

Low back pain and associated factors among users of community health centres in South Africa: a prevalence study

by
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Master of Science in Physiotherapy at the University of Stellenbosch*



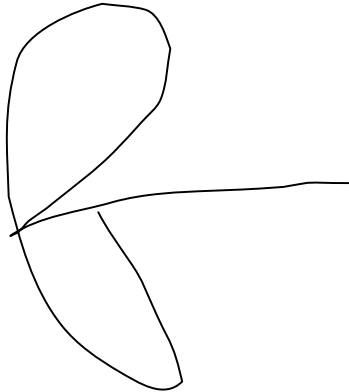
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Signature

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ABSTRACT

Background: Low back pain (LBP) has a high prevalence worldwide. LBP is significantly associated with a range of poor socio-demographic circumstances which should be addressed in preventive programs. Despite this there is a dearth of information about the prevalence and associated factors among low-income communities in South Africa. It is speculated that the burden of LBP may be most significant in these underprivileged communities.

Objective: The objective of this study was to assess the prevalence of LBP among the low-income communities in the Cape Town Metropole and to establish associated factors in order to make recommendations for management.

Study design: A cross-sectional study was conducted among the visitors of eight community health centres (CHCs) in the Cape Town Metropole.

Methodology: A new measurement tool was developed based on existing validated outcome measures and initial testing of the psychometric properties of the questionnaire was conducted. The questionnaire was administered to 489 eligible subjects. Descriptive analysis was used to describe the sample and logistic regression analytical techniques were applied to determine associated factors.

Main findings: Lifetime prevalence for LBP was 76.49% (n=358). About 37% (n=133) suffered from chronic LBP. LBP was significantly associated with belonging to the black ethnic group, any co-morbidity, poor perceived general health, and any type of pain medication. Lifting weights > 20 kg and kneeling and squatting were physical factors significantly associated with LBP. Severe psychological distress was significantly associated with acute and chronic LBP. Having a better or same perceived general health compared to a year ago, was protective for LBP.

Conclusion: LBP has a high prevalence among the low income communities, visiting the CHCs, in the Cape Town Metropole. Multiple factors were associated with LBP, which imply that a tailor-made multidisciplinary program addressing lifestyle issues, self management strategies, medication use, chronic diseases and psychosocial factors may be required for this population to combat LBP.

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I dedicate this thesis to the memory of my father, Michel Helsloot

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CHAPTER 1: INTRODUCTION

Low back pain (LBP) is globally one of the biggest health problems and one of the most common reasons for seeking medical care (Deyo 1998). LBP is defined as pain localized between the 12th rib and the inferior gluteal folds and is divided in non-specific LBP, which counts for 90-95% of the cases and specific LBP. Specific causes are inflammatory conditions, infective and neoplastic causes, metabolic bone disease, psychogenic pain, trauma, congenital disorders and degenerative disorders (Krismer and Van Tulder 2007).

LBP in developed countries has a lifetime prevalence ranging between 60-85% (Krismer and Van Tulder 2007). The average lifetime prevalence of LBP among adults on the African continent is 62% (Louw *et al* 2007). There is however a lack of South African data on LBP prevalence. Cross-sectional studies conducted among workers of a South African manganese plant and steel plant report point prevalence rates for LBP of about 37% (Van Vuuren *et al* 2005, 2007). It is however proposed that LBP prevalence in South Africa compares well to the LBP prevalence in the developed world (Louw *et al* 2007).

Published research indicates that LBP is related to a multitude of factors. These factors can be classified into individual or personal risk factors, work related physical risk factors and psychosocial risk factors (Miranda *et al* 2008, Ijzelenberg and Burdorf 2005). Published longitudinal studies conducted in developed countries in the last ten years report significant associations for the following individual risk factors: high BMI (Van Nieuwenhuijse *et al* 2009, Miranda *et al* 2008), smoking (Miranda *et al* 2008, Power *et al* 2001), and having a chronic disease (Hestbaek *et al* 2003, Leino-Arjas *et al* 2006). Physical risk factors at work include: heavy lifting, prolonged static postures, repetitive movements, whole body vibration, and regular flexing or rotating the spine (Hartvigsen *et al* 2001, Andersen *et al* 2007, Bovenzi 2009, Miranda *et al* 2008, Van Nieuwenhuijse *et al* 2006, Leclerc *et al* 2003 and Yip 2004). Psychosocial risk factors that have been reported significantly associated with LBP are psychosocial work factors such as low social support at work and low job satisfaction (Hoogendoorn *et al* 2002) as well as being depressed (Caroll *et al* 2004, Power *et al* 2001, Jarvik *et al* 2005). Literature searches through research databases yield only cross-sectional studies on LBP and associated factors, conducted in developing countries.

The South African report on Income and Expenditure 2005/2006 describes ten income categories, of which the first two categories include a monthly household income of < R 800 (US\$ 80) (Statistics SA, 2008). Another definition used to classify low income or poverty is any

income below 60% of the mean per capita expenditure. In 2005 this 60% line, also called the poverty line, was set at R738 per month (South African Department of Social Development, Poverty Line Discussion Document, 2008). The most recent publication on poverty rates in South Africa is a fact sheet published by the Human Sciences Research Council (2004). The document states that the poverty rate in South Africa was 57% in 2001.

Low-income communities in South Africa are exposed to many of the primary risk factors as described in the previous paragraph. People with low socioeconomic status are more likely to perform manual labour tasks that increase the risk of developing spinal pain, to suffer from psychological distress and to be exposed to health risks as chronic diseases and unhealthy lifestyle habits. The South African Demographic and Health Survey 2003 reports that smoking and being overweight are common among the South African population. Low-income communities are also vulnerable to developing chronic low back pain (CLBP) since low educational levels and low socioeconomic status have been reported to be associated with the transition from acute LBP to CLBP (Thomas *et al* 1999, Enthoven *et al* 2006). Although low-income communities in South Africa are being exposed to all currently known risk factors for LBP, very little information is available on the prevalence of LBP and associated factors.

A high prevalence of CLBP among the low-income communities in South Africa is expected to have a great impact on the country's economy, including the social security system, and public health care costs. Dagenais *et al* (2008) conducted a systematic review on 21 studies on cost of illness undertaken in several countries worldwide, and concluded that LBP represents an important economic burden in all of these (developed) countries. Costs that occur as a result of CLBP are divided into direct costs, such as health care costs and indirect costs, such as costs related to employment and household productivity. In the absence of relevant research, appropriate LBP strategies in primary health settings to effectively treat LBP cannot be developed. Conducting research into these issues could provide insight into the scope of the problem and may raise pertinent questions that should be explored in future studies.

The aim of this study was to establish the prevalence of LBP and identify the associated factors among the visitors of the CHCs in the Cape Town Metropole. The findings of this study contribute important information to the current knowledge base on LBP in South African low-income communities.

In Chapter 2 the results of a systematic literature review on risk factors for low back pain are reported. Chapter 3 describes the methodology and developmental process of the

measurement tool used in the cross-sectional study: the Primary Health Low Back Pain Questionnaire (PHLBPQ). Chapter 4 reports on the methodology of the cross-sectional study conducted among eight CHCs in the Cape Town Metropole. In Chapter 5 the results of the study are reported on. Chapter 6 provides the discussion and recommendations for further management. Refer to Figure 1.1.

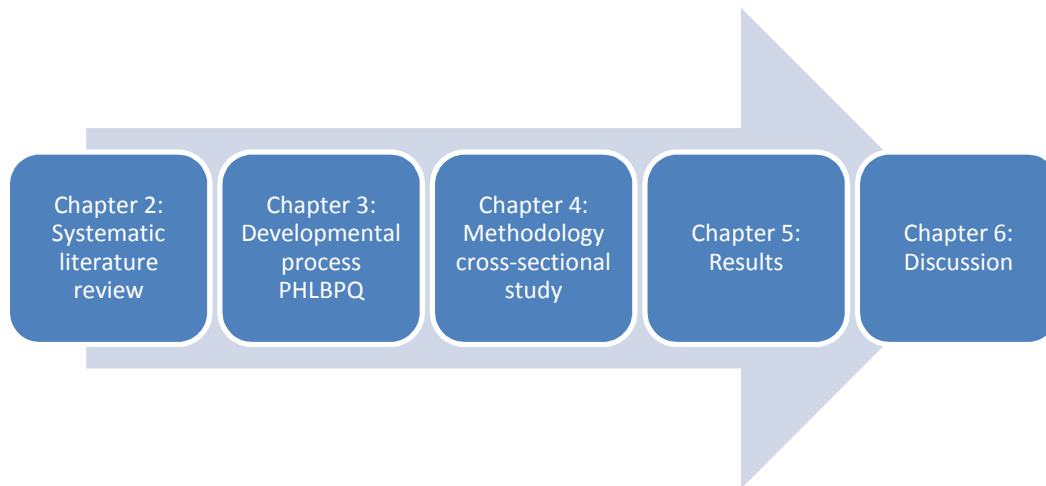


Figure 1.1: Flow chart construction thesis

CHAPTER 2: SYSTEMATIC LITERATURE REVIEW: RISK FACTORS FOR LOW BACK PAIN

2.1 INTRODUCTION

High prevalence rates of low back pain (LBP) across the globe, as described in the introduction, make it necessary to establish known risk factors for acute and chronic LBP. Several epidemiological studies have found evidence for factors associated with LBP, and describe predictors for acute and chronic LBP. So far the evidence on individual, psychosocial and personal risk factors has not been established through a systematic review. This systematic review was conducted in order to obtain information on common exposures for LBP, necessary for the development of the measurement tool as described in Chapter 3.

2.2 PUBLISHED REVIEWS

Several opinion pieces or reviews on risk factors for LBP have been published since 2000 (Natvig and Picavet 2002, Woolf and Pfleger 2003, Leboeuf-Yde 2000, Manek and MacGregor 2005, and Rubin 2007), and in each of these reviews, extensive literature research was done in order to summarize the currently known risk factors. Unfortunately, most of these reviews have methodological flaws:

- They are not systematic reviews.
- They include cohort studies as well as cross-sectional studies.
- The included studies have not been critically appraised on methodological quality.

Although the conclusions of these reviews are valuable, they should be interpreted with caution.

2.3. RESEARCH QUESTION

The research question was: What are the individual, physical and psychosocial risk factors among adults for developing acute or recurrent LBP, emerging from evidence collected during the past ten years?

2.4 AIM AND OBJECTIVES

The aim of this review was to systematically analyze available literature on LBP and risk factors, to establish levels of evidence and to critically appraise the eligible studies.

2.4.1 Objectives

The objectives of this systematic review were:

- To draw from the available studies the risk factors for LBP for which strong evidence exist, in order to develop a measurement tool for the cross-sectional study described in Chapter 3.
- To critically appraise the available literature on risk factors and to draw conclusions about the strength of the evidence for certain factors.
- To explore if the possibility exist to conduct a meta-analysis on risk factors for LBP.
- To retrieve the available evidence extracted from longitudinal studies conducted among uninsured, low-income communities on factors predicting LBP.

2.5 METHODS

Available literature on LBP and associated factors was systematically searched and reviewed.

2.5.1 Inclusion and exclusion criteria

The following criteria for inclusion of studies were set up:

- Prospective cohort studies on LBP prevalence and associated factors.
- Studies published between 2000 and 2009.
- Studies on the population group aged 18-65.
- Studies written in English and Dutch.
- Studies on the following outcomes: acute non-specific LBP, sciatica and recurrent non-specific LBP or sciatica.

- Studies on LBP related sick leave were included, in cases where acute LBP was the outcome studied.

The following exclusion criteria were used:

- Cross-sectional studies, retrospective cohorts, (systematic) reviews and experimental studies on LBP and associated factors.
- Studies on LBP related to specific causes like osteoporosis, vertebral fractures, and LBP related to pregnancy.
- Studies on chronicity and / or disability.
- Studies on yellow flags related to CLBP.
- Prospective cohort studies without an absolute asymptomatic sample at baseline.

2.5.2 Search strategy

Firstly a search was conducted on published systematic literature reviews, but yielded no results. This was followed by a systematic search of the following seven databases in the month of April 2009:

- Cinahl.
- Psychinfo/psycharticles.
- PubMed.
- African-Wide/NIPAD.
- Cochrane.
- PEDro.
- Medline.

The search items used were 'low back pain AND risk factors', in abstract and / or title, and an advanced search was done where possible. The search was limited according to the inclusion and exclusion criteria. For the Psychinfo/psychArticles database the time period was extended from 1980 until present, because no eligible articles were published in the last ten years. Refer to Appendix A for the detailed search strategies.

Firstly the titles of all articles that came up in the searches were screened on eligibility, the abstracts were then reviewed, and when these met the inclusion criteria, the full text of the papers were retrieved.

The first reviewer (MM) conducted the initial search, the screening of abstracts and retrieval of the full texts. When the first reviewer had any doubts about inclusion she consulted the second reviewer (QL) until consensus was reached.

2.5.3 Level of evidence

The level of evidence of each study was determined by use of the NHMRC evidence hierarchy as set up by the National Health and Medical Research Council, Australia (1999). Refer to Table 2.1.

Table 2.1: NHMRC Evidence Hierarchy

| | |
|--------------------|--|
| Level I | Systematic review of level II studies |
| Level II | Prospective cohort studies |
| Level III-1 | All or none * |
| Level III-2 | Retrospective cohort studies |
| Level III-3 | Case-control studies |
| Level IV | Cross sectional studies or case series |

* All or none of the people with the risk factor(s) experience the outcome: the data arises from an unselected or representative case series which provides an unbiased representation of the prognostic effect (*National Health and Medical Research Council, Australia, 1999*)

2.5.4 Quality appraisal

A critical appraisal tool was used, based on the tool developed by Hoogendoorn *et al* (2000) in their systematic review on psychosocial risk factors for LBP. The authors developed an appraisal tool based on existing criteria lists and critical appraisal tools. See Appendix B for the criteria list for assessment of methodologic quality, developed by Hoogendoorn *et al* (2000).

The appraisal tool used in this systematic review, consisted of the following eleven items assessing the methodological quality of the study:

1. Objectives of the study are clearly defined.
2. Main features of the sampling frame described (distribution age/sex etc).
3. Participation rate at baseline and follow up equal to or higher than 80%.
4. Reduction of selection bias by including controls/healthy subjects.
5. Random sampling used.
6. Data collected by use of validated instruments and standardized methods.
7. Controlled for confounders in statistical analysis.
8. Reliability of the measurement tool: description of intra-class correlation coefficient, intra-observer reliability, and inter-observer reliability.
9. Assessment period of LBP cases at least one year.
10. Appropriately used statistical analysis (including 95% confidence intervals).
11. Analysis included a stratified or multivariate analysis.

We scored each of the included studies against the eleven criteria with:

- 0 for not satisfactory.
- 0.5 for partly satisfactory.
- 1.0 for satisfactory.

The total score was the sum of all eleven items divided by eleven and expressed in a percentage with a maximum score of 100%.

The first reviewer (MM) evaluated and scored the included studies, after which at two different points in time random audits were done by the second reviewer (SH) and a third and fourth reviewer (QL and LM). When the reviewers were in disagreement on the final score, the papers were discussed until 100% consensus was obtained.

2.5.5 Data analysis

Descriptive data to describe the:

- study sample,
- anatomical region used to describe LBP,
- definition of LBP cases and controls,
- exposures,
- number of LBP cases at follow up,
- and odds ratios with 95% confidence intervals were extracted.

A descriptive meta-synthesis were conducted as a meta-analysis could not be done due to heterogeneity with respect to definitions, exposures and follow-up time-frames.

2.6 RESULTS

Seventy-eight studies on LBP and associated factors among adults were found eligible based on the first screening. Refer to Figure 2.1 for an outline of the search results.

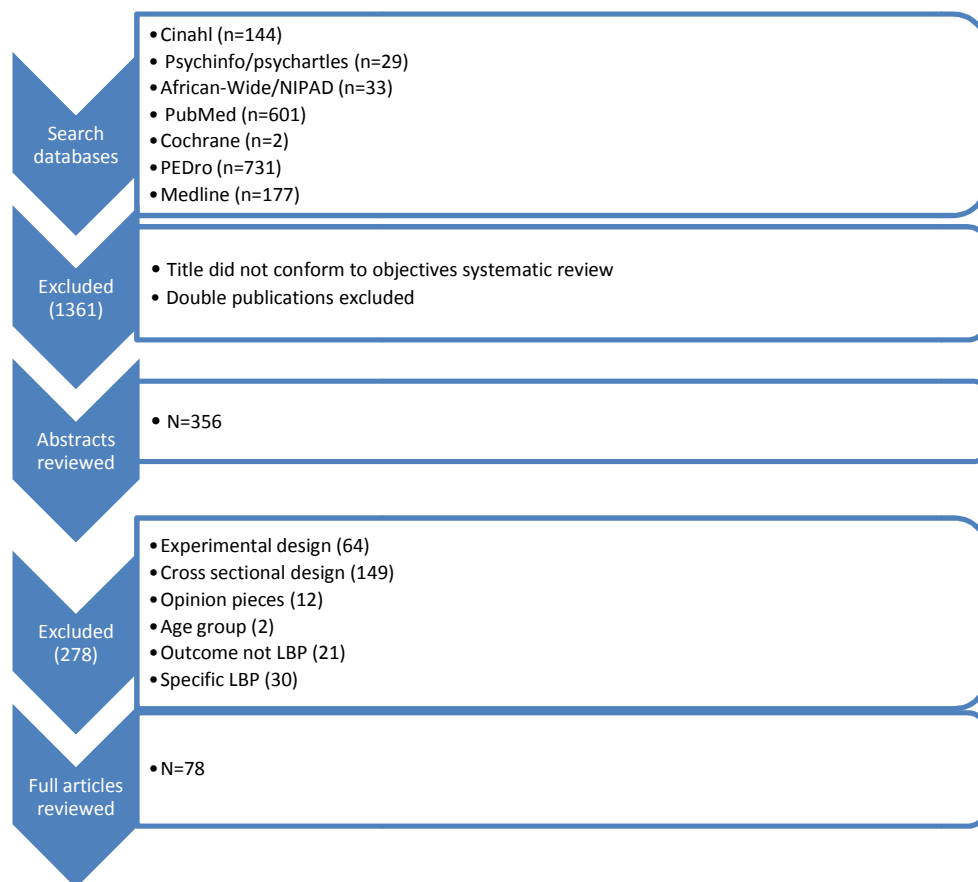


Figure 2.1: CONSORT- diagram on selection of eligible papers

2.6.1 Selection process and included studies

All level III and level IV studies were excluded for reasons of ineligibility, which left 69 articles. Systematic reviews reporting on level IV studies were excluded. Eight of the papers described population groups outside of our target group and were excluded. Finally 50 prospective cohort studies were included for quality appraisal. Refer to Appendix C for the quality appraisal score of the 50 initially included cohorts.

2.6.2 Cut off point for inclusion

After the quality appraisal of the 50 prospective cohorts, we set the cut off point for good quality studies on a score of $\geq 70\%$. This left 25 prospective cohort studies of good methodological quality available for review on individual, psychosocial and physical risk factors for first onset and / or recurrent LBP.

According to the criteria for prospective cohorts, as described in literature, the study sample needs to be asymptomatic at baseline (Mosby's Medical Dictionary; online: <http://medical-dictionary.thefreedictionary.com>). Data extraction showed that of the 25 prospective cohorts, only 14 studies contained such a sample. Therefore this systematic review will only report on the results described in these fourteen studies.

Figure 2.2 represents the selection procedure.

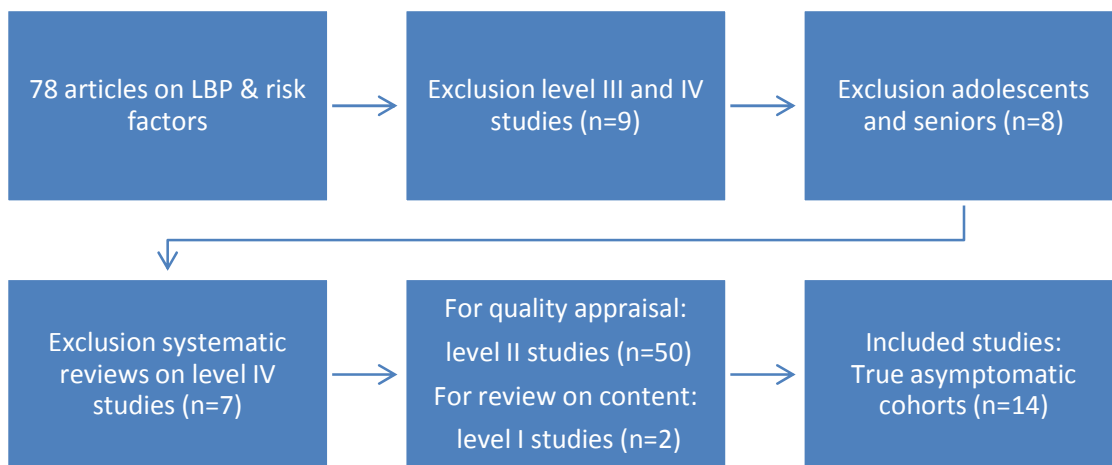


Figure 2.2: Selection process and included studies

The quality appraisal score of the 14 included studies are presented in Table 2.2.

Table 2.2: Quality score 14 prospective cohorts

| First author, year of publication | Objective defined | Description population | > 80% participation rate | No selection bias ¹ | Random sampling | Validated tools | Controlled for confounders | Reliability established ² | LBP ≥ 1 yr | OR and C.I's | Multivariable analysis | Total score |
|-----------------------------------|-------------------|------------------------|--------------------------|--------------------------------|-----------------|-----------------|----------------------------|--------------------------------------|------------|--------------|------------------------|-------------|
| Hartvigsen 2001 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 86% |
| Jarvik 2005 | 1.0 | 1.0 | 1.0 | 0.5 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 86% |
| Latza 2000 | 1.0 | 1.0 | 1.0 | 0.5 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 86% |
| Harkness 2003 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 81% |
| Power 2001 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 81% |
| Van Nieuwenhuijse 2006 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 81% |
| Andersen 2007 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 77% |
| Leclerc 2003 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 77% |
| Van Nieuwenhuijse 2009 | 1.0 | 1.0 | 0 | 1.0 | 0 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 77% |
| Yip 2004 | 1.0 | 1.0 | 0 | 0.5 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 77% |
| Carroll 2004 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 72% |
| Hoogendoorn 2002 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 72% |
| Leijon 2007 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 72% |
| Miranda 2008 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 72% |

¹ healthy subjects/controls included in the sample

² reliability established through mention of previous validity studies or intra-class correlation coefficient or inter/intra-observer reliability

2.6.3 Heterogeneity of included studies

Data extraction on sample characteristics, definition of LBP, definition of cases and controls, exposures studied and follow-up time-frames showed heterogeneity across all 14 studies. As a result, performing a meta-analysis was not possible. The results of this review are therefore presented descriptively.

2.6.4 Gender distribution across the 14 studies

Twelve of the 14 studies used a sample of mixed gender, but in only four studies the sample consisted of an equal proportion in males and females: Power *et al* (2001), Carroll *et al* (2004), Hartvigsen *et al* (2001) and Leijon *et al* (2007).

Two of the included studies comprised a 100% male study sample: Latza *et al* (2000) and Leclerc *et al* (2003).

Studies with a 75% male sample were Jarvik *et al* (2005), Hoogendoorn *et al* (2002) and Miranda *et al* (2008). Harkness *et al* (2003) studied a sample consisting of 65% male participants.

Four of the 14 studies included more females than males in their sample: the study sample of Yip (2004) consisted of 85% females and Andersen *et al* (2007), Van Nieuwenhuijse *et al* (2006 and 2009) included 60% females in their sample.

2.6.5 Age distribution across the 14 studies

All included papers reported on data collected from the working class between 22-65 years of age. Van Nieuwenhuijse *et al* (2006 and 2009) conducted the research among a young group (24-29 years), as did Power *et al* (2001), who studied subjects between 23-33 years of age. Refer to Table 2.3 for details on age and gender distribution per study.

Table 2.3: Description of 14 included cohorts

| Ref. no. | First author, country, year of publication | N = | Follow up frame | Sample characteristics | Age/gender | Definition of controls | Definition of LBP cases | No of cases (%) | Exposure studied | Quality score |
|----------|--|------|---------------------------|----------------------------|-------------------------------|--|---|-----------------|--|---------------|
| 1 | Hartvigsen, Denmark, 2001 | 1397 | 1163 at 5 years follow up | Adults, general population | 40.4 mean age, 53% female | No LBP in last year before baseline | Any LBP in the past year (group 1) LBP ≤ 30 days past year (group 2) LBP > 30 days past year (group 3) | 558 (48%) | Physical workload divided in 3 groups: Sedentary, light physical and heavy physical | 86% |
| 2 | Jarvik, USA, 2005 | 148 | 123 at 3 years follow up | Veterans | 35-52 years, 75% male | No LBP in 4 months prior to baseline | Incident LBP = score >2 for LBP or buttock pain on PFI and score >1 on PFI for leg pain, numbness or weakness | 88 (67%) | Individual factors, co-morbidities, general functional status HrQoL | 86% |
| 3 | Latza, Germany, 2000 | 285 | 230 at 3 years follow up | Construction workers | 32.51 mean (±9.16), 100% male | At baseline questions on LBP in past 12 months were asked. No LBP at baseline was defined as control | LBP during past 12 months, divided into: lumbago (sudden attack of LBP), sciatic pain (LBP radiation to the leg), permanent LBP (not further described), LBP during or after unusual movements or tasks | 71 (30.9%) | job history, job tasks, psychosocial factors, individual factors, health status | 86% |

Table 2.3: Description of 14 included cohorts - continued

| Ref. no. | First author, country, year of publication | N = | Follow up frame | Sample characteristics | Age/gender | Definition of controls | Definition of LBP cases | No of cases (%) | Exposure studied | Quality score |
|----------|--|-------|---|--|----------------------------|---|--|---|--|---------------|
| 4 | Harkness, United Kingdom, 2003 | 1186 | 788 at 1 year and 430 at 2 year follow up | Newly employed workers in 12 different occupational groups | 23 (range 21-28), 64% male | No LBP in past month before baseline and before first follow up | Any ache or pain lasting 24 hours in the past month | 119 (19%) at 12 months 81 (19%) at 24 months | Psychosocial work factors, physical work tasks, work postures, work environment, psychological distress, other bodily pain | 81% |
| 5 | Power, United Kingdom, 2001 | 11407 | 5781 at 10 years follow up | Adults, general population | 23-33, 51% male | No persistent pain, no incident pain and not recovering from back pain at baseline (period not further described) | Pain for > 1 day in shaded area not counting flu / periods / pregnancy related back pain | 571 (9.9%) | Ergonomic factors, Driving, psychosocial work factors, psychological distress, individual factors, life control | 81% |
| 6 | Van Nieuwenhuijse, Belgium, 2006 | 1041 | 716 at 1 year follow up | Workers in healthcare and distribution sector | 24-29, 60% female | No LBP for ≥ 7 consecutive days in the 12 months before inclusion | Any ache, pain or discomfort in low back region irradiating to legs or not for ≥ 7 consecutive days in past 12 months | 90 (12.6%) | Physical exposures, psychosocial work factors, individual factors | 81% |

Table 2.3: Description of 14 included cohorts - continued

| Ref. no. | First author, country, year of publication | N = | Follow up frame | Sample characteristics | Age/gender | Definition of controls | Definition of LBP cases | No of cases (%) | Exposure studied | Quality score |
|----------|--|------|--|---|-------------------------------|---|--|---|---|---------------|
| 7. | Andersen, Denmark, 2007 | 5604 | 3,276 at 2 years follow up | Industrial / service workers | Mean 43.9 (±10.5), 60% female | Score of 'not at all', 'very little' or 'little' on 7- point Likert scale on pain in LBP region in past 12 months | Question asked: 'How much have you been bothered by pain during past 12 months?': answers 'some pain' to 'very much pain' = LBP case | 160 (10.6%) | Physical work factors, psychosocial work factors, individual factors, fear avoidance, bodily pain | 77% |
| 8 | Leclerc, France, 2003 | 841 | 841 at 2 years follow up | Electricity and gas company workers | 43-53, 100% male | No LBP disorders in 12 months prior to baseline | Sciatica= pain / discomfort or stiffness ≥ 1 day in low back region in past 12 months with radiating symptoms to the leg | 217 (5.6% sciatica, 20.2% LBP without sciatica) | Physical workload, psychosocial workfactors, anthropometrics, individual factors | 77% |
| 9 | Van Nieuwenhuijse, Belgium, 2009 | 1041 | 692 at 1 year follow up, 355 true asymptomatic | Workers in healthcare and distribution sector | < 30 years, 60% female | No or limited back antecedents in past 12 months before baseline | LBP ≥ 1 week consecutively in past 12 months | 34 (9.6% of 355) | Physical workfactors, psychosocial workfactors, individual factors | 77% |
| 10 | Yip, China, 2004 | 224 | 144 at 1 year follow up | Nurses | < 35 years, 85% female | No LBP in 12 months prior to baseline | Discomfort in spinal area with or without radiation to below the knee for ≥ 1 day in the past 12 months | 56 (39%) | Work stress, work activities, individual factors | 77% |

Table 2.3: Description of 14 included cohorts - continued

| Ref. no. | First author, country, year of publication | N = | Follow up frame | Sample characteristics | Age/gender | Definition of controls | Definition of LBP cases | No of cases (%) | Exposure studied | Quality score |
|----------|--|------|---------------------------|----------------------------------|---|---|--|--|---|---------------|
| 11 | Carroll, Canada 2004 | 1131 | 790 at 6 month and 1 year | Adults, general population | Mean 44.5 (\pm 13.5), 50% male | No or mild neck or back pain in the past 6 months before baseline | Trouble-some pain in low back, grades II, III and IV on a 5-point scale of the Chronic Pain Question-naire | Total = 89, 59 at 6 months and 30 at 12 months (11.3%) | Depression | 72% |
| 12 | Hoogendoorn, the Netherlands 2002 | 1738 | 732 at 3 years follow up | Workers, 2/3 production workers | Mean 36.4 (range 19-59), 75% male | No sick leave due to LBP in the 3 months before baseline | Based on ICD numbers 721,722,724. Most cases were 724 = unspecified back disorders | 149 (20.4%) | Physical workload, psychosocial factors, individual factors | 72% |
| 13 | Leijon, Sweden 2007 | 1332 | 1095 at 5 years follow up | Adults, general population | Mean 48.1 (\pm 9.6), 56% female | Not seeking care for LBP in the 6 months prior to baseline | VAS \geq 3 on pain intensity and VAS \geq 1 on pain related disability = case | 423 (39%) | Physical workload, psychosocial workload, individual factors | 72% |
| 14 | Miranda, Finland, 2008 | 5180 | 2256 at 1 year follow up | Workers, 70% blue collar workers | < 40 N=948 40-49 N=826 > 50 N=482, 74% male | No LBP in the 12 months prior to baseline | LBP > 7 days in the past 12 months | 474 (21%) | Physical workload, psychosocial work factors individual factors psychological exposures | 72% |

2.6.6 Definition of LBP cases across the 14 studies

The definition of LBP varied across the included studies. Variation was found in the anatomical region, intensity and duration of the pain.

2.6.6.1 Anatomical region of the lower back

Few authors described the exact region of the lower back. In cases where the anatomical region was defined, it was often described as the area between the 12th rib and the gluteal folds (Harkness *et al* 2003, Power *et al* 2001, Van Nieuwenhuijse *et al* 2006 and Yip 2004).

In two of the included studies, no distinction was made between pain in the lower back area and / or radiating pain to one or both legs (Jarvik *et al* 2005, Latza *et al* 2000). Subjects with any of these symptoms, were considered LBP cases.

2.6.6.2 Characteristics of symptoms and pain

On the characteristics of LBP, the studies showed great variability: Jarvik *et al* (2005) included subjects with LBP with or without buttock pain, leg pain, numbness or weakness, and Van Nieuwenhuijse *et al* (2006) and Harkness *et al* (2003) included subjects with any ache, pain, or discomfort.

Five studies do not mention the duration of pain as a criterion for inclusion (Hartvigsen *et al* 2001, Jarvik *et al* 2005, Andersen *et al* 2007, Carroll *et al* 2004, Leijon *et al* 2007). Harkness *et al* (2003) defined a LBP case as 'subjects that have pain lasting for 24 hours in the month prior to data collection'. Leclerc *et al* (2003), Power *et al* (2001) and Yip (2004) defined a LBP case as 'someone who presents with pain lasting for \geq one day in the past twelve months'. Van Nieuwenhuijse *et al* (2006) defined a LBP case as 'someone with pain for \geq seven consecutive days in the past twelve months'. Miranda *et al* (2008) also used the definition 'pain for $>$ seven days in the past twelve months', but the authors did not mention whether the pain must exist for seven consecutive days. Leijon *et al* (2007) used the VAS scale to define a case: subjects had to present with a VAS score \geq three for pain and a VAS score \geq one for disability due to the pain.

Refer to Table 2.3 for the definition of cases and controls across the 14 studies.

2.7 EVIDENCE ON RISK FACTORS FOR LBP

The risk factors studied can be summarized under individual risk factors, physical risk factors and psychosocial risk factors.

2.7.1 Individual risk factors for LBP

Individual risk factors include lifestyle factors and health-related factors.

2.7.1.1 Lifestyle factors: smoking and body mass index

Two studies reported on smoking as a risk factor for developing first onset or recurring LBP (Miranda *et al* 2008, Power *et al* 2001). Miranda *et al* (2008) found that being and ex-smoker, in combination with being younger than 50 years of age, was a significant risk factor for LBP. Refer to Table 2.4 for the odds ratios and 95% confidence intervals.

Body mass index (BMI) was reported a significant risk factor for LBP in two out of the 14 studies. Van Nieuwenhuijse *et al* (2009) and Miranda *et al* (2008) found having a BMI higher than 30 to be a risk factor for LBP. Having a high BMI (>30) *and* being younger than 40 years old indicated a nearly two-fold risk for acute LBP (Miranda *et al* 2008). Refer to table 2.4 for the odds ratios and 95% confidence intervals.

2.7.1.2 Health related factors: history of LBP, co-morbidities and other bodily pain

Two studies reported that previous LBP episodes were predictive for a new episode of LBP (Van Nieuwenhuijse *et al* 2006, Leclerc *et al* 2003 for sciatica). Refer to Table 2.4 for the odds ratios and 95% confidence intervals.

Having a chronic disease or pain in other body areas is found to be associated with LBP in two out of the 14 studies. Miranda *et al* (2008) found that for the group younger than 40 years of age, having a chronic disease or having pain in any other area increased the risk of developing LBP by 1.5 times. Harkness *et al* (2003) found that having any bodily pain was associated with LBP.

2.7.1.3 Other individual risk factors: height

Being taller than 180 cm was found predictive for sciatica by Leclerc *et al* (2003), in this study the authors report a three-fold risk. The data are presented in Table 2.4.

Table 2.4: Individual risk factors for LBP: odds ratios and 95% confidence intervals

| Risk factor | Specifications | Odds Ratio (95% C.I.) | First author, year of publication |
|-------------------------------------|--|-----------------------|-----------------------------------|
| Smoking | Smoking | 1.63 (1.23-2.17) | Power 2001 |
| | Ex smoker aged ≥ 50 | 1.6 (1.1-2.2) | Miranda 2008 |
| BMI | BMI > 30 | 2.57 (1.09-6.09) | Van Nieuwenhuijse 2009 |
| | BMI ≥ 30 , aged < 40 | 1.9 (1.1-3.3) | Miranda 2008 |
| Previous episode of LBP | Lumbar pain in the year before inclusion | 1.71 (1.07-2.75) | Van Nieuwenhuijse 2006 |
| | History of LBP predictive for sciatica | 3.10 (1.60-6.00) | Leclerc 2003 |
| Co-morbidities / bodily pain | Having any other pain | 1.5 (1.1-2.1) | Harkness 2003 |
| | Chronic diseases, aged < 40 | 1.5 (1.1-2.2) | Miranda 2008 |
| | Pain in other areas, aged < 40 | 1.6 (1.2-2.3) | Miranda 2008 |
| Height | Height > 180 cm predictive for sciatica | 3.00 (1.20-6.50) | Leclerc 2003 |

2.7.2 Physical risk factors

We defined physical risk factors as work related physical factors such as frequent bending, twisting, whole body vibration (WBV), repetitive movements or awkward static postures.

2.7.2.1 Frequent flexing or rotating the spine

Three out of the 14 studies found that flexing and rotating the spine regularly at work was predictive for developing LBP (Van Nieuwenhuijse *et al* 2006, Leclerc *et al* 2003, Yip 2004).

The results, as presented in Table 2.5, do not allow for clustering because of heterogeneity in the methods used in these studies. The exposures varied in the degree of flexion/rotation of the spine, the frequency of the movements and the period of time that the spine was in a flexed or rotated position.

2.7.2.2 Driving / WBV

Leclerc *et al* (2003) found that driving for two hours once a week increased the risk for LBP significantly. Miranda *et al* (2008) looked at WBV while driving and found significant associations with LBP. The odds ratios (and 95% C.I) are presented in Table 2.5.

2.7.2.3 Heavy physical labour: lifting

Hartvigsen *et al* (2001) found that compared to the group that performed sedentary work tasks, the participants performing light or heavy physical labour had an OR of 1.3 and 1.6 respectively for developing LBP lasting for more than 30 days.

Lifting is described separately in two studies (Andersen *et al* 2007 and Miranda *et al* 2008), but the results do not allow for comparing due to differences in the description of the exposure. Andersen *et al* (2007) studied lifting a weight of ≥ 100 kg per hour, and Miranda *et al* (2008) reported 'heavy lifting' (not further specified) as being predictive for LBP. Refer to Table 2.5 for the odds ratios.

2.7.2.4 Other physical risk factors

Other physical risk factors found to be associated with LBP were:

- Laying heavy sandstones (Latza *et al* 2000).
- Kneeling ≥ 15 minutes (Harkness *et al* 2003).
- Performing monotonous work (Harkness *et al* 2003).
- Standing ≥ 30 minutes an hour (Andersen *et al* 2007).
- Having less years of work experience as a nurse (Yip 2004).
- Working in awkward postures / no ability to change position regularly (Miranda *et al* 2008, Van Nieuwenhuijse *et al* 2006).

Table 2.5: Physical risk factors for LBP: odds ratios and 95% confidence intervals.

| Physical risk factor | Specifications | Odds Ratio (95% C.I) | First author, year of publication |
|---------------------------------------|---|----------------------|-----------------------------------|
| Flexion / rotation | Trunk bent or twisted > 2 hrs a day | 2.21 (1.20-4.07) | Van Nieuwenhuijse 2006 |
| | Trunk rotated > 30° 5-10% of the time | 2.12 (1.45-3.07) * | Hoogendoorn 2002 |
| | Trunk flexed ≥ 30° 10-15% of the time | 2.03 (1.19-3.40)* | Hoogendoorn 2002 |
| | Trunk flexed ≥ 30° 15-20% of the time | 3.24 (1.80-5.69) * | Hoogendoorn 2002 |
| | Trunk flexed ≥ 30° > 20% of the time | 2.33 (1.32-3.97) * | Hoogendoorn 2002 |
| | Trunk flexed 10% of the time 30° and 5% ≥ 60° | 2.27 (1.45-3.52) * | Hoogendoorn 2002 |
| | Trunk flexed 5% ≥ 60° | 2.65 (1.59-4.32)* | Hoogendoorn 2002 |
| | Bending forward / backwards often predictive for LBP | 2.20 (1.40-3.40) | Leclerc 2003 |
| | Flexing spine to lift item from floor | 2.76 (1.06-7.22) | Yip 2004 |
| Driving/WBV | WBV age group < 40 | 1.9 (1.3-2.9) | Miranda 2008 |
| | WBV age group ≥ 50 | 1.8 (1.1-3.0) | Miranda 2008 |
| | Driving for 2 hours once a week predictive for sciatica | 2.70 (1.20-6.10) | Leclerc 2003 |
| Lifting / Heavy physical work tasks | Lifting ≥ 100 kg per hour | 1.5 (1.0-2.3) | Andersen 2007 |
| | Heavy lifting age group < 40 | 1.4 (1.0-2.1) | Miranda 2008 |
| | Laying heavy sandstone for 2 – 8.5 hours per shift | 2.6 (1.1-6.5) | Latza 2000 |
| | Sedentary work | 1.0 | Hartvigsen 2001 |
| | Light physical work group 1 | 1.33 (1.01-1.75) | Hartvigsen 2001 |
| | Heavy physical work group 1 | 1.68 (1.22-2.33) | Hartvigsen 2001 |
| | Heavy physical work group 3 | 2.26 (1.50-3.40) | Hartvigsen 2001 |
| Other physical tasks / static posture | Kneeling ≥ 15 minutes | 1.07 (1.0-2.9) | Harkness 2003 |
| | Awkward postures age group 40-49 | 1.6 (1.1-2.3) | Miranda 2008 |
| | No ability to change posture regularly | 2.11 (1.26-3.54) | Van Nieuwenhuijse 2006 |
| | Standing > 30 minutes an hour | 1.9 (1.2-3.0) | Andersen 2007 |
| Other physical exposures | Working in hot conditions | 1.9 (1.3-2.9) | Harkness 2003 |
| | Ward experience < 1 year | 2.90 (1.12-7.83) | Yip 2004 |
| | High physical demands: <ul style="list-style-type: none"> • Free agent group | 2.55 (1.36-9.3) | Leijon 2007 |

* Rate ratios with 95% C.I.'s were used in this study

2.7.3 Psychosocial risk factors

Psychosocial risk factors are defined as work related psychosocial factors on the one hand, and psychological distress on the other hand. Most authors used the Demand-Control-Support model by Karasek and Theorell to measure psychosocial work factors. The model includes questions on the following 6 items: skill discretion, decision authority, psychological job demands, supervisor and co-worker support, job insecurity and job dissatisfaction (as described by Van Nieuwenhuijse *et al* 2006). In most studies, the measurement tool used was the Job Content Questionnaire (JCQ) by Karasek *et al* (1998).

Psychological distress comprises exposures such as depression, anxiety, perception of pain and fear avoidance. Out of the 14 studies included in this review, 12 prospective cohorts reported on one or more psychosocial risk factors.

2.7.3.1 Job control

Andersen *et al* (2007) described job control as decision latitude and freedom from work. The authors found an OR of 1.5 for low job control as a predictor for developing LBP.

2.7.3.2 Depression and / or psychological distress

Power *et al* (2001) conducted a cohort study on subjects that were 23 years old at baseline and 33 at follow up. The authors found that having psychological distress at age twenty-three was predictive for developing LBP ten years later. Carroll *et al* (2004) studied the relationship between depression and acute LBP. They reported that, in comparison with the subjects that were least depressed, the subjects that scored in the highest quartile for depression, had an almost four-fold risk of developing acute LBP. In another study on psychosocial risk factors, Jarvik *et al* (2005) found that depression showed the largest hazard ratio from all baseline predictors for LBP. Refer to Table 2.6 for the odds ratios with 95% confidence intervals.

2.7.3.3 Other psychosocial risk factors

Other psychosocial factors found to be associated with LBP were:

- Severe sleep disturbances (Miranda *et al* 2008).
- High pain related fear (Van Nieuwenhuijse *et al* 2006).
- Job satisfaction (Hoogendoorn *et al* 2002).
- Bad relationships with colleagues (Yip 2004).

2.7.3.4 Work and living conditions

Leijon *et al* (2007) studied eleven different groups identified through cluster analysis in a five-year prospective study (N=1095) with the objective to establish physical and psychosocial risk factors for persistent neck, shoulder and lower back pain. The authors found four of the groups to have an increased risk. These groups were:

- The onerous human services group, characterized by high psychological demands and low physical demands (OR 2.39, 1.08-5.31).
- The free agent group, characterized by high working hours, high physical demands and high psychological demands (OR 2.55, C.I. 1.36-9.3).
- The family burden group, characterized by short working hours, many social interactions and low to moderate physical demands (OR 2.65, C.I. 1.19-5.9).
- The mentally stretched group, characterized by high psychological demands, long working hours, low physical demands and high influence (OR 2.38, C.I. 1.07-5.32).

Table 2.6: Psychosocial risk factors for LBP: odds ratios and 95% confidence intervals

| Psychosocial risk factor | Specifications | Odds ratio (95% C.I.) | First author, year of publication |
|--|---|-----------------------|-----------------------------------|
| Depression / psychological distress | Depression | 2.3 (1.2-4.4)* | Jarvik 2005 |
| | Depression scale score (HRR) | 1.04 (1.01-1.06)** | Carroll 2004 |
| | Depression CES-D ≥ 16 | 1.87 (1.10-3.19)** | Carroll 2004 |
| | 2 nd Quartile | 2.46 (1.07-5.67)** | Carroll 2004 |
| | 3 rd Quartile | 2.35 (1.01-5.45)** | Carroll 2004 |
| | 4 th Quartile | 3.97 (1.81-8.72)** | Carroll 2004 |
| | Psychological distress at age 23 | 2.52 (1.65-3.86) | Power 2001 |
| | Somewhat mentally distressed age group 40-49 | 1.6 (1.1-2.3) | Miranda 2008 |
| Job control | Low job control | 1.5 (1.1-2.2) | Andersen 2007 |
| Other psychosocial risk factors | Monotonous work at least half of the time | 1.7 (1.0-2.9) | Harkness 2003 |
| | Severe sleep disturbances age group 40-49 | 2.3 (1.3-4.3) | Miranda 2008 |
| | Severe sleep disturbances age group ≥ 50 | 2.1 (1.0-4.6) | Miranda 2008 |
| | High pain related fear | 1.81 (1.04-3.14) | Van Nieuwenhuijse 2006 |
| | Occasionally / never satisfied in relationship with colleagues | 2.52 (1.03-5.68) | Yip 2004 |
| | Not good / moderate job satisfaction | 1.95 (1.08-3.39)* | Hoogendoorn 2002 |
| | High psychological demands | | |
| | • Free agent group | 2.55 (1.36-9.3) | Leijon 2007 |
| | • Onerous human service group | 2.39 (1.08-5.31) | Leijon 2007 |

* Rate ratios with 95% C.I.

**Hazard risk ratios with 95% C.I.

2.8 CONCLUSION

A systematic review was conducted among the existing literature on individual, physical and psychosocial risk factors published in the last ten years. Fourteen level II studies were found eligible for inclusion. Due to heterogeneity of the population groups and the exposures studied, the results could not be pooled into a meta-analysis. We are thus restricted to a summary of the evidence found.

Personal and lifestyle factors were studied in most of the included papers. There was evidence for smoking (two studies), being overweight (two studies), having had a previous episode of LBP (two studies) and having a chronic disease or other bodily pain (two studies) to be predictive for development of LBP.

Several studies looked at physical risk factors, the most common factors studied were spinal loading in a flexed or rotated position (three studies), driving or whole body vibration (two studies), and manual handling (three studies). Evidence was found that being exposed to any of these factors can lead to the development of first onset LBP.

Of the included studies in this systematic review, twelve reported on psychosocial risk factors. The studies found evidence that low job control (one study) and depression/psychological distress (three studies) are predictive for the development of LBP. Interestingly Carroll *et al* (2004) conclude that depression in itself can be predictive for developing first onset LBP. Depression has been a known risk factor in the transition of acute LBP into chronic LBP.

Linton (2000) has conducted a systematic review on 37 prospective cohorts, all published before 1999, with the aim to pool the studies on psychological risk factors together. The author concluded that there is evidence for stress / distress, anxiety, and depression / mood disorders to be risk factors for first onset LBP as well as for sub acute and chronic LBP. A limitation to Linton's review is that the included studies were not critically appraised on methodological quality.

Hoogendoorn *et al* (2000) published a systematic review on psychosocial work factors. The authors appraised eleven prospective cohorts and two case-control studies on psychosocial factors in work and private life. Strong evidence was reported for low social support at the workplace and low job satisfaction as independent risk factors for LBP. They found insufficient evidence for job control, high job demands, low job content and psychosocial factors in private life.

The strength of this study was that the authors developed a critical appraisal tool based on appraisal tools and quality criteria that existed at that time. The limitation of this study lies in the fact that two of the included studies were level III studies.

2.9 DISCUSSION: LOW BACK PAIN, PART OF LIFE?

There is a large amount of epidemiological studies on LBP and associated factors. Of these, many are cross-sectional in design, and therefore the conclusions need to be interpreted with caution. Among the longitudinal studies published in the last ten years, there are several high quality studies that provide strong evidence for certain predictors of LBP.

The aim of this study was to organize the results of prospective cohorts on risk factors, out of the literature published in the last ten years.

With an overall lifetime prevalence in developed and developing countries of close to 70%, LBP is almost as common as contracting the flu when season changes. Comparable to general treatment of the flu, guidelines on LBP are generally directed towards management of LBP instead of prevention (European guidelines, 2004). However, the results of this review show that preventive measures, like ergonomic solutions for workers who perform heavy physical labour, might decrease the prevalence of LBP and the costs of LBP management.

Experiencing low control over work tasks can lead to the development of LBP and to sick leave related to LBP, which is costly for companies. Preventive programs, aiming to reduce psychosocial risk factors could be set up by companies and help reduce sick leave related to LBP.

Moderate evidence was found for lifestyle factors such as smoking, being overweight and having a chronic disease as predictors for LBP. Treatment strategies towards LBP should therefore include programs directed to lifestyle change.

This review found strong evidence for psychological distress and depression as risk factors for both acute and chronic LBP. Clinicians in primary health care should therefore be observant to the yellow flags when assessing a person with LBP.

2.10 RECOMMENDATIONS FOR FUTURE RESEARCH

With extensive evidence for psychological distress and psychosocial work factors, there is a strong case for future intervention studies directed towards treatment of underlying psychological conditions, within the current guidelines for management of LBP.

With regards to physical risk factors at work, future research could focus on ergonomic measures to prevent LBP as well as intrinsic patient specific factors like physical strength and functioning of the lumbar spine. Physiotherapeutic exercises in the treatment of LBP have already shifted towards functional 3D exercises, in order to train the lumbar spine in the position it is loaded at work.

This literature review clarifies that the management of LBP should be multi-dimensional: individual, physical and psychosocial factors should be addressed.

Longitudinal studies on LBP and risk factors among low-income communities in developing countries are wanting. Available cross-sectional studies indicate that similar risk factors might be prevalent in the developing world. Louw *et al* (2007) concluded that information on risk factors for LBP on the African continent is lacking, due to few high quality studies conducted on the continent.

The good quality longitudinal studies conducted in the developed world in the past ten years, can be used as blueprints for future prospective cohort studies in the developing world.

2.11 LIMITATIONS TO THIS SYSTEMATIC REVIEW

A first limitation of this review is the possibility of bias in the selection and appraisal of included studies.

A second limitation of this review is the heterogeneity in the study samples, the definitions of cases and controls, follow up time-frames and exposures studied among the 14 included studies. Thus, the results cannot be pooled together, which would make for stronger evidence.

Two of the 14 studies included a small percentage of the population at baseline with minor LBP symptoms: Van Nieuwenhuijse *et al* 2009 and Andersen *et al* 2007. Andersen *et al* (2007) postulated *that a population free of any musculoskeletal symptoms might not exist, and if so the*

characteristics of such a group would be so extraordinary' that the subjects could not be used as a reference group. Van Nieuwenhuijse *et al* (2009) also reported difficulties with the inclusion of subjects free from LBP symptoms. Their study therefore reports on two groups separately: the 'asymptomatic' and the 'mildly symptomatic' group. This current review only reports on results from the asymptomatic group.

The results of this systematic review provide us with the information needed to develop a measurement tool that can be used to conduct the cross-sectional study described in this thesis. Refer to Chapters 3 and 4 for the methodology of this study.

CHAPTER 3: QUESTIONNAIRE DEVELOPMENT

3.1 INTRODUCTION

In Chapter 2, the findings pertaining to the evidence on individual, physical and psychosocial risk factors for low back pain (LBP) were presented. The content generated by the review was applied to design a measurement tool for this study. The decision to develop a new measurement tool was motivated by the idea that existing measurement tools were not appropriate for this study's sample.

The development of the questionnaire involved three primary steps:

1. Construction of the draft questionnaire.
2. Validation of the questionnaire.
3. Reliability assessment of the questionnaire.

The construction of the questionnaire was based on published questionnaires used in similar studies as described in Chapter 2. The information was then revised to ensure validity for the local population. Secondly, an expert panel consisting of national and international researchers participated to conduct the face and content validity. Thirdly, the reliability of the final version of the questionnaire was established through a test-retest methodology and thereafter the questionnaire was translated into Afrikaans and isi-Xhosa. Refer to Figure 3.1 for the development process of the measurement tool.

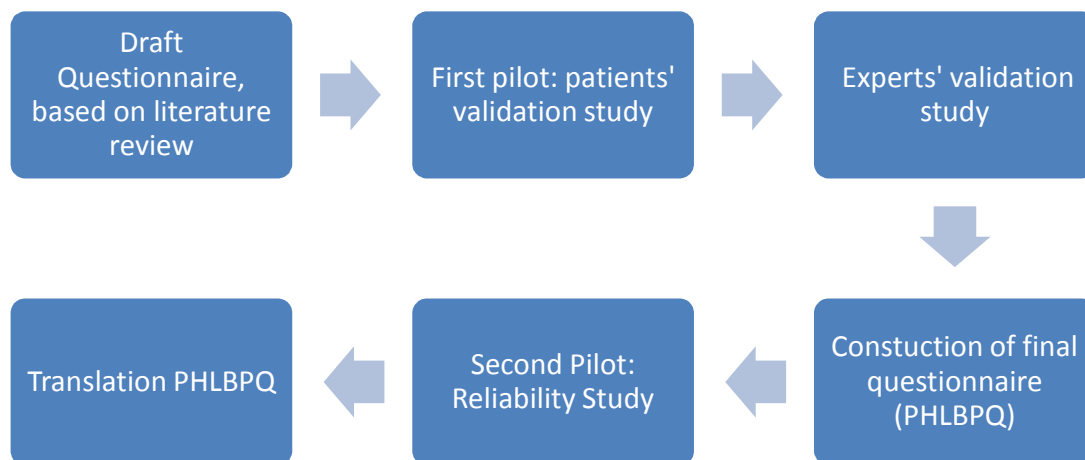


Figure: 3.1 Development process measurement tool

3.2 CONSTRUCTION OF THE DRAFT QUESTIONNAIRE

The draft questionnaire consisted of nine sections derived from the following questionnaires:

- The Baecke Questionnaire for measurement of a person's habitual physical activity (Baecke *et al* 1982)
- The Mental Health Inventory (Veit and Ware, 1983)
- The Short Form Health Survey or SF-36 (Ware 1995)
- The Survey of Pain Attitudes (Jensen *et al* 1987).

3.2.1 The Baecke questionnaire for habitual physical activity

This questionnaire was developed in 1982 as a measurement tool for evaluating a person's physical activity level. It consists of three indices for physical activity: 'Work Activity', 'Sports Activity' and 'Leisure Activity'. Responses are given on five-point Likert scales varying per question. Refer to Appendix D for the complete Baecke questionnaire.

The following three questions from the 'Sports Activity' section were included:

- 1) Do you participate in any organized sports?
- 2) How many times a week do you participate in organized sports?
- 3) How many hours a week do you participate in organized sports?

All questions related to walking and cycling to and from work and watching television from the 'Leisure Activity' section were included in the draft questionnaire.

3.2.2 The Mental Health Inventory

The Mental Health Inventory (MHI) was developed in 1983 by Veit and Ware, to measure psychological distress and well-being in general populations. It consists of 38 questions on the subjects' feelings over a one month retrospective period. For the design of this questionnaire, the retrospective period was changed to twelve months. Refer to Appendix E for the complete MHI.

The following questions were included in the draft questionnaire:

1. During the past twelve months, how much of the time have you been a happy person?
2. During the past twelve months, how much of the time did you feel loved and wanted?
3. During the past twelve months, how much of the time did you feel depressed?
4. During the past twelve months, how much of the time have you felt like crying?
5. During the past twelve months, how much of the time have you been anxious and worried?

Scoring was done using the following five-point Likert Scale: all of the time, most of the time, some of the time, a little of the time, none of the time. The original measurement tool has a six-point Likert scale that includes the option 'a good bit of the time'. This option was discarded, because the sample for this study may have found it difficult to distinguish between 'most of the time', 'a good bit of the time' and 'some of the time'.

For the draft questionnaire a sixth question was added to the section on mental health:

6. During the past month, how much of the time have you had trouble sleeping at night because of your worries?

This question was added because it was hypothesized that data on the severity of sleep disturbance in our sample, would help establish the mental health status. The time period of one month in the 6th question was mistakenly not changed to twelve months in the draft questionnaire.

3.2.3 The Short Form Health Survey

The Short Form Health Survey (SF-36) developed by Ware (1995) is a widely used tool to measure general health. It contains questions on general health status and perception of general health. Refer to Appendix F for the complete SF-36. The following two questions taken from the General Health section of the SF-36, were included and scored on a five-point Likert scale: poor, fair, good, very good and excellent.

1. How would you rate your health?
2. Compared to one year ago, how would you rate your health in general now?

Questions on lifestyle habits were included, because literature indicates that these factors are known risk factors for LBP (Miranda *et al* 2008, Power *et al* 2001). The following questions were added:

3. Do you smoke? (Dichotomous score: yes/no).
4. Do you drink alcohol? (Dichotomous score: yes/no).
- 4a. If yes, how many glasses of alcohol do you drink in a week? Scoring using a six-point Likert scale: 1 glass occasionally, 1-3 glasses a week, 3-5 glasses a week, 5-7 glasses a week, 7-10 glasses a week or more than 10 glasses a week.

3.2.4 The Survey of Pain Attitudes

The Survey of Pain Attitudes (SOPA) was developed by Jensen *et al* in 1987 with the aim to measure peoples' attitudes towards chronic pain. It consists of 57 statements on pain

experience, which each contribute to the evaluation of seven common coping styles. Scoring is done using a five-point Likert scale from 'this is very untrue for me' to 'this is very true for me'. Refer to Appendix G for the complete SOPA measurement tool.

Sixteen of the 57 statements from the SOPA were included and categorized as 'Beliefs'. Four statements were added that applied specifically to our population. To ensure user-friendliness, we adjusted the response options to:

- a) I agree
- b) I disagree
- c) I am not sure

3.2.5 Other sections of the draft questionnaire

Refer to Appendix H for the draft questionnaire.

The following sections were also included in the draft questionnaire.

Demographics

Questions on gender, age, ethnic group, level of schooling, employment status, and income were included to obtain a basic description of the sample.

General health

Questions on co-morbidities as diabetes mellitus type I and II, hypertension, HIV/AIDS and arthritis were included. Also questions on medication use, investigative procedures like X-rays and MRI's, and referral to a specialist were added to this section.

Body charts

A body chart was used to collect information on the point-, month- and lifetime prevalence of bodily pain. The subjects were asked to indicate on the manikins which areas of the body they had experienced pain in their lifetime, in the past month and at the moment of completing the questionnaire. Body charts have been found reliable and valid tools to measure areas of pain (Haywood *et al* 2002).

The body chart was obtained from the International Centre for Allied Health Evidence (iCAHE), University of South Australia. The body chart was designed with a grid consisting of 42 different

body areas that could be used for scoring. Refer to Appendix I for the body chart and scoring method.

Low back pain

In this section a detailed picture of a manikin with the area between the 12th rib and the gluteal folds highlighted for the subjects' reference, was included. The picture was accompanied by the question: '*Do you currently have any pain in the highlighted area?*' If the subject's response was 'yes' to this question, it was followed by ten more questions on the intensity of the pain, health care visits in the past year, (in)ability to carry out daily tasks, medication use and disability.

Refer to Appendix J for the draft questionnaire.

Work

This section consisted of questions related to the type of employment, type of contract and job satisfaction.

Treatment received / patients' satisfaction

Questions on medical treatment for LBP and satisfaction with treatment were included in this section.

Educational program

This section contained questions on preferences for an educational program on LBP management and coping mechanisms. Questions were asked on the subjects' preferences for the time of day, the venue and the preferred length of the program. One question enquired about the subjects' previous experience with such programs. This section was added with the aim to gain insight in forms of back education offered to the visitors of the CHCs.

3.3 METHODOLOGY

3.3.1 First pilot: patients' validation study

The aim of this pilot study was to ascertain face and content validity on the draft questionnaire: the Primary Health Low Back Pain Questionnaire (PHLBPQ).

3.3.1.1 Objectives of the pilot study

The objectives of the pilot study were:

1. To ascertain if the questions were clear to the subjects.
2. To ascertain the time required to administer and complete the questionnaire.
3. To establish the content validity of the target LBP population.

3.3.1.2 Sample recruitment

A convenient sample of 22 subjects was recruited at the physiotherapy department of Elsie's River Community Health Centre, located in the Tygerberg District. Physiotherapy patients who were older than 18 years, literate and had sufficient knowledge of the English language were asked to participate. Subjects with cognitive impairments were excluded from the study.

When subjects agreed to participate they signed a consent form, of which they received a copy. Refer to Appendix J for the consent form used in the patients' validation study.

3.3.1.3 Setting

Data collection took place at the main treatment area of the physiotherapy department at Elsie's River CHC.

3.3.1.4 Data collection procedure

The main researcher recruited eligible candidates, informed the subjects about the objectives of the pilot study and explained the consent form. Eligible subjects completed the questionnaire, after which the main researcher conducted an interview with each subject to collect information on the length of the questionnaire, the content and the relevancy of the questions.

3.3.1.5 Data analysis

Firstly content analysis was done to analyze the qualitative comments offered by the subjects. Secondly a purpose built excel sheet was used, to enter the data.

3.3.2 Experts' validation study

The objectives of the experts' validation study were:

1. To retrieve feedback from established researchers in epidemiology on face and content validity of the questionnaire.
2. To obtain comments on the utility of the draft PHLBQ as a self-administered questionnaire.
3. To obtain an independent and objective evaluation of the face and content validity of the PHLBQ.

3.3.2.1 Formation of the expert panel

Based on literature retrieved for the systematic review described in Chapter 2, national and international researchers experienced in epidemiological research on LBP were selected. In November 2008, we emailed the draft PHLBPQ as well as a checklist based on key aspects of validity to twelve national and international researchers. The checklist contained questions on readability, layout and content of the questionnaire. See appendix K for the checklist.

Seven out of twelve researchers responded positively to the request for feedback. The expert panel consisted of the following researchers:

1. Dr. H. Anema, VU Medical Centre, the Netherlands.
2. Prof. K. Grimmer-Somers, International Centre for Allied Health Evidence, University of South Australia.
3. Dr. L. Hestbaek, Odense University Hospital, Denmark.
4. Prof. J. Jelsma, University of Cape Town, South Africa.
5. Dr. P. Keeley, University of Manchester, United Kingdom.
6. Dr. M. Nagasu, Wageningen Universiteit, the Netherlands.
7. Dr. B. van Vuuren, University of Pretoria, South Africa.

3.3.2.2 Procedure

The experts were given one month to respond. A week before the deadline a reminder email was sent out to the experts.

3.3.2.3 Data analysis

The comments of the expert panel were structured into themes (utilizing a content analytical approach). The research team, consisting of the main researcher (MM) and supervisor (QL) analyzed all comments within the themes and decided on accepting or declining the comments. The decision-making process was based on the relevancy of each question for the low-income communities of the Cape Town Metropole.

3.3.3 Second pilot: reliability study

The objective of this pilot was to ascertain the test-retest reliability of the PHLBPQ.

Participants were asked to complete the questionnaire on two different occasions, one to two weeks apart. This time period was chosen, as it has been demonstrated to be an appropriate period for reliability studies on LBP measurement tools (Holt *et al* 2002, Halpern *et al* 2001).

3.3.3.1 Sample recruitment

A convenient sample of 16 subjects was recruited through the physiotherapy department of Elsies River Community Health Centre. Subjects were found eligible if they were older than 18 years, literate and able to speak and read English. Subjects that participated in the patients' validation study, had cognitive impairments or were unable to return for the second moment of data collection were excluded.

3.3.3.2 Setting

Data collection took place at the main treatment area of the physiotherapy department at Elsies River CHC.

3.3.3.3 Data collection procedure

The main researcher recruited eligible candidates, instructed the subjects on the consent form and objectives of the pilot study. A copy of the signed consent form was given to the participants. Refer to Appendix L for the consent form used in the reliability study. After completion of the questionnaire a date was set, at least one week and no longer than two weeks

apart, for the second moment of data collection. The subjects were offered restitution of their travel expenses. The reliability study was conducted in January 2009.

3.3.3.4 Data analysis

Data were captured in a purpose build excel sheet. Statistica 8 was used for analysis. Inter correlation coefficients (ICC) for agreement and consistency were calculated with 95% confidence intervals. Kappa values were calculated for the categorical data.

3.4 RESULTS

3.4.1 Results of the patients' validation study

We completed the first pilot study in October 2008 with data of 22 participants. The comments were grouped into two categories:

1. Content and clarity.
2. Length and layout.

3.4.1.1 Participants' comments on content and clarity of the questionnaire

Twelve of the participants indicated to suffer from LBP at the moment of data collection. They also reported to find the questions related to LBP relevant.

The use of the manikin was poorly understood. Next to the first manikin, the following text was printed: *'Please look at the picture below and mark any areas in the body where you have felt any pain or discomfort in your lifetime. You can mark as many areas as you want'*. Most participants highlighted the areas of pain in the manikin that appeared first in the questionnaire. The questions on month- and point prevalence of pain, that followed and were formulated in a similar way, were missed by seven respondents.

There were also missing data in sections which contained many questions, or where the questions seemed repetitive. For example the question *'Have you ever been referred to a specialist, in Tygerberg, Groote Schuur Hospital or another hospital in the Western Cape?'* had response options 'yes' or 'no'. The following question: *'if YES, which department did you attend?'* followed by a list of possible departments, was missed by twelve respondents. Refer to Table 3.1 for a summary of the respondents' comments.

3.4.1.2 Participants' comments on length and layout of the questionnaire

The majority of the participants (n=15) found the questionnaire too long and required more than 25 minutes to complete it. When the respondents were asked about their reason for missing certain questions, the layout (small printing, landscape layout) was given as a possible reason. Refer to Table 3.1. for a summary of the respondents' comments.

Table 3.1 Results of patients' validation study: respondents' comments

| Participants' comments | No. of respondents (N=22) |
|--|------------------------------|
| Questionnaire is too long and takes too much time to complete | 15 |
| Question on ethnicity: suggestion to add option 'unwilling to respond' | 10 |
| The use of a manikin to mark bodily pain was found confusing | 16 |
| The layout of the questionnaire could be improved | 13 |
| Questions on low back pain were relevant | 12 |

3.4.2 Results of the experts' validation study

The expert panel comments can be grouped into the following three themes:

1. Commentary on content.
2. Commentary on layout.
3. Commentary on validity and reliability.

3.4.2.1 Commentary on content

Five experts gave feedback on the content of the questionnaire.

One of questions asked in the checklist was: *'Does the questionnaire measure what we aim for: prevalence of low back pain, associated factors and treatment experience and preferences?'*.

The following comments were made:

- Dr. Van Vuuren: *'For prevalence, treatment experiences and preferences yes, but not for all risk factors'*. He further writes: *'[...]psychosocial factors that is associated strongly with previous episodes like fear avoidance beliefs, catastrophizing pain strategies etc. are not accounted for'*.
- Dr. Anema: *'Questions about physical, mental workload and ergonomic measures are lacking'*.

- Prof. Jelsma wrote: *'BMI, injury [are lacking - MM]'*.
- Dr. Keeley: *'You have been selective in asking about associated factors – however it is not clear why you decided to leave things out [...] suggest to include lifting, moving and handling'*
- Dr. Hestbaek: *'Including all possible risk factors is impossible.'*

On the question: *'Do any of the questions infringe on the participants' privacy?'* Prof. Jelsma commented:

- *'Give option not to respond for ethnicity'*.
- *'Shack is an insulting description of a home – [rather refer] to an informal shelter'*.

Other comments on the content of the questionnaire were:

- Dr. Keeley: *'If you use descriptors that are consistent with government data collection items – you will be able to make judgments about the representativeness of your sample when compared with the general population'*.
- Dr. Anema: *'What is the additional value of your questions about X-rays?'*
- Prof. Jelsma: *'[...] not much information [is] gathered about the functional status of the patient [...] or HRQoL[...]'*.
- Prof. Grimmer-Somers: *'I wonder whether your respondents will be able to differentiate between X rays and MRI/CAT scans, or whether they'll know which body part was scanned?[...]'*. She goes on to suggest: *'a more generic question: 'have you ever had an X-ray or a scan?'*
- Dr. Keeley: *'Race: this term is politically incorrect in the UK. We tend to use the term ethnicity [...] the term "coloured" is not acceptable'*.
- Dr. Hestbaek: *'Currently there is serious doubt about the validity of one-years recall. One month- and point prevalence is more reliable, but obviously require a larger sample'*.
- Dr. Nagasu: *'[...] I will use 'one year' instead of 'twelve months' and 'one month' instead of 'four weeks'. I suggest that you make the hypothesis clear and identify which questions you need as the risk factors of LBP for **your** [layout: MM] subjects [...]'*.

Please refer to Table 3.2 for an overview of the comments on content.

Table 3.2 Results of experts' validations study: comments on content

| Commentary on content of the PHLBPQ | Expert(s) |
|--|--|
| Missing risk factors: manual handling, psychosocial risk factors | Van Vuuren, Anema, Jelsma, Keeley, Hestbaek. |
| Question on race/ethnicity: suggestion to rephrase | Keeley, Jelsma. |
| Question on working status: consider including 'stay-at-home' husband | Keeley |
| Housing situation: replace the word 'shack' by informal shelter | Jelsma |
| Job categories: add the option 'domestic worker' | Jelsma |
| Job categories: change according to occupational categories used by Department of Labour | Keeley |
| Question on LBP prevalence: use only month- and point prevalence | Hestbaek |
| Time periods: One year instead of twelve months, one month instead of four weeks | Nagasu |
| Questions on X-rays: additional value of the question doubted | Anema, Keeley. |
| Questions on X-rays need to be simplified | Grimmer |
| Alcohol usage: suggestion to describe the answer in strength of the units used per week | Keeley |
| Educational program: describe the program before asking the questions | Keeley |

3.4.2.2 Commentary on layout

All of the experts made suggestions to improve the layout.

Prof. Grimmer-Somers made the following suggestions: *'Questions and answers need to be more spaced out, font needs to be bigger [...] questions response options lined up vertically down the page [...]*'.

Refer to Table 3.3 for a summary of all comments on layout.

Table 3.3: Results of experts' validation study: comments on layout

| Commentary on layout of the PHLBPQ | Expert(s) |
|--|----------------------------|
| Layout of the questionnaire is too cramped, insert space between questions | Grimmer, Keeley, Hestbaek. |
| Questionnaire is too long, remove repetitive questions | All |
| Group questions on past LBP history and current history together | Grimmer |
| Font and distance between lines are too small | Hestbaek |

3.4.2.3 Commentary on validity and reliability

Three of the experts suggested the use of existing, validated outcome measures. The Kessler Psychological Distress Scale (K10) and the Nordic LBP questionnaire were suggested by Prof. Grimmer-Somers. The Health Assessment Questionnaire and the EQ-5D for HrQoL were suggested by Prof. Jelsma. Dr. Keeley suggested the use of the General Health Questionnaire.

3.4.3 Results of the reliability study

Sixteen people agreed to participate in the reliability study, and twelve of the participants completed the PHLBPQ on both occasions. A descriptive analysis was done on the twelve participants. Just over half of the group were female ($n=7$), and belonged to the coloured ethnic group ($n=7$). Two respondents were under 40 years of age, five respondents were aged 40-60 and five respondents were over 60 years old. Refer to Table 3.4 for an overview of the study sample characteristics.

Table 3.4: Sample characteristics reliability study

| Sample characteristics (N=12) | No. (%) |
|---------------------------------|---------|
| Gender: | |
| - Females | 7 (58) |
| - Males | 5 (42) |
| Ethnic group: | |
| - Coloured | 7 |
| - White | 2 |
| - Asian | 1 |
| - Black | 0 |
| - Unwilling to respond | 2 |
| Age group: | |
| - < 40 | 2 |
| - 40-60 | 5 |
| - > 60 | 5 |
| Highest educational level: | |
| - Primary school | 3 |
| - Standard 8/grade 10 | 5 |
| - Matric | 4 |
| Employment status: | |
| - Employed | 5 |
| - Unemployed | 3 |
| - Housewife | 2 |
| - Student | 2 |
| LBP point prevalence | 8 (67) |
| LBP lifetime prevalence | 10 (83) |
| Currently using pain medication | 8 (67) |

Of this sample of twelve only a very small sub sample (n=5) completed the section on work and work related risk factors. Although data were retrieved from a very small sample, for certain sections of the questionnaire ICC's and kappa values were calculated. For the questions on pain prevalence in the lower back, upper back, shoulder and feet Kappa was calculated as 1.00, interpreted as having 100% reliability. Refer to Table 3.5 for the ICC's and Kappa calculations.

Table 3.5: Results test-retest analysis

| Section | Kappa | ICC agreement (95% C.I.) | ICC consistency (95% C.I.) |
|---------------------------------------|-------|-----------------------------|-------------------------------|
| K10 scale for psychological distress | | 0.928 (0.76-0.98) | 0.923 (0.74-0.98) |
| Low back pain month prevalence | 1.00 | | |
| Upper back pain month prevalence | 1.00 | | |
| Neck pain month prevalence | 0.74 | | |
| Shoulder pain month prevalence | 1.00 | | |
| Hand pain month prevalence | 0.74 | | |
| Hips pain month prevalence | 0.62 | | |
| Knee pain month prevalence | 0.63 | | |
| Feet pain month prevalence | 0.79 | | |
| Low back pain life prevalence | 0.75 | | |
| Upper back pain life prevalence | 0.80 | | |
| Neck pain life prevalence | 0.31 | | |
| Shoulder pain life prevalence | 1.00 | | |
| Elbow pain life prevalence | 0.43 | | |
| Hand pain life prevalence | 0.56 | | |
| Hips pain life prevalence | 0.64 | | |
| Knee pain life prevalence | 0.83 | | |
| Feet pain life prevalence | 1.00 | | |
| Low back pain point prevalence* | 0.79 | | |
| Disability ** | | 0.48 (-0.10-0.84) | 0.55 (-0.13-0.88) |
| Minutes spend walking/cycling per day | | 0.90 (0.69-0.97) | 0.89 (0.68-0.97) |
| Walking during leisure time*** | | 0.41 (-0.23-0.79) | 0.39 (-0.21-0.78) |
| Watching TV during leisure time*** | | 0.92 (0.73-0.98) | 0.93 (0.79-0.98) |

* Question asked: Do you currently have any pain in the area highlighted in the picture above?

** Question asked: How much did low back pain interfere with your normal activities in the past month?

*** Baecke (1982) question: During leisure time I walk / watch TV; response options: never, seldom, sometimes, often, and very often

3.5 OUTCOMES: CONSTRUCTION OF THE PHLBPQ

3.5.1 Outcome of the patients' validation study: construction of the draft PHLBPQ

Based on the results of the patients' validation study we adjusted the PHLBPQ in the following ways before sending it to the expert panel:

- The body chart was removed. Instead a manikin was included with four body areas highlighted for reference: the neck, shoulder, upper back and lower back.

- Pain prevalence questions on point-, year- and lifetime prevalence were rephrased and limited to the areas of the neck, shoulder, upper back and lower back.
- The order of the questions on pain prevalence was revised into a more logical order.
- The layout was changed into a more reader-friendly layout.
- The response option 'unwilling to respond' was added to the question on ethnicity.

3.5.1.1 Exclusion of the 'beliefs' section

Before sending the PHLBPQ to the expert panel, the beliefs section, including the statements from the SOPA (Jensen *et al* 1987), was deleted. The research team decided on this, because beliefs and coping strategies are not known risk factors for first onset LBP. The section containing the SOPA statements did not meet the objectives of this study.

3.5.2 Outcome of the experts' validation study: construction of the final PHLBPQ

To improve validity and reliability of the PHLBPQ we decided to use previously validated tools as suggested by the expert panel. We used the Dutch Musculoskeletal Questionnaire (DMQ) by Hildebrandt *et al* (2001) for questions on pain, LBP and work related physical and psychosocial risk factors. We chose the Kessler Psychological Distress Scale (K10) for questions on mood/depression (Kessler *et al*, 2002). Refer to appendix M and N for the original DMQ and K10 measurement tools.

3.5.2.1 Dutch Musculoskeletal Questionnaire

The Dutch Musculoskeletal Questionnaire (DMQ) is developed and validated by Hildebrandt *et al* (2001) as a measurement tool for work related musculoskeletal risk factors and symptoms in worker populations. There is a standard version which contains sections on demographics, perceived heaviness of work tasks, musculoskeletal workload, psychosocial working conditions, health, lifestyle and ideas for improvement of the work situation. An extended version covers extra questions on the presence of LBP and neck/shoulder pain as well as questions regarding the subjects' ideas for improvement. The short version of the DMQ covers only the sections on demographics, general health, and some work related risk factors.

The short version for the DMQ as it is suggested by the developers was deemed unsuitable for our population, because it does not include for all possible physical and psychosocial risk

factors. The standard version and the extended version were both too long and some of the questions did not apply to a (working) population in a developing country.

The following parts of the DMQ were included in the final version of the PHLBPQ.

General health section:

We printed a manikin with the following areas shaded and marked: neck, shoulders, upper back, elbows, wrists/hands, lower back, hips/thighs, knees and feet. We asked questions on point-, month- and lifetime presence of pain and/or discomfort in any of these areas. The DMQ suggests dichotomous (yes/no) responses for point- and lifetime prevalence. For one year prevalence however, the suggested response options are more complicated: yes sometimes, yes regularly, yes chronically or no, never. To keep the questions and response options easily understood we asked our subjects to tick the area where they had experienced pain in the last month or in their lifetime, or experienced pain currently.

LBP section:

The following questions were taken from the DMQ:

- Did your low back pain start during your work? Dichotomous score: yes/no
- How often have you had separate spells of low back pain in the past 12 months? Scoring on a five-point Likert scale from 'once' to 'my complaints are always there'.
- How long was your longest spell of low back pain during the past 12 months? Scoring on a six-point Likert scale from 'less than one day' to '3-12 months'.
- How many times in the past 12 months did you consult a doctor or nurse or physiotherapist? Scoring on a five-point Likert scale from 'not at all' to 'more than seven times'.

To make for easier reading we changed the word 'spell' to 'episode' and replaced the period of 12 months by one year.

Work section:

We used most questions on physical and psychosocial risk factors at work described in the DMQ. Based on what we assumed to be the working conditions of our population we included questions on the following exposures:

1) Manual handling:

- Lifting, pushing, pulling, bending, twisting, and reaching.
- Working with the arms above shoulder level.
- Working with the hands below knee level.
- Working in static or uncomfortable positions for prolonged periods of time.
- Repetitive movements of the arms or legs.
- Sitting, standing, kneeling or squatting for long periods of time.
- Exposure to vibration.
- Exposure to a cold work environment.
- Having night shifts.

2) Psychosocial risk factors:

- Enjoyment.
- Job satisfaction.
- Supervision and co-worker support.
- Job demand/stress.
- Appropriate pay.
- Possibility of performing light duty when injured.
- Decision latitude, i.e. being able to take breaks whenever you want, being able to decide on characteristics of work tasks.

All physical and psychosocial exposures were tabulated and response options 'yes' or 'no' were given. The accompanying question was: *'Do you, in your work, often have to...'* followed by the

list of exposures. Only subjects currently working were instructed to complete this section. Refer to Appendix O for the Work Section in the PHLBPQ.

3.5.2.2 Kessler Psychological Distress Scale: K10

The K10 is a 10-item measurement scale on psychological distress, aimed to measure mood, anxiety and depression. There are five response categories, from 1 (none of the time) to 5 (all of the time). The score is calculated as the sum of all 10 items, and the higher the score, the more likely it is that the person suffers from psychological distress. The K10 has been tested and validated in three large surveys and shows good precision and sensitivity in measuring the severity of psychological distress (Kessler *et al* 2002). The K10 was included in its entirety and the previous questions on mood/depression from the Mental Health Inventory (Veit and Ware, 1983) were removed. See Appendix O for the ‘Your feelings’ section of the PHLBPQ.

3.5.2.3 Changes to the activity index according to Baecke *et al* (1982)

To make for easier reading, to avoid repetition and to improve reliability of the outcome we tabulated the questions and response options on leisure activity as shown in Table 3.6. Subjects were asked to tick the option that applied to their activity level in leisure time.

Table 3.6: Leisure activity questions and answer options

| | Never | Seldom | Sometimes | Often | Very Often |
|--------------------------------|-------|--------|-----------|-------|------------|
| During leisure time I watch TV | | | | | |
| During leisure time I walk | | | | | |
| During leisure time I cycle | | | | | |

3.5.2.4 Further adjustments to the content of PHLBPQ

The following adjustments were made as a result of the expert panel’s comments as described in 3.4.2.

Issue of including all known risk factors

By using a large part of the DMQ we covered most of the known physical and psychosocial risk factors for LBP (see 3.5.2.1).

Privacy issues: ethnicity

The question on ethnicity remained in the final questionnaire because we thought the information was relevant for statistical purposes. We did include the response option 'unwilling to respond'. Statistics South Africa report on the following population groups in the latest document on population estimates: African, Coloured, Indian/Asian and White (P0302, Mid-Year population estimates, 2010, Statistics SA). We chose to use the same categories except for 'African' as we reasoned the term might be confusing for participants, since all participants were South Africans. This resulted in the following response options for the question on ethnicity: black, coloured, Asian, white, and unwilling to respond.

Privacy issues: housing

The response option 'shack' to the question '*what type of house do you live in?*' was not changed. Prior to 2010, official documents published by the South African department of Housing, often contained the word 'shack' or 'shack dwellers' when referring to people living in a type of dwelling that had been erected illegally (General Housing Survey 2009, Statistics SA). Recently the name of this department was changed into the Department of Human Settlements and in official reports and press statements the description 'informal settlements' is used and the term 'shack' is discarded (the National Housing Code 2009, www.dhs.gov.za). At the time of data collection these changes had not occurred. We argued that the community living in the informal settlements could identify with the word shack, as it was widely used at that time.

Issue of the occupational categories

For the final questionnaire we used the occupational categories as described in the EEA10 Occupational Categories, Annexure 3 of the Regulations to the Employment Equity Act, (South African Department of Labour, www.labour.gov.za). In the EEA10 nine categories are given with examples of occupations under each category. We chose professions within each category based on what we hypothesized to be applicable to our population. This resulted in the following response options to the question '*What kind of work are you currently doing?*'

- General Labourer (EEA10 category: elementary occupations)
- Machinist / machine operator (EEA10 category: plant and machine operators)
- Supervisor in a factory (EEA10 category: technicians and associated professionals)
- Craft worker (EEA10 category: craft and related trades)

- Shop assistant (EEA10 category: service and sales workers)
- Domestic worker/cleaner (EEA10 category: service and sales workers)
- Administration / clerical work (EEA10 category: clerks)
- Manager (EEA10 category: legislators, senior officials, managers)
- Self employed, doing: ... (EEA10: all categories, including professionals, technicians & associate professionals, skilled agricultural and fishery workers)
- Other, doing: ... (EEA10: all categories).

Issue of the educational program

A short description on the contents of an educational program on prevention of LBP was placed as an introduction to the questions on preferences for an educational program. Refer to Appendix O, section 'treatment received'.

Issue of one year's recall

No changes were made to the time period used in the questions on LBP. The questions, taken in its original form from the DMQ, all enquired on a one year retrospective period.

Issue of X-rays and MRI investigations

The question on X-rays and MRI's were simplified. For X-rays the question was formulated as follows: *'Did the doctor ever take any X-rays? If YES, what part of your body did he / she X-ray?'* For MRI's the questions was: *'Have you ever been for a MRI or CT-scan for your lower back or neck?'* These questions were grouped together in the section: 'treatment received'.

Layout issues

The layout of the questionnaire was revised to be more readable using a portrait design and more spacing between the questions and answers.

3.5.3 Content of the final questionnaire

The final PHLBPQ, used in this cross-sectional study, consisted of twelve pages, 110 questions and the following seven sections:

Section 1: Demographics and social circumstances

Contained the demographic questions as well as questions on living conditions and socio-economic situation.

Section 2: General health

Questions on health and bodily pain, taken directly from the DMQ by Hildebrandt *et al* (2001) to which we added lifestyle questions and questions on use of medication and presence of co-morbidities.

Section 3: Low back pain

This section started with a manikin drawn up, with the area between the 12th rib and the gluteal folds shaded. The first question is: 'Do you currently have any pain in the area highlighted in the above picture?' The questions following were only responded to by subjects currently suffering from LBP. This section included questions on the cause of LBP, on intensity of the pain and on disability, and were all taken from the DMQ.

Section 4: Your feelings

The K10 for psychological distress (Kessler *et al* 2002) was used in its entirety.

Section 5: Treatment received

These were questions that applied specifically to patients making use of the CHCs and enquired about medical treatment received from the CHCs, including for LBP. This section also included questions on the subjects' preferences for an educational program on LBP.

Section 6: Work

Questions on physical and psychosocial risk factors, which were taken directly from the DMQ. This section also contained questions on occupational category and characteristics of the work contract.

Section 7: Sport and leisure time

This section included five questions on leisure time activity and sports activity, which were taken from the Baecke questionnaire (Baecke *et al* 1982).

Refer to Appendix O for the final version of the PHLBPQ.

3.6 OUTCOMES RELIABILITY STUDY

Because the K10, the DMQ and the Baecke questionnaire are previously validated tools and cover most of the questionnaire, we found the reliability of the final questionnaire satisfactory to commence data collection. Of the sections where reliability could not be established, results were interpreted with care.

3.7 TRANSLATION

In the month of February 2009 the questionnaire was translated into Afrikaans by a native Afrikaans speaker who was employed as an occupational therapist at Elsie's River CHC. The PHLBPQ was also translated into isi-Xhosa by a native isi-Xhosa speaker employed as a clinical nurse practitioner at Elsie's River CHC. The translated versions of the questionnaire were translated back in English by the translators, with the objective to account for items lost in translation. The method used for this, was verbally reading back the translated questionnaire into English.

3.8 CONCLUSION

A questionnaire on LBP and associated factors, based on existing validated measurement tools, was developed for our population. The questionnaire's validity was tested through a patients' validation study and an expert panel validation study. The final questionnaire, the Primary Health Low Back Pain Questionnaire was constructed and translated into Afrikaans and isi-Xhosa, with the aim to use as a measurement tool in the cross-sectional study. The next chapter describes the methodology for this cross-sectional study.

3.9 LIMITATION TO THE PILOT STUDY

Due to small sample size in the reliability study, further research into this aspect may be required. It was difficult to conduct the reliability study because subjects did not return for the second moment of data collection. As a result, the test-retest reliability of the following sections of the PHLBPQ could not be established: Demographics, Treatment Received and parts of the General Health and Low Back Pain section.

CHAPTER 4: METHODOLOGY

The results of the systematic review as described in Chapter 2 provided information for the development of the questionnaire reported on in Chapter 3. In this chapter the methodology is described used for the cross-sectional study conducted among the low-income communities visiting the community health centres (CHCs) in the Cape Town Metropole.

4.1 AIM AND OBJECTIVES

4.1.1 Aim of the Study

The aim of the study was to establish the prevalence of low back pain (LBP) and identify and examine the associated factors among the low-income communities making use of the CHCs in the Cape Town Metropole, in order to make recommendations regarding the management of LBP in primary health care.

4.1.2. Objectives

The objectives were:

1. To assess the prevalence and severity of LBP among individuals from the low-income communities in the Cape Town Metro District, attending the CHCs.
2. To establish the factors associated with LBP.
3. To make recommendations regarding the management of LBP within the primary health care sector in the Cape Town area.

4.1.3 Research study design

A cross-sectional study was conducted at eight randomly selected CHCs in the larger Cape Town area.

4.2 STUDY POPULATION

The Western Cape has an estimated total population of 5,356,900, which makes for 10.9% of the total population of South Africa (Mid-Year population estimates 2009, Statistical release P0302, Statistics SA). The Western Cape is divided into six rural districts, with the Cape Town District serving the largest population of about 3,324,209 projected for 2010 (Comprehensive service plan 2007, Department of Health, Western Cape Province). Refer to Figure 4.1.

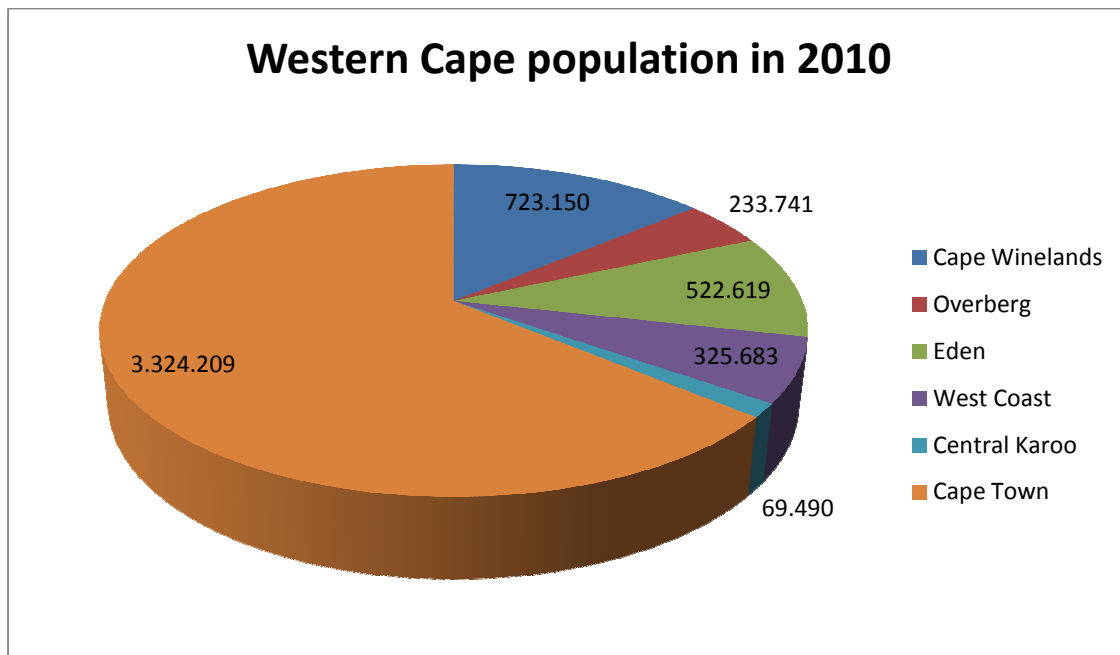


Figure 4.1: Western Cape population in 2010

4.2.1 Organization of health care in South Africa

Health care in South Africa is divided into public health care (subsidized medical care with an income-based fee for patients) and private health care. The large uninsured population of the Western Cape (nearly 70%) makes use of the public health sector, which is further divided into primary health care, secondary health care and tertiary health care. For the first, emergency and non-emergency medical needs, uninsured clients seek management at primary health care facilities like the CHCs and clinics.

The Cape Town district or Cape Town Metropole is divided into eight sub-districts, each offering primary health care through several CHCs and clinics. The eight sub-districts are: Northern, Western, Southern, Eastern, Klipfontein, Mitchell's Plain, Tygerberg and Khayelitsha. Refer to Table 4.1 for an overview of estimated patient contacts for each of the districts.

Table 4.1: Sub-districts, CHCs and estimated patient contacts for 2010 (Source: Comprehensive service plan 2007, Department of Health, Western Cape Province)

| Sub-district | CHCs open 40 hrs a week | CHC's open 24/7 | Estimated annual patient contacts 2010 |
|---------------------|--------------------------------|------------------------|---|
| Northern | 4 | 1 | 609,215 |
| Western | 5 | 1 | 761,835 |
| Southern | 5 | 1 | 995,648 |
| Eastern | 5 | 1 | 784,078 |
| Klipfontein | 5 | 2 | 800,585 |
| Mitchell's Plain | 4 | 2 | 932,137 |
| Tygerberg | 7 | 2 | 1,072,625 |
| Khayelitsha | 4 | 2 | 764,596 |
| Total | 39 | 12 | 6,720,719 |

4.3 SAMPLE SELECTION

Cluster randomization was applied to select a CHC in each sub-district. A purpose build excel sheet was constructed to randomly list all CHCs according to each of the eight sub-districts. Eight CHCs were then randomly selected. Criteria were set up for eligible CHCs. If the CHC was deemed inappropriate because it did not serve the population group needed for this study, the next CHC on the random list was selected. Refer to Figure 4.2 for the CHCs per district.

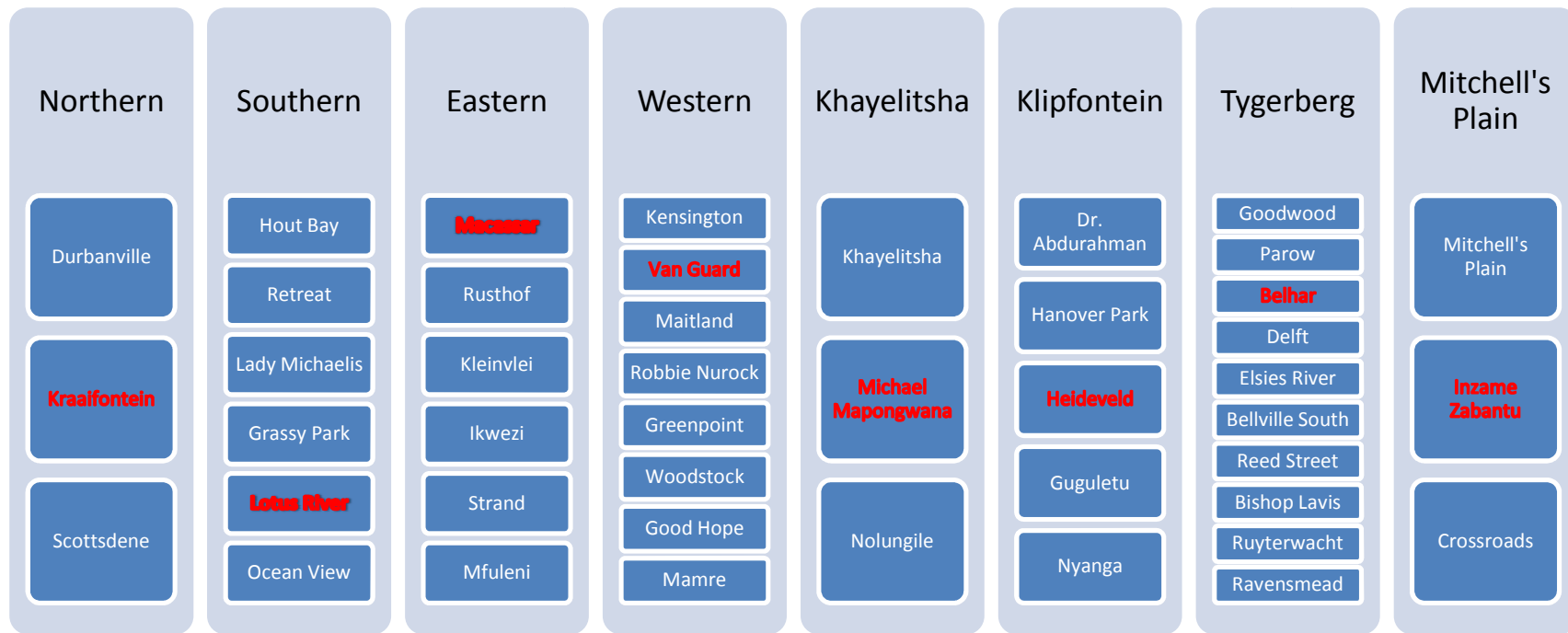


Figure 4.2: Flow chart of CHCs in the Cape Town District (included CHCs highlighted)

4.3.1 Sample size calculation

Sample size calculation determined that about 600 subjects were needed for this study. The sample size was based on the size of the population (750 daily visitors for the 24-hour CHCs, 150 daily visitors for the smaller CHCs) and a predicted prevalence of 50%.

4.3.2. Inclusion and exclusion criteria

Subjects were eligible for inclusion if they were:

- Adults (18 years or older);
- 'Literate' according to the definition of UNESCO as referenced by the South African department of Labour: 'a person who is functionally literate can engage in all those activities in which literacy is required for effective functioning [...]' (Trends in Education Macro Indicators Report 2009, South African Department of Education).
- Listed as a patient at the facility.

Subjects were excluded from this study if they were:

- Visiting the CHC as patients of the Midwife Obstetric Unit at the day of data collection.

4.4. ETHICAL CONSIDERATIONS

In August 2008, approval was obtained for this study from the Committee for Human Research, Department of Research Development and Support, Stellenbosch University. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health). We conducted this study according to internationally accepted ethical standards and guidelines. Refer to Appendix P for the ethical approval letters.

Written permission was obtained from the Western Cape Department of Health, division District Health Services and Programmes (Appendix Q). Permission was also obtained from all facility managers or sisters-in-charge of the CHCs where data collection took place.

Consent forms were available in English, Afrikaans and isi-Xhosa. Each participant signed two consent forms and kept one for their own administration. See appendix R for the consent forms in the three languages.

4.5 SETTING

Through cluster randomization a list was generated with eight selected CHCs. In three cases we had to deviate from the randomized list:

- Mfuleni CHC in the Eastern district and Mamre CHC in the Western district could not be reached telephonically and were replaced by Macassar CHC and Van Guard CHC respectively.
- Scottsdene CHC in the Northern district mainly services mothers and babies and was replaced by Kraaifontein CHC.

4.5.1 Eastern district: Macassar CHC

Macassar is a small day clinic in the eastern part of the Cape Town District, with an average of 150-200 patients passing through daily. It serves a large geographical area of mainly Afrikaans speaking people. Data collection took place on Thursday 26th of February 2009 between 8 am and 3 pm.

4.5.2 Northern district: Kraaifontein CHC

Kraaifontein CHC is a large 24-unit that serves about 700-1200 patients daily. The CHC provides medical care for a largely isi-Xhosa speaking population and the geographical area includes a few large informal settlements. Data collection took place on Tuesday 24th of February 2009, between 8 am and 2:30 pm.

4.5.3 Western district: Van Guard CHC

Van Guard CHC is a large 24-hour unit in the western part of the Cape Town District. A large patient population passes through this CHC daily of whom 50% is primarily isi-Xhosa speaking and 50% is mainly English speaking. It also serves a large informal settlement area. Data collection took place on Wednesday 25th of February between 9 am and 3 pm.

4.5.4 Southern district: Lotus River CHC

Lotus River CHC is a small day clinic that serves a maximum of 200 people daily. The population primarily speaks Afrikaans. Data collection took place on Monday the 23rd of February 2009 between 8 am and 1 pm.

4.5.5 Khayelitsha district: Michael Mapongwana CHC

Michael Mapongwana CHC, or Michael M, is located in the Khayelitsha district in an area called Harare. It is a very busy, 24-hour unit that serves between 700 and 1000 people daily. The building incorporates a TB clinic, an ARV clinic and a Midwife Obstetric Unit (MOU). It serves several informal settlement areas and the language primarily spoken is isi-Xhosa. Data collection took place on Wednesday the 18th of February 2009 between 8 am and 4 pm.

4.5.6 Mitchell's Plain district: Inzame Zabantu CHC

Inzame Zabantu CHC, also known as Brown's Farm CHC, is a small but busy day clinic in Philippi, situated in an informal settlement. It serves a maximum of 200 people daily. The language primarily spoken is isi-Xhosa. Data collection took place on Tuesday 17th of February 2009, between 7:30 am and 1 pm.

4.5.7 Tygerberg district: St. Vincent CHC

St. Vincent CHC in Belhar serves a mainly Afrikaans speaking population, with about 200 people passing through on a busy day. Data collection took place on Monday 9th of March 2009 between 7:30 am and 1 pm.

4.5.8 Klipfontein district: Heideveld CHC

Heideveld CHC is a small but busy day clinic that serves about 200 people a day, largely an Afrikaans speaking community. Data collection took place on Monday 16th of February 2009 between 8 am and 4 pm.

4.5.9 Instrumentation

The measurement tool we used was the Primary Health Low Back Pain Questionnaire (PHLBPQ), described in Chapter 3. The questionnaire was available in three languages: English, Afrikaans and isi-Xhosa.

4.6 DATA COLLECTION PROCEDURES

The facility managers of the selected CHCs were contacted telephonically, and the objectives of the study and facilities needed for data collection were discussed. Thereafter further written information on the research, as well as copies of the approval letters by the Western Cape

Department of Health and the Committee for Human Research were sent to the facility managers. Once permission was obtained from the facility managers, the main researcher visited the CHCs to check if the location and population were suitable for data collection. The area for data collection was assigned to us by the facility manager.

Data collection took place in February and March 2009.

4.6.1 Research team

The research team consisted of the main researcher, two isi-Xhosa speaking research assistants and health workers (physiotherapists, occupational therapists and health promoters) employed by the CHCs. The research assistants were present at facilities where more than 50% of the visitors spoke isi-Xhosa. In other CHCs the health workers helped with recruitment and translation into Afrikaans or isi-Xhosa.

4.6.2 Data collection areas

At Macassar CHC, Van Guard CHC and St Vincent CHC the waiting area at the clinicians' rooms was used for data collection. At Kraaifontein CHC, Lotus River CHC and Heideveld CHC the pharmacy waiting area was the designated area for data collection. At Michael Mapongwana CHC the main waiting area, where people collected their medical folder, was used for data

4.6.3 Questionnaire administration and recruitment of subjects

Initially a promotional speech in English and in either Afrikaans or isi-Xhosa, was held by the main researcher and an employee of the CHC. Thereafter each new individual that entered the area was approached. People were given the consent forms to read through. Once they agreed to take part and signed the form they were asked to complete the questionnaires. In some occasions, the research assistants helped with translation or explanation of the questions.

After completion the questionnaire was checked by the main researcher for missed sections, while ensuring the privacy of the participants. The participants' weight measurements were taken with a calibrated digital scale and height measurements were obtained. BMI was calculated at a later stage. Each participant was given a cool drink and a snack to thank them for their participation.

4.7 DATA ANALYSIS

Data was entered in MS Excel and analyzed with SAS 9.1. Descriptive statistics were reported as mean and standard deviations or percentages, as appropriate. Odds ratios (with 95% confidence intervals) expressed the crude associations between the range of individual putative exposures (considered in binary form) and LBP (also considered in binary form), calculated using univariate logistic regression models.

The results of the cross-sectional study are presented in Chapter 5.

CHAPTER 5: RESULTS

The aim of this study was to identify and examine the factors associated with low back pain (LBP) among the visitors of eight community health centres (CHCs) in the Cape Town district.

Data collection took place in February and March 2009. We collected data on a sample of 504 respondents. Fifteen questionnaires were excluded because of the following reasons:

- Participants were younger than 18 (1)
- More than 50% of the data was missing (12)
- Respondents weren't able to complete because they did not have reading glasses with them (2)

This total sample for data analysis was $N = 489$. In this chapter the results are presented.

5.1 SAMPLE DESCRIPTION

We set a target of 75 subjects per CHC, but adjusted this target upwards or downwards on the days of data collection, depending on the eligibility and availability of subjects.

Figure 5.1 illustrates the eligible subjects recruited per CHC, divided by gender. The largest group of participants came from Michael Mapongwana CHC, located in the Khayelitsha district, which is the largest of the eight CHCs.

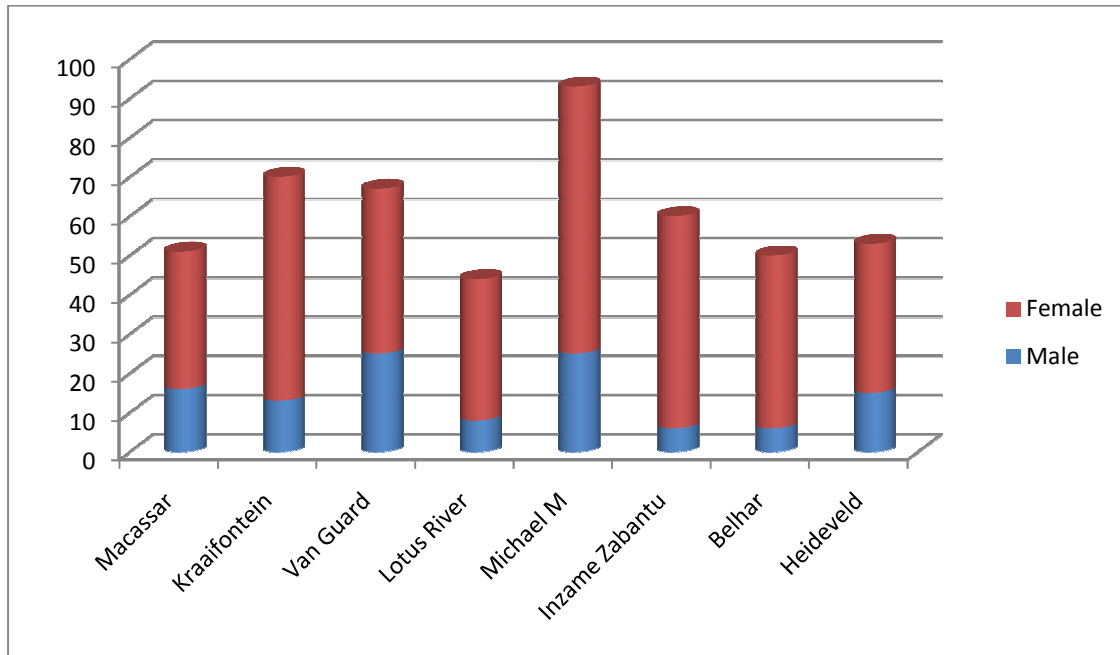


Figure 5.1: Included patients per CHC (N=489)

5.1.1 Language

Of the 489 questionnaires completed, 232 were in isi-Xhosa, 162 were Afrikaans questionnaires and 95 were in English. Figure 5.2 presents the distribution of Afrikaans, English and isi-Xhosa questionnaires.

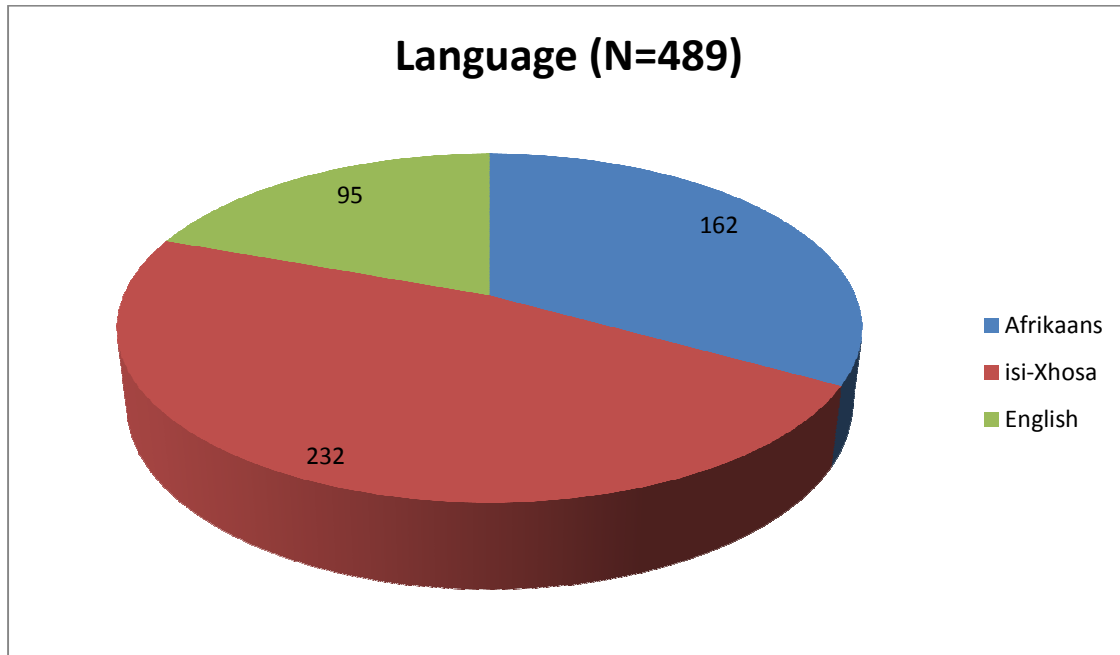


Figure 5.2: Distribution of Afrikaans, English and isi-Xhosa questionnaires

5.2 DEMOGRAPHICS

5.2.1 Gender and age

Of the 489 participants, 76% were female. The mean age was 44.8 years (SD \pm 13.95). Refer to Table 5.1 for sample characteristics.

5.2.2 Ethnic groups (N=488)

The sample consisted mainly of people from the ethnic groups 'coloured' (n=237) and 'black' (n=233), with the groups 'Indian/Asian' (n=3) and 'white' (n=3) under represented. Twelve people were unwilling to respond to the question on ethnicity, and there were missing data on one person. Refer to Table 5.1 for sample characteristics.

5.2.3 Marital status (N=487)

Almost half of the respondents (47.43%, n=231) were married, 32.85% (n=160) single, 10.48% (n=51) separated or divorced and 9.24% (n=45) widowed. Refer to Table 5.1.

5.2.4 Educational level (N=480)

Only 17% (n=82) finished high school, 2.71% (n=13) finished a college education and only two participants (0.42%) had a university degree. Forty-four percent (n=212) completed schooling up to grade 10 or 4th year in high school, and 35.63% (n=171) indicated their highest level of schooling to be primary school. Data are presented in Table 5.1.

5.2.5 Employment status (N=478)

Nearly 25% (n=119) of the participants were employed at the time of data collection. Forty-two percent (n=201) indicated to be unemployed, 18.41% (n=88) were housewives, 12.76% (n=61) were retired, and 1.88% (n=9) were students. Refer to Table 5.1.

5.2.6 Occupational categories (N=169)

A total of 169 people responded to the question: *'What kind of work are you currently doing?'* Of these 169 people, 23.08% (n=39) worked as general labourer, 36 people (21.30%) worked as domestic worker/cleaner, and 37 people (21.89%) indicated to have other work, for example nursing (n=10), security officer (n=5), or teacher (n=6). Sixteen people indicated to perform 'other' work but did not further specify. The rest of the sample indicated to either be self employed, work in administration, do factory work or work as a general manager. Figure 5.3 presents the workers per occupational category as used by the South African Department of Labour. The category 'elementary' includes general labourers and the category 'service and sales' includes domestic workers and shop assistants.

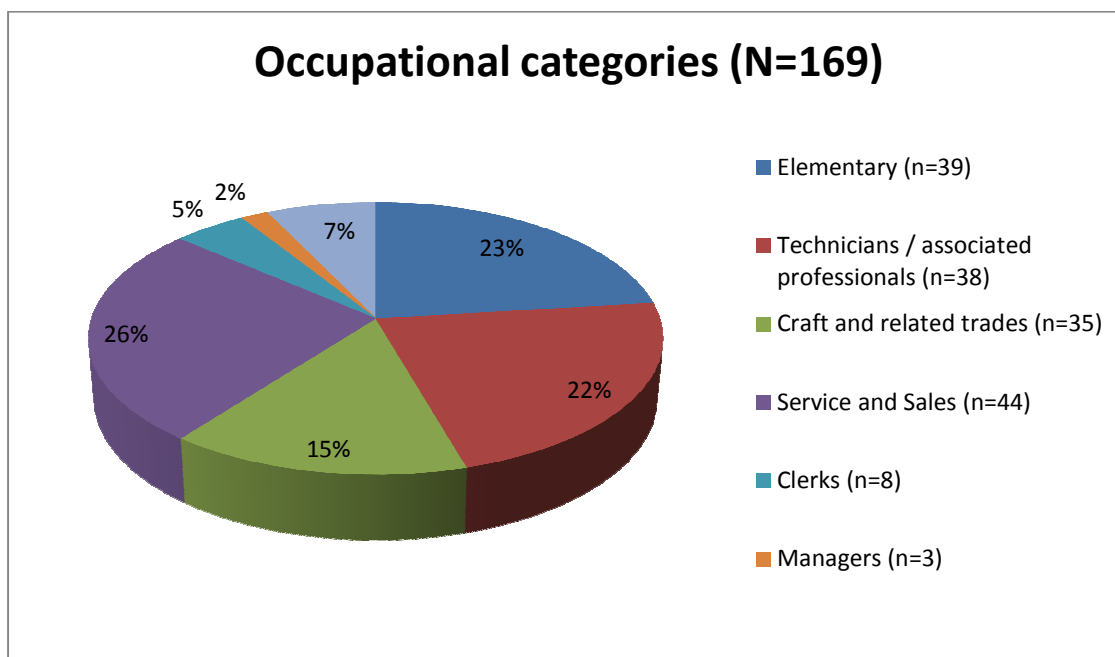


Figure 5.3: Occupational categories (as described by South African Department of Labour)

There is a discrepancy between the total amount of respondents ($n=119$) indicating to be employed at the time of data collection (refer to paragraph 5.2.5), and the total amount of respondents answering the questions on occupational categories ($n=169$). An explanation for this can be that some of the retired and the self-employed participants responded to the questions on occupational categories, although they did not consider themselves to be formally employed.

5.2.7 Monthly household income (N=459)

With the larger part of the sample being unemployed it follows that the monthly household income of most of the participants is less than R500 (US\$50) a month. Hundred and eighty-two people (39.65%) indicated to live of a joint monthly household income of R 500 or less, followed by 148 people (32.24%) earning a combined monthly household income between R501 and R1000 (US\$100). Seventy-six people (16.56%) earned between R1001 and R3000 (US\$300) monthly, 29 participants (6.32%) had a joint monthly household income between R3001 and R5000 (US\$500) and eleven people (2.4%) earned between R5001 and R7000 (US\$700) monthly. Only 13 people (2.8%) indicated they had a combined monthly household income above R7000. Refer to Table 5.1 for sample characteristics.

5.2.8 Housing

5.2.8.1 Type of housing (N=481)

Nearly 56% (n=269) indicated to reside in a brick house, with the rest of the participants to be living in a shack (18.5%, n=89), a flat (10.81%, n=52), a Wendy house (10.4%, n=50) a room/sharing a house (3.33%, n=16) and other not specified housing (1.04%, n=5).

5.2.8.2 Inhabitants (N=481)

Three hundred and fourteen people (65.28%) shared a house with 3-6 inhabitants while 85 participants (17.67%) shared a house with a maximum of two people. Forty-eight respondents (9.98%) shared their house with 7-8 people, and 34 people (7.07%) indicated to live with more than eight people in one house.

The data are presented in Table 5.1.

Table 5.1: Sample characteristics

| Variable | No. | Percentage | Missing data |
|-----------------------------|-----|------------|--------------|
| Gender: | | | |
| - Males | 114 | 23.36 | 1 |
| - Females | 374 | 76.64 | |
| Age group: | | | |
| - < 40 | 178 | 36.48 | 26 |
| - 40-60 | 217 | 44.47 | |
| - > 60 | 68 | 13.93 | |
| Ethnic group: | | | |
| - Black | 233 | 47.75 | 13 |
| - Coloured | 237 | 48.57 | |
| - Indian/Asian | 3 | 0.61 | |
| - White | 3 | 0.61 | |
| Marital status: | | | |
| - Single | 160 | 32.85 | 2 |
| - Married | 231 | 47.43 | |
| - Separated/Divorced | 51 | 10.48 | |
| - Widowed | 45 | 9.24 | |
| Housing situation (1) | | | |
| - Brick house | 269 | 55.93 | 8 |
| - Wendy House | 50 | 10.40 | |
| - Flat | 52 | 10.81 | |
| - Room/sharing | 16 | 3.33 | |
| - Shack | 89 | 18.50 | |
| - Other | 5 | 1.04 | |
| Housing situation (2) | | | |
| - 1-2 inhabitants | 85 | 17.67 | 8 |
| - 3-4 inhabitants | 167 | 34.72 | |
| - 5-6 inhabitants | 147 | 30.56 | |
| - 7-8 inhabitants | 48 | 9.98 | |
| - > 8 inhabitants | 34 | 7.07 | |
| Highest level of education: | | | |
| - Primary school | 171 | 35.63 | 9 |
| - Grade 10 (standard 8) | 212 | 44.17 | |
| - High school (Matric) | 82 | 17.08 | |
| - College | 13 | 2.71 | |
| - University | 2 | 0.42 | |
| Employment Status | | | |
| - Employed | 119 | 24.90 | 11 |
| - Retired | 61 | 12.76 | |
| - Student | 9 | 1.88 | |
| - Unemployed | 201 | 42.05 | |
| - Housewife | 88 | 18.41 | |

Table 5.1: Sample characteristics continued

| Variable | No. | Percentage | Missing data |
|---|-----|------------|--------------|
| Monthly household income* | | | |
| - ≤ R 500 (US\$ 50) | 182 | 39.65 | 30 |
| - R 501-R 1000 (US\$ 50-US\$ 100) | 148 | 32.24 | |
| - R 1001-R 3000 (US\$ 100-US\$ 300) | 76 | 16.56 | |
| - R 3001-R 5000 (US\$ 300-US\$ 500) | 29 | 6.32 | |
| - R 5001-R 7000 (US\$ 500-US\$ 700) | 11 | 2.40 | |
| - R 7001-R 9000 (US\$ 700 – US\$ 900) | 8 | 1.74 | |
| - R 9001- R11000 (US\$ 900 – US\$ 1100) | 3 | 0.65 | |
| - > R 11000 (>US\$ 1100) | 2 | 0.44 | |

* exchange rate 15/02/2009: 1ZAR = 0.10 USD

5.3 DESCRIPTIVE ANALYSIS: GENERAL HEALTH

The following data on lifestyle and general health issues were collected: body mass index (BMI), smoking and drinking habits, prevalence of bodily pain, and prevalence of (chronic) diseases.

5.3.1 BMI (N=487)

BMI was calculated according to the formula weight/length², and was obtained for 487 respondents. Of this group, nearly 70% was indexed in the categories overweight, obese or morbidly obese. Nearly 23% (n=111) of the sample had a BMI between 25 and 29.9, considered to be overweight. Nearly 40% (n=193) scored between 30 and 39.9, considered to be obese, and for 7.39% (n=36) the BMI was > 40, categorized as morbidly obese.

Of the rest of the sample, 26.69% (n=130) had a normal weight, with a BMI between 19 and 24.9, and a percentage of 3.49 (n=17) fell in the 'underweight' category with a BMI of < 19. Refer to Table 5.2 for an overview of these data.

5.3.2 Smoking (N=478) and alcohol consumption (N=88)

On smoking habits data was collected on a total of 478 respondents. Hundred and thirty-one people (27.4%) responded with 'yes' to the question 'Do you smoke?', and 72.6% (n=347) indicated that they did not smoke at all. Refer to Table 5.2.

Only 88 people (18.49%) indicated that they use alcohol. Of this group, 86 people responded to further questions on frequency of drinking. Sixty participants (69.77%) consumed a maximum of

three glasses of alcohol a week, and 15 people (17%) drank between four to nine glasses of alcohol a week. Eleven people (12.8%) indicated to consume more than ten units of alcohol weekly. The strength of the alcohol used was not further specified in the questionnaire and therefore no information was retrieved on this. The data are presented in Table 5.2.

5.3.3 Chronic diseases / co-morbidities (N=455)

Three hundred and fifty people (76.92%) indicated to have been diagnosed with one or more chronic diseases. Hypertension was the most common diagnosis (45.27%, n=206), followed by arthritis (27.25%, n=124). Arthritis was not further specified and could include both osteoarthritis and rheumatoid arthritis. Nearly 19% (n=86) had been diagnosed with a form of diabetes (type not further specified). Fourteen percent (n=64) reported to have been diagnosed with HIV/AIDS. Refer to Table 5.2 for data on co-morbidities.

5.3.4 Perception of general health (N=482)

The participants were asked two questions on perceived general health:

- 1) *How would you rate your health?*
- 2) *Compared to one year ago, how would you rate your health in general NOW?*

On the first question data were collected of 482 people. Just over half of this group (51.24%, n=247) indicated to rate their health as being fair. Ninety-three people (19.3%) considered their health to be good, and 15.57% (n=75) perceived their health as being poor. Thirty four people (7.05%) found their health to be very good and 33 people (6.84%) perceived their health as being excellent.

Four hundred and sixty eight people answered the second question, on the perception of their health compared to one year ago. Just over 32% (n=152) considered their health to be about the same as one year ago, 23.08% (n=108) said their health to be a little better and 19.23% (n=90) considered it to be much better than one year ago. Eighty-six people (18.37%) perceived their health to be a little worse than one year ago and 6.84% (n=32) perceived their health to be much worse than one year ago. The data is presented in Table 5.2.

5.3.5 Use of pain medication (N=469)

Sixty-one percent (n=287) of the sample indicated that they use medication for muscle and joint pain. The most common pain medication used was paracetamol (n=160), followed by NSAIDs

such as ibuprofen / Voltaren© (n=117) and paracetamol with codeine (n=75). Thirty-nine people indicated the use of amitriptyline. Of the group that indicated that they use pain medication, just over 33% (n=96) used two or more prescribed painkillers. The most common combinations were paracetamol with a NSAID or NSAIDs with amitriptyline.

The data are presented in Table 5.2.

Table 5.2: General health data

| Variable | No. | Percentage | Missing data |
|--|-----|------------|--------------|
| BMI: | | | |
| - < 19 | 17 | 3.49 | 2 |
| - 19-24.9 | 130 | 26.69 | |
| - 25-29.9 | 111 | 22.79 | |
| - 30-39.9 | 193 | 39.63 | |
| - ≥ 40 | 36 | 7.39 | |
| Smoking: | | | |
| - Yes | 131 | 27.40 | 11 |
| - No | 347 | 72.60 | |
| Drinking: | | | |
| - Yes | 88 | 18.49 | 13 |
| - No | 388 | 81.61 | |
| (units a week) | | | |
| - 1 glass occasionally | 33 | 38.37 | 2 |
| - 1-3 | 27 | 31.40 | |
| - 4-6 | 9 | 10.46 | |
| - 7-9 | 6 | 6.97 | |
| - ≥ 10 | 11 | 12.80 | |
| Self perceived general health | | | |
| - Excellent | 33 | 6.84 | 7 |
| - Very good | 34 | 7.05 | |
| - Good | 93 | 19.3 | |
| - Fair | 247 | 51.24 | |
| - Poor | 75 | 15.57 | |
| Health now compared to 1 year ago | | | |
| - Much better than 1 year ago | 90 | 19.23 | 31 |
| - A little better than 1 year ago | 108 | 23.08 | |
| - About the same as 1 year ago | 152 | 32.48 | |
| - A little worse than 1 year ago | 86 | 18.37 | |
| - Much worse than 1 year ago | 32 | 6.84 | |

Table 5.2: General health data continued

| Variable | No. | Percentage | Missing data |
|--|-----|------------|--------------|
| Co-morbidities* (N=455) | | | |
| - Diabetes Mellitus type I and II | 86 | 18.9 | 34 |
| - Hypertension | 206 | 45.27 | |
| - High cholesterol | 42 | 9.23 | |
| - Ischemic heart disease | 40 | 8.79 | |
| - Arthritis (osteoarthritis or rheumatoid) | 124 | 27.25 | |
| - Asthma | 74 | 16.26 | |
| - HIV/Aids | 64 | 14.06 | |
| - None of the above | 105 | 23.07 | |
| * = more than one answer possible | | | |
| Medication | | | |
| - Yes | 287 | 61.2 | 20 |
| - No | 182 | 38.8 | |
| Kind of medication used* | | | |
| - Paracetamol | 160 | | |
| - Paracetamol + codeine | 75 | | |
| - Ibuprofen / Voltaren© | 117 | | |
| - Amitriptyline / antidepressants | 39 | | |
| - Grandpa's© (working substance = paracetamol, caffeine and aspirin) | 25 | | |
| - Other | 24 | | |
| * = more than one answer possible | | | |

5.4. PREVALENCE OF BODILY PAIN

Three questions on prevalence of pain in different body areas were asked, to retrieve information on point-, month- and lifetime prevalence of pain.

5.4.1 Point prevalence of bodily pain (N=477)

The area that had the highest point-prevalence was the lower back, with 73.79% (n=352) of the participants indicating to have pain in the lower back at the moment of data collection.

Other body areas where a high point-prevalence for pain was found were the feet (36.68%, n=175), knees (31.86%, n=152), upper back / thoracic (30.6%, n=146), neck / cervical (28.93%, n=138), shoulder (27.25%, n=130) and hands / wrists (24.73%, n=118). Refer to Figure 5.4 for an overview of the frequency of bodily pain.

5.4.2 Month prevalence of bodily pain (N=456)

Similar to point prevalence, we found that the highest month prevalence of pain was in the area of the lower back, with 52.85% (n=241) indicating to have had LBP over the past month. Other areas with a high month prevalence of pain were the feet (35.74%, n=163), the knees (33.55%, n=153), neck / cervical (28.28%, n=129), shoulder (27.41%, n=125), upper back / thoracic (25.65%, n=117) and wrists / hands (23.9%, n=109). Refer to Figure 5.4.

5.4.3 Lifetime prevalence of bodily pain (N=468)

The life time prevalence for pain in the lower back was 76.49% (n=358). Other areas with a high lifetime prevalence for pain were the knees (39.95%, n=187), neck / cervical (35.68%, n=167), upper back / thoracic (35.04%, n=164), hands / wrists (32.47%, n=152), shoulder (31.83%, n=149) and feet (31.83%, n=149).

The data on frequency of bodily pain are presented in Figure 5.4.

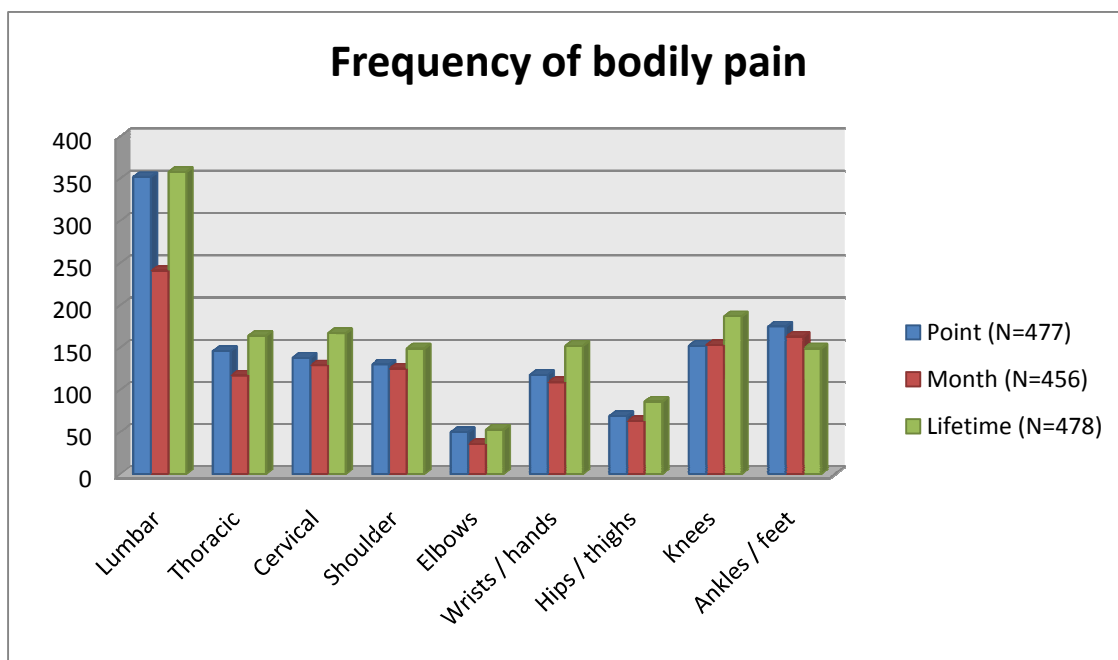


Figure 5.4: Frequency of bodily pain

5.4.4 Characteristics of LBP

Among the total sample of 489, a high point- (73.79%) and lifetime prevalence (76.49%) was observed. Participants that indicated to suffer from LBP at the moment of completion of the questionnaire were asked to complete additional questions on disability, and on frequency and length of separate LBP episodes.

5.4.4.1 Disability (N=355)

Three hundred and fifty-five people answered the question on disability. Twenty-one people (5.92%) indicated that LBP did not interfere with their daily activities at all. The rest of the study sample indicated 'a little bit of interference with daily activities' (n=93, 26.2%), 'moderate interference with daily activities' (n=84, 23.66%), 'quite a bit of interference with daily activities' (n=96, 27.04%) and 'extreme interference with daily activities' (n=61, 17.18%). Data are presented in Table 5.3.

5.4.4.2 Chronicity (N=361)

On the question '*How often have you had separate episodes of low back pain in the past year?*' 36.84 % (n=133) indicated to suffer from LBP on a daily basis. Nearly 20% (n=72) indicated they experienced more than 10 separate episodes of LBP in the past year. Just over 25% (n=92) experienced between two and four separate episodes of LBP in the past year. The rest of the sample indicated a single episode of LBP (n=30, 8.31%) in the past year, or between 5-10 episodes (n=34, 9.42%) in the past year.

On the question '*How long was your longest episode of low back pain during the past year?*' a response of 357 people was obtained. Just over 26% (n=94) indicated that the longest period of consecutive days they had been suffering from LBP lay between three and twelve months. Refer to Table 5.3 for the data on chronicity.

5.4.4.3 Seeking medical care from a general practitioner (N=356) or physiotherapist (N=332)

Of the group of people that indicated to suffer from LBP, 30.62% (n=109) responded that they had not consulted a general practitioner/doctor for their LBP in the past year. Sixty-five people (18.26%) had visited a doctor once for their LBP, nearly twenty-five percent (n=87) had seen the doctor between two and four times in the past year and 27 subjects consulted a doctor 5-7 times

in the past year. Nineteen percent (n=68) consulted a doctor more than seven times in the past year. Data are presented in Table 5.3.

Consultation of a physiotherapist for LBP was rare. Sixty-four percent (n=214) did not consult a physiotherapist at all, 14.46% (n=48) consulted a physiotherapist once in the past year, and 70 subjects (21.08%) received physiotherapy treatment for their LBP more than once in the past year.

The data are presented in Table 5.3.

Table 5.3: Characteristics of LBP episodes and disability

| Question asked | No. | Percentage | Missing data |
|--|-----|------------|--------------|
| How much did LBP interfere with your normal activities? (N=355) | | | |
| - Not at all | 21 | 5.92 | 134 |
| - A little bit | 93 | 26.20 | |
| - Moderately | 84 | 23.66 | |
| - Quite a bit | 96 | 27.04 | |
| - Extremely | 61 | 17.18 | |
| How often have you had separate episodes of LBP during the past year? (N=361) | | | |
| - Once | 30 | 8.31 | 128 |
| - 2-4 times | 92 | 25.48 | |
| - 5-10 times | 34 | 9.42 | |
| - > 10 times | 72 | 19.94 | |
| - My complaints are always there | 133 | 36.84 | |
| How long was your longest episode of LBP during the past year? (N=357) | | | |
| - < 1 day | 68 | 19.05 | 132 |
| - 1-7 days | 99 | 27.73 | |
| - 1-4 weeks | 44 | 12.32 | |
| - 1-2 months | 31 | 8.68 | |
| - 2-3 months | 21 | 5.88 | |
| - 3-12 months | 94 | 26.33 | |
| How many times in the past year did you consult a doctor for your LBP? (N=356) | | | |
| - Not at all | 109 | 30.62 | 157 |
| - Once | 65 | 18.26 | |
| - 2-4 times | 87 | 24.44 | |
| - 5-7 times | 27 | 7.58 | |
| - > 7 times | 68 | 19.10 | |
| How many times in the past year did you consult a physiotherapist for your LBP (N=332) | | | |
| - Not at all | 214 | 64.46 | 157 |
| - Once | 48 | 14.46 | |
| - 2-4 times | 30 | 9.04 | |
| - 5-7 times | 13 | 3.92 | |
| - > 7 times | 27 | 8.13 | |

5.4.5 Treatment received (N=302)

A set of questions was asked to determine what medical treatment people with LBP generally received at their CHC. On the first question: *'In the past year, what kind of treatment did you receive for your low back pain?'* 302 people responded. Ninety percent (n=273) indicated that

pain medication was prescribed to them as the only form of treatment for their LBP. Physiotherapy was received by 48 people, only six people had been referred to occupational therapy and one person had undergone lower back surgery.

On the question how many people had ever been referred to a physiotherapist for their LBP, only 29.38% (n=114) responded positively.

5.4.5.1 Patient satisfaction (N=311)

To gain insight in the satisfaction with the medical treatment the patients had received, the question: *'Do you feel the treatment that you received for LBP has helped you?'* was asked. Of the 311 respondents that answered this question, 36.66% (n=114) chose the option 'no, not at all', 48.23% (n=150) responded with 'yes, for a little while' and 15.11% (n=47) chose 'yes it helped me a lot'.

5.4.5.2 Consultation time (N=301)

Hundred and thirty people (43.19%) indicated that the doctor took the time to answer all their questions when they came for a consultation, and 26.58% (n=80) responded that the doctor took enough time to answer their questions but they were not able to ask *all* their questions. Ninety-one people (30.2%) indicated the doctor did not take enough time to answer their questions. Therefore, satisfaction with the medical treatment received from the doctors, was generally high.

5.4.5.3 Preferences for an educational program (N=396)

A total of 396 people responded to the questions on preferences for an educational program on prevention of LBP.

The largest percentage indicated that the educational program should take place at the CHC (n=221) or a community centre (n=158). 63.87% (n=244) preferred a short program lasting 6-12 weeks with weekly sessions, rather than a longer program with ongoing weekly sessions.

Fifty-five percent (n=219) wanted the sessions to be offered in the mornings, and 65.15% (n=258) preferred the sessions to take place in a group of people with the same problem, instead of in individual sessions with a physiotherapist.

Booklets and pamphlets or a video or DVD were the most popular means, chosen by the participants, to assist in education on LBP prevention.

Lastly the participants who indicated to be currently working (N=169) were asked if they had ever been educated at work on how to prevent back pain. Nearly 85% (n=144) responded that they had never received any education on prevention of LBP.

5.5 PSYCHOLOGICAL DISTRESS (N=468)

Four hundred and sixty-eight people completed the K10 for psychological distress. The K10 is a 10-item scale with five response categories, ranging from 1 (none of the time) to 5 (all of the time). The score was calculated as the sum of all responses. Based on the total score, the respondents were grouped in one of the following four categories:

1. Score 10-19: likely to be well
2. Score 20-24: likely to have a mild mental disorder
3. Score 25-29: likely to have a moderate mental disorder
4. Score 30-50: likely to have a severe mental disorder

Of the 109 males that completed the K10 questionnaire, 37.61% (n=41) scored in the 'likely to be well' scale, and 34.86% (n=38) had the highest score on the K10 scale, which indicates severe psychological distress.

Among the females (n=359), 22.56% (n=81) scored between 10-19, while 42.34% (n=152) scored in category four: 'likely to have a severe mental disorder'. The overall median score on the K10 was 27. The data are presented in Figure 5.5.

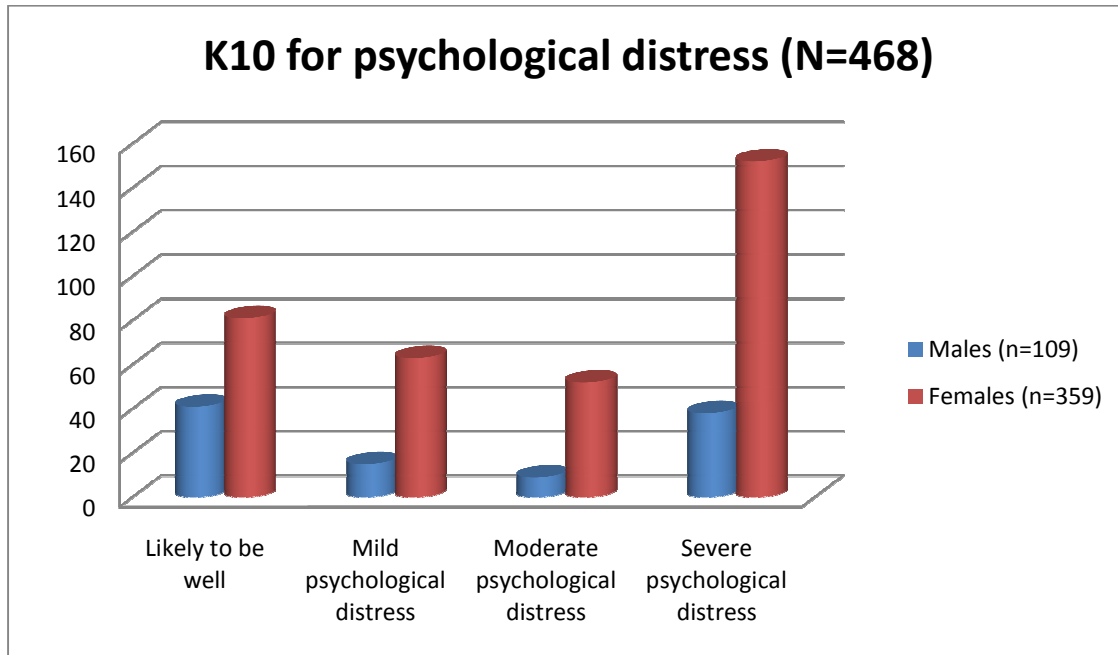


Figure 5.5: K10 scores; male and female distribution

5.6 SPORT AND LEISURE TIME ACTIVITIES (N=450)

Five questions were taken from the Baecke questionnaire for a person's habitual physical activity (Baecke *et al* 1982). The sports and physical activity section started with the question 'Do you participate in any organized sports'? Of the 450 people that answered this question, 82.71% (n=373) indicated to not participate in any organized sports.

Only a small group (n=85) answered the questions on frequency and total hours spent playing sports. Thirty-one respondents (36.47%) said to play sports once a week with an average of 1-2 hours a week. The data are presented in Table 5.4.

Table 5.4: Data on sports activity

| Question asked | No. (%) | Missing data |
|---|--------------|--------------|
| Do you participate in any organized sports? (N=450) | | |
| - Yes | 77 (17.07%) | 49 |
| - No | 373 (82.71%) | |
| If yes, how many times a week? (N=85) | | |
| - < Once | 20 (23.53%) | 404 |
| - Once | 31 (36.47) | |
| - 2 times | 16 (18.82) | |
| - 3-4 times | 9 (10.59) | |
| - ≤ 5 times | 9 (10.59) | |
| If yes, how many hours a week? (N=84) | | |
| - < 1 hour | 23 (27.38) | 405 |
| - 1-2 hrs | 36 (42.86) | |
| - 2-4 hrs | 16 (19.05) | |
| - 4-6 hrs | 6 (7.14) | |
| - > 6 hrs | 3 (3.57) | |

To determine physical activity during leisure time, we asked questions on time spent watching television and time spent walking or cycling during leisure time.

The participants indicated little physical activity during leisure time: 40.7% (n=188) indicated to watch television sometimes, 27.3% (n=126) watched television often and 14.7% (n=68) watched television very often during leisure time. Hundred and seventy-eight people (40.36%) indicated to walk sometimes during leisure time, 18.14% (n=80) walked often and 17.7% (n=78) walked very often during leisure time.

The participants were asked to specify the amount of minutes spent daily on walking to and from work, shops, church etcetera. 34.73% (n=149) responded that they do not walk daily, 23.31% (n=100) indicated to walk between 15 and 30 minutes daily and 12.59% (n=54) said to walk for more than an hour daily. The data are presented in Table 5.5.

Table 5.5: Physical activities during leisure time

| Activity | Never | Seldom | Sometimes | Often | Very Often | Total |
|-------------|-------------|------------|-------------|------------|------------|-------|
| Watching TV | 37 (8.0%) | 43 (9.30%) | 188 (40.70) | 126 (27.3) | 68 (14.70) | N=462 |
| Walking | 46 (10.43) | 59 (13.37) | 178 (40.36) | 80 (18.14) | 78 (17.70) | N=441 |
| Cycling | 304 (76.57) | 38 (9.57) | 39 (9.8) | 7 (1.76) | 9 (2.26) | N=397 |

5.7 ASSOCIATIONS BETWEEN INDIVIDUAL FACTORS AND LBP

Individual risk factors include lifestyle factors like BMI, smoking and drinking habits, co-morbidities, medication use, as well as age, gender, ethnicity and other demographic factors. Odds ratios (OR) with 95% confidence intervals are presented for each risk factor.

5.7.1 Ethnicity

Belonging to the black ethnic group was found significantly associated with having LBP (OR 1.7, 95% C.I. 1.1-2.7).

5.7.2 Perception of general health

People with a fair or poor perceived general health had a significant greater likelihood to have LBP (OR 2.4, 95% C.I. 1.5-3.7). Compared to perceiving general health as poorer than one year ago, having health better or the same as last year, was found to be protective for having LBP (OR 0.4, 95% C.I. 0.3-0.8 for health better than one year ago, OR 0.3; 95% C.I. 0.2-0.6 for health the same as one year ago). Refer to Table 5.6.

5.7.3 Co-morbidity

Having any kind of co-morbidity was significantly associated with having LBP (OR 1.8, 95% C.I. 1.2-2.9).

5.7.4 Use of pain medication

Taking any kind of pain medication was associated with having LBP (OR 1.6; 95% C.I. 1.0-2.4).

5.7.5 BMI

No significant association was found between having a BMI > 29 and having LBP but a trend towards significance was observed (OR 1.3; C.I. 0.8-1.9).

5.7.6 Smoking and alcohol consumption

A trend for smoking as an influence on LBP was found, with an OR of 1.4 (95% C.I. 0.9-2.3). No effect was found for consuming alcohol on having LBP (OR 0.8; 95% C.I. 0.4-1.5).

5.7.7 Demographics

There is no association between age, gender, level of education, housing situation, employment status or income and having LBP. Refer to Table 5.6 for the OR's and 95% confidence intervals.

5.7.8 Physical fitness

Based on a cumulative score from the questions on leisure time activity and sports activity, we found no significant association between physical fitness and LBP (OR 1.4, 95% C.I. 0.9-2.2). Scoring low on physical activity was not predictive of developing LBP. The data are presented in Table 5.6.

Table 5.6: Individual risk factors for LBP: odds ratios and 95% confidence intervals

| Variable | Exposure definition | Odds Ratio (95% C.I.) |
|-------------------------------|------------------------------------|-----------------------|
| Age | > 44.85 | 0.8 (0.5-1.2) |
| Gender | Female | 1.2 (0.7-1.9) |
| Marital status | Married | 0.9 (0.6-1.5) |
| Ethnic group | Black | 1.7 (1.1-2.7)* |
| Level of education | Primary school | 1.4 (0.8-2.5) |
| | Standard 8 only | 0.8 (0.5-1.4) |
| | Higher | 1.0 |
| Type of house | Independent (brick or Wendy house) | 0.8 (0.5-1.3) |
| Amount of inhabitants | 1-2 | 1.5 (0.7-3.1) |
| | 3-4 | 0.9 (0.5-1.8) |
| | 5-6 | 0.9 (0.5-1.7) |
| | ≥ 7 | 1.0 |
| Employment status | Employed, housewife | 0.9 (0.5-1.3) |
| | Student, retired | 1.2 (0.6-2.3) |
| | Unemployed | 1.0 |
| Household income | < R 500 | 1.4 (0.8-2.6) |
| | R 500-R 3000 | 1.0 (0.6-1.8) |
| | > R 3000 | 1.0 |
| BMI | > 29 | 1.3 (0.8-1.9) |
| Self perceived general health | Fair or poor health | 2.4 (1.5-3.7)* |
| Health compared to 1 year ago | Better | 0.4 (0.3-0.8)* |
| | Same | 0.3 (0.2-0.6)* |
| | Worse | 1.0 |
| Smoking | | 1.4 (0.9-2.3) |
| Drinking | > Occasional | 0.8 (0.4-1.5) |
| Co-morbidity | Any co-morbidity | 1.8 (1.2-2.9)* |
| Using pain medication | Any kind of pain medication | 1.6 (1.0-2.4)* |
| Physical fitness | Cumulative score (Baecke 1982) | 1.4 (0.9-2.2) |

* Significant association between variable and LBP, OR equals or greater than 1.0

5.8 ASSOCIATIONS BETWEEN PSYCHOSOCIAL FACTORS AND LBP

Among the psychosocial factors studied, possible associations between LBP and a high score on the Kessler scale for psychological distress (K10) were analyzed, as well as psychosocial work factors like job satisfaction, job stress and control over job tasks. Possible associations between having chronic, disabling LBP and having a high K10 score, as well as having chronic LBP and dissatisfaction with the medical treatment received were also investigated.

5.8.1 K10 score

The results show that having a K10 score >27 was significantly predictive of having LBP (OR 2.8, 95% C.I. 1.8-4.5).

5.8.2 Chronic disabling LBP and K10 score

People with a high K10 score had a significantly higher risk of having chronic disabling LBP (OR 2.3, 95% C.I. 1.2-4.2).

5.8.3 Job satisfaction, job control and job stress

Considering the larger part of the sample not currently working, no significant association was found between satisfaction with work and LBP (OR 4.4; 95% C.I. 0.6-34.5).

When analyzing a cumulative score of all questions on job control, no significant association was found between control over work and LBP (OR 1.4; 95% C.I. 0.7-2.5).

No significant association between stress at work and LBP was found, after analyzing a cumulative score of all questions on job stress (OR 1.1; 95% C.I. 0.6-2.0).

5.8.4 Treatment satisfaction

Satisfaction or dissatisfaction with the medical treatment received for LBP was not associated with having chronic, disabling LBP (OR 1.3; 95% 0.8-1.9).

The data are presented in Table 5.7.

Table 5.7: Psychosocial risk factors for LBP: odds ratios and 95% confidence intervals

| Variable | Exposure definition | Odds Ratio (95% C.I.) |
|----------------------------------|--|-----------------------|
| K10 score | > 27 (median) | 2.8 (1.8-4.5)* |
| Chronic LBP and K10 score | Longest episode LBP: > 1 month or > 5 episodes of LBP in past year | 2.3 (1.2-4.2)* |
| Work satisfaction | Cumulative score: no satisfaction | 4.4 (0.6-34.5) |
| Job control | Cumulative count of control | 1.4 (0.7-2.5) |
| Job stress | Cumulative count of stress | 1.1 (0.6-2.0) |

* Significant association between variable and LBP, OR equals or greater than 1.0

5.9 ASSOCIATIONS BETWEEN PHYSICAL WORK FACTORS AND LBP

Work type and physical work tasks were analyzed for possible associations with LBP.

5.9.1 Work type and cumulative physical workload

Compared with not working, type of work does not have any associations with having LBP. When compared with work type 1, being a labourer, we found no association between any type of work and having LBP. The data are presented in Table 5.8.

A cumulative count of all physical activities at work did not show an association between physical workload and LBP (OR 1.3; 95% C.I. 0.8-2.1).

5.9.2 Manual handling: lifting loads > 20 kg

A significant association was found between lifting, pushing, pulling or carrying loads heavier than 20 kilogram and having LBP (OR 3.3, 95% C.I. 1.2-8.5).

5.9.3 Static positions: kneeling and squatting

A significant association was observed between kneeling and squatting at work for long periods of time, and having LBP: OR 3.4, 95% C.I. 1.1-10.4.

5.9.4 Other physical work factors

No significant associations were found for bending, twisting, repetitive movements, working with vibrating tools, driving, and lifting, pushing, pulling or carrying loads lighter than 20 kilograms.

The data are presented in Table 5.8.

Table 5.8: Physical risk factors for LBP: odds ratios and 95% confidence intervals

| Variable | Exposure definition | Odds Ratio (95% C.I.) |
|---|---|------------------------|
| Type of occupation | General labourer | 1.2 (0.5-2.8) |
| | Machinist / machine operator | 0.8 (0.4-1.9) |
| | Supervisor in a factory | 1.7 (0.7-4.1) |
| | Craft worker | 2.8 (0.8-9.6) |
| | Domestic worker / cleaner | 0.8 (0.4-1.7) |
| General labourer | Machinist / machine operator | 0.8 (0.4-1.9) |
| | Supervisor in a factory | 1.6 (0.7-4.0) |
| | Craft worker | 2.8 (0.8-9.4) |
| | Domestic worker / cleaner | 0.8 (0.4-1.6) |
| Physical workload cumulative | Cumulative count of physical activities at work | 1.3 (0.8-2.1) |
| Lifting, pushing, pulling, carrying > 5 kg | | 1.3 (0.6-2.8) |
| Lifting, pushing, pulling, carrying > 20 kg | | 3.3 (1.2-8.5)* |
| Bending / twisting upper body or trunk | | 0.9 (0.4-2.3) |
| Bending / twisting neck | | 1.7 (0.8-3.9) |
| Reaching with arms / hands | | 1.5 (0.7-3.2) |
| Holding arms above shoulder level | | 1.9 (0.9-4.1) |
| Uncomfortable positions | | 1.7 (0.7-3.9) |
| Static positions | | 1.1 (0.5-2.5) |
| Repetitive movements arms / legs | | 1.2 (0.5-3.1) |
| Working with hands below knee level | | 2.1 (0.9-4.6) |
| Prolonged standing | | 0.6 (0.2-1.5) |
| Prolonged sitting | | 1.3 (0.6-2.8) |
| Prolonged walking | | 0.9 (0.4-1.9) |
| Prolonged kneeling or squatting | | 3.4 (1.1-10.4)* |
| Driving | | 1.3 (0.5-3.8) |
| Working with vibrating tools | | 2.1 (0.8-6.0) |
| Cold environment | | 1.9 (0.7-5.5) |

* Significant association between variable and LBP, OR equals or greater than 1.0

5.10 SUMMARY OF RESULTS

- The point prevalence for LBP is 73.79%, LBP lifetime prevalence is 76.49%.
- Over a quarter of the people with LBP suffered for longer than three months in the past year, nearly 37% suffered from LBP daily.
- 90% of the LBP sufferers received pain medication as first choice of treatment.

- 42% of the females and nearly 35% of the males in the sample suffer from severe psychological distress.
- Belonging to the black ethnic group is significantly associated with having LBP.
- A fair or poor perception of general health is significantly associated with having LBP.
- Having better or same general health compared to last year is protective for having LBP.
- Having any kind of co-morbidity is significantly associated with LBP.
- Using any type of pain medication is significantly associated with LBP.
- There is a tendency that smoking increases the likelihood of experiencing LBP.
- A high K10 score is significantly associated with LBP.
- Having severe psychological distress is significantly associated with having chronic disabling LBP.
- Lifting, pushing, pulling and carrying loads > 20 kg is significantly associated with having LBP.
- Kneeling and squatting for prolonged periods of time is significantly associated with having LBP.

5.11 CONCLUSION

In this chapter, we described the results of data collection among 489 visitors of eight CHCs in the Cape Town district. A very high point- and lifetime prevalence for LBP was observed. Factors that were significantly associated with LBP were the use of pain medication, having a co-morbidity, belonging to the black ethnic group, having a perception of poor general health, psychological distress, manual handling tasks such as lifting, pushing, pulling and carrying loads heavier than 20 kg, and prolonged kneeling and squatting.

In the next chapter the results will be discussed in light of existing epidemiological evidence and recommendations will be made to address the high LBP prevalence among the visitors of the CHC's.

CHAPTER 6: DISCUSSION

This thesis reports on findings of a cross-sectional study of clients of eight community health centres (CHCs) in the Cape Town Metropole, South Africa. The research reported in this thesis had the objective of exploring prevalence rates of LBP and identifying the factors associated with LBP. This chapter presents an overview and a discussion of the key findings in terms of their implications for the primary care provided in community health settings.

6.1 STUDY SAMPLE GENERALIZABILITY

We believe that this study sample was representative of South Africans in lower socioeconomic situations, since 83% of the population in South Africa is uninsured and makes use of public health care (General Housing Survey 2009, Statistics SA). To ensure a representative sample of South Africans in lower socioeconomic situations, we conducted this research in low-income, low socioeconomic South African communities that utilized public health facilities for their health needs. These communities generally comprise people who are not members of a medical aid scheme and thus the CHCs provide vital primary health care services for people who would otherwise not be able to access care. The data on monthly household income as described in Chapter 4, confirm the low socio-economic status of the study sample. 71.8% of the study sample earns less than R 800 a month (US\$ 80, exchange rates at date of data collection 1ZAR = 0.10US\$) and falls under the poverty line, as described by the South African Department of Social Development (South African Department of Social Development, Poverty Line Discussion Document, 2008).

The study sample was largely female (76%) and consisted mainly of members from the black and coloured ethnic groups. Three quarters of the participants had only completed primary school or at most grade 10 (4th year high school). Just short of 25% of the sample was employed. As a reference, at the end of the first quarter in 2009 (at the same time as data collection) the unemployment rate in South Africa was 23.5%, with the larger part (27.7%) among black South Africans, followed by coloured (19.5%), Indian/Asian (12.7%) and white (4.6%) (Statistics South Africa, Mid-year population estimates, 2009). Compared to the national statistics, this study sample had a much higher unemployment rate (42%). An explanation for this could be that among the people identified as unemployed in the study sample, no distinction was made between student, housewife, retired or unemployed.

Of the workers, 23% were employed as general labourers and 21% as domestic workers. Twenty-one percent indicated to have other work, for example nursing (n=10), security officer (n=5) and teacher (n=6). The rest of the sample indicated to perform other, not further specified, jobs.

6.2 PREVALENCE OF LBP AMONG THE VISITORS OF THE CHCs

The point prevalence for LBP among our sample was 73.79%, whilst lifetime prevalence for LBP was 76.49%. These findings do not compare with prevalence rates published in recent longitudinal studies on LBP and risk factors. Chapter 2 reported the results of our systematic review of relevant longitudinal studies on LBP prevalence and risk factors published in the last ten years. Considerable variability in prevalence and incidence rates was identified in this review. The studies, which were all from developed countries, reported LBP prevalence rates of 48% (Hartvigsen *et al* 2001), 43% (Leijon *et al* 2007), 14.8% (Carroll *et al* 2001) and 9.9% (Power *et al* 2001).

Currently no longitudinal studies on LBP are available for South Africa or similar developing countries. The most relevant literature was from Louw *et al* (2007), who describe an average lifetime LBP prevalence among adults of 62% in a systematic review on cross-sectional prevalence studies conducted on the African continent.

The variability in prevalence rates between our study and published literature could be explained by the setting in which this research was conducted. The prevalence rate reported in this study confirms our hypothesis that compared to the general population; the study sample would show a higher prevalence rate for LBP.

The high LBP point- and lifetime prevalence in this study in relation to other studies could be explained by its design and the way the questions were formulated which may have produced biased answers. The setting (primary health care facility), was also a likely bias, as it was more likely to have a higher proportion of LBP sufferers compared to the general population, simply because of its function.

6.2.1 Chronic LBP among the low-income communities

Of the study participants who reported LBP, nearly 37% experienced LBP daily. The high prevalence of chronic LBP could be explained by sample characteristics and living

circumstances. High levels of psychological distress, low levels of physical activity, being unemployed and poor self rated health are factors that have been found associated with the transition from acute to chronic LBP (Thomas *et al* 1999, Enthoven *et al* 2006). These findings highlight the importance of the community health settings in assisting (chronic) LBP sufferers to understand and manage their condition, in order to optimize their health and improve the quality of their lifestyles.

6.3 FACTORS ASSOCIATED WITH LBP IN THE PRIMARY HEALTH SETTING

This study reported several individual, physical and psychosocial factors to be associated with LBP, among the clients of CHCs. The findings are summarized in Table 6.1. The significant positive predictors are bolded in Table 6.1 and the significant protective predictor is in italic.

Table 6.1: Summary of risk factors in order of strength of association

| Risk factor | OR (95% C.I) |
|--|-----------------------|
| Prolonged kneeling or squatting | 3.4 (1.1-10.4) |
| Lifting > 20 kg | 3.3 (1.2-8.5) |
| K10 score > 27; moderate or severe mental distress | 2.8 (1.8-4.5) |
| Fair or poor perceived general health | 2.4 (1.5-3.7) |
| Chronic disabling LBP and high K10 score | 2.3 (1.2-4.2) |
| Any kind of co-morbidity | 1.8 (1.2-2.9) |
| Ethnicity; black descent | 1.7 (1.1-2.7) |
| Any kind of pain medication | 1.6 (1.0-2.4) |
| Smoking | 1.4 (0.9-2.3) |
| Physical inactivity | 1.4 (0.9-2.2) |
| BMI > 29 | 1.3 (0.8-1.9) |
| Better health than 1 year ago | <i>0.4 (0.3-0.8)</i> |

There are many putative causes of LBP, including functional, occupational, emotional, genetic and environmental. Many of these are inter-related and difficult to 'tease out' even in well-researched populations. Given the scant research into LBP prevalence and causes in lower socioeconomic communities in South Africa, and the limitations of cross-sectional data, it is difficult to identify true markers of LBP from this study. The findings of this study, however, might aid in identifying new research questions among this population.

In Table 6.2 the results of this study are compared to existing evidence.

Table 6.2: LBP and associated factors, studies compared

| Risk factor | This study | Other Studies (first author and year of publication) |
|--|------------|--|
| Prolonged kneeling or squatting | ↑ | ↑ (Harkness 2003, Van Vuuren 2005) |
| Lifting > 20 kg | ↑ | ↑ (Andersen 2007, Bovenzi 2009, Miranda 2008) |
| K10 score > 27; psychological distress | ↑ | ↑ (Jarvik 2005, Carroll 2004, Power 2001, Miranda 2008) |
| Fair or poor perceived general health | ↑ | ↑ (Thomas 1999) |
| Chronic disabling LBP and high K10 score | ↑ | ↑ (Pincus 2002) |
| Any kind of co-morbidity | ↑ | ↑ (Harkness 2003, Miranda 2008, Hestbaek 2003, Leino-Arjas 2006) |
| Ethnicity; black descent | ↑ | No literature available |
| Any kind of pain medication | ↑ | No literature available |
| Smoking | ≈↑ | ↑ (Power 2001, Miranda 2008, Leino-Arjas 2006, Tubach 2002) |
| Physical inactivity | ≈↑ | ↑ Miranda 2008 |
| BMI > 29 | ≈↑ | ↑ (Van Nieuwenhuijse 2009, Miranda 2008, Leino Arjas 2006) |
| Better health than 1 year ago | ↓ | No literature available |

≈↑ = trend towards significance

6.3.1 Physical risk factors: kneeling, squatting and lifting

Many physical risk factors were studied in this research. Only two were found to be significantly associated with LBP (albeit with wide confidence intervals): lifting, pushing, pulling and carrying loads > 20 kg and kneeling/squatting for prolonged periods of time. The cross-sectional design of this study, as well as the small percentage of employed people could explain why no other significant associations between physical work tasks and LBP were found.

Recent South African cross-sectional studies undertaken among manual workers (Van Vuuren *et al* 2005 and 2007) confirm the results found in this study. The authors recommend future industry-specific studies on preventive measures and emphasize the importance of multi-modal intervention strategies in industrial settings. The workplace and the CHCs have a combined role to play in the prevention and management of LBP among workers performing manual labour.

6.3.2 Psychological distress and acute LBP

A high score on the K10 measure for psychological distress was significantly associated with the development of LBP (OR 2.8, C.I. 1.8-4.5). Forty-two percent of the women and nearly 35%

of the men in the study sample appeared to suffer from severe psychological distress. There are several prospective studies that support the association between psychological distress and LBP (Power *et al* 2001, Carroll *et al* 2004, Jarvik *et al* 2005). A recent longitudinal study undertaken among the general population in Sweden (Leijon and Mulder, 2009) reports an increase in prevalence of LBP when there is a concurrent increase of psychological distress. Refer to Table 6.2 for study comparisons.

The low-income communities in the Cape Town district are more likely to suffer from psychological distress compared to people with a more secure financial situation. This is well described by Jelsma *et al* (2008) in a study undertaken among the same population, isi-Xhosa speaking people living in the informal settlements. The authors describe a study on health related quality of life with the aim to portray the items most valued by this population. Food availability came first on the list, owning a brick house second, access to medical services third and safety fourth. Having no bodily pain came 40th on the list of most valued items. The results of the study imply that when basic needs are not provided for, seeking treatment for physical pain is not a priority. It also gives insight into the life stressors to which this population is exposed.

6.3.3 Psychological distress and chronic LBP

Having a high K10 score was significantly associated with chronic disabling LBP (OR 2.3, C.I. 1.2-4.2). Pincus *et al* (2002) report in a systematic review on the role of psychological factors on chronic LBP, that psychological distress and depression increase the risk of chronicity, defined as persistence of LBP symptoms and disability.

The high prevalence rate for chronic LBP (37%) as well as the high prevalence of psychological distress among this study's sample, confirm the relationship between psychosocial factors and persistent, disabling LBP. The uninsured population of the Cape Metropole is primarily dependent on the CHCs for their physical and mental health care. The mental health departments at the CHCs are generally staffed by mental health nurses and social workers. Only for specialist care mental health patients are referred to secondary or tertiary psychiatric hospitals. It seems that the CHCs are currently not equipped to deal with such a large number of people with mental health issues.

The findings of this study suggest that clinicians at the CHCs should pay more attention towards treatment of underlying causes for persistent musculoskeletal pain, since these psychosocial factors influence the outcome of the disease.

This study did not find significant associations between psychological work factors such as job demand, job control, supervisor support and LBP. The relatively small sample of workers could be responsible for this. Van Vuuren *et al* (2005, 2007) found significant associations among South African workers for work place support, job control and work related fear avoidance beliefs.

6.3.4 Perception of general health

This study found that having a perception of a fair or poor general health was significantly associated with having LBP (OR 2.4, C.I. 1.5-3.7). These findings are congruent with the literature. Thomas *et al* (1999) report a poor self rated health as a more than threefold risk of having persistent disabling LBP at one year follow up.

Having better or same general health compared to last year is protective for having LBP (OR 0.4, C.I. 0.3-0.8). A possible explanation for the protective effect of this factor is that with improvement of general health comes the belief that LBP symptoms can improve. Our findings concur with Iles *et al* (2008), who conducted a systematic review on psychosocial predictors of failure to return to work in non chronic LBP. The authors found strong evidence for expectation of recovery as a predictor for a positive outcome on return to work. They also found moderate evidence for fear avoidance beliefs as predictors for return to work.

Management of LBP in primary health care should involve management of the general health status of the client. To focus solely on the management of musculoskeletal symptoms when a person's general health is poor, is perhaps unlikely to be effective. Education could be key here too, since perception of general health is likely to improve with the understanding of the natural course of a condition like LBP.

6.3.5 Co-morbidities

This study found that having any kind of health co-morbidity was significantly associated with LBP (OR 1.8, C.I. 1.2-2.9). Three quarters of the sample were diagnosed with a co-morbidity; with hypertension (45.27%) and arthritis (27.25%) being the most prevalent. These findings are consistent with other prospective studies on co-morbidities and prevalence of LBP. Hestbaek *et*

al report, in a systematic review published in 2003, on positive associations between LBP and a variety of co-morbidities: headache/migraine, respiratory disorders, cardiovascular disease and poor perceived general health. Leino-Arjas *et al* (2006) report on a study conducted among employees of an engineering company. Seven cardiovascular disease risk factors were studied on their association with LBP. Among the men, systolic blood pressure was significantly associated with frequent LBP with radiating pain to one or both legs. An overall score on cardiovascular disease showed a graded association with increased LBP. Harkness *et al* (2003) conducted a study among newly employed workers at a variety of work settings and found that having pain in any other region of the body was predictive of newly developed LBP at follow up. Miranda *et al* (2008) report that the presence of a chronic disease was a significant predictor for LBP among subjects younger than 40 years old.

The South African Demographic and Health Survey of 2003 reports on the self-reported prevalence of chronic diseases in a survey done among adults aged > 15 years. Hypertension (HPT) was most prevalent in females (18.8%) compared to males (8.8%). Ischaemic Heart Disease was diagnosed in 3.9% of the women and 2.7% of the men, and Diabetes Mellitus (type not further specified) was diagnosed in 3.9% of the females and 2.6% of the males. About one-fifth of the adults aged > 15 had been diagnosed with mild HPT (South African Demographic and Health Survey 2003, South African Department of Health).

The high prevalence of hypertension among the population in this study (45.27%) could, according to Pieters and Vorster (2008), be explained through genetic factors, dietary factors and changes in lifestyle associated with urbanization. The authors argue in favour of nutritional interventions in a narrative review published recently.

An explanation for the association of having any kind of co-morbidity with LBP could lie in decreased general health status as a result of having a chronic disease. Diabetes is shown to be associated with musculoskeletal pain and osteoarthritis because of its effect on connective tissues in the body (Burner and Rosenthal, 2009). Both osteoarthritis and rheumatoid arthritis are characterized by muscle and joint pain. Hypertension in itself is probably not responsible for causing LBP, however the underlying causes such as unhealthy behaviour, could be the pathway of association.

Clinicians at the CHCs should perform a thorough screening for co-morbidities on patients presenting with persistent LBP, and be alert to the inter-relationship between certain chronic diseases and musculoskeletal pain.

6.3.5.1 Prevalence of HIV/AIDS

Fourteen percent of the study sample reported being diagnosed with HIV/AIDS. We did not find an association between being diagnosed with HIV/AIDS and LBP, but found an association between having any kind of co-morbidity and LBP.

Our findings compare with prevalence rates of HIV/AIDS nationally: 10.6% was reported HIV-positive among the South African population in 2009 (Mid-Year population estimates 2009, Statistics SA). Among the 15-49 year olds the prevalence rate was higher: 17%. Currently one fifth of the females in their reproductive ages, are HIV-positive.

Although we could not establish an association between the prevalence of HIV/AIDS and LBP, other studies have found significant associations with having bodily pain. Lee *et al* (2009) conducted a longitudinal study among San Francisco HIV-positive residents, of which 72% received anti-retroviral treatment. Fifty-five percent of the sample indicated pain to be a major symptom, the location of the pain was not further described by the authors.

Two cross-sectional studies undertaken in South Africa among adult HIV-positive patients also report on pain as a troubling symptom. Norval (2005) describes that 98% of the study sample reported pain, with 34.4% mentioning pain to be the worst symptom. The most common site where pain was reported was the lower limbs. 11.6% of the sample reported back pain and 12% reported generalized pain. Van As *et al* (2009) report on 45 HIV-positive adults, of which 71% indicated to suffer from pain. Pain was found to be associated with limited activity and participation.

No formal research has been published so far on the relationship between LBP and HIV/AIDS and thus our research establishes the groundwork for future projects.

Primary health care settings in South Africa, responsible for the management of people diagnosed with HIV/AIDS, will have to address the additional musculoskeletal symptoms with which these people might present.

6.3.6 Ethnicity

Belonging to the ethnic group of black South Africans, was significantly associated with having LBP (OR: 1.7, C.I. 1.1-2.7). Possible explanations for this lie in the other associations found in this study. It can be argued that this group of South Africans suffers from more psychological

distress as a result of their poorer living circumstances, when compared to other ethnic groups. The association between low income and psychological distress has been reported in literature by Orpana *et al* (2009) and Mc Millan *et al* (2010). Other explanations could be found in lower educational levels which mean a greater likelihood of having to perform manual labour, and being exposed to physical risk factors like heavy lifting.

6.3.7 Use of pain medication

Our study found that the use of any kind of pain medication was significantly associated with LBP (OR 1.6, C.I.1.0-2.4). Prescribing pain medication seems to be the first course of action taken by the clinicians at the CHCs when a person presents with symptoms of LBP. The 'Treatment guidelines and Essential Drug List' (South African Department of Health, Primary Health Care, 2008) describes in the section 'non-cancer pain' no other treatment options for acute pain (lasting < 4 weeks) than the prescription of analgesics, NSAIDs or mild opioids. Pain is described as chronic when lasting > 4-6 weeks, and an outline is given on proposed medication. Optional referral to an occupational therapist or physiotherapist, as well as addressing lifestyle issues and psychosocial problems are mentioned in this chapter. As far as we know, no national guidelines on the treatment of LBP are in place. Louw *et al* (2007) report that the prescription of pain medication is the most common form of treatment offered to LBP sufferers on the African continent. International guidelines recommend prescription of analgesics and NSAIDs in acute LBP, however evidence for the effect of pain medication decreases in strength as acute LBP transitions into chronic LBP (CLIP Canadian guidelines 2007, European Guidelines 2004). Lasting benefits of pain medication in chronic low back pain (CLBP) cannot be expected unless patients' activity levels go up and function improves. Medication should therefore be provided as adjunctive to other forms of intervention (Mens 2005).

There are currently no studies available to support the finding that regular intake of pain medication is associated with having LBP. A possible explanation could be found in the administration of pain medication. According to Nicholson (2009) compliance with regular administration of short acting analgesics is essential to prevent gaps in pain relief. The author speaks of patients 'chasing their pain' as a result of non-compliance.

Clinicians at the CHCs should, when prescribing pain medication, educate clients on the use of pain medication in order to improve the effectiveness of the drug. Repeated prescription of pain

medication should be avoided in the absence of chronic muscle and joint diseases such as osteoarthritis or rheumatoid arthritis. Instead, alternative strategies should be explored.

6.3.8 Lifestyle choices: smoking, alcohol consumption and physical activity

The study sample consisted of mainly non-smokers (72.6%) and non-drinkers (81.5%). Smoking showed a trend towards significance in this study (OR 1.4, C.I. 0.9-2.3), which is comparable with other longitudinal studies (Leino-Arjas *et al* 2006, Miranda *et al* 2008, Tubach *et al* 2002, Power *et al* 2001) which reported significant associations between smoking and LBP. In this study, no significant associations were found between alcohol consumption and LBP.

Only 17.3% of the sample participated in organized sports. In this study we did not find a significant association between low physical activity level and LBP. Miranda *et al* (2008) reports that health behaviour, defined as the sum of smoking, being overweight and lack of physical exercise, increases the risk of LBP among people older than 50 years. Another prospective study conducted by Strøyer *et al* (2008) on the role of physical fitness on the intensity of LBP reports a lower risk for people with a self assessed medium aerobic fitness level compared to people with a high aerobic fitness level, but in this study the general association between aerobic fitness and LBP intensity was non-significant.

An explanation for the lack of sports activity among this study's sample could lie in problems with access of sports facilities. The residential areas of people from the low-income communities often lie far from the city centre. Sports ground and affordable gyms are not always available in these areas. Studies recently published in the UK and the USA confirm that people with low socioeconomic status have fewer opportunities to use sports facilities that are affordable than people with a higher socioeconomic status (Panter *et al*, 2008, Moore *et al* 2008).

Another explanation could be that transport, especially for people living in the rural areas or informal settlements, is not well organized in the Cape Town district. Most people have to walk long distances to the bus stop or train station on a daily basis. The long travelling times might negatively influence a person's motivation for performing leisure time sports.

6.3.9 BMI

Although this study did not find a significant association between a high BMI and LBP, several prospective studies have reported BMI to be a risk factor for developing LBP (Van

Nieuwenhuijse *et al* 2009, Miranda *et al* 2008, Leino-Arjas *et al* 2006). Thus this needs to be explored further in lower socioeconomic South African populations with LBP.

This study's sample comprised nearly 70% with a BMI above normal range, 23% being overweight and nearly 40% being obese. These findings concur with data from the Demographic and Health Survey 2003, where the prevalence of obesity among females > 15 years of age was reported as being 23%. Among males the prevalence of obesity was 9%. 21% of the men and 29% of the women were classified as overweight at the time of the survey.

An explanation for the high prevalence of obesity in this sample could be that malnutrition or under-nutrition in foetal life and in early childhood increases the chance of obesity in adulthood (Pieters and Vorster 2008, Vorster and Kruger, 2007). The National Food Consumption Survey Fortification Baseline (NFCS-FB-I, South Africa, 2005) reports the following statistics on obesity and malnutrition among children: one in ten children was obese with the highest prevalence reported in urban households, and one in five children were stunted. The level of maternal education was found to be an important determinant of both nutritional disorders. This report indicates that malnutrition is common among the low-income communities in South Africa. The Western Cape Department of Health has set up nutritional programs and all CHCs employ nutrition advisors and dieticians.

In an effort to effectively treat CLBP the CHCs need to continue to offer nutritional advice and education to overweight and obese people with LBP.

6.4 THE CURRENT ROLE OF THE CHC IN THE MANAGEMENT OF LBP

Results from the sections 'treatment received' and 'satisfaction with treatment' were reported in Chapter 5.

Just over 29% of the sample with LBP had received physiotherapy for their condition. Common forms of physiotherapeutic interventions offered were massage, exercise and advice / education. No information was gathered on treatment for LBP in the different stages: acute, sub acute or chronic. There is evidence that physiotherapeutic interventions in themselves can be useful in treatment of acute and sub acute LBP. In CLBP physiotherapy should be supported by other disciplines because of its multidimensional nature (European Guidelines, 2004).

It seems that a large percentage of this study sample did not receive optimal treatment for LBP. 71% of the people with LBP had never received physiotherapy. Limited personnel resources result in long waiting times before starting treatment and this could attribute to the transition from acute to chronic LBP. A study undertaken by Casserley-Feeney *et al* (2007) compared physiotherapy treatment for LBP between public and private settings, and reported the prevalence of more chronic patients in the public sector than in the private sector. Longer waiting times before receiving treatment was given as one of the causes: 23% of the patients transitioned from acute LBP to chronic LBP while waiting for their first physiotherapy treatment.

Public health care in South Africa is limited in its resources and supplies medical care to a large population. Implementing evidence based treatment strategies for LBP requires funding, time and educated medical staff. Pharmaceutical expenses could however be cut down when alternative treatment strategies are offered.

The subjects of this study were asked about their satisfaction with the medical treatment they had received for their LBP. Forty-eight percent indicated that the treatment had improved the LBP symptoms for a little while, but nearly 37% indicated that the treatment had not helped at all. Experiences with failed treatment with LBP have been linked to chronicity in a qualitative study undertaken by Liddle *et al* (2007). The authors conducted this study on people suffering from CLBP and found that all participants had experienced a variety of failed treatment approaches, which in turn resulted in poor adherence with further treatment, as well as decreased motivation.

In this study, only a few questions were asked on patients' satisfaction and on reflection, and they may have been suggestive in nature (leading). More research among this population is needed.

In the management of CLBP it is important for the CHCs to adhere to (inter)national guidelines based on evidence based treatment strategies, with the aim of improving treatment effectiveness and increasing opportunities for restoring physical health. Physiotherapists, currently employed by the CHCs, have an important role to play in the development and execution of these evidence based strategies.

6.4.1 Education on the prevention of LBP

In this study subjects were asked if they had ever been educated on preventive measures for LBP, or received any form of back schooling at work or at the CHCs. Nearly 85% indicated that

they had never received any form of education on back care. It seems that companies in particular, do not provide workers that are exposed to physical risk factors like heavy lifting or prolonged static postures, with education on prevention of musculoskeletal problems. In developed countries it is common practice to offer workers tools, in the form of ergonomic measures or education, to prevent sick leave related to LBP.

In chronic LBP, educating patients with LBP on preventive measures and informing them about the influence of psychosocial factors in recovery, is recommended to shift the patients' beliefs on LBP (Henrotin 2006). As a treatment in itself, however, individual education is not found to be more effective on outcomes such as return to work or function of the lower back, than other interventions. This is reported in a Cochrane Review published by Engers *et al* (2008). The authors found that an individual 2.5 hour oral education session was more effective on return to work than no intervention. The effectiveness of group educational sessions was not studied in this review.

Education in combination with a form of back school could be an effective form of treatment in CLBP, when combined with other, evidence based treatment strategies. This should be a joint project between the CHCs and the companies involved.

6.5 LIMITATIONS TO THIS STUDY

Firstly the cross-sectional design of this study limits its capacity to draw conclusions on causality regarding the prevalence of LBP. The sample size (N=489) is relatively small when seeking robust measures of association with LBP.

The measurement tool used in this study was partly constructed from previously validated tools. The non-validated parts could not be adequately tested in a reliability study due to the small pilot study sample. Therefore conclusions drawn from the sections 'treatment received' and 'preferences on educational programs' should be interpreted with caution.

The choice of population, being the users of public health care, creates possible bias. It is likely that a higher prevalence of any bodily pain exists among a population in the primary care setting. It is possible that the quality of care between public health care and private health care differs in South Africa, due to the high workload and shortage of professionals in the public

sector. Persistence of LBP symptoms and ineffective treatment strategies could be more prevalent in public health care facilities providing medical care for the low-income communities.

Participants in this study had to be literate to complete the self-administered questionnaire. This excluded people lacking formal education. The national numbers on illiteracy in 2007 were 10%. This percentage comprised people who had not completed primary school. Illiteracy would be expected to be more prevalent among the low-income communities making use of public health care, compared to private health care. Future research among this population should be undertaken via interviews, so as to include for this population.

6.6 CONCLUSION

This cross-sectional study provided the first insights in the proportion of LBP among public health care users in the Cape Town Metropole. It shows that LBP is a considerable problem among this population. Factors associated with LBP were of personal nature (being of black South African descent, having a co-morbidity, perceived general health, use of pain medication), of physical nature (lifting heavy loads, kneeling/squatting) and of psychological nature (having severe psychological distress).

Chronicity is prevalent in high numbers among this population and treatment offered in the different stages of LBP, is not always appropriate.

6.7 IMPLICATIONS OF THE PRESENT STUDY'S FINDINGS

The high prevalence of (chronic) LBP among this population and the factors associated with LBP show that LBP is a multidimensional problem in South African communities which needs to be effectively addressed.

The implications of this study's findings are first and foremost directed to the CHCs, which are already burdened with the heavy workload that comes from the various problems the low-income communities in South Africa are facing. The solution should be sought in improving the effectiveness of treatment strategies which will in the long term decrease the workload, as LBP should become less prevalent.

6.8 RECOMMENDATIONS FOR FUTURE MANAGEMENT

Considering that multiple factors were found to be associated with the high prevalence of LBP among the low-income communities, management strategies should focus on all of these factors when addressing this problem.

Firstly, LBP should be addressed by several disciplines: experts on both physical and mental health should be included. Multidisciplinary programs should be developed specifically for this population, in which lifestyle issues, self-management strategies, medication use, chronic diseases and psychosocial factors will be addressed. Such programs are already in place in many other countries and the effectiveness in treatment of CLBP has long been proven. These programs could be used as blueprints for multidisciplinary programs to be developed by the CHCs.

In the treatment of acute and sub acute LBP, treatment strategies should be set up according to international guidelines and available evidence. Prevention of chronicity is of importance and possible yellow flags should be taken into account when a patient presents at the CHC with LBP. Clinicians should be instructed on these guidelines and how to use screening tools to identify yellow flags, after which patients can be appropriately referred to other disciplines.

The prescription of pain medication as a single treatment in CLBP should be limited and when pain medication is prescribed, clinicians should instruct the patient carefully on the administration of the drug.

Fifty-nine percent of the South African population indicates to make use of the public clinic or CHC for their health needs (General Housing Survey 2009) and among this population prevalence of TB, HIV/Aids and other chronic diseases appears to be high. For the primary health care facilities this means that the management of health problems, other than musculoskeletal pain, take up a large part of the workload.

The South African Department of Health should work together with the South African Department of Labour in a joint effort to prevent musculoskeletal pain like LBP. Also community organizations and NGO's should be involved in solving issues related to LBP that are specific for this population.

6.9 RECOMMENDATIONS FOR FUTURE RESEARCH

Currently little funding is made available for longitudinal studies on LBP in South Africa. It is of great importance that such studies are conducted in the near future, to gain insight in risk factors for LBP among the South African population.

Cost effectiveness studies should be done among the CHCs to compare the costs of the currently most used form of treatment, namely pain medication, with any alternative (more evidence based) form of treatment.

More research is needed on the association between living circumstances, BMI, and life stresses and the development of LBP, to possibly explain why certain population groups seem to be at risk. Future research on HIV/AIDS should be directed to possible associations of the disease with musculoskeletal pain and LBP specifically.

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APPENDIX A:

DETAILED SEARCH STRATEGIES SYSTEMATIC REVIEW

| Database | Datum | Search item(s) | Hits | Abstracts reviewed | Full texts retrieved |
|--|----------|---|------|--------------------|----------------------|
| PubMed | 1/02/09 | 'Low back pain AND risk factors', limits: 2000-2009, humans, English/Dutch, all adults, reviews and meta-analysis | 36 | 13 | 3 |
| PubMed | 20/04/09 | 'Low back pain AND risk factors', limits: Humans, English/Dutch, all adults 19+, pub. Date 2000-2009 | 601 | 239 | 79 |
| PubMed | 5/05/09 | 'Low back pain and risk factors', limits: 1980-2000, meta-analysis or review, all adults | 10 | 2 | |
| Cinahl | 20/04/09 | 'Low back pain (AB) AND risk factors (AB)', limits: all adults, publication date: January 2000-May 2009 | 144 | 56 | 15 |
| Nipad/African-Wide | 19/04/09 | All words: 'Low back pain and risk factors', publication date: 2000-2009 | 33 | 26 | 4 |
| Psychinfo Psycharticles EBSCO host | 20/04/09 | 'Low back pain (AB) and risk factors (AB)', limits: adults 18+, human. Smart search 'find all my search terms' | 29 | 0 | |
| Cochrane Library | 20/04/09 | 'low back pain AND risk factors' | 2 | 0 | |
| PEDro | 23/04/09 | 'pain', 'lumbar spine, SI joint, pelvis', published from 2000 | 731 | 2 | |
| Medline | 30/04/09 | 'Low back pain (AB) and risk factors (AB)', limits: all adults 19+, 2000-2009 | 177 | 4 | |
| Yourjournals@Ovid | | #1 low back pain AND risk factors | 466 | | |
| | | #2 low back pain AND psychosocial | 811 | | |
| | | #2, limits: 2000-2009 | 599 | | |
| | | # low back pain AND psychosocial risk factors, limits 2000-2009 | 290 | 12 | 1 |
| Spine Journal | 11/11/08 | 'Low back pain AND risk factors' | 639 | | |

* In the case where two or more publications existed, published by the same authors and studying the same population group, the most recent study was included.

* Pearling: the reviews that were excluded because they were not systematic in design, were checked on their reference lists for eligible studies. Through this process 4 papers were retrieved for reviewing.

APPENDIX B:

CRITERIA LIST FOR ASSESSMENT OF METHODOLOGIC QUALITY
PROSPECTIVE/HISTORICAL COHORTS AND CASE-CONTROL STUDIES –
HOOGENDOORN *ET AL* (2002)

■ Appendix

Methodologic Quality Assessment

■ TABLE A1

Criteria Lists for Assessment of the Methodologic Quality of Prospective and Historical Cohort Studies and Case-Control Studies

| Criteria | Design* | I, V/P† |
|--|---------|---------|
| Objective of the study | | |
| 1. Positive if the study had a clearly defined objective | CH/CC | I |
| Study population | | |
| 2. Positive if the main features (description of the sampling frame, distribution of the population according to age and sex) of the study population were described | CH/CC | I |
| 3. Positive if the participation rate at baseline was at least 80% | CH | V/P |
| 4. Positive if the response after 1 year of follow-up was at least 80% of the number of participants at baseline, or if the nonresponse was not selective (data shown) | CH | V/P |
| 5. Positive if cases and controls were drawn from the same population and a clear definition of cases and controls was given. Subjects with low back pain during the previous 90 days must be excluded from the control group | CC | V/P |
| 6. Positive if the participation rate of cases and controls selected and invited to participate at baseline was at least 80% | CC | V/P |
| Exposure measurements, physical load at work | | |
| 7. Positive if data on physical load at work were collected and included in the statistical analysis. Data on physical load at work based on information about job title (job-exposure matrix) were not considered to be appropriate | CH/CC | V/P |
| 8. Positive if data were collected by means of standardized methods of acceptable quality‡ | CH/CC | V/P |
| Exposure measurements, psychosocial factors at work | | |
| 9. Positive if data on psychosocial factors at work were collected and included in the statistical analysis | CH/CC | V/P |

| Criteria | Design* | I, V/P† | Criteria | Design* | I, V/P† |
|---|---------|---------|---|---------|---------|
| 10. Positive if data were collected by means of standardized methods of acceptable quality‡ | CH/CC | V/P | If no intraclass correlation coefficient or κ has been computed, but the data presented show clearly that the reliability of the method is good, this criterion is also rated positively | | |
| Exposure measurements, other | | | | | |
| 11. Positive if data on physical or psychosocial exposure during leisure time were collected and included in the statistical analysis | CH/CC | V/P | 18. Positive if the period on which the assessment of back pain was based was at least one year | CH | V/P |
| 12. Positive if data on historical exposure at work were collected and included in the statistical analysis | CH/CC | V/P | 19. Positive if data were collected at least once every 3 months or obtained from a continuous registration system | CH | V/P |
| 13. Positive if data on history of back pain, age, and sex were collected and included in the statistical analysis. Data on history of back pain should be based on information about the presence of back pain during at least 1 year before baseline | CH/CC | V/P | 20. Positive if incident cases were included (prospective enrollment) | CC | V/P |
| 14. Positive if the exposure was measured in an identical manner among cases and controls | CC | V/P | Analysis and data presentation | | |
| 15. Positive if the exposure assessments were blinded to disease status | CC | V/P | 21. Positive if the method used for the statistical analysis was appropriate for the outcome studied and the measures of association estimated according to this model (including confidence intervals [CI]) were presented | CH/CC | V/P |
| 16. Positive if the exposure was assessed before the occurrence of the outcome | CC | V/P | 22. Positive if the analysis included a stratified or multivariable analysis | CH/CC | V/P |
| Assessment of back pain | | | 23. Positive if the number of cases in the final multivariable model was at least 10 times the number of independent variables in the analysis | CH/CC | V/P |
| 17. Positive if based on standardized methods of acceptable quality, i.e., positive if one of the following criteria were met: | CH/CC | V/P | | | |
| Self-reported: data presented or in reference show that the intraclass correlation coefficient >0.60 or $\kappa > 0.40$ for test-retest reliability | | | | | |
| Registered: data presented or in reference must demonstrate that the registration system is valid and reliable | | | | | |
| Physical examination blinded to exposure status: data presented or in reference show that the intraclass correlation coefficient >0.60 or $\kappa > 0.40$ for the intraobserver reliability if only one observer is involved or the interobserver reliability if more than one observer is involved | | | | | |

* This column shows whether a criterion pertains to the criteria list for cohort (CH) and/or case-control (CC) studies.
 † I = criterion on informativeness; V/P = criterion on validity/precision.
 ‡ This criterion is rated positively if one of the following criteria is met:
 Direct measurement method: data presented or in reference show that the intraclass correlation coefficient >0.60 or $\kappa > 0.40$.
 Observational method: Data presented or in reference show that the intraclass correlation coefficient >0.60 or $\kappa > 0.40$ for the intraobserver reliability if only one observer is involved or the interobserver reliability if more than one observer is involved.
 Self-reported: Data presented or in reference show that the intraclass correlation coefficient >0.60 or $\kappa > 0.40$ for the test-retest reliability.
 If no intraclass correlation coefficient or κ has been computed, but the data presented show clearly that the reliability of the method is good, this criterion is also rated positively.

APPENDIX C:

QUALITY APPRAISAL SCORE 50 PROSPECTIVE COHORTS

| Ref No. | First author | Objective defined | Description population | > 80% participation rate | No selection bias ¹ | Random sampling | Validated tools | Controlled for confounders | Reliability established ² | LBP ≥ 1 yr | OR and C.I.'s | Multi-variable analysis | Total score |
|---------|-------------------------|-------------------|------------------------|--------------------------|--------------------------------|-----------------|-----------------|----------------------------|--------------------------------------|------------|---------------|-------------------------|-------------|
| 1. | Hartvigsen 2001 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 86% |
| 2. | Ijzelenberg 2005 | 1.0 | 1.0 | 1.0 | 0.5 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 86% |
| 3. | Jarvik 2005 | 1.0 | 1.0 | 1.0 | 0.5 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 86% |
| 4. | Latza 2000 | 1.0 | 1.0 | 1.0 | 0.5 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 86% |
| 5. | Kaila-Kangas 2004 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 86% |
| 6. | Hamberg Van Reenen 2006 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 86% |
| 7. | Schell 2008 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 81% |
| 8. | Harkness 2003 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 81% |
| 9. | Plouvier 2008 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 81% |
| 10. | Power 2001 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 81% |
| 11. | Leino-Arjas 2006 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 81% |
| 12. | Van Nieuwenhuijse 2006 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 81% |
| 13. | Andersen 2007 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 77% |
| 14. | Leclerc 2003 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 77% |
| 15. | Yip 2002 | 1.0 | 1.0 | 0 | 0.5 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 77% |
| 16. | Bovenzi 2008 | 1.0 | 1.0 | 1.0 | 0.5 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 77% |
| 17. | Eriksen 2004 | 1.0 | 1.0 | 1.0 | 0.5 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 77% |
| 18. | Van Nieuwenhuijse 2009 | 1.0 | 1.0 | 0 | 1.0 | 0 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 77% |
| 19. | Yip 2004 | 1.0 | 1.0 | 0 | 0.5 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 77% |
| 20. | Tubach 2004 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 72% |
| 21. | Carroll 2004 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 72% |
| 22. | Hoogendoorn 2002 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 72% |
| 23. | Leijon 2007 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 72% |
| 24. | Nahit 2003 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 72% |
| 25. | Miranda 2008 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 72% |
| 26. | Clays 2007 | 1.0 | 1.0 | 0 | 1.0 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 68% |
| 27. | George 2002 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0.5 | 1.0 | 0 | 0 | 1.0 | 1.0 | 68% |
| 28. | Hoogendoorn 2000 | 1.0 | 1.0 | 0 | 1.0 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 68% |

| Study | Objective defined | Description population | > 80% participation rate | No selection bias ¹ | Random sampling | Validated tools | Controlled for confounders | Reliability established ² | LBP ≥ 1 yr | OR and C.I.'s | Multivariable analysis | Total score |
|--------------------------|-------------------|------------------------|--------------------------|--------------------------------|-----------------|-----------------|----------------------------|--------------------------------------|------------|---------------|------------------------|-------------|
| 29. Miranda 2002 | 1.0 | 1.0 | 0 | 1.0 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 68% |
| 30. Videman 2005 | 1.0 | 1.0 | 0 | 1.0 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 68% |
| 31. Torp 2001 | 1.0 | 1.0 | 0 | 1.0 | 0.5 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 68% |
| 32. Jacob 2006 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.5 | 0 | 0 | 1.0 | 1.0 | 0 | 68% |
| 33. Juul-Kristensen 2004 | 1.0 | 1.0 | 0 | 1.0 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 68% |
| 34. Krause 2004 | 1.0 | 1.0 | 1.0 | 0.5 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 68% |
| 35. Tiemessen 2008 | 1.0 | 1.0 | 0 | 0.5 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 68% |
| 36. Elders 2004 | 1.0 | 0 | 0 | 0.5 | 0 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 64% |
| 37. Feyer 2000 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 64% |
| 38. Waxman 2000 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 0 | 64% |
| 39. Strøyer 2008 | 1.0 | 1.0 | 0 | 0.5 | 0 | 0.5 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 64% |
| 40. Carragee 2006 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 1.0 | 64% |
| 41. Johnston 2003 | 1.0 | 1.0 | 0 | 0.5 | 0 | 1.0 | 1.0 | 0 | 0.5 | 1.0 | 1.0 | 64% |
| 42. Jansen 2004 | 1.0 | 0.5 | 0 | 0.5 | 0 | 1.0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 64% |
| 43. Kopec 2003 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0 | 0 | 1.0 | 1.0 | 0 | 64% |
| 44. Stevenson 2001 | 1.0 | 1.0 | 0 | 0.5 | 0 | 1.0 | 1.0 | 1.0 | 0 | 0 | 1.0 | 59% |
| 45. Hestbaek 2005 | 1.0 | 1.0 | 0 | 0.5 | 0 | 0 | 1.0 | 0 | 1.0 | 1.0 | 1.0 | 59% |
| 46. Greene 2001 | 1.0 | 1.0 | 1.0 | 0.5 | 0 | 0 | 0 | 0 | 1.0 | 0 | 1.0 | 50% |
| 47. Ghaffari 2006 | 1.0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 0 | 0 | 1.0 | 0 | 0 | 45% |
| 48. Gonge 2001 | 1.0 | 1.0 | 1.0 | 1.0 | 0 | 0.5 | 0 | 0 | 0 | 1.0 | 0 | 45% |
| 49. Reynolds 2002 | 1.0 | 1.0 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 1.0 | 0 | 32% |
| 50. Evans 2005 | 1.0 | 1.0 | 0 | 0 | 0 | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 32% |

In bold: the cut off point was set at 70%

¹ healthy subjects/controls included in the sample

² reliability established through mention of previous validity studies or intra-class correlation coefficient or inter/intra-observer reliability

APPENDIX D:

BAECKE MEASUREMENT TOOL FOR A PERSON'S HABITUAL PHYSICAL
ACTIVITY – BAECKE *ET AL* (1982)

The Questionnaire of Baecke et al for Measurement of a Person's Habitual Physical Activity

Overview:

Baecke et al developed a questionnaire for evaluating a person's physical activity and separating it into three distinct dimensions. The authors were from the Netherlands.

Indices for physical activity:

(1) work activity

(2) sports activity

(3) leisure activity

Work Index

| Question | Response | Points |
|-------------------------------|-------------------|--------|
| What is your main occupation? | low activity | 1 |
| | moderate activity | 3 |
| | high activity | 5 |
| At work I sit | never | 1 |
| | seldom | 2 |
| | sometimes | 3 |
| | often | 4 |
| | always | 5 |
| At work I stand | never | 1 |
| | seldom | 2 |
| | sometimes | 3 |
| | often | 4 |
| | always | 5 |
| At work I walk | never | 1 |
| | seldom | 2 |
| | sometimes | 3 |
| | often | 4 |
| | always | 5 |

| | | |
|---|--------------|---|
| At work I lift heavy loads | never | 1 |
| | seldom | 2 |
| | sometimes | 3 |
| | often | 4 |
| | always | 5 |
| After working I am tired | very often | 5 |
| | often | 4 |
| | sometimes | 3 |
| | seldom | 2 |
| | never | 1 |
| At work I sweat | very often | 5 |
| | often | 4 |
| | sometimes | 3 |
| | seldom | 2 |
| | never | 1 |
| In comparison of others of my own age I think my work is physically | much heavier | 5 |
| | heavier | 4 |
| | as heavy | 3 |
| | lighter | 2 |
| | much lighter | 1 |

where: • The work activity is according to the Netherlands Nutrition Council with (1) low activity including clerical work driving shopkeeping teaching studying housework medical practice and occupations requiring a university education; (2) middle activity including factory work plumbing carpentry and farming; (3) high activity includes dock work construction work and professional sport.

work index = $((6 - (\text{points for sitting})) + \text{SUM}(\text{points for the other 7 parameters})) / 8$

Sport Index

| Question | Response | Points |
|---|--------------------------------|-------------|
| Do you play sports? | yes then calculate sport score | (see below) |
| | • sport score ≥ 12 | 5 |
| | • sport score 8 to < 12 | 4 |
| | • sport score 4 to < 8 | 3 |
| | • sport score 0.01 to < 4 | 2 |
| | • sport score = 0 | 1 |
| | No | 1 |
| In comparison with others of my own age I think my physical activity during leisure time is | much more | 5 |
| | More | 4 |
| | the same | 3 |
| | Less | 2 |
| | much less | 1 |
| During leisure time I sweat | very often | 5 |
| | Often | 4 |
| | sometimes | 3 |
| | Seldom | 2 |
| | Never | 1 |
| During leisure time I play sport | Never | 1 |
| | Seldom | 2 |
| | sometimes | 3 |
| | Often | 4 |
| | very often | 5 |

| Data on Most Frequently Played Sport | Finding | Value |
|--|------------------|-------|
| What sport do yo play most frequently | low intensity | 0.76 |
| | medium intensity | 1.26 |
| | high intensity | 1.76 |
| How many hours do you play a week? | < 1 hour | 0.5 |
| | 1-2 hours | 1.5 |
| | 2-3 hours | 2.5 |
| | 3-4 hours | 3.5 |
| | > 4 hours | 4.5 |
| How many months do you play in a year? | < 1 month | 0.04 |
| | 1-3 months | 0.17 |
| | 4-6 months | 0.42 |
| | 7-9 months | 0.67 |
| | > 9 months | 0.92 |

where: • The sport intensity is divided into 3 levels: (1) low level (billiards sailing bowling golf etc) with an average energy expenditure of 0.76 MK/h; (2) middle level (badminton cycling dancing swimming tennis) with an average energy expenditure of 1.26 MJ/h; (3) high level (boxing basketball football rugby rowing) with an average energy expenditure of 1.76 MJ/h

| Data on Second Most Frequently Played Sport | Finding | Value |
|---|------------------|-------|
| What sport do you play most frequently | low intensity | 0.76 |
| | medium intensity | 1.26 |
| | high intensity | 1.76 |
| How many hours do you play a week? | < 1 hour | 0.5 |
| | 1-2 hours | 1.5 |
| | 2-3 hours | 2.5 |
| | 3-4 hours | 3.5 |
| | > 4 hours | 4.5 |
| | > 9 months | 0.92 |
| How many months do you play in a year? | < 1 month | 0.04 |
| | 1-3 months | 0.17 |
| | 4-6 months | 0.42 |
| | 7-9 months | 0.67 |
| | > 9 months | 0.92 |

simple sports score = ((value for intensity of most frequent sport) * (value for weekly time of most frequent sport) * (value for yearly proportion of most frequent sport)) * ((value for intensity of second sport) * (value for weekly time of second sport) * (value for yearly proportion of second sport))

sport index = (SUM(points for all 4 parameters)) / 4

Leisure Index

| Question | Response | Points |
|---|---------------|--------|
| During leisure time I watch television | never | 1 |
| | seldom | 2 |
| | sometimes | 3 |
| | often | 4 |
| | very often | 5 |
| During leisure time I walk | never | 1 |
| | seldom | 2 |
| | sometimes | 3 |
| | often | 4 |
| | very often | 5 |
| During leisure time I cycle | never | 1 |
| | seldom | 2 |
| | sometimes | 3 |
| | often | 4 |
| | very often | 5 |
| How many minutes do you walk and/or cycle per day to and from work school and shopping? | < 5 minutes | 1 |
| | 5-15 minutes | 2 |
| | 15-30 minutes | 3 |
| | 30-45 minutes | 4 |
| | > 45 minutes | 5 |

leisure index = ((6 – (points for television watching)) + SUM(points for remaining 3 items)) / 4

References:

Baecke JAH Burema J Frijters ER. A short questionnaire for the measurement of habitual physical activity in epidemiological studies. Am J Clin Nutr. 1982; 36: 936-942.

APPENDIX E:

MENTAL HEALTH INVENTORY (MHI) – VEIT AND WARE (1983)

MENTAL HEALTH INVENTORY FROM THE MEDICAL OUTCOMES STUDY

SECTION 5: YOUR FEELINGS

These questions are about how you feel and how things have been with you during the past month.

For each question, please circle a number for the one answer that comes closest to the way you have been feeling.

20. How happy, satisfied, or pleased have you been with your personal life during the past month?

(Circle One)

- Extremely happy, could not have been more satisfied or pleased.....1 _____
- Very happy most of the time2
- Generally satisfied, pleased3
- Sometimes fairly satisfied, sometimes fairly unhappy.....4
- Generally dissatisfied, unhappy.....5
- Very dissatisfied, unhappy most of the time6

21. During the past month, how often did you feel there were people you were close to?

(Circle One)

- _____ Always1
- Very often.....2
- Fairly often.....3
- Sometimes.....4
- Almost never.....5
- Never.....6

22. During the past month, how often has feeling depressed interfered with what you usually do?

(Circle One)

- _____ Always1
Very often.....2
Fairly often.....3
Sometimes.....4
Almost never.....5
Never.....6

23. How much of the time, during the past month, did you have difficulty reasoning and solving problems; for example, making plans, making decisions, learning new things?

(Circle One)

- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

24. During the past month, how much of the time have you generally enjoyed the things you do?

(Circle One)

- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

25. How much of the time, during the past month, has your daily life been full of things that were interesting to you?

(Circle One)

- All of the time 1
- Most of the time 2
- A good bit of the time 3
- Some of the time 4
- A little of the time 5
- None of the time 6

26. During the past month, how much of the time have you felt loved and wanted?

(Circle One)

-
- All of the time 1
 - Most of the time 2
 - A good bit of the time 3
 - Some of the time 4
 - A little of the time 5
 - None of the time 6

27. How much of the time, during the past month, have you been a very nervous person?

(Circle One)

-
- All of the time 1
 - Most of the time 2
 - A good bit of the time..... 3
 - Some of the time 4
 - A little of the time 5
 - None of the time 6

28. During the past month, how much of the time did you have difficulty doing activities involving concentration and thinking?

(Circle One)

- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

29. During the past month, how much of the time did you feel depressed?

(Circle One)

- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

30. During the past month, how much of the time have you felt tense or "high-strung"?

(Circle One)

- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

31. During the past month, how much of the time have you been in firm control of your behavior, thoughts, emotions, feelings?

(Circle One)

- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

32. During the past month, how much of the time did you become confused and start several actions at a time?

(Circle One)

-
- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

33. During the past month, how much of the time did you feel that you had nothing to look forward to?

(Circle One)

-
- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

34. How much of the time, during the past month, have you felt calm and peaceful?

(Circle One)

- All of the time1
- Most of the time2
- A good bit of the time3
- Some of the time4
- A little of the time5
- None of the time6

35. How much of the time, during the past month, have you felt emotionally stable?

(Circle One)

- All of the time1
- Most of the time2
- A good bit of the time3
- Some of the time4
- A little of the time5
- None of the time6

36. How much of the time, during the past month, have you felt downhearted and blue?

(Circle One)

- All of the time1
- Most of the time2
- A good bit of the time3
- Some of the time4
- A little of the time5
- None of the time6

37. How often have you felt like crying during the past month?

(Circle One)

- Always1
- Very often.....2
- Fairly often.....3
- Sometimes.....4
- Almost never.....5
- Never.....6

38. How much of the time, during the past month, did you feel left out?

(Circle One)

- All of the time1
- Most of the time2
- A good bit of the time3
- Some of the time4
- A little of the time5
- None of the time6

39. During the past month, how often did you feel that others would be better off if you were dead?

(Circle One)

- Always1
- Very often.....2
- Fairly often.....3
- Sometimes.....4
- Almost never.....5
- Never.....6

40. During the past month, how much of the time did you forget, for example, things that happened recently, where you put things, appointments?

(Circle One)

- _____
- All of the time1
 - Most of the time2
 - A good bit of the time3
 - Some of the time4
 - A little of the time5
 - None of the time6

41. During the past month, how much of the time did you feel that your love relationships, loving and being loved, were full and complete?

(Circle One)

- _____
- All of the time1
 - Most of the time2
 - A good bit of the time3
 - Some of the time4
 - A little of the time5
 - None of the time6

42. How much have you been bothered by nervousness, or your "nerves," during the past month?

(Circle One)

- _____
- Extremely so, to the point where I could not take care of things1
 - Very much bothered2
 - Bothered quite a bit.....3
 - Bothered some, enough to notice.....4
 - Bothered just a little5
 - Not bothered at all6

43. During the past month, how much of the time has living been a wonderful adventure for you?

(Circle One)

- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

44. How much of the time, during the past month, have you felt so down in the dumps that nothing could cheer you up?

(Circle One)

- _____ All of the time1
Most of the time2
A good bit of the time3
Some of the time4
A little of the time5
None of the time6

45. During the past month, did you ever think about taking your own life?

(Circle One)

- _____ Yes, constantly1
Yes, very often.....2
Yes, fairly often3
Yes, a couple of times.....4
Yes, once.....5
No, never.....6

46. During the past month, how much of the time have you felt restless, fidgety, or impatient?

(Circle One)

- _____ All of the time1
- Most of the time2
- A good bit of the time3
- Some of the time4
- A little of the time5
- None of the time6

47. During the past month, how much of the time have you been moody or brooded about things?

(Circle One)

-
- _____ All of the time1
 - Most of the time2
 - A good bit of the time3
 - Some of the time4
 - A little of the time5
 - None of the time6

48. During the past month, how often did you get rattled, upset, or flustered?

(Circle One)

-
- _____ Always1
 - Very often.....2
 - Fairly often.....3
 - Sometimes.....4
 - Almost never.....5
 - Never.....6

49. How much of the time, during the past month, did you have trouble keeping your attention on any activity for long?

(Circle One)

- All of the time 1
- Most of the time 2
- A good bit of the time 3
- Some of the time 4
- A little of the time 5
- None of the time 6

50. During the past month, how much of the time have you been anxious or worried?

(Circle One)

-
- _____ All of the time 1
 - Most of the time 2
 - A good bit of the time 3
 - Some of the time 4
 - A little of the time 5
 - None of the time 6

51. During the past month, how much of the time have you been a happy person?

(Circle One)

-
- _____ All of the time 1
 - Most of the time 2
 - A good bit of the time 3
 - Some of the time 4
 - A little of the time 5
 - None of the time 6

52. How often during the past month did you find yourself having difficulty trying to calm down?

(Circle One)

- Always1
- Very often.....2
- Fairly often.....3
- Sometimes.....4
- Almost never.....5
- Never.....6

53. During the past month, how much of the time have you been in low or very low spirits?

(Circle One)

-
- All of the time1
 - Most of the time2
 - A good bit of the time3
 - Some of the time4
 - A little of the time5
 - None of the time6

54. How much of the time, during the past month, have you felt cheerful, lighthearted?

(Circle One)

-
- All of the time1
 - Most of the time2
 - A good bit of the time3
 - Some of the time4
 - A little of the time5
 - None of the time6

55. During the past month, how depressed (at its worst) have you felt?

(Circle One)

- Extremely depressed.....1
 - Very depressed2
 - Quite depressed3
 - Somewhat depressed4
 - A little depressed5
 - Not depressed at all6
-

56. How much of the time, during the past month, did you react slowly to things that were said or done?

(Circle One)

- All of the time1
 - Most of the time2
 - A good bit of the time3
 - Some of the time4
 - A little of the time5
 - None of the time.....6
-

57. During the past month, how often did you feel isolated from others?

(Circle One)

- Always1
- Very often.....2
- Fairly often.....3
- Sometimes.....4
- Almost never.....5
- Never.....6

APPENDIX F:

SHORT FORM HEALTH SURVEY (SF-36) – WARE (1995)

Today's Date: _____

Name: Last: _____ First: _____ Date of Birth: _____

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

Please answer these questions by "check-marking" your choice. Please select only one choice for each item.

1- In general, would you say your health is:

1. Excellent 2. Very good 3. Good 4. Fair 5. Poor

2- Compared to ONE YEAR AGO, how would you rate your health in general NOW?

1. MUCH BETTER than one year ago.
2. Somewhat BETTER now than one year ago.
3. About the SAME as one year ago. _____
4. Somewhat WORSE now than one year ago.
5. MUCH WORSE now than one year ago.

3- The following items are about activities you might do during a typical day.

Does your health now limit you in these activities? If so, how much?

| Activities | 1. Yes, Limited A Lot | 2. Yes, Limited A Little | 3. No, Not Limited At All |
|--|--------------------------------|--------------------------------|---------------------------------|
| a) Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| b) Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| c) Lifting or carrying groceries? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| d) Climbing several flights of stairs? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| e) Climbing one flight of stairs? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| f) Bending, kneeling or stooping? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| g) Walking more than a mile? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| h) Walking several blocks? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| i) Walking one block? | 1. Yes, limited a lot | 2. Yes, limited a little | 3. No, not limited at all |
| j) Bathing or dressing yourself? | | 2. Yes, limited a little | 3. No, not limited at all |

4- During the past 4 weeks, have you had any of the following problems with your work or other regular activities as a result of your physical health?

| | Yes | No |
|---|--------|-------|
| a) Cut down on the amount of time you spent on work or other activities? | 1. yes | 2. No |
| b) Accomplished less than you would like? | 1. yes | 2. No |
| c) Were limited in the kind of work or other activities? | 1. yes | 2. No |
| d) Had difficulty performing the work or other activities (for example it took extra effort)? | 1. yes | 2. No |

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

| | Yes | No |
|--|--------|-------|
| a) Cut down on the amount of time you spent on work or other activities? | 1. yes | 2. No |
| b) Accomplished less than you would like? | 1. yes | 2. No |
| c) Didn't do work or other activities as carefully as usual? | 1. yes | 2. No |

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

1. Not at all 2. Slightly 3. Moderately 4. Quite a bit 5. Extremely

7. How much bodily pain have you had during the past 4 weeks?

1. None 2. Very mild 3. Mild 4. Moderate 5. Severe 6. Very severe

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

| | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
|--|--------------------|---------------------|---------------------------|---------------------|-------------------------|---------------------|
| a) Did you feel full of pep? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
| b) Have you been a very nervous person? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
| c) Have you felt so down in the dumps that nothing could cheer you up? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
| d) Have you felt calm and peaceful? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
| e) Did you have a lot of energy? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
| f) Have you felt downhearted and blue? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
| g) Do you feel worn out? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
| h) Have you been a happy person? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |
| i) Did you feel tired? | 1. All of the time | 2. Most of the time | 3. A good bit of the time | 4. Some of the time | 5. A little of the time | 6. None of the time |

10. During the past 4 weeks, how much of the time has your physical health or emotional _____ problems interfered with your social activities (like visiting with friends, relatives, etc.)?

1. All of the time
2. Most of the time.
3. Some of the time
4. A little of the time.
5. None of the time.

11. How TRUE or FALSE is each of the following statements for you?

| | 1. Definitely true | 2. Mostly true | 3. Don't know | 4. Mostly false | 5. Definitely false |
|--|--------------------------|----------------------|---------------------|-----------------------|---------------------------|
| a) I seem to get sick a little easier than other people? | 1. Definitely true | 2. Mostly true | 3. Don't know | 4. Mostly false | 5. Definitely false |
| b) I am as healthy as anybody I know? | 1. Definitely true | 2. Mostly true | 3. Don't know | 4. Mostly false | 5. Definitely false |
| c) I expect my health to get worse? | 1. Definitely true | 2. Mostly true | 3. Don't know | 4. Mostly false | 5. Definitely false |
| d) My health is excellent? | 1. Definitely true | 2. Mostly true | 3. Don't know | 4. Mostly false | 5. Definitely false |

Thank you!

APPENDIX G:

SURVEY OF PAIN ATTITUDES (SOPA) – JENSEN *ET AL* (1987)

The Survey of Pain Attitudes (SOPA)

Overview: The Survey of Pain Attitudes (SOPA) measures the beliefs of a patient with chronic pain that influence the person's adjustment to the pain. It can be used to help separate those who are adjusting well to the pain from those who are not. The authors are from the University of Washington in Seattle.

Beliefs related to pain measured by the survey:

- (1) control: belief in one's personal control over pain
- (2) solicitude: belief in the appropriateness of solicitous responses from one's family when in pain
- (3) medication: belief that medications are appropriate for chronic pain problems
- (4) disability: belief in oneself as unable to function because of pain
- (5) emotion: belief in a relationship between emotions and pain
- (6) medical cure: belief that a medical cure exists for one's pain problems
- (7) harm: belief that pain signifies damage and that exercise and activity should therefore be restricted. There may be a hesitancy to exercise because of a fear for possible injury.

Instructions:

Please indicate how much you agree with each of the following statements about your pain problem by using the following scale.

Statements:

- (1) There are many times when I can influence the amount of pain I feel.
- (2) The pain I usually experience is a signal that damage is being done.
- (3) I do not consider my pain to be a disability.
- (4) Nothing but my pain really bothers me.
- (5) Pain is a signal that I have not been exercising enough.
- (6) My family does not understand how much pain I am in.
- (7) I count more on my doctors to decrease my pain than I do on myself.
- (8) I will probably always have to take pain medication.
- (9) When I hurt I want my family to treat me better.
- (10) If my pain continues at its present level I will be unable to work.
- (11) The amount of pain I feel is completely out of my control.

- (12) I do not expect a medical cure for my pain.
- (13) Pain does not necessarily mean that my body is being harmed.
- (14) I have had the most relief from pain with the use of medication.
- (15) Anxiety increases the pain I feel.
- (16) There is little that I or anyone can do to ease the pain I feel.
- (17) When I am hurting people should treat me with care and concern.
- (18) I pay doctors so they will cure me of my pain.
- (19) My pain problem does not need to interfere with my activity level.
- (20) My pain is not emotional it is purely physical.
- (21) I have given up my search for the complete elimination of my pain through the work of the medical profession.
- (22) It is the responsibility of my loved ones to help me when I feel pain.
- (23) Stress in my life increases my pain.
- (24) Exercise and movement are good for my pain problem.
- (25) Just by concentrating or relaxing I can "take the edge" off of my pain.
- (26) I will get a job to earn money regardless of how much pain I feel.
- (27) Medicine is one of the best treatments for chronic pain.
- (28) I am unable to control a significant amount of my pain.
- (29) A doctor's job is to find effective pain treatments.
- (30) My family needs to learn how to take better care of me when I am in pain.
- (31) Depression increases the pain I feel.
- (32) If I exercise I could make my pain problem much worse.
- (33) I believe that I can control how much pain I feel by changing my thoughts.
- (34) Often I need more tender loving care than I am now getting when I am in pain.
- (35) I consider myself to be disabled.
- (36) I wish my doctor would stop prescribing pain medications for me.
- (37) My pain is mostly emotional and not so much a physical problem.
- (38) Something is wrong with my body which prevents much movement or exercise.

- (39) I have learned to control my pain.
- (40) I trust that the medical profession can cure my pain.
- (41) I know for sure I can learn to manage my pain.
- (42) My pain does not stop me from leading a physically active life.
- (43) My physical pain will never be cured.
- (44) There is a strong connection between my emotions and my pain level.
- (45) I can do nearly everything as well as I could before I had a pain problem.
- (46) If I do not exercise regularly my pain problem will continue to get worse.
- (47) I am not in control of my pain.
- (48) No matter How I feel emotionally my pain stays the same.
- (49) Pain will never stop me from doing what I really want to do.
- (50) When I find the right doctor he or she will know how to reduce my pain.
- (51) If my doctor prescribed pain medication for me I would throw them away.
- (52) Whether or not a person is disabled by pain depends more on your attitude than the pain itself.
- (53) I have noticed that if I can change my emotions I can influence my pain.
- (54) I will never take pain medications again.
- (55) Exercise can decrease the amount of pain I experience.
- (56) I'm convinced that there is no medical procedure that will help my pain.
- (57) My pain would stop anyone from leading an active life.

| Response | Positive Directed | Negative Directed |
|--|-------------------|-------------------|
| This is very untrue for me. | 0 | 4 |
| This is somewhat untrue for me. | 1 | 3 |
| This is neither true nor untrue for me (or it does not apply to me). | 2 | 2 |
| This is somewhat true for me. | 3 | 1 |
| This is very true for me. | 4 | 0 |

Control (10):

- positive directed: 1 25 33 39 41 53
- negative directed: 11 16 28 47

Disability (10):

- positive directed: 10 35 57
- negative directed: 3 19 26 42 45 49 52

Harm (8):

- positive directed: 2 32 38
- negative directed: 5 13 24 46 55

Emotion (8):

- positive directed: 15 23 31 37 44
- negative directed: 4 20 48

Medication (6):

- positive directed: 8 14 27
- negative directed: 36 51 54

Solicitude (6):

- positive directed: 6 9 17 22 30 34
- negative directed:

Medical Cure (9):

- positive directed: 7 18 29 40 50
- negative directed: 12 21 43 56

Interpretation:

- minimum score: 0
- maximum control score: 40
- maximum disability score: 40
- maximum harm score: 32
- maximum emotion score: 32
- maximum medication score: 24

- maximum solicitude score: 24
- maximum medical cure score: 36
- Patients with high scores for disability and harm tended to be physically disabled.

References:

Jensen MP Karoly P Braver S. The measurement of clinical pain severity: a comparison of six methods. *Pain*. 1986; 27: 117-126.

Jensen MP Turner JA et al. Relationship of pain-specific beliefs to chronic pain adjustment. *Pain*. 1994; 57: 301-309.

APPENDIX H:

DRAFT QUESTIONNAIRE CROSS-SECTIONAL STUDY

PRIMARY HEALTH LBP-QUESTIONNAIRE (Working title)

THANK YOU, for agreeing to complete this questionnaire, about your health and any bodily aches and pains you might have or have had in your life. The questionnaire is divided into **8 sections**, with a total of **90 questions**.

You only complete the sections that apply to you, but this will be clearly indicated in the text. The questionnaire will take you approximately 15-20 minutes to complete.

Every question has 2 or more answers to choose from. Please tick the answer that applies to you.

Example question:

Which hand do you use to write or sign with? Please tick one.

Left hand right hand

In some cases more than one answer may be appropriate, this will be indicated with the question.

If anything is unclear please ask one of the researchers for assistance.

You can now start with the first question.

SECTION1: DEMOGRAPHICS & SOCIAL CIRCUMSTANCES

THESE QUESTIONS ARE ABOUT YOUR PERSONAL SITUATION. PLEASE TICK THE ANSWER THAT APPLIES TO YOU.

1. What is your gender? Male Female
2. What is your date of birth? /...../.....
3. What is your marital status? Single Married Separated Divorced Widowed
4. What is your race? Black Coloured White Asian
5. What is the highest level of schooling that you finished?
 Primary school Standard 8 (Grade 10) Matric (Grade 12) College diploma University degree

6. What kind of house do you live in?

- Brick house Wendy House Maisonnette /Flat Room/sharing a house Shack Other:

7. How many people stay in the house or room, including yourself? (Please include babies and children)

- 1-2 2-4 4-6 6-8 More than 8

8. Which describes your current working status?

- Employed Unemployed Retired Housewife Student

9. Are you currently receiving any government grant?

- Yes No → go to question 10

9a. If YES: Which grant do you receive? You can tick more than one.

- Disability grant Child support grant Grant in Aid Old age pension

10. Have you ever received any money from a social grant or fund?

- Yes No → go to question 11

10a. If yes, which grant/fund have you received money from?

- Disability grant Child support grant Grant in Aid Money through UIF Workman compensation fund
 Motor Vehicle Fund Other, namely

11. What is your current monthly income (**including income of partners**)?

- No income < R 500 R500-R1000 R1000-R3000 R3000-R5000 R5000-R7000
 R7000-R9000 R9000 –R11000 R11000-R15000 R > 15000

SECTION 2: WORK

THESE QUESTIONS ARE ABOUT WORK. IF YOU ARE CURRENTLY EMPLOYED BY AN ORGANISATION OR SELF-EMPLOYED, PLEASE ANSWER THE FOLLOWING QUESTIONS. IF YOU ARE NOT EMPLOYED PLEASE GO TO SECTION 3.

12. What kind of work are you currently doing?

- General labourer Machinist Machine operator Supervisor in a factory Technician
 Administration / clerical work Manager / executive Shop assistant Self employed
 Other, namely:

13. What kind of contract do you have?

Casual Permanent (full time) Permanent (part time) Contract (full time) Contract (part time) Char

14. Do you get paid sick leave days at work?

Yes No

15. How many years have you been working at your current job?

< 1 year 1-2 years 2-4 years 4-6 years 6-8 years 8-10 years > 10 years

16. Do you mostly enjoy your work?

Yes No

17. What describes your workday best?

At work I sit most of the time At work I stand most of the time At work I walk most of the time

SECTION 3: SPORTS

THESE QUESTIONS ARE ABOUT SPORTS AND PHYSICAL ACTIVITY. PLEASE TICK ONE ANSWER OR MORE THAN ONE ANSWER IF INDICATED.

18. Do you participate in any organized sports (like a sports club, gym membership, exercise groups)

Yes No → go to question 19

18a. If YES, how many times a week do you participate in organized sports as mentioned in question 18?

Less than once a week Once a week Twice a week 3-4 times a week 5 times a week or more

18b. On average, how many hours per week do you participate in organized sports?

Less than one hour 1-2 hours 2-4 hours 4-6 hours More than 6 hours

19. How many minutes per day do you walk and/or cycle to and from work, shops, etcetera?

< 15 minutes per day 15-30 minutes per day 30-45 minutes per day 45-60 minutes per day > 1 hour per day

20. How much time a day do you spend watching TV?

None Less than 15 minutes 15 minutes – half hour half hour – 1 hour 1-2 hours 2-4 hours
 4-6 hours More than 6 hours

SECTION 4: GENERAL HEALTH

THE FOLLOWING QUESTIONS ARE ABOUT YOUR HEALTH. PLEASE READ THE QUESTIONS AND INDICATE YOUR ANSWER BY JUST ONE TICK, UNLESS OTHERWISE INDICATED.

21. How would you rate your health?

- Excellent Very good Good Fair Poor

22. **Compared to 1 year ago**, how would you rate your health in general now?

- Much better than 1 year ago A little better than 1 year ago About the same as 1 year ago
 A little worse than 1 year ago Much worse than 1 year ago.

23. Do you smoke?

- Yes No

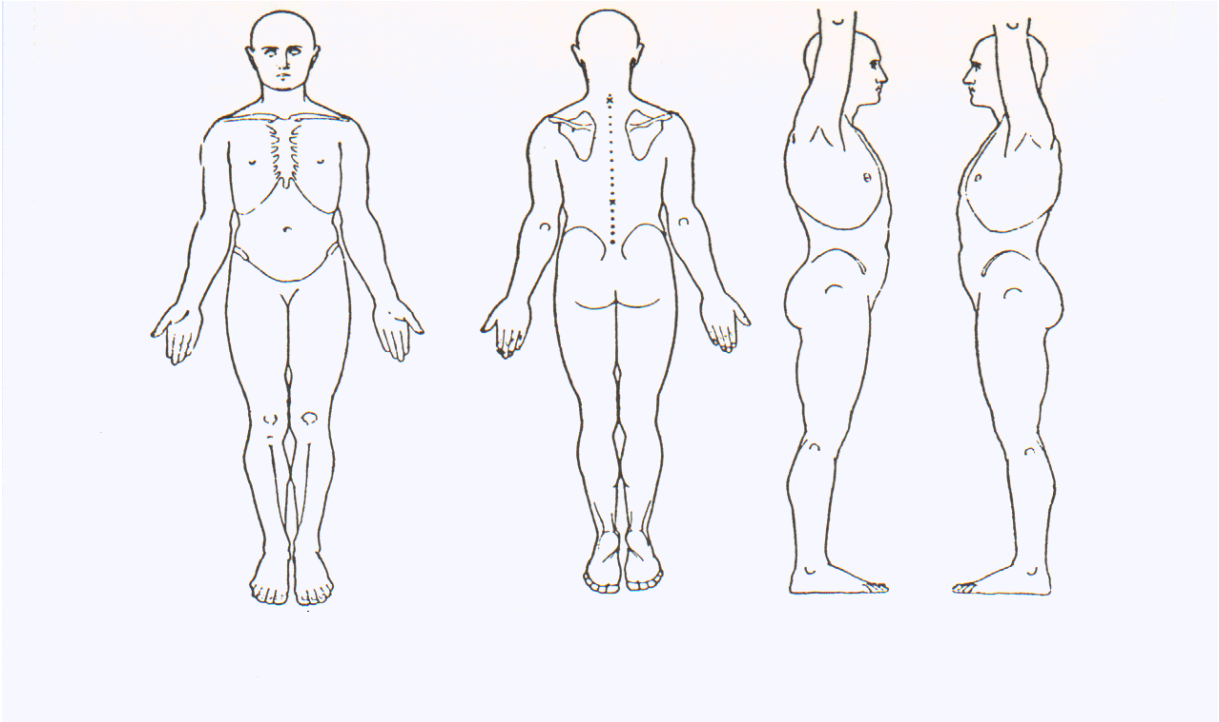
24. Do you drink alcohol?

- Yes No → go to question 25

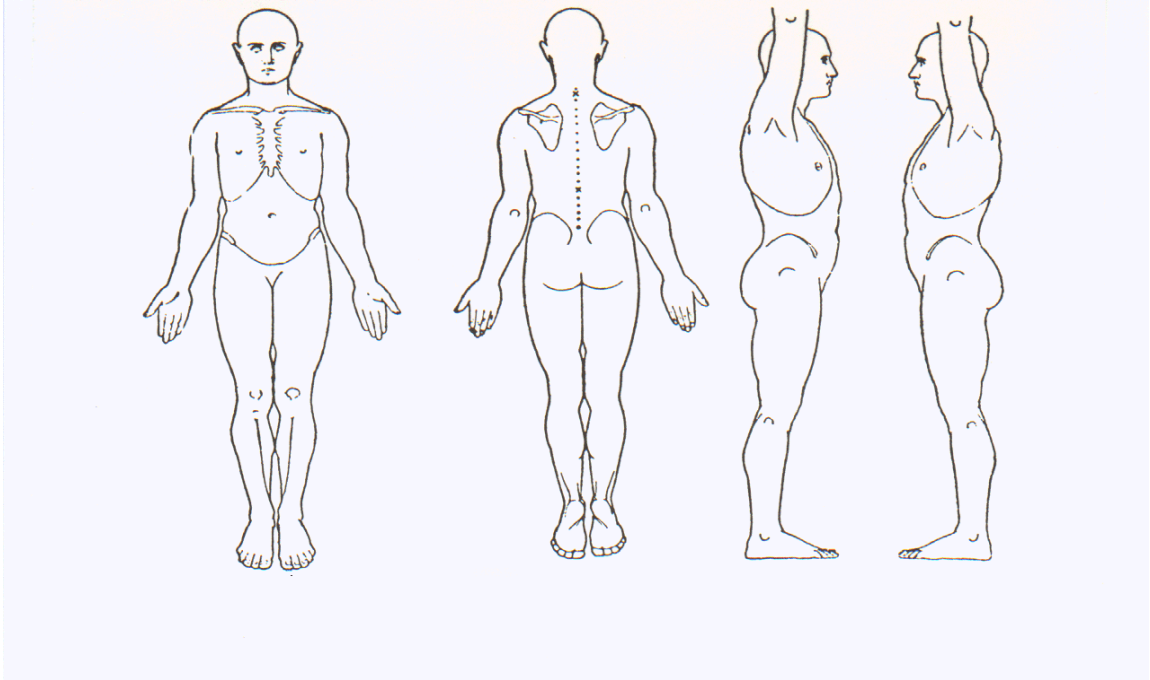
24a. If YES, how many glasses of alcohol do you drink in a week?

- 1 glass occasionally 1-3 glasses a week 3-5 glasses a week 5-7 glasses a week
 7-10 glasses a week > 10 glasses a week

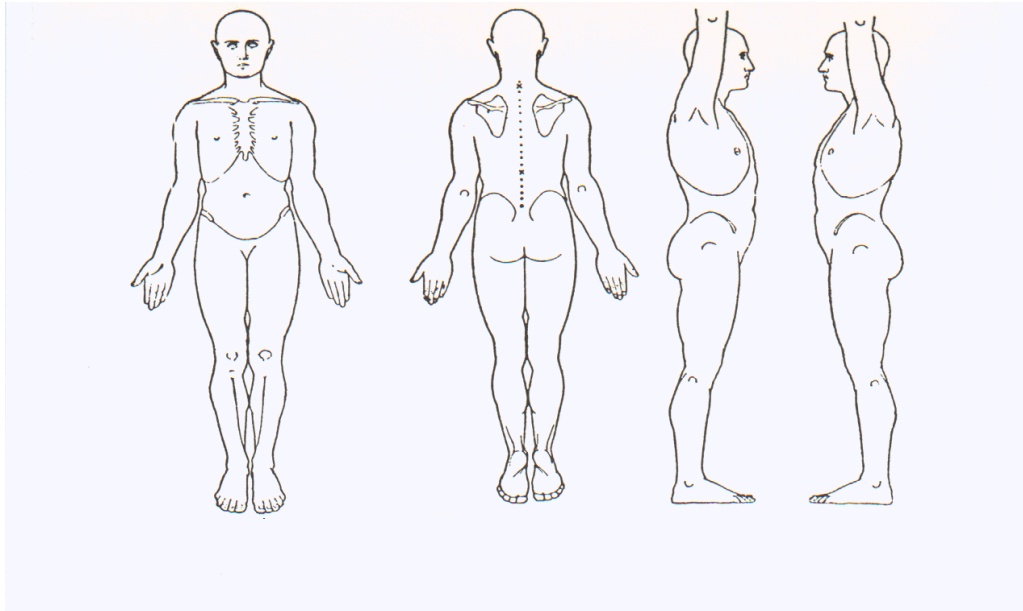
25. Please look at the picture below and mark any areas in the body where you have felt any pain or discomfort **IN YOUR LIFETIME**. You can mark as many areas as you want.



26. Please look at the picture below and mark any areas in the body where you have felt any pain or discomfort **IN THE PAST 12 MONTHS**. You can mark as many areas as you want.



27. Please look at the picture below and indicate any areas in the body where you are **CURRENTLY** feeling any pain or discomfort. You can indicate as many areas as you want.



28. During the past 4 weeks how much did pain interfere with your normal work (including both work outside the home and housework)?

- Not at all A little bit Moderately Quite a bit Extremely

29. Have you been diagnosed with any of the below listed diseases? Please tick, you can tick more than one.

- Sugar / Diabetes High blood pressure High cholesterol Angina heart (IHD) Arthritis Asthma
 HIV/AIDS None of these

30. Did the doctor ever tell you that you have arthritis?

- Yes No → go to question 31.

30a. If YES, in which area do you have arthritis according to your doctor? (you can tick more than one)

- In my neck In my upper back In my lower back In my shoulders In my elbows In my wrists/hands
 In my hips/thighs In my knees In my ankles/feet All over my body

30b. Did the doctor explain to you how arthritis is treated?

- Yes No

31. Did the doctor have any X-rays taken?

Yes No → go to question 32

31a. If YES, which area(s) of your body was X-rayed? (tick as many as needed)

Neck Lower back Shoulder(s) Hips Knee(s) Ankles

31b. Did the doctor explain the X-rays to you after they were taken?

Yes No

32. Have you ever been for an MRI or CT-scan for you lower back or neck?

Yes No

33. Have you **ever** been referred to a specialist, in Tygerberg, Groote Schuur Hospital or another hospital in the Western Cape?

Yes No, go to question 34

33a. If YES, which department do you attend?

Orthopedic clinic Arthritis clinic (rheumatology) Neurology Diabetes clinic Blood pressure clinic ARV clinic

Another department, namely....

34. Are you taking any medication for muscle or joint pain that the doctor has prescribed for you?

Yes No → go to question 35

34a. What medication for muscle or joint pain are you taking?

Pain pills like Panado (white pill) Pain pills like or Panado-Co (green pill)

Anti-inflammatory like Brufen (pink pill) / Voltaren (yellow pill) Muscle relaxers like Amitriptyline (blue pill, to take before sleeping) Other,

35. Have you ever been given an injection for your muscle or joint pain?

Yes No → go to question 36

35a. If Yes, how many times have you had an injection for muscle or joint pain?

once 2-3 times 4-5 times 5-7 times > 7 times

SECTION 5: YOUR FEELINGS

THESE QUESTIONS ARE ABOUT YOUR FEELINGS AND HOW YOU HAVE BEEN IN THE PAST 12 MONTHS

36. During the past 12 months, how much of the time have you been a happy person?

- All of the time Most of the time Some of the time A little of the time None of the time

37. During the past 12 months, how much of the time have you felt loved and wanted?

- All of the time Most of the time Some of the time A little of the time None of the time

38. During the past 12 months, how much of the time did you feel depressed?

- All of the time Most of the time Some of the time A little of the time None of the time

39. During the past 12 months, how much of the time have you felt like crying?

- All of the time Most of the time Some of the time A little of the time None of the time

40. During the past 12 months, how much of the time have you been anxious or worried?

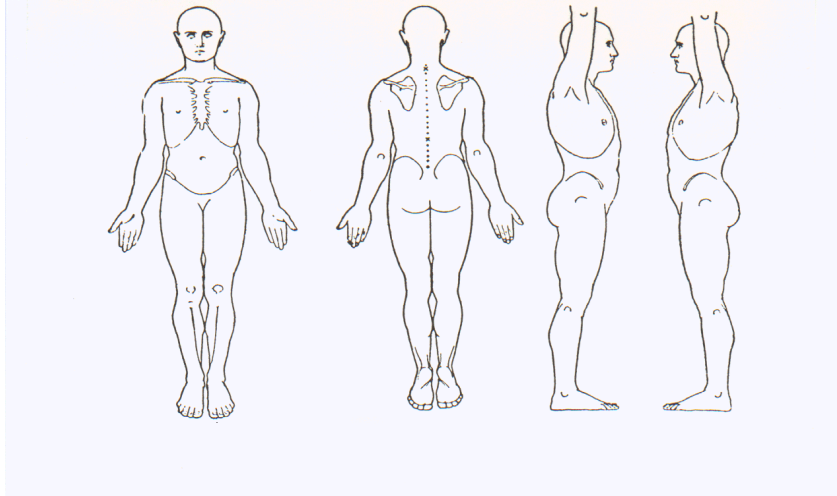
- All of the time Most of the time Some of the time A little of the time None of the time

41. During the past month, how much of the time have you had trouble sleeping at night because of your worries?

- All of the time Most of the time Some of the time A little of the time None of the time

SECTION 6: BACK PAIN

THE FOLLOWING QUESTIONS ARE ABOUT LOW BACK PAIN.
YOU ARE ASKED TO ANSWER THE QUESTIONS THAT APPLY TO YOUR SITUATION.



42. Do you currently have any pain in the area highlighted in the picture above?

Yes No → go to section 6.

If YES, please answer the following questions:

43. How many times did you come to the day hospital in the past 12 months for back pain?

Once Twice Every 3 months Every second month Once a month
 Several times a month

44. Have you ever, in the past 12 months, come to see the doctor for low back pain - **when you did not have an appointment?**

Yes No

45. In the past 12 months, how many days have you not been able to do your daily work (job or housework) due to your back pain?

< 5 days 5-10 days 10-15 days 15-20 days 20-25 days > 25 days

46. Did the doctor at the day hospital or a private doctor book you off work in the past 12 months for your back pain?

Yes No → go to question 47

46a. If YES: for how many days did the doctor book you off work in the past 12 months?

2 days or less 2-4 days 1 week 1-2 weeks 2-4 weeks More than 4 weeks

47. In the past 12 months did you have to take paid leave or sick leave from your work because of your back pain?

Yes No → go to question 48

47a. If YES, how many days of paid leave or sick leave did you take from work because of your back pain?

2 days or less 2-4 days 1 week 1-2 weeks 2-4 weeks > 4 weeks

48. In the past 12 months did you have to take any unpaid leave from work because of your back pain?

Yes No → go to question 49

48a. If YES, how many days of unpaid leave did you take off work because of your back pain?

2 days or less 2-4 days 1 week 1-2 weeks 2-4 weeks More than 4 weeks

49. Are you currently taking any medication for back pain?

Yes No → go to question 50

49a. If YES, how did you get this medication?

From the doctor day hospital From a private doctor From the pharmacy From a friend / family member

50. Are you currently in the process of being boarded from work because of you back pain?

Yes No

51. Are you currently **applying or wanting to apply** for a disability grant because of you back pain?

Yes No

52. Do you **currently receive** a disability grant because of your back pain?

Yes No

SECTION 7: BELIEFS

THE FOLLOWING QUESTIONS ARE ABOUT THE IDEAS AND BELIEFS YOU MIGHT HAVE ABOUT YOUR BACK PAIN. IF YOU DO NOT SUFFER FROM LOW BACK PAIN, GO TO SECTION 8. PLEASE READ THE FOLLOWING STATEMENTS AND CHOOSE FOR EACH STATEMENT: I AGREE, I DISAGREE OR I AM NOT SURE.

- | | | | |
|--|----------------------------------|-------------------------------------|--|
| 53. My back pain would stop anyone from leading an active life | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 54. I consider myself to be disabled | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 55. I am worried my back pain might cause me to loose my job | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 56. My back pain is only a temporary thing and will get better | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 57. Pain does not necessarily mean that my body is being harmed | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 58. With exercise and movement I could make my back pain worse | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 59. My family does not understand how much pain I am in | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 60. It is the responsibility of my loved ones to help me when my back hurts | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 61. I do not expect a medical cure for my pain | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 62. When I find the right doctor he or she will know how to reduce my back pain | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 63. I need an operation to get better | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 64. If only the doctors took an X-ray of my back than they would find the problem | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 65. I will probably always have to take medication for my back pain | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 66. I have the most relief from back pain with the use of medication | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 67. The amount of back pain I feel is completely out of control | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 68. There is little that I or anyone can do to ease the back pain | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 69. I believe that I can control how much back pain I feel by changing my thoughts | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 70. My back pain is not emotional it is pure physical | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 71. Stress in my life makes my back pain worse | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |
| 72. When I feel depressed my back pain gets worse | <input type="checkbox"/> I agree | <input type="checkbox"/> I disagree | <input type="checkbox"/> I am not sure |

SECTION 8:

THESE QUESTIONS ARE ABOUT TREATMENT THAT YOU HAVE RECEIVED FOR YOUR BACK PAIN AND TREATMENT THAT YOU WOULD LIKE TO RECEIVE IN THE FUTURE.

73. **In your lifetime**, have you received treatment for low back pain?
 Yes No → go to question 81

74. What kind of treatment have you received so far for your back pain? (you can tick more than one)

- Pain medication Physiotherapy Occupational therapy Surgery on my back
 Alternative treatment, like

75. Do you feel that the treatment that you have received for your back pain has helped you?

- No not at all Yes for a little while Yes it helped me a lot

76. Did the doctor take time to listen to you when you told him/her of your back pain?

- Yes, I was able to ask all my questions Yes, but I did not have enough time to ask all my questions
 No, there was no time to ask most of the questions No, I could not ask any of my questions

77. Have you received physiotherapy for your back pain?

- Yes No → go to question 78

77a. If YES, what did the physiotherapy treatment consist of? (you can tick more than one)

- Massage Hot packs Exercises Advice and education Electrotherapy (machines like ultrasound or interferentia)

77b. Did you feel the physiotherapy helped you?

- No not at all Yes for a little while Yes it helped me a lot

78. If you haven't received physiotherapy or it was a long time ago, would you like to get physiotherapy for your back pain (again)?

- Yes No → go to question 79

78a. If YES, what should the physiotherapist do? You can tick more than one

- Massage Hot packs Exercises Education on how to protect my back and advice
 Electrotherapy (machines like ultrasound and interferentia)

79. Did the doctor or physiotherapist explained to you how you hurt your back?

- Yes No

80. Do you think it is important learning how to look after your back?

- Yes No → go to question

80a. If YES, who would you like to teach you how to look after your back?

- My doctor A nurse A physiotherapist A **team** of medical professionals A friend A colleague or my boss

THE FOLLOWING QUESTIONS ARE ABOUT **YOUR IDEAS** ABOUT AN EDUCATIONAL PROGRAM ON CARING FOR YOUR BACK. PLEASE TICK THE ANSWER THAT BEST SUITS YOUR SITUATION.

81. If you join an educational program for your back what should the length of the program be?

- Short program: between 6 – 12 weeks long Ongoing weekly sessions for a longer period of time (more than 3 months)

82. If you join an educational program for your back what time of day should the sessions be?

- The morning (between 8:00 – 12:00) The afternoon (between 13:00 – 16:00) The early evening (between 17:00 – 19:00)

83. How would you like to learn about looking after your back?

- In a group with other people with the same problem In an individual session with a physiotherapist

84. What additional way would you want to receive information?

- In a booklet or pamphlet in a video or DVD via SMS via posters in the waiting room

85. **Where** must the educational program take place?

- At work At the day hospital At a private doctors' practice At a community centre

86. Have you **ever** been educated **at work** about how to look after your back and neck while working?

- Yes No

87. **At this moment** does your work offer any education on good posture or how to look after your back and neck when you work?

- Yes No I don't know

88. At this moment does your day hospital offer any education on good posture and how to look after your back?

- Yes No I don't know

89. How many people do you know at your work that suffer from similar pain like you?

- Nobody 1-2 people 2-4 people 4-6 people 6-8 people More than 8 people

90. Do you think it would be good if a program to look after your back or neck will be offered at your work?

- Yes No

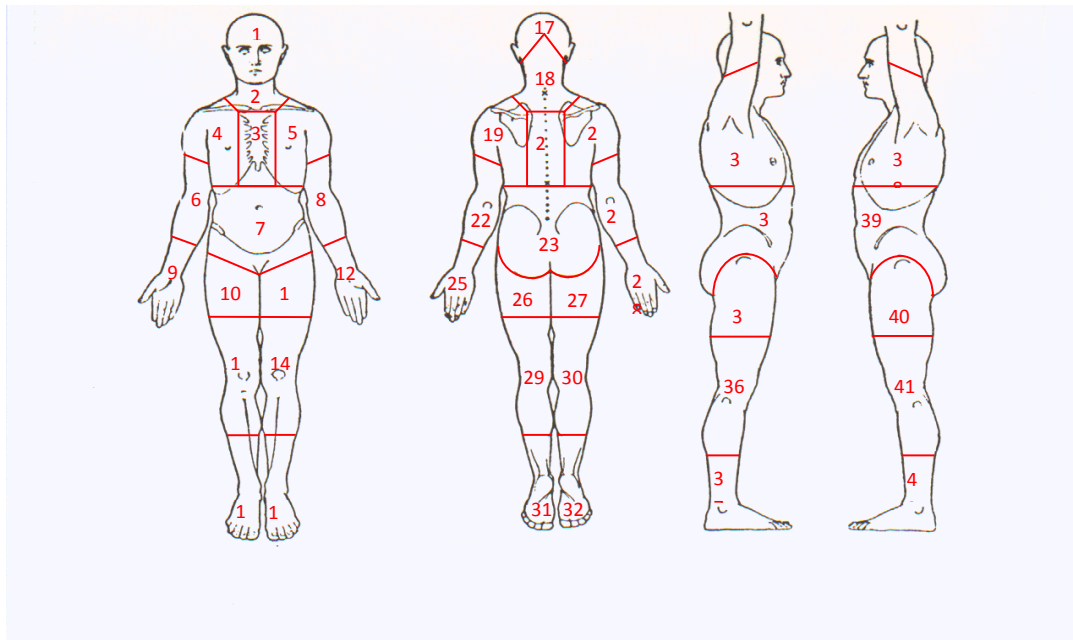
THANK YOU VERY MUCH FOR COMPLETING THIS QUESTIONNAIRE. IT IS BECAUSE OF YOU THAT WE CAN DO THIS RESEARCH. YOU MAY NOW PUT THIS QUESTIONNAIRE IN THE SEALED BOX. GO WELL AND BE WELL!

APPENDIX I:

BODY CHARTS AND SCORING GRID

Key

| ANTERIOR | POSTERIOR | LATERAL |
|----------------------|-----------------------|--------------------------|
| 1. Head | 17. Head | 33. Right side chest |
| 2. Neck | 18. Neck | 34. Right side abdomen |
| 3. Sternum | 19. Left shoulder | 35. Right side hip/thigh |
| 4. Right shoulder | 20. Upper middle back | 36. Right side knee |
| 5. Left shoulder | 21. Right shoulder | 37. Right ankle/foot |
| 6. Right elbow | 22. Left elbow | 38. Left side chest |
| 7. Abdomen | 23. Lower back | 39. Left side abdomen |
| 8. Left elbow | 24. Right elbow | 40. Left side hip/thigh |
| 9. Right wrist/hand | 25. Left wrist/hand | 41. Left knee |
| 10. Right hip/thigh | 26. Left hip/thigh | 42. Left ankle/foot |
| 11. Left hip/thigh | 27. Right hip/thigh | |
| 12. Left wrist/hand | 28. Right wrist/hand | |
| 13. Right knee | 29. Left knee | |
| 14. Left knee | 30. Right knee | |
| 15. Right ankle/foot | 31. Left ankle/foot | |
| 16. Left ankle/foot | 32. Right ankle/foot | |



APPENDIX J:

CONSENT FORM PATIENTS' VALIDATION STUDY

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT

Chronic low back pain among the population visiting the community health centres in the Cape Metropole: prevalence and risk factors.

REFERENCE NUMBER: N0805148

PRINCIPAL INVESTIGATOR: Mel Major

ADDRESS: 2, Wyndover Road, Claremont 7708

CONTACT NUMBER: 072-0684767

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the research team any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Committee for Human Research at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

This study is part of a larger research project among the community health centers in the Cape Metro District.

We want to get an idea about the people that come to the community health centres (CHC) for their appointments with doctors or diabetes clubs or for physiotherapy. We want to find out about diseases like sugar diabetes, high blood pressure and arthritis and also about pain like neck/shoulder pain or back pain. We have developed a questionnaire of fourteen pages that asks questions on your general health, any pain in the body, your education and employment, your income, your home situation and your level of activity. We will also ask about treatment that you have received at the community health centre.

With the information that we get from this study, we hope to get an idea about certain health problems and we want to make recommendations to improve the health care that the CHC's offer to the public.

Before we can do the main research, in which we will ask a total of 1200 patients, we want to test the reliability of the questionnaire on a small group of people. We also want to see how much time it takes to complete the questionnaire and if all the questions are easy to understand.

You have been asked to fill in a questionnaire of a total of 14 pages. The questionnaire is divided into seven sections. We ask you to answer the questions truthfully. While you fill in the questionnaire you can sit quietly and privately. We will not ask for your name or folder number and all information you give us will be fully confidential. You will be given a study ID number that you will use instead of your name so that your information remains anonymous. After completing the questionnaire, you should place it in a special sealed box provided by the researchers.

Why have you been invited to participate?

Persons older than 18 years will be invited to complete the questionnaire. We have invited you to participate because you are a visitor of Elsie's River Community Health Centre.

What will your responsibilities be?

You are asked to complete the questionnaire as completely and honestly as you can. If you feel uncomfortable giving certain information you are free to leave certain questions unanswered.

Will you benefit from taking part in this research?

We hope that all patients of the community health centres can benefit from the results of this study. We want to make recommendations for better health care for people suffering from low back pain, that attend the CHC regularly.

We will make these results known to the public as well as to the directors at the Metro District Health Services. With the information you and others are giving us, we can make recommendations for better health care in the future.

Are there in risks involved in your taking part in this research?

There are not risks involved in your taking part in this research.

If you do not agree to take part, what alternatives do you have?

You are welcome to not take part in this study if you wish to do so. Your decision to take part or to not take part will not influence any of the medical treatment that you will receive from a community health centre, now or in the future.

Who will have access to your medical records?

All the answers from the questionnaire are confidential and only the researcher has access to this information. At completion of the questionnaire you will be allocated a number so that you can remain anonymous. If any of the results will be published in a thesis, you will still remain anonymous.

What will happen in the unlikely event of some form of injury occurring as a direct result of your taking part in this research study?

It is highly unlikely that your participation in this study will put you at risk for any kind of injury. We will try and make you as comfortable as possible while you complete the questionnaire.

Will you be paid to take part in this study and are there any costs involved?

No you will not be paid to take part in the study, but we will give you a healthy snack and a cool drink to thank you for your help.

Is there any thing else that you should know or do?

- You can contact the main researcher, Mrs Mel Major, at the physiotherapy department at this day hospital (Physiotherapy department, room 8) if you have any further queries or encounter any problems.
- You can contact the Committee for Human Research at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by the person doing the study.
- You will receive a copy of this information and consent form for your own records and we will also put a copy of this form in your medical folder, so that we know that you have participated in this research.

Declaration by participant

By signing below, I agree to take part in a research study entitled *Chronic low back pain among the uninsured population in the Cape Metropole: prevalence and risk factors*.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (place) on (date) 2008.

.....
Signature of participant

.....
Signature of witness

Declaration by investigator

I (name) declare that:

- I explained the information in this document to
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use a translator. (If a translator is used then the translator must sign the declaration below.

Signed at (place) on (date) 2008.

.....
Signature of investigator

.....
Signature of witness

Declaration by translator

I (name) declare that:

- I assisted the investigator (name) to explain the information in this document to (name of participant) using the language medium of Afrikaans/Xhosa.
- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (place) on (date) 2008.

.....
Signature of translator

.....
Signature of witness

APPENDIX K:

EXPERTS' PANEL CHECKLIST

CHECKLIST FOR PRIMARY HEALTH LBP QUESTIONNAIRE

Layout and structure

| | | |
|---|-----|----|
| 1. Does the layout of the questionnaire allow for easy reading? | Yes | No |
|---|-----|----|

If No, please explain:

| | | |
|---|-----|----|
| 2. Are the questions grouped logically in the 8 sections? | Yes | No |
|---|-----|----|

If No, please explain:

| | | |
|---|-----|----|
| 3. Are the instructions for completion of the questionnaire and the instructions at the beginning of each section clear enough? | Yes | No |
|---|-----|----|

If No, please explain:

| | | |
|---|-----|----|
| 4. Are the questions and options given direct and clear enough? | Yes | No |
|---|-----|----|

If No, which questions/options are unclear?

| | | |
|--|-----|----|
| 5. Are there any questions that can be made redundant? | Yes | No |
|--|-----|----|

If Yes, please motivate which questions and why:

| | | |
|--|-----|----|
| 6. Do you believe that the questions are easily written and will be understood by our target group (highest educational level: grade 10/standard 8 high school)? | Yes | No |
|--|-----|----|

If No, please explain which questions should be re written?

Content:

| | | |
|--|-----|----|
| 7. Does the questionnaire measure what we aim for: prevalence of low back pain, associated factors and treatment experience and preferences? | Yes | No |
|--|-----|----|

If No, please clarify:

| | | |
|--|-----|----|
| 8. Have all possible associated risk factors for low back pain been accounted for? | Yes | No |
|--|-----|----|

If no, which factors would you recommend to include in the questionnaire? Please motivate your answer.

| | | |
|---|-----|----|
| 9. Do any of the questions infringe on the participants' privacy? | Yes | No |
|---|-----|----|

If Yes, please state which questions and why?

10. Any other comments or suggestions about the Primary Health LBP questionnaire?

Please e-mail this checklist with your comments, on or before December 5, 2008 to major.dreams@hotmail.com

Thank you very much for your valuable time and input.

Mel Major

MSc Physiotherapy student

Faculty of Health Sciences,

Stellenbosch University

Cape Town

South Africa

APPENDIX L:

CONSENT FORM RELIABILITY STUDY

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT

Chronic low back pain among the uninsured population, visiting the community health centres in the Cape Metropole: prevalence and risk factors.

REFERENCE NUMBER: N0805148

PRINCIPAL INVESTIGATOR: Mel Major

ADDRESS: 2, Wyndover Road, Claremont 7708

CONTACT NUMBER: 072-0684767

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the research team any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied and that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Committee for Human Research at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

With the information that we get from this study, we hope to get an idea about certain health problems and specifically how many people suffer from low back pain in their lives and the treatment they have received for that. We also want to get an idea about common factors that cause low back pain or that can make low back pain worse. With the results of the study we aim to make recommendations for future health care.

We have developed a questionnaire, which will help us to get all the information that we seek. Developing a questionnaire is a complex process and for that the questionnaire

needs to be tested several times. This study will take place at Elsie's River Community Health Centre. A total of 30 – 40 people will be asked to participate.

Why have you been invited to participate?

Persons older than 18 years will be invited to participate. People that visit the physiotherapy department of Elsie's River CHC will be invited to participate.

What will your responsibilities be?

You will be asked to complete a questionnaire of 12 pages, which will take you about 20 minutes. The questionnaire is divided into eight sections, containing general questions on your education, employment, income and home situation, as well as specific questions on your health. The questions about low back pain aim to determine if you ever in your life had low back pain and/or if you currently suffer from low back pain, what kind of treatment you have received or currently receive for your low back pain and what your preferences are regarding treatment for low back pain. The questionnaire will guide you through the sections that are relevant for you.

You are asked to complete the questionnaire as completely and honestly as you can. If you feel uncomfortable giving certain information you are free to leave certain questions unanswered.

While you complete the questionnaire you can sit quietly and privately. When you are finished a date will be scheduled with you within the next 2 weeks to complete the same questionnaire again. This is to assess whether the information we obtain from the questionnaire is truthful.

Will you benefit from taking part in this research?

We want to get as much information as possible on people suffering from low back pain. We will make these results known to the public as well as the directors at the Metro District Health Services. With the information you and others are giving us, we can make recommendations for better health care in the future.

Are there any risks involved in your taking part in this research?

There are no risks involved in your taking part in this research.

If you do not agree to take part, what alternatives do you have?

Your decision to take part or to not take part will not influence any of the medical treatment that you will receive from this community health centre, now or in the future.

Who will have access to your medical records?

All the answers from the questionnaire are confidential and only the researcher has access to this information. We will not ask for your name or folder number. After completion of the questionnaire you can put the questionnaire in a sealed box. If any of the results will be published in a thesis, you will still remain anonymous.

Will you be paid to take part in this study and are there any costs involved?

No, you will not be paid to take part in the study, but we will give you a healthy snack and a cool drink to thank you for your help. Also we will refund you the transport costs for the follow up appointment. There are no costs involved for you, if you do take part.

Is there any thing else that you should know or do?

- If you have any further queries or encounter any problems, you can contact the main researcher, Mrs Mel Major, at the physiotherapy department at Elsie's River day hospital (021 931 02 12, ext 223), or leave your name and phone number with your physiotherapist so that the researchers can contact you.
- You can contact the Committee for Human Research at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by the person doing the study.
- You will receive a copy of this information and consent form for your own records, and we will keep a copy in file for our records.

Declaration by participant

By signing below, I agree to take part in a research study entitled *Chronic low back pain among the uninsured population, visiting the community health centres in the Cape Metropole: prevalence and risk factors*.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

Signed at (place) on (date) 2009.

.....
Signature of participant

.....
Signature of witness

Declaration by investigator

I (name) declare that:

- I explained the information in this document to
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use a translator. (If a translator is used then the translator must sign the declaration below.

Signed at (place) on (date) 2009.

.....
Signature of investigator

.....
Signature of witness

Declaration by translator

I (name) declare that:

- I assisted the investigator (name) to explain the information in this document to (name of participant) using the language medium of Afrikaans/Xhosa.
- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (place) on (date) 2009.

.....
Signature of translator

.....
Signature of witness

APPENDIX M:

DUTCH MUSCULOSKELETAL QUESTIONNAIRE (DMQ) – HILDEBRANDT
(2005)

Dutch Musculoskeletal Questionnaire DMQ

English translation - 2nd draft

Nota bene:

The shortened version of the DMQ comprises the following pages:

General (page 1)

Health 2 (page 3)

Work 1 (page 4); on this page, you have to insert yourself the tasks which are prevalent in your study-population.

Work 2 (this is a separate page meant only for the short version; it is attached as page 18)

The standard version of the DMQ comprises pages 1 - 9

The extended version comprises pages 1 to 14.

Optional for all versions are pages 15-16.

ACKNOWLEDGEMENT

We thank Mr. John Jackson for his help with the English translation.

Do read this first:

This questionnaire addresses your work and your health.

Most questions can simply be answered by **yes** or **no**. Please do not think too long about each question and do not consult with your colleagues.

You should only mark one answer, even if sometimes choosing between the possibilities given might be difficult: in that case choose the answer that in your opinion is best. Try to answer all questions.

Some questions may look the same. Nevertheless, it is important to complete all questions: don't skip any questions!

EXAMPLE HOW TO COMPLETE THE QUESTIONNAIRE:

Do you have headaches regularly?

yes no

If you make a mistake, correct your answer as is indicated here:

Do you have headaches regularly?

yes no

In case you doubt about the answer to be given, try to choose the possibility that nears best reality.

Do never mark "yes" and "no" at the same time, or something in between, as in that case your answer can no longer be processed!

Your answers will be treated in the **strictest confidence**. Apart from the research workers no one will ever have access to the data without your permission, not even your superiors! In the report about this study your personal data cannot be recognised.

Thank you very much for your cooperation!

General questions

Please read the explanation on the previous page before answering the questions below!

1. What is your age? -- years
2. What is your gender? male _1 female _2
3. – Has your family lived in Britain for at least three generations? yes _1 no _2
– Can you speak and read the English language easily? yes _1 no _2
4. What is the highest education that you completed successfully? _1
no education completed or primary school _2
lower secondary or vocational school _3
intermediate secondary or vocational school _4
higher secondary or vocational school _5
university
5. – How tall are you? about-- -- cm
– What is your weight? about-- -- kg
6. –How many years have you been carrying out your present work at this firm? -- -- years
– How many hours week do you work normally (*including regular overtime!*)? -- hours per week
– How many days per week do you work normally? -- days per week
7. – Do you have a temporary contract (less than a year) or are you a temp.? yes _1 no _2
– Are you on sick leave or partly disabled? yes _1 no _2
– Do you have other jobs (paid or unpaid)? yes _1 no _2
– Do you work left-handed? yes _1 no _2
8. Do you supervise people in your daily work? yes _1 no _2
9. How long does it take to travel to your work (single journey)? -- -- -- minutes
10. How do you usually travel to your work (*more than one answer is possible*)? _1
_1
_1
_1
_1
_1
_1
on foot _1
pushbike _1
moped, motor _1
car _1
bus _1
tram, train _1
11. Are you working in shifts? no _1
_2
_3
_4
_5
yes, irregular shifts _2
yes, 2 shifts (no nights) _3
yes, 3 shifts _4
yes, 12 hour shifts _5

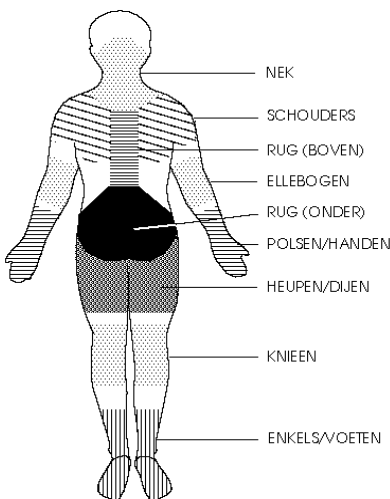
Health (1)

1. How is your health status in general? good ₁
reasonably good ₂
not too bad ₃
poor ₄
2. How is to your opinion your physical fitness nowadays? good ₁
reasonably good ₂
not too bad ₃
poor ₄
3. – Does your work require a lot of strength? yes ₁ no ₂
– Does your work require endurance? yes ₁ no ₂
4. How tired are you normally at the end of a working day physically? not tired ₁
a bit tired ₂
rather tired ₃
very tired ₄
5. How tired are you normally at the end of a working day mentally? not tired ₁
a bit tired ₂
rather tired ₃
very tired ₄
6. – Have you had any complaints about your health recently? yes ₁ no ₂
– Have you consulted your doctor the past six months
(other than for a routine check-up)? yes ₁ no ₂
– Is a physician treating you at the moment? yes ₁ no ₂
– Have you been absent from work the last six months
because of an illness or an accident? yes ₁ no ₂
– Are you taking drugs on a doctors prescription? yes ₁ no ₂
7. Do you smoke or did you smoke in the past? yes, I'm smoking nowadays ₁
yes, I did smoke in the past ₂
no, I never smoked ₃
8. – Do you often feel tense? yes ₁ no ₂
– Do you often feel nervous? yes ₁ no ₂
– Do you often feel flustered? yes ₁ no ₂
– Are you often very tired after work? yes ₁ no ₂
– Do you regularly feel tired when getting up in the morning? yes ₁ no ₂

Health (2)

1. Have you ever had trouble (pain, discomfort) from your:
- | | | |
|--------------|------------------------------|-----------------------------|
| neck | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| upper back | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| lower back | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| shoulders | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| elbows | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| wrists/hands | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| hips/thighs | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| knees | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| ankles/feet | yes <input type="checkbox"/> | no <input type="checkbox"/> |

2. Have you had in the past 12 months trouble (pain, discomfort) from your:



- | | YES,
sometimes | YES,
regularly | YES,
chronically | NO ,
never |
|------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| neck | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| upper back | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| lower back | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| left shoulder | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| right shoulder | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| left elbow | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| right elbow | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| left wrist/hand | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| right wrist/hand | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| left hip/thigh | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| right hip/thigh | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| left knee | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| right knee | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| left ankle/foot | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| right ankle/foot | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

3. Have you had during the past 7 days trouble (pain, discomfort) from your:

- | | | |
|--------------|------------------------------|-----------------------------|
| neck | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| upper back | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| lower back | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| shoulders | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| elbows | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| wrists/hands | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| hips/thighs | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| knees | yes <input type="checkbox"/> | no <input type="checkbox"/> |
| ankles/feet | yes <input type="checkbox"/> | no <input type="checkbox"/> |

yes no

Work (1)

1. Please list your job tasks and indicate how often (seldom/never, sometimes, often or (almost) always?)

| | seldom or never | sometimes | often | (almost) always |
|----|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 1. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| 2. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| 3. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| 4. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| 5. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| 6. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| 7. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| 8. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| 9. | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |

2. Please mark for each task and all tasks together the number which best indicates the amount of exertion associated with that task (light, normal, heavy, very heavy).

| | light | normal | heavy | very heavy | | | |
|---|-------|--------|-------|------------|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The tasks should be the same as in the table above. | | | | | | | |
| 1. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| all tasks together, taking into account the frequency | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Work (2)

1. – Do you carry out the same work almost the whole day? yes ₁ no ₂
 – Does your work vary from day to day? yes ₁ no ₂
 – Does the work rotate between you and your colleagues? yes ₁ no ₂
 – Do your tasks vary according to the season or time of the year? yes ₁ no ₂
 – Do you carry out your work mostly at the same workplace(s)? yes ₁ no ₂
 – Do you carry out your work outdoors? yes ₁ no ₂
 – Do you have a sedentary job? yes ₁ no ₂
 – Does your work involve mainly repetitive tasks many times a minute? yes ₁ no ₂
 – Does your work often involve contacts with clients, patients or the public? yes ₁ no ₂
 – Does your work involve coldness, draughts or changes of temperature? yes ₁ no ₂
 – Are you often driving in vehicles at your work? yes ₁ no ₂
2. *This question addresses breaks. We are only interested in breaks which you actually have or could take!*
 – How many breaks do you have during a normal working day? — breaks per day
 – Counting all breaks, how many minutes resting time do you have normally? — — — minutes per day
 – Are your normal breaks sufficient? yes ₁ no ₂
 – Are you going back to work rested after a break? yes ₁ no ₂
3. – Can you choose the start and end of a working day yourself? yes ₁ no ₂
 – Can you choose the moment of a break yourself? yes ₁ no ₂
 – Are you familiar with your work schedule longer than one month on forehand? yes ₁ no ₂
 – Can you take a holiday when you wish? yes ₁ no ₂
 – Is there a shortage of personnel at your department? yes ₁ no ₂
 – Do you have to replace colleagues often? yes ₁ no ₂
 – Do you have overtime regularly? yes ₁ no ₂
4. Did you have other work in the past? yes ₁ no ₂
If yes: Which kind of work did you do in your previous work never, sometimes, often or (almost) always?
- | | seldom
or never | some-
times | often | almost
always |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| standing for long periods | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| sitting for long periods | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| VDU work for long periods | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| squatting/kneeling for long periods | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| moving loads (more than 5 kg) | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| moving heavy loads (more than 20 kg) | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| jobs which require exertion of arms/hands | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working with vibrating tools | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| driving vehicles | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working in uncomfortable postures | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working in the same position for long periods | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| doing repetitive tasks many times per minute | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |

Work (3)

1. Do you in your work often have to:
 - lift heavy loads (more than 5 kg)? yes _1 no _2
 - push or pull heavy loads (more than 5 kg)? yes _1 no _2
 - carry heavy loads (more than 5 kg)? yes _1 no _2

2. Do you in your work often have to lift:
 - in a uncomfortable position? yes _1 no _2
 - with the load far away from your body? yes _1 no _2
 - with twisted trunk? yes _1 no _2
 - with the load above shoulder-level? yes _1 no _2
 - with one hand? yes _1 no _2
 - with a load which is difficult to grap or hold? yes _1 no _2

3. Do you in your work often have to:
 - lift very heavy loads (more than 20 kg)? yes _1 no _2
 - push or pull very heavy loads (more than 20 kg)? yes _1 no _2
 - carry very heavy loads (more than 20 kg)? yes _1 no _2

4. Do you in your work often have to::
 - bent slightly with your trunk? yes _1 no _2
 - bent heavily with your trunk? yes _1 no _2
 - twist slightly with your trunk?? yes _1 no _2
 - twist heavily with your trunk? yes _1 no _2
 - bent and twist simultaneously with your trunk? yes _1 no _2

5. Do you in your work often have to work:
 - in a slightly bent posture for long periods? yes _1 no _2
 - in a heavily bent posture for long periods? yes _1 no _2
 - in a slightly twisted posture for long periods? yes _1 no _2
 - in a heavily twisted posture for long periods? yes _1 no _2
 - in a bent and twisted for long periods? yes _1 no _2

6. Do you in your work often have to:
 - bent your neck forward or hold your neck in a forward posture for long periods? yes _1 no _2
 - bent your neck backward or hold your neck in a backward posture for long periods? yes _1 no _2
 - twist your neck or hold your neck in a twisted posture for long periods? yes _1 no _2

7. Do you in your work often have to:
 - bent your wrist or hold your wrist bent for long periods? yes _1 no _2
 - twist your wrist or hold your wrist twisted for long periods? yes _1 no _2

8. Do you in your work often have to make:
 - the same movements with your arms, hands of fingers many times per minute? yes _1 no _2
 - the same movements (bending, twisting) with your trunk many times per minute? yes _1 no _2
 - the same movements (bending, twisting) with your head many times per minute? yes _1 no _2

Work (4)

1. How many minutes per day do you work with your hands:
 - above shoulder level? about— — — minutes per day
 - under knee level? about — — — minutes per day
 (if not applicable, insert a '0')

2. Do you in your work often have to:
 - reach with your arms or hands? yes ₁ no ₂
 - hold your hands at or under shoulder level? yes ₁ no ₂
 - hold your hands above shoulder level? yes ₁ no ₂
 - work in uncomfortable postures? yes ₁ no ₂

3. Do you in your work often have to:
 - stand for long periods? yes ₁ no ₂
 - sit for long periods? yes ₁ no ₂
 - walk for long periods? yes ₁ no ₂
 - work kneeled or squatted for long periods? yes ₁ no ₂
 - work in the same posture for long periods? yes ₁ no ₂

4. Do you in your work often have to:
 - sit on your knees or move on your knees? yes ₁ no ₂
 - operate pedals with your feet? yes ₁ no ₂
 - climb stairs? yes ₁ no ₂
 - walk on irregular surfaces? yes ₁ no ₂
 - lay on your back? yes ₁ no ₂

5. Do you in your work often hold vibrating tools? yes ₁ no ₂

6. Do you in your work often have:
 - insufficient space to do your work properly? yes ₁ no ₂
 - insufficient space above you which forces you to bent forward? yes ₁ no ₂
 - insufficient height or reach to be able to reach things with your tools? yes ₁ no ₂

7. Do you in your work often have:
 - difficulties exerting enough force because of uncomfortable postures? yes ₁ no ₂
 - nothing to lean on? yes ₁ no ₂

8. Do you in your work often have to:
 - make sudden, unexpected movements? yes ₁ no ₂
 - perform short, but maximal force-exertions? yes ₁ no ₂
 - exert great force with your arms or hands? yes ₁ no ₂
 - hold things in a pinch grip with your hands? yes ₁ no ₂
 - exert great force on tools or machinery? yes ₁ no ₂

9. Do you sometimes slip or fall during your work? yes ₁ no ₂

Work (5)

1. – Is your work physically very strenuous? yes _1 no _2
 – Is your work mentally very exacting? yes _1 no _2

2. Does your work cause you to perspire or to be out of breath? yes _1 no _2

3. – Is the rate at which or the pressure under which
 you have to work regularly fairly high? yes _1 no _2
 – Are you regularly working under pressure of time? yes _1 no _2
 – Do you have to hurry to be ready on time? yes _1 no _2
 – Do you regularly have problems with the pace or the busyness of your work? yes _1 no _2
 – Should you really be taking it somewhat easier in your work? yes _1 no _2
 – is your work often too tiring? yes _1 no _2

4. – Do you have to work very fast? yes _1 no _2
 – Do you have very much to do? yes _1 no _2
 – Do you have to work extra hard? yes _1 no _2
 – Do you have enough time in general to finish all your work in time? yes _1 no _2
 – Is your work hectic or is it a madhouse? yes _1 no _2

5. – Can you determine yourself how to carry out your work? yes _1 no _2
 – Are there in general enough tools available at your work yes _1 no _2
 – Do you yourself determine the sequence of your tasks? yes _1 no _2
 – Can you adjust your workplace yourself (*think of the height of e.g. your chair, table*)? yes _1 no _2
 – Do you decide yourself when to carry out a task? yes _1 no _2
 – Can you leave your workplace easily if you wish to do that? yes _1 no _2
 – Can you interrupt your work if you wish to do that? yes _1 no _2
 – Can you control your working pace yourself? yes _1 no _2

6. – Are you mentally exhausted by your work? yes _1 no _2
 – Do you feel empty at the end of a working day? yes _1 no _2
 – Do you feel tired when you wake up at the start of a new working day? yes _1 no _2
 – Do you feel 'burned-out' by your work? yes _1 no _2
 – Are you frustrated by your job? yes _1 no _2
 – Do you think that you have too much to do at work? yes _1 no _2
 – Do you feel things are too much for you? yes _1 no _2

7. – Is your work mostly interesting? yes _1 no _2
 – Do you have enough variety in your work? yes _1 no _2
 – Do you consider your work too simple? yes _1 no _2
 – Do you have enough training to perform your tasks? yes _1 no _2
 – Do you mostly enjoy your work? yes _1 no _2

Work (6)

1. Are you much hindered in your work by:
 - noise? yes _1 no _2
 - lack of fresh air? yes _1 no _2
 - dry air? yes _1 no _2
 - changes or extremes of temperature? yes _1 no _2
 - bad smells or stench? yes _1 no _2

2.
 - Is your work often hampered by unexpected situations? yes _1 no _2
 - Is your work usually well organized? yes _1 no _2
 - Are there sufficient possibilities for consultation about your work? yes _1 no _2
 - Is your work often hindered by the absence of others? yes _1 no _2
 - Are you regularly hindered in your work by deficiencies in the work of others? yes _1 no _2

3.
 - Are you working under a good supervision? yes _1 no _2
 - Are you often annoyed by others at your work? yes _1 no _2
 - Does the supervision sufficiently regard what you say? yes _1 no _2
 - Do you find the atmosphere at work all right? yes _1 no _2
 - Does the supervision have a correct picture of you in your work? yes _1 no _2
 - Does the supervision provide enough support in your work? yes _1 no _2
 - Can you count upon the support of one of your colleagues if necessary? yes _1 no _2
 - Are you kept informed on what is going on in your company? yes _1 no _2

4.
 - Are there circumstances in your work that adversely affect your private life? yes _1 no _2
 - Are there circumstances in your private life that adversely affect your work? yes _1 no _2
 - Do you take problems at work with you to your home? yes _1 no _2
 - Do you take problems at home with you to your work? yes _1 no _2
 - Do you consider the safety at work all right? yes _1 no _2
 - Are your prospects good with this employer? yes _1 no _2
 - Are there enough possibilities for a good career at your work? yes _1 no _2
 - Do you feel that you are sufficiently valued in this company? yes _1 no _2
 - Do you think your pay is appropriate for the work you are doing? yes _1 no _2

5.
 - Does your work require skills? yes _1 no _2
 - Do you have enough variety in your work? yes _1 no _2
 - Does your job require that you learn new things?? yes _1 no _2
 - Does your job require creativity? yes _1 no _2
 - Do you have the opportunity to develop your skills? yes _1 no _2
 - Do you have to carry out the same actions again and again over a short period of time? yes _1 no _2

6. All in all, does your work suit you well, reasonably well, not too badly or badly?
 - well _1
 - reasonably well _2
 - not too badly _3
 - badly _4

Leisure time

1. Please indicate the number of hours per week you are travelling in a motor vehicle (*e.g. car, bus, but not a train*):
- during your work? about — — hours per week
 - during commuting? about — — hours per week
 - in your leisure time? about — — hours per week
- (if not applicable, please write '0')
2. How often did you engage in sports or strenuous exercise in your leisure time during the past four months which lasted long enough to perspire?
- not ₁
 less than once a month ₂
 about once a month ₃
 about 2 - 3 times per month ₄
 about 1 - 2 times per week ₅
 3 or more times per week ₆
3. Did you do physically strenuous sports during the past 12 months? yes ₁ no ₂
- If yes:
- do you participate in a competition? yes ₁ no ₂
 - how many hours per week on average? — — hours per week
 - how many months per year? — — months per jaar
 - how many years? — — years
 - which sport(s)?
- (if you participate in several sports, please indicate which you perform most intensely)
- | | | | | |
|--|--|---|---|---|
| <input type="checkbox"/> ₁ athletics | <input type="checkbox"/> ₈ fitness/aerobics | <input type="checkbox"/> ₁₅ motorsports | <input type="checkbox"/> ₂₂ surfing | <input type="checkbox"/> ₂₉ walking |
| <input type="checkbox"/> ₂ badminton | <input type="checkbox"/> ₉ golf | <input type="checkbox"/> ₁₆ hang-gliding | <input type="checkbox"/> ₂₃ table tennis | <input type="checkbox"/> ₃₀ water sports |
| <input type="checkbox"/> ₃ basketball | <input type="checkbox"/> ₁₀ handball | <input type="checkbox"/> ₁₇ rowing | <input type="checkbox"/> ₂₄ tennis | <input type="checkbox"/> ₃₁ cycling |
| <input type="checkbox"/> ₄ mountaineer | <input type="checkbox"/> ₁₁ hockey | <input type="checkbox"/> ₁₈ skating | <input type="checkbox"/> ₂₅ gymnastics | <input type="checkbox"/> ₃₂ sailing |
| <input type="checkbox"/> ₅ bowling | <input type="checkbox"/> ₁₂ horse riding | <input type="checkbox"/> ₁₉ shooting | <input type="checkbox"/> ₂₆ boxing/fencing | <input type="checkbox"/> ₃₃ swimming |
| <input type="checkbox"/> ₆ dance/ballet | <input type="checkbox"/> ₁₃ weight training | <input type="checkbox"/> ₂₀ skiing | <input type="checkbox"/> ₂₇ volleyball | <input type="checkbox"/> ₃₄ other:.. |
| <input type="checkbox"/> ₇ biking | <input type="checkbox"/> ₁₄ rugby | <input type="checkbox"/> ₂₁ squash | <input type="checkbox"/> ₂₈ (indoor)football | |
| | | | | |
4. Did you have a sports injury during the past 12 months which forced you to stop training or competition or prevented you from playing the next time? yes ₁ no ₂
- If yes: which bodily region? (if you had several injuries, please indicate the most severe injury)
- | | | | | |
|--|--|---|---|---|
| <input type="checkbox"/> ₁ neck | <input type="checkbox"/> ₁ shoulders | <input type="checkbox"/> ₁ hips/thigh | <input type="checkbox"/> ₁ head | <input type="checkbox"/> ₁ groin |
| <input type="checkbox"/> ₁ upper back | <input type="checkbox"/> ₁ elbows | <input type="checkbox"/> ₁ knees | <input type="checkbox"/> ₁ arms | <input type="checkbox"/> ₁ legs |
| <input type="checkbox"/> ₁ lower back | <input type="checkbox"/> ₁ wrists/hands | <input type="checkbox"/> ₁ ankles/feet | <input type="checkbox"/> ₁ belly | |
5. Did you have sick leave caused by a sports injury during the past 12 months? yes ₁ no ₂
- If yes:– how many working days? — — — days
6. Have you been treated medically for a sport injury during the past 12 months? yes ₁ no ₂

Low back pain (1)

Complete these questions only if you had low back pain during the past 12 months.

1. Please indicate your age when you experienced your low back pain for the first time:
 My age was: — — year

2. What caused your low back pain:
 - a sports injury? yes _1 no _2
 - an accident? yes _1 no _2
 - a sudden movement? yes _1 no _2
 - the lifting of a heavy load? yes _1 no _2
 - a bad posture during a long period? yes _1 no _2
 - stress? yes _1 no _2
 - the climate (draught, coldness, moisture)? yes _1 no _2
 - (only for females):*
 - a pregnancy, delivery yes _1 no _2
 - menstruation? yes _1 no _2

3.
 - Is your low back pain associated with your work? yes _1 no _2
 - is your low back pain associated with leisure time activities? yes _1 no _2
 - Did your low back pain start during your current work? yes _1 no _2

4. How often have you had separate spells of low back pain during the past 12 months?
 - once _1
 - between 2-4 times _2
 - between 5-10 times _3
 - more than 10 times _4
 - my complaints are always there _5

5. How many days were you on sick leave during the past 12 months due to your low back pain?
 - none _1
 - 1-7 days _2
 - 8-14 days _3
 - 15-28 days _4
 - between 1-3 months _5
 - longer than 3 months _6

6. How long was the longest spell of your low back pain during the past 12 months?
 - less than one day _1
 - 1-7 days _2
 - 1-4 weeks _3
 - 5-7 weeks _4
 - between 8 weeks and 3 months _5
 - 3-12 months _6

7. Did you have radiating low back pain (to the legs) during the past 12 months to:
 - the left and/or right knee? yes _1 no _2
 - the left and/or right ankle/foot? yes _1 no _2

Low back pain (2)

Complete these questions only if you had low back pain during the past 12 months.

8. Please describe the last period of your low back pain
- cured completely within a few days ₁
 cured completely, but it took a few weeks ₂
 cured not entirely, sometimes my symptoms do recur ₃
 not cured, my symptoms persisted ₄
 not cured, but my symptoms started only recently ₅
9. –Is your low back pain getting worse? yes ₁ no ₂
 – Is the severity of your low back pain varying widely? yes ₁ no ₂
 – Did your low back pain start suddenly? yes ₁ no ₂
 – Does your low back pain hinder your sleep? yes ₁ no ₂
 – Does your low back pain persist during holidays? yes ₁ no ₂
 – Are you getting up in the morning with a stiff feeling in your lower back? yes ₁ no ₂
 – Do you have a numb, dead or tingling feeling in the legs
 when you have to sneeze, cough or strain? yes ₁ no ₂
10. Did you ever had:
- lumbago? yes ₁ no ₂
 – a herniated (slipped) lumbar disc? yes ₁ no ₂
 – a medical treatment due to your low back pain? yes ₁ no ₂
 – a hospitalisation due to your low back pain? yes ₁ no ₂
11. How many times during the past 12 months did your low back pain cause you to:
- consult a physician yes ₁ no ₂
 – consult a physiotherapist, chiropractor or osteopath? yes ₁ no ₂
12. Is your low back pain causing trouble when:
- | | I do this
never | no
trouble | little
trouble | much
trouble |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| standing for a long period | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| sitting for a long period | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| moving loads (more than 5 kg) | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| moving heavy loads (more than 20 kg) | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| performing jobs which require exertion of arms/hands | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working with vibrating tools | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| driving in vehicles | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working in uncomfortable postures | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working in the same postures for a long period | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
13. – Are you partly disabled due to your low back pain? yes ₁ no ₂
 – Did you change your work in the past due to your low back pain? yes ₁ no ₂
 – Are your workplace, tools or working hours adjusted due to your low back pain? yes ₁ no ₂

Neck and/or shoulder pain (1)

Complete these questions only if you had neck and/or shoulder pain during the past 12 months.

14. Please indicate your age when you experienced your neck and/or shoulder pain for the first time My age was: — — year
15. What caused your neck and/or shoulder pain:
- a sports injury? yes _1 no _2
 - an accident? yes _1 no _2
 - a sudden movement? yes _1 no _2
 - the lifting of a heavy load? yes _1 no _2
 - a bad posture during a long period? yes _1 no _2
 - stress? yes _1 no _2
 - the climate (draught, coldness, moisture)? yes _1 no _2
- (only for females):*
- a pregnancy, delivery yes _1 no _2
16. – Is your neck and/or shoulder pain associated with your work? yes _1 no _2
 – Is your neck and/or shoulder pain associated with leisure time activities? yes _1 no _2
 – Did your neck and/or shoulder pain start during your current job? yes _1 no _2
17. How often have you had separate spells of neck and/or shoulder pain during the past 12 months?
once _1
between 2-4 times _2
between 5-10 times _3
more than 10 times _4
my complaints are always there _5
18. How many days were you on sick leave during the past 12 months due to your neck and/or shoulder pain?
none _1
1-7 days _2
8-14 days _3
15-28 days _4
between 1-3 months _5
longer than 3 months _6
19. How long was the longest spell of your neck and/or shoulder pain during the past 12 months?
less than one day _1
1-7 days _2
1-4 weeks _3
5-7 weeks _4
between 8 weeks and 3 months _5
3-12 months _6
20. Did you have radiating neck and/or shoulder pain (to the arms) during the past 12 months to:
- the left and/or right upper arm/elbow? yes _1 no _2
 - the left and/or right forearm/wrist/hand? yes _1 no _2

Neck and/or shoulder pain (2)

Complete these questions only if you had neck and/or shoulder pain during the past 12 months.

21. Please describe the last period of your neck and/or shoulder pain

- cured completely within a few days ₁
 cured completely, but it took a few weeks ₂
 cured not entirely, sometimes my symptoms do recur ₃
 not cured, my symptoms stayed ₄
 not cured, but my symptoms started only recently ₅

22. –Is your neck and/or shoulder pain getting worse? yes ₁ no ₂
 – Is the severity of your neck and/or shoulder pain strongly varying? yes ₁ no ₂
 – Did your neck and/or shoulder pain start suddenly? yes ₁ no ₂
 – Does your neck and/or shoulder pain hinder your sleep? yes ₁ no ₂
 – Does your neck and/or shoulder pain persist during holidays? yes ₁ no ₂
 – Are you getting up in the morning with a stiff feeling in your neck or shoulders? yes ₁ no ₂
 – Do you have a deaf, dead or twinkling feeling in your arms or hands? yes ₁ no ₂
 – Does your neck and/or shoulder pain radiate into the arms
 when you have to sneeze, cough or squeeze? yes ₁ no ₂

23. Did you ever had:
 – a frozen shoulder? yes ₁ no ₂
 – a herniated cervical disc? yes ₁ no ₂
 – a medical treatment due to your neck and/or shoulder pain? yes ₁ no ₂
 – a hospitalisation due to your neck and/or shoulder pain? yes ₁ no ₂

24. How many times during the past 12 months did you due to your neck and/or shoulder pain:
 – consult a physician yes ₁ no ₂
 – consult a physiotherapist, chiropractor or osteopath? yes ₁ no ₂

25. Is your neck and/or shoulder pain causing trouble when:

| | I do this never | no trouble | little trouble | much trouble |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| standing for a long period | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| sitting for a long period | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| moving loads (more than 5 kg) | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| moving heavy loads (more than 20 kg) | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| performing jobs which require exertion of arms/hands | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working with vibrating tools | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| driving in vehicles | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working in uncomfortable postures | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| working in the same postures for a long period | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |
| making repetitive movements with arms or hands | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₄ |

Your own opinion (1)

Down beneath you can indicate which tasks cause symptoms. You are also invited to suggest how to improve these tasks.

1. Please indicate which jobs are heavy for the low back and ways to improve those jobs.

heavy tasks for the low back:

how to improve:

task 1.

task 1.

task 2.

task 2.

task 3.

task 3.

2. Please indicate which jobs are heavy for the neck and/or shoulders and ways to improve those jobs

heavy tasks for the neck/shoulders:

how to improve:

task 1.

task 1.

task 2.

task 2.

task 3.

task 3.

3. Please indicate which jobs are heavy for the arms (elbows, wrists, hands) and ways to improve those jobs

heavy tasks for the arms:

how to improve:

task 1.

task 1.

task 2.

task 2.

task 3.

task 3.

4. Please indicate which jobs are heavy for the knees and ways to improve those jobs

heavy tasks for the knees:

how to improve:

task 1.

task 1.

task 2.

task 2.

task 3.

task 3.

Your own opinion (2)

Down beneath you can indicate which tasks cause symptoms. You are also invited to suggest how to improve these tasks.

5. Every job has its 'heavy tasks'. Please indicate below which heavy tasks you have in your work and how to improve them.

heavy or uncomfortable task:

how to improve:

task 1. _____

task 1. _____

task 2. _____

task 2. _____

task 3. _____

task 3. _____

6. In many jobs, there are some very heavy tasks which are not conspicuous because the task is seldomly performed or takes a very short period of time. If there are such tasks in your work, please name them below and indicate how to improve them.

kind of work:

how to improve:

task 1. _____

task 1. _____

task 2. _____

task 2. _____

task 3. _____

task 3. _____

If you use tools which are not suitable for your job, please indicate which tools and how to improve them.

unsuitable tools:

how to improve:

1. _____

1. _____

2. _____

2. _____

3. _____

3. _____

If you have health complaints related to your work which have not been addressed so far, please name them below and indicate to which tasks they are related.

health complaint:

related to:

Work (2)

Short version only

1. Do you in your work often have to:
 - lift, push, pull or carry heavy loads (more than 5 kg)? yes _1 no _2
 - lift, pull, push or carry very heavy loads (exceeding 20 kg)? yes _1 no _2
 - exert great force on tools? yes _1 no _2

2. Do you in your work often have to bend or twist with your:
 - trunk? yes _1 no _2
 - neck? yes _1 no _2
 - wrists/hands? yes _1 no _2

3. Do you in your work often have to work in a bent, stooped or twisted posture for long periods of time with your:
 - trunk? yes _1 no _2
 - neck? yes _1 no _2
 - wrists? yes _1 no _2

4. Do you in your work often have to make short repetitive movements with your:
 - trunk? yes _1 no _2
 - neck? yes _1 no _2
 - wrists? yes _1 no _2

10. Do you in your work often have to:
 - reach with your arms or hands? yes _1 no _2
 - hold your arms at or above shoulder level? yes _1 no _2
 - work in uncomfortable postures? yes _1 no _2
 - work in the same posture for long periods of time? yes _1 no _2
 - make frequent repetitive movements with your arms, hands or fingers? yes _1 no _2

11. Do you in your work often for long periods of time have to:
 - stand? yes _1 no _2
 - sit? yes _1 no _2
 - walk? yes _1 no _2
 - kneel or squat? yes _1 no _2

12. Do you, in your work, often hold vibrating tools or materials? yes _1 no _2

13. How many minutes per day do you work with your hands:
 - above shoulder level? about — — — minutes
 - per day
 - below knee level? about — — — minutes
 - per day

(if not applicable, insert a '0')

APPENDIX N:

KESSLER PSYCHOLOGICAL DISTRESS SCALE (K10) – KESSLER *ET AL*
(2002)



Kessler Psychological Distress Scale

Background

The Kessler Psychological Distress Scale (K10) is a widely reported two-domain, 10-item measure of non-specific psychological distress, primarily intended as a measure of mood, anxiety and depression. The wording is appropriate for use with moderately literate individuals.

Measurement and Scoring

The 10-item scale has 5 response categories, from 1 (None of the time) to 5 (All of the time). The score can be calculated as the sum of the responses to the 10 items.

Recording

A separate recording sheet is provided to facilitate repeated measures over time.

Comparison

The K10 should be completed on repeated occasions of testing, and the scores should be compared between testings in order to obtain an understanding of any change in the mood.

Interpretation

The following cut-off scores have been used to estimate the prevalence of levels of psychological distress in an Australian population health survey.

| K10 score | Likelihood of having a mental disorder |
|-----------|---|
| 10–19 | Likely to be well |
| 20–24 | Likely to have a mild mental disorder |
| 25–29 | Likely to have a moderate mental disorder |
| 30–50 | Likely to have a severe mental disorder |

Scores usually decline with effective treatment. Patients whose scores remain above 24 after treatment should be reviewed and specialist referral considered.

Validity, reliability and internal consistency

The developmental literature reports a significant area under the ROC curve (0.89) related to its sensitivity and specificity, high Cronbach's alpha in all tests (>0.9) and high intra-rater reliability (Pearson $r > 0.75$).



CAHE Outcomes Calculator: Musculoskeletal User's Manual

References

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K-10

The following questions ask about how you have been feeling over the **past 30 days**. For each question, mark the circle under the option that best describes the amount of time you felt that way.

| | None of the time | A little of the time | Some of the time | Most of the time | All of the time |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. During the last 30 days, about how often did you feel tired out for no good reason? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. During the last 30 days, about how often did you feel nervous? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. During the last 30 days, about how often did you feel so nervous that nothing could calm you down? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. During the last 30 days, about how often did you feel hopeless? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. During the last 30 days, about how often did you feel restless or fidgety? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. During the last 30 days, about how often did you feel so restless you could not sit still? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7. During the last 30 days, about how often did you feel depressed? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. During the last 30 days, about how often did you feel that everything was an effort? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. During the last 30 days, about how often did you feel so sad that nothing could cheer you up? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 10. During the last 30 days, about how often did you feel worthless? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

APPENDIX O:

PRIMARY HEALTH LOW BACK PAIN QUESTIONNAIRE (PHLBPQ)

6. What kind of house do you live in?

- Brick house
- Wendy House
- Maisonnette /Flat
- Room/sharing a house
- Shack
- Other:

7. How many people stay in the house or room, **including you**? (Please include babies and children)

- 1-2
- 3-4
- 5-6
- 7-8
- More than 8

8. Which describes your current working situation?

- Employed
- Retired
- Student
- Unemployed
- Housewife

9. What is your current monthly household income, **including income of your partner**?

- No income
- Less than R500
- R500-R1,000
- R1,000-R3,000
- R3,000-R5,000
- R5,000-R7,000
- R7,000-R9,000
- R9,000-R11,000
- More than R 11,000

10. Are you currently receiving a government grant?

- Yes
- No → go to question 11

10a. If **YES**: Which grant do you receive? You can tick more than one.

- Disability grant
- Child support grant
- Grant in Aid
- Old age pension

11. Have you **ever** received money from any of the following funds? You can tick more than one.

- Disability grant
- UIF (mannekrag)
- Workman compensation fund
- Motor Vehicle Fund
- None of the above

SECTION 2: GENERAL HEALTH

THE FOLLOWING QUESTIONS ARE ABOUT YOUR HEALTH. PLEASE READ THE QUESTIONS AND TICK YOUR ANSWER(S).

12. How would you rate your health?

- Excellent
- Very good
- Good
- Fair
- Poor

13. Compared to 1 year ago, how would you rate your health in general NOW?

- Much better than 1 year ago
- A little better than 1 year ago
- About the same as 1 year ago
- A little worse than 1 year ago
- Much worse than 1 year ago.

14. Do you smoke?

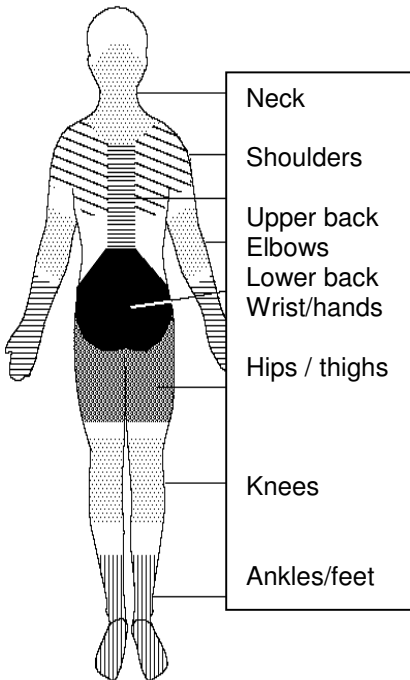
- Yes
- No

15. Do you drink alcohol?

- Yes
- No → go to question 16

15a. If YES: how many glasses of alcohol do you drink in a week?

- 1 glass occasionally
- 1-3 glasses a week
- 4-6 glasses a week
- 7-9 glasses a week
- 10 or more glasses a week



For the following 3 questions on pain / discomfort please refer to the picture on the left.

16. At the moment, do you have any pain / discomfort in any of the following areas? You can tick more than one. (look at the picture for reference)

- Low back
- Upper back
- Neck
- Shoulder
- Elbows
- Wrist / hands
- Hips / thighs
- Knees
- Ankles / feet
- None of the above

17. In the past month, have you had any pain / discomfort in any of the following areas? You can tick more than one. (look at the picture for reference)

- Low back
- Upper back
- Neck
- Shoulder
- Elbows
- Wrist / hands
- Hips / thighs
- Knees
- Ankles / feet
- None of the above

18. In your lifetime have you had any pain / discomfort in any of the following areas? You can tick more than one. (Look at the picture on previous page for reference)

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> Low back | <input type="checkbox"/> Wrist/hands |
| <input type="checkbox"/> Upper back | <input type="checkbox"/> Hips / thighs |
| <input type="checkbox"/> Neck | <input type="checkbox"/> Knees |
| <input type="checkbox"/> Shoulder | <input type="checkbox"/> Ankles / feet |
| <input type="checkbox"/> Elbows | <input type="checkbox"/> None of the above |

19. Have you been diagnosed with any of these diseases? You can tick more than one.

- Sugar / Diabetes
- High blood pressure
- High cholesterol
- Angina heart (IHD)
- Arthritis
- Asthma
- HIV/AIDS
- None of the above

20. Are you taking any medication for muscle or joint pain?

- Yes No → go to section 3

20a. If YES: where did you get this medication?

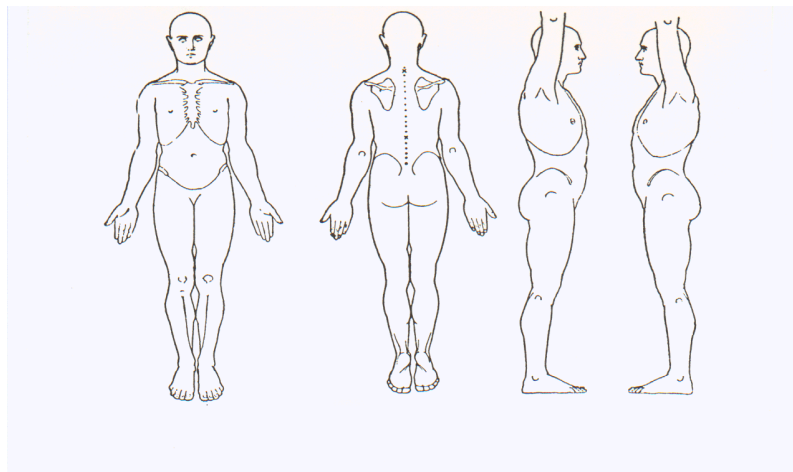
- From the doctor at the (day)hospital
- From a private doctor
- From the pharmacy
- From a friend / family member
- Sangoma

20b. If YES: what medication for muscle or joint pain are you taking?

- Pain pills like Panado (white pill)
- Pain pills like Panado-co (green pill)
- Anti-inflammatory like Brufen (pink pill) / Voltaren (yellow pill)
- Muscle relaxers / anti depressants like Amitriptyline (blue pill, to take before sleeping)
- Grandpa's
- Other,

SECTION 3: LOW BACK PAIN

**THE FOLLOWING QUESTIONS ARE ABOUT LOW BACK PAIN.
PLEASE ANSWER THE QUESTIONS THAT APPLY TO YOU.**



21. Please look at the above picture. Do you currently have any pain in the area highlighted in the picture above? Yes No → go to section 4

If YES at question 21, please answer the following questions:

22. Did your low back pain start during your work? Yes No I don't know

23. Do you know what is the cause of your low back pain? You can tick more than one.

- Accident
- Fall
- Lifting heavy loads
- Sitting or standing in the same position for a long time
- Other, namely
- I don't know

24. During the past month how much did low back pain interfere with your normal activities (including both work outside the home and housework)?

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

25. How often have you had separate episodes of low back pain during the past year?

- Once
- 2-4 times
- 5-10 times
- More than 10 times
- My complaints are always there

26. How long was your **longest episode** of low back pain during the past year?

- Less than one day
- 1-7 days
- 1-4 weeks
- 1-2 months
- 2-3 months
- 3-12 months

27. How many times in the past year did your low back pain cause you to:

a) Consult a doctor or nurse?

- Not at all
- Once
- 2-4 times
- 5-7 times
- More than 7 times

b) Consult a physiotherapist?

- Not at all
- Once
- 2-4 times
- 5-7 times
- More than 7 times

The following questions are about how low back pain interfered with your work in the past year. If you did not work in the past year, please go to question 32.

28. In the past year how many days did the doctor **book you off** work for your low back pain?

- None
- 2 days or less
- 3-5 days
- 1-2 weeks
- 3-4 weeks
- More than 4 weeks

29. In the past year how many days did you have to take **paid leave** from your work because of your low back pain?

- None
- 2 days or less
- 3-5 days
- 1-2 weeks
- 3-4 weeks
- More than 4 weeks

30. In the past year how many days did you have to take **unpaid leave** from work because of your low back pain?

- None
- 2 days or less
- 3-5 days
- 1-2 weeks
- 3-4 weeks
- More than 4 weeks

31. Are you currently in the process of being boarded from work because of your low back pain?

- Yes
- No

32. Are you currently **applying or wanting to apply** for a disability grant because of your low back pain?

- Yes
- No

33. Do you **currently receive** a disability grant because of your low back pain?

- Yes
- No

SECTION 4: YOUR FEELINGS

THE FOLLOWING QUESTIONS ARE ABOUT HOW YOU HAVE BEEN FEELING IN THE PAST MONTH. FOR EACH QUESTION TICK THE ANSWER THAT BEST DESCRIBES THE AMOUNT OF TIME YOU FELT THAT WAY.

| | None of the time | A little of the time | Some of the time | Most of the time | All of the time |
|---|--------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|
| 34. During <u>the last month</u> , about how often did you feel tired out for no good reason? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. During <u>the last month</u> , about how often did you feel nervous? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. During <u>the last month</u> , about how often did you feel so nervous that nothing could calm you down? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. During <u>the last month</u> , about how often did you feel hopeless? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. During <u>the last month</u> , about how often did you feel restless or fidgety? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. During <u>the last month</u> , about how often did you feel so restless that you could not sit still? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. During <u>the last month</u> , about how often did you feel depressed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. During <u>the last month</u> , about how often did you feel that everything was an effort? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. During <u>the last month</u> , about how often did you feel so sad that nothing could cheer you up? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. During <u>the last month</u> , about how often did you feel worthless? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SECTION 5: TREATMENT RECEIVED

THESE QUESTIONS ARE ABOUT TREATMENT THAT YOU HAVE RECEIVED AT THE DAYHOSPITAL AND TREATMENT THAT YOU WOULD LIKE TO RECEIVE IN THE FUTURE.

44. Did the doctor ever tell you that you have arthritis?

- Yes No → go to question 45

44a. If YES: did the doctor explain to you how arthritis is treated?

- Yes No

45. Did the doctor ever take any X-rays?

- Yes No → go to question 48

45a. If YES: of what part of your body did he/she take an X-ray? (you can tick more than one)

- | | |
|--------------------------------------|-------------------------------------|
| <input type="checkbox"/> Low back | <input type="checkbox"/> Wrist/hand |
| <input type="checkbox"/> Upper back | <input type="checkbox"/> Hip(s) |
| <input type="checkbox"/> Neck | <input type="checkbox"/> Knee(s) |
| <input type="checkbox"/> Shoulder(s) | <input type="checkbox"/> Ankle/foot |
| <input type="checkbox"/> Elbow(s) | |

45b. Did the doctor show you the X-rays and explain them to you?

- Yes No

46. Have you **ever** been for an MRI or CT-scan for you lower back or neck?

- Yes No

47. Have you **ever** been referred to a specialist, in Tygerberg, Groote Schuur Hospital or another hospital in the Western Cape?

- Yes No → go to question 48

47a. If **YES**: which department have you been referred to?

- Orthopaedic clinic
 Arthritis clinic (rheumatology)
 Neurology
 Cardiology
 Diabetes clinic
 ARV clinic
 Gastro clinic
 Another department, namely:

The following questions are about treatment that you have received for low back pain. If you do not suffer from low back pain, please go to section 6.

48. In the past year, what kind of treatment did you receive for your low back pain? (you can tick more than one)

- Pain medication
 Physiotherapy
 Occupational therapy
 Surgery on my back
 Other treatment, namely

49. In the past year have you had an injection for your low back pain?

- Yes No → go to question 52

49a. If **YES**: how many times in the past year have you had an injection for low back pain?

- once
 2-3 times
 4-5 times
 5-6 times
 More than 6 times

50. Do you feel that the treatment that you have received for your low back pain has helped you?

- No, not at all
 Yes, for a little while
 Yes, it helped me a lot

51. Did the doctor take time to listen to you when you told him/her about your low back pain?

- Yes, I was able to ask all my questions
 Yes, but I did not have enough time to ask all my questions
 No, there was no time to ask most of the questions
 No, I could not ask any of my questions

52. Have you ever received physiotherapy for your low back pain?

- Yes No → go to question 54

52a. If **YES**: What did the physiotherapist do? (you can tick more than one)

- Massage
 Hot packs
 Exercises
 Advice and education
 Electrotherapy (machines like ultrasound or interferentia)
 Manual therapy / mobilization of the spine
 Dry Needling / acupuncture
 Other

53. Did you feel that physiotherapy helped you?

- No, not at all
 Yes, for a little while
 Yes, it helped me a lot

54. If you haven't received physiotherapy or it was a long time ago, would you like to get physiotherapy for your low back pain (again)?

- Yes No → go to question 55

54a. If **YES**: what should the physiotherapist do? You can tick more than one

- Massage
 Hot packs
 Exercises
 Advice and education
 Electrotherapy (machines like ultrasound and interferentia)
 Manual therapy / mobilization of the spine
 Dry Needling / acupuncture
 I don't know

The following questions are about an educational program: these are sessions with a physiotherapist in which you learn how to look after your back, what exercises to do, what you can do to prevent low back pain and what to do when you have low back pain.

55. At this moment does your **dayhospital** offer any education on good posture and how to look after your back?

- Yes No I don't know

56. Do you think it is important to learn how to look after your back?

- Yes No

57. If you join an educational program for your back what should the length of the program be?

- Short program: once a week for 6 – 12 weeks long
 Ongoing weekly sessions for a longer period of time (more than 3 months)

58. If you join an educational program for your back what time of day should the sessions be?

- The morning (between 8:00 – 12:00)
 The afternoon (between 13:00 – 16:00)
 The early evening (between 17:00 – 19:00)

59. How would you like to learn about looking after your back?

- In a group with other people with the same problem
 In an individual session with a physiotherapist

60. In what additional way would you want to receive information on caring for your back? You can tick more than one.

- In a booklet or pamphlet
- In a video or DVD
- Via SMS
- Via posters in the waiting room

61. Where must the educational program take place?

- At work
- At the day hospital
- At a private doctors' practice
- At a community centre

SECTION 6: WORK

THESE QUESTIONS ARE ABOUT WORK. IF YOU ARE CURRENTLY WORKING OR ARE SELF-EMPLOYED, PLEASE ANSWER THE FOLLOWING QUESTIONS. IF YOU ARE NOT WORKING PLEASE GO TO SECTION 7.

62. What kind of work are you currently doing?

- General labourer
- Machinist or machine operator
- Supervisor in a factory
- Craft worker (bricklayer, carpenter, plumber, electrician, painter, mechanic)
- Shop assistant
- Domestic worker / Cleaner
- Administration / clerical work
- Manager
- Self employed, doing:
- Other, namely:

63. What kind of contract do you have?

- Permanent (full time)
- Permanent (part time)
- Contract (full time)
- Contract (part time)
- No contract: I do casual/char/temp work

64. How many hours a day do you work? hours

65. How many years have you been working at your current job?

- Less than 1 year
- 1-2 years
- 3-4 years
- 5-6 years
- 7-8 years
- 9-10 years
- More than 10 years

66. Do you get **paid sick leave** days at work? Yes No

67. Do you get **paid annual leave** days at work? yes no

**The following questions are about your tasks at work, please tick YES or NO:
Do you in your work, often have to:**

| | | |
|---|------------------------------|-----------------------------|
| 68. Lift, push, pull or carry heavy loads (more than 5 kg)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 69. Lift, pull, push or carry very heavy loads (more than 20 kg)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 70. Bend or twist your upper body / trunk? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 71. Bend or twist your neck? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 72. Reach with your arms or hands? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 73. Hold your arms at or above shoulder level? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 74. Work in uncomfortable positions? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 75. Work in the same position for long periods of time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 76. Make frequent repetitive movements with your arms or legs? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 77. Work with your hands below knee level? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 78. Stand for long periods of time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 79. Sit for long periods of time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 80. Walk for long periods of time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 81. Kneel or squat for long periods of time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 82. Drive a vehicle for long periods of time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 83. Work with vibrating tools or materials? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 84. Work in a very cold environment for most of the day? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

The following questions are about how you feel about your work, please tick YES or NO:

| | | |
|---|------------------------------|-----------------------------|
| 85. Do you mostly enjoy your work? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 86. Do you feel your work is physically very strenuous? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 87. Is your work mostly interesting? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 88. Are you working under good supervision? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 89. Do you get enough support in your work from your supervisor? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 90. Do you think the pay is appropriate for the work you are doing? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 91. Is it possible for you to do light duty when you are injured? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

The following questions are about working hours and breaks, please tick YES or NO:

| | | |
|---|------------------------------|-----------------------------|
| 92. Can you choose what time you want to start or finish work? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 93. Can you take a holiday or a day off when you wish? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 94. Is there a shortage of personnel at your department? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 95. Do you decide for yourself when to carry out a task? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 96. Can you leave your workplace easily if you wish to do that? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 97. Can you interrupt your work if you wish to do that? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 98. Can you control your working pace yourself? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 99. Do you have a daily target that you must reach? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 100. Do you work in shifts? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 101. Do you work overtime regularly? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 102. Do you have 2 or more breaks a day? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

103. Have you ever been educated at work about how to look after your back and neck while working?
 Yes No

104. **At this moment** does your work offer any education on good posture or how to look after your back and neck when you work?
 Yes No

105. Do you think it would be good if a program to look after your back or neck is offered at your work?
 Yes No

SECTION 7: SPORTS AND LEISURE TIME

THESE QUESTIONS ARE ABOUT SPORTS AND PHYSICAL ACTIVITY. PLEASE TICK ONE OF THE ANSWERS.

The following questions are about what you do in your free time, please tick one box:

| | Never | Seldom | Sometimes | Often | Very often |
|--|-------|--------|-----------|-------|------------|
| 106. During leisure time I watch TV | | | | | |
| 107. During leisure time I walk | | | | | |
| 108. During leisure time I cycle | | | | | |

109. How many minutes per day do you walk and/or cycle to and from work, shops, church or other places?

- Not every day
- Less than 15 minutes per day
- 15-30 minutes per day
- 30-45 minutes per day
- 45-60 minutes per day
- More than 1 hour per day

110. Do you participate in any organized sports (like a sports club, gym membership, exercise groups)

- Yes
- No → go to the bottom of the page

110a. If YES: how many times a week do you participate in organized sports?

- Less than once a week
- once a week
- twice a week
- 3-4 times a week
- 5 times a week or more

110b. On average, **how many hours** per week do you participate in organized sports?

- Less than one hour
- 1-2 hours
- 2-4 hours
- 4-6 hours
- More than 6 hours

THANK YOU VERY MUCH FOR COMPLETING
THIS QUESTIONNAIRE. IT IS BECAUSE OF
YOU THAT WE CAN DO THIS RESEARCH.

YOU MAY NOW PUT THIS QUESTIONNAIRE IN
THE SEALED BOX.

APPENDIX P:

COMMITTEE FOR HUMAN RESEARCH – APPROVAL LETTERS



12 June 2008

UNIVERSITEIT • STELLENBOSCH • UNIVERSITY

Mrs. ME Major-Helsloot *jou kennisvenoot • your knowledge partner*
Dept of Physiotherapy

Dear Mrs. Helsloot

RESEARCH PROJECT: "Chronic low back pain among the uninsured population of the Cape Metropole: Prevalence and risk factors"

PROJECT NUMBER : N08/05/148

At a meeting that was held on 11 June 2008 the Committee for Human Research considered your application for the approval and registration of the abovementioned project.

In principle the Committee is in agreement with the project, but requested that you should attend to the following matter before the project could be finally approved:

1. The race categories in the questionnaire should be revised i.e. Xhosa should be replaced with either African or Black, and the Asian classification is missing.
2. The questionnaire is too lengthy and should be revised to make it more concise and client/patient friendly.
3. With regard to the patient information leaflet and informed consent document
3.1 It is suggested that you rephrase sentences like 'it will not harm you' with something more appropriate and you should state that 'further treatment at the centre will not be affected'.


On receipt of the additional information/corrected document(s) the application will be reconsidered. **Please mark all the corrections/amendments clearly in order to allow rapid scrutiny and appraisal.**

Please note that the application for the approval and registration of this project would be cancelled automatically if no feedback is received from you within 6 (six) months of the date of this letter.

Please quote the Ethics Project Number on all correspondence henceforth.

For standard CHR forms and documents please visit:
www.sun.ac.za/knowledgepartner/committees_CHR.htm

Yours faithfully


Mertrude Davids
RESEARCH DEVELOPMENT AND SUPPORT (TYGERBERG)
Tel: +27 21 938 9207 / E-mail: mertrude@sun.ac.za

Copy to : Prof QA Louw and Mrs. LC Crous

C:\DOCUMENTS AND SETTINGS\MERTRUDE\MY DOCUMENTS\2008\2008N0805148_MAJORHELSDOTN0805148_MAJORHELSDOT_CONDITIONAL APPROVAL-MEETING.DOC

20 August 2008

Mrs. ME Major-Helsloot
Dept of Physiotherapy

Dear Mrs. Helsloot

RESEARCH PROJECT : “Chronic low back pain among the uninsured population of the Cape Metropole: Prevalence and risk factors”

PROJECT NUMBER : N08/05/148

At a meeting of the Committee for Human Research that was held on 11 June 2008 the above project was approved on condition that further information that was required, be submitted.

This information was supplied and the project was finally approved on 13 August 2008 **for a period of one year from this date**. This project is therefore now registered and you can proceed with the work.

Please quote the above-mentioned project number in ALL future correspondence.

Please note that a progress report (obtainable on the website of our Division: www.sun.ac.za/knowledgepartner/committees_CHR.htm) should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly and subjected to an external audit.

Translations of the consent document in the languages applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372

Institutional Review Board (IRB) Number: IRB0005239

The Committee for Human Research complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46.

This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Kind regards

pp

Prof PJT de Villiers

Chairperson: Committee for Human Research

RESEARCH DEVELOPMENT AND SUPPORT (TYGERBERG)

Tel: +27 21 938 9207 / E-mail: mertrude@sun.ac.za

Approval Date: 13 August 2008

Expiry Date: 13 August 2009

APPENDIX Q:

WESTERN CAPE DEPARTMENT OF HEALTH – APPROVAL LETTER



Verwysing
Reference
Isalathiso 19/18/RP43/2008

Navrae
Enquiries
Imibuzo Dr T. Naledi

Telefoon
Telephone
Ifowuni 021 483 9801

Departement van Gesondheid
Department of Health
iSebe isezempilo

Ms M. Major-Helsloot
2 Wyndover Road
Claremont
7708

Fax to 021 9318359

Dear Ms Major-Helsloot

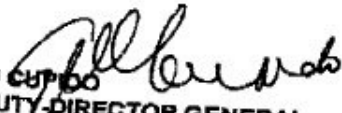
Chronic low back pain among the uninsured population of the Cape Metropole: prevalence and risk factors

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research. Please contact the following members of staff to assist you with access to the facilities for data collection between the months of February and March 2009:

- 1) Ms PB Hintsho Tel: 021 9093138 (Mfuleni CHC)
- 2) Mr L. Mbanga at imbanga@pgwc.gov.za Tel: 021 3613353 (Michael Mapongwana CHC)
- 3) Mr M. Simpson at masimpson@pgwc.gov.za Tel: 021 6380923 (Heideveld CHC)
- 4) Sr Xaphile at jizwani@mweb.co.za Tel: 021 3746063 (Inzame Zabantu CHC)
- 5) Mrs A. Jaftha Tel: 021 9882027/ 9806243 (Scottsdene CHC)
- 6) Ms H.J. Miller Tel: 021 7033131 (Lotus River CHC)
- 7) Ms M. Kordom Tel: 021 9538032 (Belhar CHC)
- 8) Ms M. Daniels Tel: 021 5761175 (Mamre CHC)

We look forward to hearing from you.

Yours sincerely


DR J CUPIDO
DEPUTY DIRECTOR GENERAL
DISTRICT HEALTH SERVICES AND PROGRAMMES
DATE: 17/12/2008

CC: MS U. VAN VUUREN
DR G. PEREZ
DR J. CLAASSEN

DD: CHRONIC CARE SUB-DIRECTORATE
D: EASTERN AND KHAYELITSHA SUB-DISTRICTS
D: KLIPFONTEIN AND MITCHELL'S PLAIN SUB-DISTRICTS

Dorpstraat 4
Posbus 2060
KAAPSTAD
8000

4 Dorp Street
PO Box 2060
CAPE TOWN
8000

APPENDIX R:

CONSENT FORMS CROSS-SECTIONAL STUDY: ENGLISH, AFRIKAANS
AND ISI-XHOSA

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT:

Chronic low back pain among the uninsured population, visiting the community health centres in the Cape Metropole: prevalence and risk factors.

REFERENCE NUMBER: N0805148

PRINCIPAL INVESTIGATOR: Mel Major

ADDRESS: Stellenbosch University, Faculty of Health Sciences, Tygerberg Campus

CONTACT NUMBER: 021 9310211

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff or doctor any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is entirely voluntary and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Committee for Human Research at Stellenbosch University and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

With the information that we get from this study, we hope to get an idea about certain health problems and specifically how many people suffer from low back pain in their lives and the treatment they have received for that. We also want to get an idea about common factors that cause low back pain or that can make low back pain worse. With the results of the study we aim to make recommendations for future health care.

This study will take place at the general waiting area/pharmacy at eight community health centres in the Cape Metro District. From every community health centre (CHC) a total of 150 people will be invited, to get a total of 600 people participating in this study.

This community health centre was randomly picked from a list of all community health centres in the Cape Metro district.

Why have you been invited to participate?

Persons older than 18 years will be invited to participate. People that have a medical folder at this CHC will be invited to participate.

What will your responsibilities be?

You will be asked to complete a questionnaire of 12 pages, which will take you about 20 minutes. The questionnaire is divided into seven sections, containing general questions on your education, employment, income and home situation, as well as specific questions on your health. The questions about low back pain aim to determine if you ever in your life had low back pain and/or if you currently suffer from low back pain, what kind of treatment you have received or currently receive for your low back pain and what your preferences are regarding treatment of low back pain. The questionnaire will guide you through the sections that are relevant for you.

You are asked to complete the questionnaire as completely and honestly as you can. If you feel uncomfortable giving certain information you are free to leave certain questions unanswered.

While you complete the questionnaire you can sit quietly and privately. If your folder will be ready to be picked up at the counter while you complete the questionnaire, a family member or one of the researchers can pick it up for you.

Will you benefit from taking part in this research?

We want to get as much information as possible on people suffering from low back pain. We will make these results known to the public as well as the directors at the Metro District Health Services. With the information you and others are giving us, we can make recommendations for better health care in the future.

Are there any risks involved in your taking part in this research?

There are no risks involved in your taking part in this research.

If you do not agree to take part, what alternatives do you have?

Your decision to take part or to not take part will not influence any of the medical treatment that you will receive from a community health centre, now or in the future.

Who will have access to your medical records?

All the answers from the questionnaire are confidential and only the researcher has access to this information. We will not ask for your name or folder number. After completion of the questionnaire you can put the questionnaire in a sealed box. If any of the results will be published in a thesis, you will still remain anonymous.

Will you be paid to take part in this study and are there any costs involved?

No, you will not be paid to take part in the study, but we will give you a healthy snack and a cool drink to thank you for your help. There are no costs involved for you, if you do take part.

Is there any thing else that you should know or do?

- You can contact the main researcher, Mrs Mel Major, at 021 931 0211, ext 223 if you have any further queries or encounter any problems.
- You can contact the Committee for Human Research at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by the person doing the study.
- You will receive a copy of this information and consent form for your own records, and we will keep a copy in file for our records.

Declaration by participant

By signing below, I agree to take part in a research study entitled Chronic low back pain among the uninsured population, visiting the community health centres in the Cape Metropole: prevalence and risk factors.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

Signed at (place) on (date) 2009.

.....
Signature of participant

.....
Signature of witness

Declaration by investigator

I (name) declare that:

- I explained the information in this document to
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use a translator. (If a translator is used then the translator must sign the declaration below.

Signed at (place) on (date) 2009.

.....
Signature of investigator

.....
Signature of witness

Declaration by translator

I (name) declare that:

- I assisted the investigator (name) to explain the information in this document to (name of participant) using the language medium of Afrikaans/Xhosa.
- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (place) on (date) 2009.

.....
Signature of translator

.....
Signature of witness

DEELNEMER INLIGTINGSBLAD EN –TOESTEMMINGS VORM

TITEL VAN DIE NAVORSINGSPROJEK:

Chronic low back pain among the population visiting the community health centres in the Cape Metropole: prevalence and risk factors.

VERWYSINGSNOMMER: N0805148

HOOFNAVORSER: Mel Major

ADRES: Stellenbosch University, Faculty of Health Sciences, Tygerberg Campus

KONTAKNOMMER: 021 9310211

U word genooi om deel te neem aan 'n navorsingsprojek. Lees asseblief hierdie inligtingsblad sorgvuldig deur aangesien die detail van die navorsingsprojek daarin verduidelik word. Indien daar enige deel van die navorsingsprojek is wat u nie ten volle verstaan nie, is u welkom om die navorsingspersoneel daarvoor uit te vra. Dit is baie belangrik dat u ten volle moet verstaan wat die navorsingsprojek behels en hoe u daarby betrokke kan wees. U deelname is ook **volkome vrywillig** en dit staan u vry om deelname te weier. U sal op geen wyse hoegenaamd negatief beïnvloed word indien u sou weier om deel te neem nie. U mag ook te eniger tyd aan die navorsingsprojek onttrek, selfs al het u ingestem om deel te neem.

Hierdie navorsingsprojek is deur die Komitee vir Mensnavorsing van die Universiteit Stellenbosch goedgekeur, en sal uitgevoer word volgens die etiese riglyne en beginsels van die Internasionale Verklaring van Helsinki en die Etiese Riglyne vir Navorsing van die Mediese Navorsingsraad (MNR).

Wat behels hierdie navorsingsprojek?

Die informasie wat verkry word vanaf die navorsingsprojek, sal ons help om 'n idee te kry van spesifieke gesondheidsprobleme, en hoeveel persone laer rugpyn ervaar en die tipe behandeling wat hulle ontvang het. Ons wil ook kyk watter faktore veroorsaak laer rugpyn en watter faktore vererger dit. Aanbevelings sal na die studie gemaak word vir verdere behandeling.

Die navorsingsprojek sal in die wagkamer van agt verskillende Gesondheids Sentrums in die Metro Distrik plaasvind. 'n Totaal van 150 persone van die verskillende gesondheids sentrums sal genooi word, wat ons 'n getal van 1200 deelnemers gee, wat

deel gaan wees van die studie. Hierdie gesondheids sentrum was gekies uit n lys wat beskikbaar was van die verskillende gesondheids sentrums in die Metro Distrik.

Wie sal kan deelneem aan die projek?

Persone ouer as 18 en wat n mediese leer by n gesondheids sentrum het.

Wat sal u verantwoordelikhede wees?

U sal gevra word om n vraelys te voltooi van 12 bladsye wat omtrent 20 minute sal neem. Die vraelys is gedeel in sewe paragrawe, en bevat algemene vrae oor jou opleiding, werk, inkomste en huislike omstandighede en spesifieke vrae oor jou gesondheid.

Die vrae oor laer ruggyn sal vastel of u al voorheen laer ruggyn gehad of ervaar het en of u huidiglik aan laer ruggyn ly, watter tipe behandeling u ontvang het of huidiglik ontvang vir u laer ruggyn en wat u voorkeur behandeling is vir u laer ruggyn. Die vraelys sal u help om die paragrawe wat toepaslik is vir u te beantwoord.

Beantwoord die vrae so volledig en so eerlik soos u kan. As u ongemaklik voel om sekere inligting te gee los dan die vraag onbeantwoord.

U kan rustig sit en die vraelys privaat en in stilte voltooi, terwyl n familie lid of een van die navorsers u leër by die ontvangs sal kry of luister of u naam by die apteek geroep word.

Sal u voordeel trek deur deel te neem aan hierdie navorsingsprojek?

Ons wil soveel as moontlik inligting hê van persone wat ly aan laer ruggyn. Die inligting sal bekend gemaak word aan die publiek sowel as die bestuur van die Metro Distrik Gesondheids Dienste. Met die informasie wat ons ontvang het gee u en die ander deelnemers, ons die geleentheid om aan bevelings te maak vir beter gesondheids sorg in die toekoms.

Is daar enige risiko's verbonde aan u deelname aan hierdie navorsingsprojek?

Daar is geen risiko verbonde vir u deelname aan die navorsings projek nie.

Watter alternatiewe is daar indien u nie instem om deel te neem nie?

U besluit om deel te neem of nie, sal nie 'n invloed maak op enige mediese behandeling wat u nou of in die toekoms by 'n gesondheids sentrum ontvang nie.

Wie sal toegang hê tot u mediese rekords / inligting?

Al die antwoorde op die vrae lys is persoonlik en net die navorser het toegang tot die inligting. U naam of lêer nommer sal nie gevra word nie. As die vraelys voltooi is kan dit in 'n verseelde houer geplaas word. As enige uitslae van die vraelys gepubliseer word, sal u steeds onbekend wees.

Sal u betaal word vir deelname aan die navorsingsprojek? Is daar enige koste verbonde aan deelname?

Nee, u sal nie betaal word om deel te neem aan die studie nie. Daar is geen koste verbonde as u gaan deelneem nie.

Is daar enigiets anders wat u moet weet of doen?

- U kan die hoof navorser, Me Mel Major kontak, by 021 9310211 uitbruiding 223 as u enige vrae of probleme ervaar.
- As u enige bekommernisse of klagtes het rakende die navorsings projek kan u die Menslike Navorsing Komitee skakel by 021 9389207.
- U sal 'n afskrif van die informasie en toestemming vorm kry en n afskrif gaan in n lêer vir ons rekordhouding.

Verklaring deur deelnemer

Met die ondertekening van hierdie dokument onderneem ek,, om deel te neem aan 'n navorsingsprojek getiteld: '**Chronic low back pain among the uninsured population visiting the community health centres in the Cape Metropole: prevalence and risk factors**'.

Ek verklaar dat:

- Ek hierdie inligtings- en toestemmingsvorm gelees het of aan my laat voorlees het en dat dit in 'n taal geskryf is waarin ek vaardig en gemaklik mee is.
- Ek geleentheid gehad het om vrae te stel en dat al my vrae bevredigend beantwoord is.
- Ek verstaan dat deelname aan hierdie navorsingsprojek **vrywillig** is en dat daar geen druk op my geplaas is om deel te neem nie.
- Ek te eniger tyd aan die navorsingsprojek mag onttrek en dat ek nie op enige wyse daardeur benadeel sal word nie.

Geteken te (plek) op (datum) 2009.

.....
Handtekening van deelnemer

.....
Handtekening van getuie

Verklaring deur navorsers

Ek (naam) verklaar dat:

- Ek die inligting in hierdie dokument verduidelik het aan
- Ek hom/haar aangemoedig het om vrae te vra en voldoende tyd gebruik het om dit te beantwoord.
- Ek tevrede is dat hy/sy al die aspekte van die navorsingsprojek soos hierbo bespreek, voldoende verstaan.
- Ek 'n tolk gebruik het/nie 'n tolk gebruik het nie. (Indien 'n tolk gebruik is, moet die tolk die onderstaande verklaring teken.)

Geteken te (plek) op (datum) 2009.

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Handtekening van navorsers

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Handtekening van getuie

Verklaring deur tolk

Ek (naam) verklaar dat:

- Ek die navorsers (naam) bygestaan het om die inligting in hierdie dokument in Afrikaans/Xhosa aan (naam van deelnemer) te verduidelik.
- Ons hom/haar aangemoedig het om vrae te vra en voldoende tyd gebruik het om dit te beantwoord.
- Ek 'n feitlik korrekte weergawe oorgedra het van wat aan my vertel is.
- Ek tevrede is dat die deelnemer die inhoud van hierdie dokument ten volle verstaan en dat al sy/haar vrae bevredigend beantwoord is.

Geteken te (plek) op (datum) 2009.

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Handtekening van tolk

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Handtekening van getuie

INCWADANA ENGOLWAZI NGOMTHATHI-NXAXHEBA KUNYE NEFOMU YEMVUMELWANO

ISIHLOKO SEPROJEKTHI YOPHANDO:

Chronic low back pain among the population visiting the community health centres in the Cape Metropole: prevalence and risk factors.

INOMBOLO YONXULUMANO: N0805148

UMPHANDI OYINTLOKO: Mel Major

IDILESI: Stellenbosch University, Faculty of Health Sciences, Tygerberg Campus

INOMBOLO YOQHAGAMSHELWANO: 021 931 0211

Uyamenywa ukuba uthathe inxaxheba kwiprojekthi yophando. Nceda uthathe ixesha lokufunda ulwazi oluvezwe apha, oluzakuthi luchaze iinkcukacha zale projekthi. Nceda buza nayiphi na imibuzo emalunga nayiphi indawo ongayiqondiyo ngokupheleleyo kubasebenzi besi sifundo okanye kugqirha. Kubaluleke kakhulu ukuba waneliseke ngokupheleleyo yinto yokuba ucacelwe kakuhle ukuba yintoni ebangwa sesi sifundo kwaye ungabandandakanyeka njani. Kwakhona, ukuthatha kwakho inxaxheba **kungentando yakho ngokupheleleyo** kwaye ukhululekile ukuba ungarhoxa ekuthatheni inxaxheba. Ukuba uthi hayi, oku akusayi kuchaphezela ukungavumi kwakho nangayiphina indlela. Ukwakhululekile ukuba uyeke kwesisifundo nanina, nkqu nokokuba uyavuma ukuthatha inxaxheba ekuqaleni.

Olu phando luvunywe ziinqobo ezisesikweni **zeKomiti yoPhando Lomntu kwiYunivesithi yaseStellenbosch** kwaye luzakwenziwa ngokwemigaqo asesikweni lophando elamkelekileyo kwiSaziso sehlabathi sika-Helsinki, iMigaqo eLungileyo yoMzantsi Afrika yokuSebenza eKliniki kunye neBhunga lezoPhando ngamaYeza (MRC)iMigaqo yeNqobo yezoPhando.

Simalunga nantoni esi sifundo sophando?

Ngalenkcazelo siyifumana koluphando, siqwenela ukufumana ulwazi ngenkazelo ezithe vetshe kwingxaki zempilo sifumane ngokupheleleyo ukuba bangaphi na abantu abakhathazwa zingqaqambo zomqolo empilweni yabo nonyango abalifumanayo. Sikwafuna ukwazi malunga nezinto eziqhelekileyo ezingunobangela wamazantsi

omqolo okanye ezibangela ingqaqambo zibenochatha. Ngezi ziphumo zoluphando injongo yehtu kukwenza ingcebiso ngengomso lezempilo.

Olu phando luzakwenziwa kwindawo zokulinda uncedo zikakawonke-wonke kumaziko ezempilo asibhozo. Kwiziko ngalinye kuzakumenywa abantu abali 150 ukuze kufunyanwe isiphumo sabantu abali 1200 abathathe inxaxheba koluphando. Eli ziko lezempilo lukhethwe kuluhlu lwamaziko ezempilo apha eKapa.

Kutheni umeniwe ukuba uthathe inxaxheba?

Kumenywe abantu abaneminyaka elishumi elinesibhozo. Abantu abanencwadi zokugula kula maziko bazakumenywa ukuba bathathe inxaxheba.

Luyakuba yintoni uxanduva lwakho?

Uzakucelwa ukuba uphendule imibuzo ekumaphepha alishumi elinesibini, le mibuzo iyakuthatha imizuzwana engamashumi amabini. Iya kwahlulwa ibe zizindlu ezisibhozo, imalunga nezemfundo yakho, umsebenzi, imali oyamnkelayo, nendlela izinto eziyiyo ekhaya kunye nemibuzo ngempilo yakho. Imibuzo malunga namazantsi omqolo ufuna ukwazi ukuba wakha wanawo na ngaphambili okanye ukhathazwa nguwo ngoku yaye ngawaphi na amayeza owakha wawasebenzisa okanye owasebenzisayo.

Uyacelwa uphendule le mibuzo ngokupheleleyo nangokunyanisekileyo. Ukuba uziva ungakhululekanga ngokusinika enye inkcazelo wamkelekile ukuba ungayiphenduli loo mibuzo.

Wamkelekile ukuba uhlale endaweni esitheleyo xa uphendula le mibuzo. Ukuba uthe xa uphendula imibuzo kwafuneka ulande incwadi yakho yokugula cela omnye wekhaya lakho okanye umphandi akulandele.

Ingaba uza kuzuzisa ekuthatheni inxaxheba kolu phando?

Sifuna ukufumana inkcazelo eyoneleyo yabantu abakhathazwa ngamazantsi omqolo. Sizakuzenza iziphumo zaziwe ngabantu kunye nabaphathi bezempilo kwiMetro District. Ngayo yonke inkcazelo esiyifumane kuni sizakukwazi ukunika ingcebiso ngempilo ekhethekayo kwixa elizayo.

Ingaba zikho iingozi ezibandakanyekayo ekuthatheni kwakho inxaxheba kolu phando?

Akukho bangozi ekuthatheni inxaxheba koluphando.

Ukuba awuvumi ukuthatha inxaxheba, loluphi olunye unyango onalo?

Isigqibo sakho sokuthatha okanye ungathathi inxaxheba asizukuchaphazela noluphina uncedo lwezempilo olufumana kwiziko lezempilo ngoku okanye kwilixa elizayo.

Ngubani uza kufumana ingxelo yakho yamayeza?

Impendulo zonke zifihlakele, ngumphandi yedwa onokufikelela kuzo. Awuzu kubuzwa igama okanye inombolo yencwadi yakho yase sibedlele. Wakugqiba ukuphendula imibuzo faka iphepha lependulo kwibhokisi evaliweyo. Ukuba khukho iziphumo ekufuneka zaziwe uyakuhlala uyimfihlo.

Ingaba uza kuhlawulwa ngokuthatha inxaxheba kwesi sifundo kwaye ingaba kukho iindleko ezibandakanyekayo?

Hayi, awuzukuhlawulwa ngokuthatha inxaxheba uyakufumana okusiwa pantsi kwempumlo nesiselo ngoncedo lwakho. Akukho zimali zidibanisa wena ngokuthatha inxaxheba.

Ingaba ikho enye into ekumele uyazi okanye uyenze?

- Ungatsalela umnxeba mna mphandi, Mrs Mel Major ku 021 9310211 ext 223 ukuba unemibuzo okanye kukho inxaki ozifumana unayo.
- Ungatsalela ikomiti yophando ukuba awucacelwanga kakuhle ngulomntu wenza uphando 021 9389207.
- Uzakufumana amaphepha anencazelo kwakunye neform uzigcinele, nathi sizakugcina amanye apha kuthi ezincwadini zethu.

Isifungo somthathi-nxaxheba

Ngokuyikitya ngezantsi, Mna ndiyavuma ukuthatha inxaxheba kwisifundo sophando semfuzo esibizwa ngokuba '**Chronic low back pain among the population visiting the community health centres in the Cape Metropole: prevalence and risk factors**'.

Ndazisa ukuba:

- Ndilufundile okanye ndalufunda olu lwazi kunye nefomu yemvumelwano kwaye ibhalwe ngolwimi endiliciko nendikhululekileyo kulo
- Bendinalo ithuba lokuba ndibuze imibuzo kwaye yonke imibuzo yam iphendulwe ngokwanelisayo.
- Ndiyakuqonda ukuba ukuthatha inxaxheba kolu phando kube **kukuzithandela kwam** kwaye andikhange ndinyanzelwe ukuba ndithathe inxaxheba.
- Ndingakhetha ukusishiya isifundo naninina kwaye andisayi kohlwaywa okanye uqal' ugwetywe nangayiphi indlela.

Kutyikitywe e-(indawo) ngo-(usuku) 2009.

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Umtyikityo womthathi-nxaxheba

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Umtyikityo wengqina

Isifungo somphandi

Mna (igama) ndiyafunga ukuba:

- Ndilucacisile ulwazi olu kweli xwebhu ku-.....
- Ndimkhuthazile ukuba abuze imibuzo kwaye athathe ixesha elifanelekileyo ukuba ayiphendule.
- Ndiyaneliseka kukuba uyakuqonda ngokwanelisayo konke okumalunga nophando okuxoxwe ngasentla.
- Ndisebenzise/andisebenzisanga toliki. (Ukuba itoliki isetyenzisiwe kumele ityikitye isaziso ngezantsi.

Kutyikitywe e-(indawo) ngo-(usuku) 2009.

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Umtyikityo womphandi

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Umtyikityo wengqina

Isifungo setoliki

Mna (igama) ndazisa ukuba:

- Ndicende umphandi (igama) Ekucaciseni ulwazi olu lapha kweli xwebhu ku- (igama lomthathi-nxaxheba) ndisebenzisa ulwimi lwesiAfrikaans/lwesiXhosa.
- Simkhuthazile ukuba abuze imibuzo kwaye athathe ixesha elifanelekileyo ukuba ayiphendule.
- Ndimxelele eyona nto iyiyo malunga nokunxulumene nam.
- Ndiyaneliseka kukuba umthathinkxaxheba ukuqonda ngokupheleleyo okuqulathwe loluxwebhu lwemvumelwano eyazisiweyo kwaye nemibuzo yakhe yonke iphendulwe ngokwanelisayo.

Kutyikitywe e-(indawo) ngo-(usuku) 2009.

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Umtyikityo wetoliki

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Umtyikityo wengqina