gros effort physique que vous avez pu faire pendant au moins 2 minutes?

Très intense, par exemple: • Courir vite • Porter une charge lourde (10 kg) en montant des escaliers ou une pente		1
Intense, par exemple: • Courir à petite allure • Monter des escaliers ou une pente, à allure modérée		2
Modéré, par exemple: • Marcher vite • Porter une charge lourde (10 kg) en terrain plat		3
Léger, par exemple: • Marcher à allure modérée • Porter une charge légère (5 kg) en terrain plat		4
Très léger, par exemple: • Marcher lentement • Faire la vaisselle		5

### LE MORAL

Au cours des 4 dernières semaines, vous êtes-vous senti(e) anxieux(se), déprimé(e), irritable, ou abattu(e)?

Pas du tout		1
Un peu		2
Modérément		3
Beaucoup		4
Enormément		5

### ACTIVITÉS QUOTIDIENNES

Au cours des 4 dernières semaines, avez-vous eu des difficultés à faire votre travail ou d'autres activités habituelles, à cause de votre état physique ou de votre moral?

Aucune difficulté		1
Très peu de difficultés		2
Quelques difficultés		3
Beaucoup de difficultés		4
Je n'ai pas pu les faire		5

### VIE SOCIALE

Au cours des 4 dernières semaines, votre état physique ou votre moral ont-ils limité vos contacts avec la famille, les amis, les voisins, ou d'autres personnes?

Pas du tout		1
Un peu		2
Modérément		3
Beaucoup		4
Enormément		5

### DOULEURS

Au cours des 4 dernières semaines, avez-vous en général ressenti des douleurs physiques?

Aucune douleur		1
Douleurs très légères		2
Douleurs légères		3
Douleurs modérées		4
Fortes douleurs		5

### CHANGEMENT DANS L'ÉTAT DE SANTÉ

D'une manière générale, comment vous portez-vous *maintenant*, par rapport à il y a 4 semaines?

Beaucoup mieux		1
Plutôt mieux		2
Sans changement		3
Plutôt moins bien		4
Beaucoup moins bien		5

### SANTÉ EN GÉNÉRAL

D'une manière générale, comment jugez-vous votre santé des 4 dernières semaines?

Excellente		1
Très bonne		2
Bonne		3
Médiocre		4
Mauvaise		5

### SOUTIEN PAR L'ENTOURAGE

Au cours des 4 dernières semaines, est-ce que quelqu'un était disponible pour vous aider en cas de besoin? Par exemple, si vous:

- vous sentiez nerveux(se), seul(e) ou déprimé(e)
- êtes tombé(e) malade et avez dû rester au lit
- aviez besoin de parler à quelqu'un
- aviez besoin d'aide dans vos tâches quotidiennes
- aviez besoin d'aide pour prendre soin de vous

Oui, autant que je voulais (ou: je n'ai pas eu besoin d'aide)		1
Oui, très disponible		2
Oui, moyennement disponible		3
Oui, un peu disponible		4
Non, personne n'était disponible		5

### QUALITÉ DE VIE

Comment se sont passées pour vous ces 4 dernières semaines?

Très bien	1
Plutôt bien	2
Tantôt bien, tantôt mal	3
Plutôt mal	4
Très mal	5