Adaptation and validation of a telephone questionnaire – Serbian version for case detection of rheumatoid arthritis and spondyloarthropathy (multicentric Eular study)

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Abstract

Objective

To adapt and validate a telephone questionnaire for case detection of rheumatoid arthritis (RA) and spondyloarthropathies (SpA) in the Serbian population.

Methods

A questionnaire, developed by the French Society of Rheumatology and successfully tested in France, was adapted to the Serbian language using a cross-cultural adaptation process. It was validated in 150 patients: 50 with RA, 50 with SpA and 50 with degenerative rheumatic disorders. They were recruited from Institute of Rheumatology in Belgrade, hospital registry, years 2001 and 2002. The questionnaire validity was assessed in reference to clinical diagnosis and ACR 1987 and ESSG 1991 classification criteria. A logistic regression model was used for RA-control and SpA-control comparison to identify the set of items that best discriminates these groups.

Results

Cross-cultural adaptation of the Questionnaire was successfully achieved, verifying its equivalence with the original (semantic, idiomatic, experiential, conceptual). According to the logistic regression, two items selected for RA provided 92.1% agreement when using either clinical diagnosis or ACR classification criteria as a standard. SpA-control comparison included five items providing 96.8% agreement with clinical diagnosis and four items providing 94.1% agreement with ESSG criteria. Results of the present study are similar to those found in the French study.

Conclusion

Validation results of the telephone questionnaire, translated and adapted to the Serbian language, confirm that it can be used as a detection tool for RA and SpA cases in the population of Serbia, whose diagnoses would have to be further confirmed.

Key words

RA, SpA, questionnaire, prevalence, cross cultural adaptation.

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Introduction

Prevalence of rheumatoid arthritis (RA) and spondyloarthropaty (SpA) has been estimated in many countries, especially in the West Europe and the North America (1). However, the results of these studies are difficult to compare because of different classification criteria and diverse methods used.

In order to enable comparable study of RA and SpA prevalence, the EULAR prevalence survey project proposed the use of a standardized methodological approach. The basic idea was to detect probable cases of RA and SpA by the use of an accurate and reliable questionnaire and after that to confirm the diagnosis by medical examination or medical history reviewing (2). A questionnaire was developed for use in a telephone survey, with reference to signs, symptoms, self-reported diagnosis and classification criteria for RA (American College of Rheumatology- ACR 1987) and SpA (European Spondyloarthropathy Study Group -ESSG 1991). SpA disease group included ankylosing spondylitis, reactive arthritis (Reiter's syndrome), arthropathy of inflammatory bowel disease (Crohn's syndrome, ulcerative colitis), psoriatic arthritis and undifferentiated spondyloarthroapthies (3). A questionnaire performed satisfactorily when adminstered by patient interviewers (2, 4). After successful validation of the procedure in France, the questionnaire was proposed for multicentric study of RA and SpA in Europe, organized by EULAR. For this purpose, the questionnaire had to be translated and cross-culturally adapted to different countries and languages. Besides the successful performance in France, the validation of the questionnaire might have been impaired by translation and cross-cultural adaptation process, and therefore validation of a translated questionnaire was nessessary before its use in a population survey.

In this paper we present the results of a questionnaire validation after its translation and adaptation to the Serbian language.

Material and methods

Measurement instruments adaptation

Two documents were subject to translation: a telephone questionnaire for the patient interviewers to detect cases, and a Gold Standard form to be filled in by a doctor to confirm diagnosis with reference to medical records, laboratory tests and radiological findings. Both received documents were in English, as they were previously translated for the European project using a cross-cultural adaptation process. If the documents were simply translated into Serbian, they could have remained inadequate due to expected differences in language and culture, especially in domains of patient's self-diagnosis and lay classification of illness, and due to some differences in material culture. Translation and adaptation to Serbian were performed following guidelines for cross-cultural adaptation, and verifying the equivalence of the source and the final version (semantic, idiomatic, experiential, conceptual) (5).

The translation was performed by two Serbian, native, independent translators. They were of different gender and occupation. One of them was aware of the study purpose and objectives, the other was not. A professional translator who did not take part in the first translation, was not aware of the investigation concepts and did not see an original English version conducted a back-translation from Serbian to English. A committee meeting consisting of the two translators and a coordinator reviewed all the versions and achieved consensus verifying the equivalence of the two documents (6).

Validation process

To assess the questionnaire validity, 150 patients were included: 50 with RA, 50 with SpA and 50 with degenerative rheumatic disorders (controls). They were recruited from the hospital registry of the Institute of Rheumatology in Belgrade, for 2001 and 2002. For patients to be included in the study, it was obligatory to have a phone number to make the telephone questionnaire use possible. Patient's clinical diagnosis was ascertained by a certified rheumatologist. Data considering medical records, laboratory tests and radiological findings were collected on Gold standard forms (ACR 1987 criteria and ESGG 1991 criteria, respectively).

Statistical analysis

The sensitivity (Se) and specifity (Sp) for each item and for items combinations of the questionnaire were calculated in reference to clinical diagnosis and classification criteria. For items combinations, positive predictive value (PPV) and negative predictive value (NPV) were calculated also on the basis of an expected prevalence rate in the population of 0.3%, 0.5% and 1%, as can be observed in other studies across Europe (1). A logistic regression model was used for RA-control comparison and SpA-control comparison to identify the set of items that discriminates the best between groups. To estimate the performance error for the selected items set, Harrel's c value was used (varies between 0 and 1; the closer to 1, the lower the performace error). The goodness of fit test (p value) was calculated using Hosmer-Lemeshow test; a higher p value is expected to show the fit of the model to the data.

Data were entered in a computer database software (ACCESS), sent to France via Internet and analysed using SAS 8.0 statistical software.

Results

Measurement instrument

The final version of the Questionnaire differs from the original in some questions according to national language characteristics, which mostly refer to the adverb of time (Are your joints swollen or have they been swollen in the past →Are your joints swollen **now** or have they been... Does or did the pain wake you? → Does the pain wake you, or did it wake you **in the past**?) and to the sentence construction (Do you know if in your family, apart from yourself, there have been cases of... → Do you know if **anybody** in your family, apart from yourself, **had**...).

Although some questions were widened in order to be comprehensible due to Serbian language specifities, idiomatic, semantic, experiential and conceptual equivalence has been preserved.

Patient characteristics

Characteristics of patients included in questionnaire validation are presented in Table I. Their mean ages were 58.9 years (SD ± 12.2) for RA patients, 51.8 (12.5) for SpA patients, and 57.3 (11.5) for controls, and average disease duration was 10.8 years (SD ± 7.6), 17.4 (13.1), and 8.6 (6.9) respectively. Diagnoses of control patients were: gonarthrosis (28%), coxarthrosis (20%), low back pain (42%), cervical syndroma (8%), and thoracal vertebral fracture (2%). The female/male ratio was 4.5 in the RA group, 1.2 in the SpA group and 2.6 in a group of patients with degenerative disorders. In SpA group, 64% had psoriatic arthritis, 30% had ankylosing spondylitis, 4% had inflammatory bowel disease, and 2% had Reiter's syndrome.

Table I. Characteristics of patients with rheumatoid arthritis (RA), spondyloarthropathy (SpA) and degenerative rheumatic diseases (control group).

Characteristic	RA (n = 50)	SpA (n = 50)	Control (n = 50)
Age (years), mean (SD)	58.9 (12.2)	51.8 (12.5)	57.3 (11.5)
Female (%)	82.0	54.0	72.0
Disease duration-first symptoms (yrs), mean (SD)	10.8 (7.6)	17.4 (13.1)	8.6 (6.9)
Disease duration-diagnosis (yrs), mean (SD)	9.0 (7.2)	10.6 (11.0)	5.1 (6.1)
Positive classification criteria (N)	50	33	
ACR 1987 positive (%)	100.0		
Morning stiffness (%)	79.6		0.0
Arthritis of 3 or more joints (%)	100.0		0.0
Arthritis of hand joints (%)	97.9		0.0
Symetric arthritis (%)	81.6		0.0
Rheumatoid nodules (%)	16.0		0.0
Serum rheumatoid factor (%)	86.0		0.0
Radiographic changes (%)	96.0		0.0
ESSG 1991 positive (%)		66.0	
Inflammatory spinal pain (%)		70.2	26.0
Synovitis (%)		40.0	0.0
Positive family history (%)		38.3	0.0
Psoriasis (%)		66.0	0.0
Inflammatory bowel disease (%)		10.0	0.0
Alternating buttock pain (%)		22.0	2.0
Enthesopathy (%)		14.3	0.0
Sacroiliitis (%)		12.2	-

All patients with RA (100%) fulfilled the ACR 1987 classification criteria. Individual criteria were positive in a range from 16% for rheumatoid nodules to 100% for arthritis of 3 or more joints. Of 50 SpA patients, 33 fulfilled the classification criteria ESSG 1991. Individual criteria were positive in a range of 10% for inflammatory bowel disease to 70% for inflammatory spinal pain (Table I).

Sensitivity and specifity of the questionnaire items

Taking clinical diagnosis as a standard, sensitivity of items in the questionnaire ranged from 36% to 100% for RA patients. Taking ACR criteria as a standard for RA patients, we obtained the same results. For SpA patients sensitivity of items ranged from 2% to 94 % when clinical diagnosis was used as a standard, and from 3% to 91% when ESSG criteria were the standard. Specifity of items ranged from 10% to 100% (Table II).

Selected set of items

Two items selected by RA-control logistic regression model provided 92.1% agreement (Harrel's c = 0.958, Hosmer-Lemeshow p = 0.964) when using either clinical diagnosis or ACR classification criteria as a standard. SpA-control logistic regression model included five items providing 96.8 % agreement with clinical diagnosis (Harrel's c = 0.977, Hosmer-Lemeshow p = 0.664) and four items providing 94.1 % agreement with ESSG criteria (c = 0.959 p = 0.969).

Self-reported diagnosis has a high level of sensitivity and specifity, but it has always been discarded from the logistic stepwise selection, because its high prediction value might be dependent

Table II. Sensitivity (Se) and specifity (Sp) of each item of the questionnaire using clinical diagnosis and classification criteria as a standard*.

Item	RA			SpA		
	Clinical diagnosis n = 50 Se (%)	ACR criteria n = 50 Se (%)	Control n = 50 Sp (%)	Clinical diagnosis n = 50 Se (%)	ESSG criteria n = 50 Se (%)	Control n = 50 Sp (%)
Self-report of diagnosis	84	84	98	94	91	100
Joint pain	100	100	30	82	76	30
Neck, back or low back pain	56	56	10	76	73	10
Joint swelling	98	98	52	68	61	52
Symmetrical joint affected	78	78	62	30	27	62
Hands affected	100	100	86	70	58	86
Lower limbs affected	100	100	32	78	70	32
More than 3 joints affected	100	100	56	64	48	56
More than 6 weeks of pain	94	94	34	72	61	34
Pain on waking	78	78	44	46	33	44
Morning joint stiffness	94	94	58	50	42	58
Nodules	70	70	94	8	-	94
Rheumatoid factor test performed	38	38	92	22	12	92
Rheumatoid factor positive	36	36	100	-	-	100
Hand and wrist x-rays performed	96	96	90	66	55	90
Low back pain started before 45	18	18	56	62	67	56
Low back pain gradually started	16	16	68	50	61	68
Low back pain increased by effort	34	34	18	28	18	18
Morning back stiffness	20	20	54	42	48	54
More than 3 weeks of low back pain	26	26	34	50	58	34
Family history of:						
spondylitis	12	12	90	6	9	90
psoriasis	8	8	98	28	18	98
uveitis	2	2	100	2	3	100
reactive arthritis	26	26	78	10	9	78
Crohn's disease	2	2	96	2	3	96
Personal history of:						
psoriasis	8	8	96	64	48	96
long-lasting dirarrhoea	8	8	100	12	15	100
pain in the heel	42	42	56	44	42	56
pain in the buttocks	18	18	54	42	42	54

on study conditions (language, patient and country-sensitive) (Table III).

The most accurate combined predictors of clinical diagnosis in RA and SpA are presented in Tables IV and V, both with positive and negative predictive values (PPV and NPV) calculated on the basis of an expected prevalence rates of 0.3%, 0.5% and 1%. Some combinations of items showed high sensitivity and specifity for RA. Items combinations with self-report diagnosis for SPA showed lower sensitivity, but specifity was maximal. PPV for those combinations ranged from 2.4% to 100% for RA, and was 100% for SpA. NPV was always higher than 99%.

Discussion

Cross-cultural adaptation of a questionnaire for RA and SpA case detection was successfully achieved using Guillemin's guidelines. Using those guidelines, many documents were translated for the various international studies (CHAQ, CHQ, BASFI, BASDAI, DFI) (7-9). It is important to emphasize that our Questionnaire will be used as a tool for case detection in the future investigation, and that a diagnosis confirmation for the detected cases would be necessary.

Common ways of obtaining information through questionnaires are: a) sending a questionnaire by mail for the study subjects to fill out and return; b) having an interviewer administrator of a questionnaire in person, and c) having an interviewer administrator of a questionnaire on the phone (10). The first method is characterized by a great number of non-responders, and direct personal contact demands a lot of time and money. A telephone-administered questionnaire is a low-cost and reliable tool that enables accurate results (2).

The validity of a telephone questionnaire, translated and adapted to the Serbian language, is very similar to the original tested in France, although the selected sets of items are not the same. In the present study, a self-reported diagnosis of RA and SpA was not among the selected items by choice, as it can be patient, language and country sensitive. Overall agree-ment with clinical diagnosis for items combinations was 92.1% for RA (2 items selected), and 96.8% for SpA (5 items selected). The French study reported overall agreement with clinical diagnosis of 90.4% for RA (10 items) and 79.1% for SpA (9 items) (2). Incorporating self-reported diagnosis in items combinations in the French study, the overall agreement with clinical diagnosis increased up to 97.7% for RA and 94.4 % for SpA.

For the point of cost-effectiveness, it is worth mentioning that questionnaire specifity of 92% for RA and 97% for SpA, found in the present study, could be considered acceptable mainly because it reduces the number of possible cases and makes the confirmation process easier. It can be estimated that if the questionnaire acheived 90 or 95% specifity, the number of false positive cases in population of 4000 with 0.3% prevalence would be 400 and 200 respectively. The number of false positives will probably be lower in a population survey, since the control group in the present study was chosen among patients with degenerative diseases who are closer to RA and SpA patients than the general population.

The results of the validation of the telephone questionnaire, translated and adapted to the Serbian language, confirm that it can be used for screening of RA and SpA cases in the general population of Serbia, providing that a confirmation process by a physician shall

Table III. Classification concordance by sets of items selected by logistic regression model in case-control comparisons against a standard of clinical diagnosis or classification criteria.

Clinical diagnosis			Classification criteria		
Selected items	Concordance (%)	G-of-fit* (p value)	Selected items	Concordance (%)	G-of-fit (p value)
Rheumatoid arthritis			Rheumatoid arthritis		
Joint swelling Hand and wrist x-rays performed	92.1	0.958	Joint swelling Hand and wrist x-rays performed	92.1	0.958
Spondylarthropathy			Spondylarthropathy		
Pain on waking Low back pain started before 45 Low back pain increased by effort Personal history of psoriasis Hand and wrist x-rays performed	96.8	0.977	Low back pain started before 45 Low back pain increased by effort Personal history of psoriasis Hand and wrist x-rays performed	94.1	0.959

*goodness of fit test.

Table IV. Most accurate combined predictors of clinical diagnosis in rheumatoid arthritis and positive and negative predictive value (PPV and NPV) according to expected prevalence rates (Pr) of rheumatoid arthritis in the community.

Items combinations	Se	Sp	Expected prevalence			
			0,3%	0,5%	1%	0,3% 0,5 and 1%
			PPV	PPV	PPV	NPV
Joint swelling + hand and wrist x-rays performed	94	94	4.5	7.3	13.7	99.9
Hands affected + joint swelling	98	88	2.4	3.9	7.6	99.9
Hands affected + joint swelling + hand and wrist x-rays performed	94	96	6.6	10.6	19.2	99.9
Hands affected + hand and wrist x-rays performed	96	96	6.7	10.8	19.5	99.9
Hands affected + joint swelling + self-report of diagnosis	82	98	10.9	17.1	29.3	99.8
Hands affected + hand and wrist x-rays performed + self-report of diagnosis	80	100	100.0	100.0	100.0	99.8
Hand and wrist x-rays performed + self-report of diagnosis	80	100	100.0	100.0	100.0	99.8

*Results are presented as percentages.

Table V. Most accurate combined predictors of clinical diagnosis in spondylarthropathy and positive and negative predictive value (PPV and NPV) according to expected prevalence rates (Pr) of spondylarthropathy in the community.

Items combinations	Se	Sp	Expected prevalence			
			0,3%	0,5%	1%	0,3% 0,5 and 1%
			PPV	PPV	PPV	NPV
Self-report of diagnosis + low back pain started before 45	56	100	100.0	100.0	100.0	99.5
Self-report of diagnosis + hand and wrist x-rays performed	52	100	100.0	100.0	100.0	99.5
Self-report of diagnosis + personal history of psoriasis	45	100	100.0	100.0	100.0	99.4
Self-report of diagnosis + pain on waking	44	100	100.0	100.0	100.0	99.4
Personal history of psoriasis + hand and wrist x-rays performed	42	100	100.0	100.0	100.0	99.4

*Results are presented as percentages.

take place afterwards.

On the basis of the questionnaire validation in several European countries (France, Lebanon, Lithuania, Turkey and Serbia and Montenegro), a classification tree consisting of 7 items was proposed for European prevalence study of RA and SpA (11). The present questionnaire, as well as the classification tree at the detection stage, selects candidates for the confirmation stage correctly, independently of self-reported diagnosis, which is not recommended to include as a classification item as it can be patient, language and country sensitive (11).

Using this Questionnaire, prevalence estimation of spondyloarthropathies and rheumatoid arthritis in France was already done, and it was announced that the prevalence of RA was 0.31%

(for women 0.51% and for men 0.09%) (12), and the prevalence for SPA was 0.30%, with no difference between men and women (13).

Since the future prevalence study will be conducted using the unique instruments, method and study sample, it is expected that the results could be comparable between countries. If the results were different, we would think of investigating possible genetic, ethnic, geographic, climatic and the influence of other factors on the onset of the disease, with less concern regarding methodological differences.

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Appendix 1-Serbian version of the questionnaire

Ime ispitivača ☐ Pozivni broj ☐☐

Upitnik broj ☐☐☐☐☐ Identifikacioni broj za prosledjivanje upitnika ☐☐☐☐

Dobro jutro/ dan/ veče, moje ime je ……., i ja sam član (grupe, tima….). Zovem vas zbog naše namere da utvrdimo kolika je učestalost reumatizma u vašem mestu, o čemu ste mogli da čujete preko novina, televizije ili radija. Vaš broj telefona je slučajno izabran. Da li se slažete da odgovorite na nekoliko pitanja? To će trajati samo nekoliko minuta.
Da bih bio/bila siguran/a da ste upravo Vi jedna od osoba koju treba da anketiram, moram da proverim nekoliko stvari.

Broj koji sam pozvao/la je..... ? **navedite na ovom papiru broj telefona**, ukoliko je pogrešan prekinite razgovor.
Da li je ovo vaše stalno mesto stanovanja? **zatražite da razgovarate sa članom domaćinstva ili prekinite razgovor ako mu to nije glavno mesto stanovanja.**

Želeo/la bih da slučajno odaberem člana vašeg domaćinstva da mu/joj postavim neka pitanja o bolovima u zglobovima koja bi on/ona mogao/la da ima, pa bih želeo/la da znam:

A1 Koliko osoba živi u vašem domaćinstvu uključujući i vas? ☐☐

Ako je samo 1, predjite na **A3**

A2 Možete li mi navesti njihovu starost i reći da li su muškog ili ženskog pola?

	Starost	pol	
1	☐☐	M… ☐	Ž… ☐
2	☐☐	M… ☐	Ž… ☐
3	☐☐	M… ☐	Ž… ☐
4	☐☐	M… ☐	Ž… ☐
5	☐☐	M… ☐	Ž… ☐
6	☐☐	M… ☐	Ž… ☐

Želeo/la bih da razgovaram sa osobom čiji je **sledeći** rodjendan najbliži današnjem datumu

Da, to sam ja → Zapišite ime, i predjite na **A3**

Ako to nije osoba sa kojom razgovarate → zamolite da razgovarate sa njim/njom
Ponovite uvod kao što je niže dat u A2 bis
Ako osoba nije prisutna → zakažite razgovor, zapišite njeno ime

Zapišite ime odabrane osobe ☐

A2bis Dobro jutro, dan, veče, moje ime je ……., I ja sam član (grupe, tima). Zovem vas zbog naše namere da utvrdimo kolika je učestalost reumatizma u vašem mestu, o čemu ste mogli da čujete preko novina,

televizije ili radija. Vaš broj telefona je slučajno izabran. Da li se slažete da odgovorite na nekoliko pitanja? To će trajati samo nekoliko minuta.

A3 Da li ste vi Muško ☐ Žensko ☐

A4 Koji je datum vašeg rodjenja? ☐☐ Mesec ☐☐ Godina

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UPITNIK

	DA	NE
P1 Da li sada imate, ili ste ranije imali bolove u zglobovima?	❑	❑
P2 Da li imate, ili ste imali, bolove u vratu, ledjima ili sedalnom predelu?	❑	❑
Ako je odgovor na P1 ili P2 DA		
P3 Koja je bila dijagnoza?		
Pitajte od P4 do P16 ako je odgovor na P1 DA	❑	❑
P4 Da li su Vam sada otečeni zglobovi ili su oticali ranije?		
Pitajte od P5 do P9 ako je odgovor na P4 DA	❑	❑
P5 Da li su Vam sada ili su Vam ranije zahvaćeni simetrični zglobovi, tj. skoro isto zahvaćeni zglobovi na obe strane tela?	❑	❑
P6 Da li su sada, ili su Vam bile zahvaćene ruke?	❑	❑
P7 Da li su sada, tj. da li su Vam bili zahvaćeni zglobovi nogu? To jest, prepone, kukovi, kolena, gležnjevi ili stopala?	❑	❑
P8 Da li su vam sada ili Vam je bilo zahvaćeno više od 3 zgloba?	❑	❑
P9 Da li bol traje, ili je trajao duže od šest nedelja?	❑	❑
P10 Da li Vas bol budi, ili Vas je budio ranije?	❑	❑
P11 Da li imate, ili ste imali ukočenost u zglobovima ujutro?	❑	❑
Pitajte P12 ako je odgovor na P11 DA		
P12 Otprilike, koliko minuta? ❑❑❑		
P13 Da li imate, ili ste imali čvoriće pod kožom laktova ili šaka?	❑	❑
Pitajte P14 ako je odgovor na P11 DA	❑	❑
P14 Da li Vam je radjen test na reumatoidni faktor, koji se ponekad naziva i Latex test, tj. Waaler- Rose test?		
Pitajte P15 ako je odgovor na P14 DA	❑	❑
P15 Znate li da li je bio pozitivan?		
P16 Da li su Vam radjeni rendgenski snimci šaka i ručnih zglobova?		
Pitajte od P17 do P22 ako je odgovor na P2 DA	❑	❑
Sada ćemo da razgovaramo o Vašim bolovima u krstima, ledjima ili vratu		
P17 (Ako je osoba rodjena pre 1955.godine) Da li su bolovi počeli pre Vaše 45. godine?		
P18 Da li su počeli postepeno?	❑	❑
P19 Da li je bol jači kada se naprežete?	❑	❑
P20 Da li ujutro imate, ili ste imali osećaj ukočenosti?	❑	❑
Pitajte P21 ako je odgovor na P20 DA	❑	❑
P21 Koliko dugo je, u proseku, trajao/traje tokom jutra?		
P22 Da li je taj bol trajao ili traje duže od tri nedelje?	❑	❑
Za sve ispitanike:		
Da li znate da je neko u Vašoj porodici, osim Vas, bolovao od:	❑	❑
P23 Spondilitisa ?		
P24 Psoriaze ?	❑	❑
P25 Uveitisa ?	❑	❑
P26 Reaktivnog artritisa ?	❑	❑
P27 Kronove bolesti ili ulceroznog kolitisa?	❑	❑
Da li ste Vi imali nekada:	❑	❑
P28 Psorijazu ?		
P29 Proliv koji je dugo trajao ?	❑	❑
P30 Bol u peti ?	❑	❑
P31 Bol u sedalnom predelu?	❑	❑
P32 Da li su Vam rendgenski snimani ledja ili karlica?	❑	❑
P33 Kakvu terapiju imate zbog Vaših problema ?	❑	❑

APPENDIX 2 - English version of the questionnaire

Name of interviewer : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Area code : ☐☐

Questionnaire n°: ☐☐☐☐☐ Identification number of ontact sheet for transfer : ☐☐☐☐

Good morning / afternoon / evening, my name is ……., and I am member of (*body*….).
I am ringing you for a study that is intended to find out how frequent rheumatism is in your area, which you may have heard about in the press or on TV or radio. Your phone number was chosen at random.
Would you agree to answering a few questions ? It will take just a few minutes.
To make sure that you are one of the people that we are to interview, I have to check a few points.

The number I called is in fact ……. ? **quote the telephone number on the sheet**, if wrong terminate the interview.

This is your main place of residence ? **ask to speak a member of the household, or terminate the interview if it is not the main residence.**

I would like to select a person randomly in the household to ask him or her some questions on any pains in the joints he or she might have, so I would like to know :

A1 How many people live in your household including yourself ? ☐☐
If only one, go to **A3**

A2 Can you give me their ages, and say whether they are male of female ?

	age	sex	
1	☐☐	H… ☐	F… ☐
2	☐☐	H… ☐	F… ☐
3	☐☐	H… ☐	F… ☐
4	☐☐	H… ☐	F… ☐
5	☐☐	H… ☐	F… ☐
6	☐☐	H… ☐	F… ☐

I would like to interview the person whose **next** birthday is closest to today's date.

Yes, that is myself → note the first name and go to A3

If the person is not the one you are talking to → ask to speak to him/her
Repeat the introduction as given in A2bis below

If the person is not in → make an appointment, make a note of the first name

Note the first name of the person selected : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

A2bis Good morning / afternoon / evening, my name is ……., and I am member of (body….). I a ringing you for a study that is intended to find out how frequent rheumatism is in your area, which you may have heard about in the press or on TV or radio.

Your phone number was chosen at random. Would you agree to answering a few questions ? It will take just a few minutes.

A3 **Are you a :** Man ☐ Woman ☐

A4 **What is your date of birth ?** ☐☐ Month ☐☐ Year

QUESTIONNAIRE

	YES	NO
Q1 Are you at present experiencing, or have you in the past experienced, pains in your joints?	❑	❑
Q2 Have you or have you had pain in your neck, your back or your buttocks ?	❑	❑
If yes to Q1 or Q2 : **Q3** What was the diagnosis ?		
Ask Q4 to 16 if yes to Q1 : **Q4** Are your joints swollen or have they been in the past ?	❑	❑
Ask Q5 to Q9 if yes to Q4 : **Q5** Are or were your joints symmetrically affected, that is to say about the same on each side ?	❑	❑
Q6 Are or were your hands affected ?	❑	❑
Q7 Are or were your lower limbs affected (that is to say, your groin, your hip joint, your knees, your ankles or your feet) ?	❑	❑
Q8 Are or were more than three joints affected ?	❑	❑
Q9 Has the pain lasted or did it last more than 6 weeks ?	❑	❑
Q10 Does or did the pain wake you ?	❑	❑
Q11 Are or were your joints stiff in the morning ?	❑	❑
Ask Q12 if yes to Q11 : **Q12** For about how many minutes ? ❑❑❑		
Q13 Have you or have you had nodules under the skin on your elbows or hands ?	❑	❑
Ask Q14 if yes to Q11 : **Q14** Have you had the rheumatoid factor test, sometimes called the latex test or the Waaler-Rose test ?	❑	❑
Ask Q15 if yes to Q14 : **Q15** Do you know if it was positive ?	❑	❑
Q16 Have you had X-rays of your hands and wrists ?	❑	❑
Ask Q17 to Q22 if yes to Q2 : Now we are going to talk about your lumbar, back or neck pain **Q17** (*if the person was born before 1955*) Did your pains start before you were 45 ?	❑	❑
Q18 Did they start gradually ?	❑	❑
Q19 Do you have more pain when you exert yourself ?	❑	❑
Q20 Do you have or have you had a feeling of stiffness in the morning?	❑	❑
Ask Q21 if yes to Q20 : **Q21** On average, how long does or did this last in the morning ?	❑	❑
Q22 Has your pain lasted or did your pain last more than three weeks ?	❑	❑
For all subjects : Do you know if in your family, apart from yourself, there have been cases of: **Q23** Spondylitis ?	❑	❑
Q24 Psoriasis ?	❑	❑
Q25 Uveitis ?	❑	❑
Q26 Reactive arthritis ?	❑	❑
Q27 Crohn's disease or ulcerative colitis ?	❑	❑
Have you yourself had : **Q28** Psoriasis ?	❑	❑
Q29 Diarrhoea that lasted a long time ?	❑	❑
Q30 Pain in your heel ?	❑	❑
Q31 Pain in your buttocks ?	❑	❑
Q32 Have you had X-rays of your back or pelvis ?	❑	❑
Q33 What treatment are you on for your problem ?	❑	❑