Translation and Cross-Cultural Adaptation of the Delphi Definitions of Low Back Pain Prevalence into Swedish (Swedish DOLBaPP)

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Abstract

Background: Previous studies on the prevalence of low back pain have found large variations between different population-based studies. The use of different definitions could partly explain these differences. In a Delphi study 28 experts in back pain research agreed on standardized items: the "Delphi Definitions of Low Back Pain Prevalence" (DOLBaPP). The Delphi DOLBaPP needs to be adapted to different languages and cultures. The aim was to translate and cross-culturally adapt the English definitions and corresponding Delphi Definitions of Low Back Pain Prevalence (DOLBaPP) questionnaire forms into Swedish.

Methods: Translation and cross-cultural adaptation of the Delphi DOLBaPP into Swedish was conducted following recommended guidelines. After the translation process, an expert committee including medical and language experts independently provided comments on the questionnaire. The pre-final online optimal questionnaire was pretested in 181 employees from the home care, education, and food and retail sectors.

Results: The DOLBaPP questionnaire forms were translated successfully into Swedish and cross-culturally adapted with few linguistic changes. Face validity of the translated version of the questionnaire was considered good by the expert committee. In question 2 about low back pain, the expression "was this pain bad enough" was re-worded into "was the pain so strong". In the pre-test 92% of the participants found the questions in the questionnaire clear, 86% that the questionnaire covered the subject adequately, and 88% needed less than five minutes to complete the questionnaire. Fifteen percent had comments including linguistic issues and issues of expanding the content. The comments were not interpreted by the review committee as improving the language nor targeting the aim. After the pre-test, consensus was reached in the review committee on the final DOLBaPP-S.

Conclusions: The translation and cross-cultural adaptation of the Delphi Definitions of Low Back Pain Prevalence into Swedish was successful, and the DOLBaPP-S can be used in epidemiological studies on the prevalence of LBP in Swedish speaking populations.

Background

Low back pain (LBP) is the leading worldwide cause of years lived with disability [1]. LBP is a complex condition that may affect different aspects of a person's life, which is important to recognize to be able to provide optimal treatment [2]. Previous studies on the prevalence of LBP have found large variations between different population-based studies [3–6], and the use of different definitions is suggested to be one of the reasons that could explain the differences. To provide more standardized definitions, 28 experts in back pain research from 12 countries agreed in a Delphi study on standardized items – the "Delphi Definitions of Low Back Pain Prevalence" (DOLBaPP) [7]. The standardized definitions correspond to questionnaires that can be used in prevalence studies to provide comparable data [7]. Both a minimal and an optimal definition were developed. The minimal definition consists of one question on
pain characteristics (symptoms, site, and time frame), and a second question on functional limitation due to LBP and is proposed for use in studies with time or space constraints. The optimal definition contains five more questions covering sciatica, frequency and duration of symptoms, and pain intensity, and is more appropriate for studies specifically focusing on LBP [8]. Both definitions in English can be openly accessed [9].

The Delphi DOLBaPP must be adapted to different languages and cultures and has so far been successfully translated and cross-culturally adapted for German [10], Spanish [11], and French [12] speaking populations. However, equivalent definitions for Swedish speaking populations are missing. Therefore, this study's aim was to translate and perform a cross-cultural adaptation of the definitions and the related Delphi DOLBaPP questionnaires into Swedish for the adult population.

Methods

The cross-cultural adaptation procedure followed recommended methodology [8, 13, 14] and applied a mixed-method design in six steps (see Figure 1).

Step 1. Forward translation

The English DOLBaPP Definitions and questionnaires were translated into Swedish simultaneously and independently by translator 1 (Tr1) and 2 (Tr2). Tr1 was a native Swedish speaking professional translator English/Swedish without clinical background. Tr2 (author PE) was knowledgeable in English and Swedish, and had knowledge of the research area.

Step 2. Synthesis

The translations by Tr1 and Tr2 were reconciled by an independent native reconciler (Rec1, author BÖ) with knowledge of the research area. Then the translations by Tr1, Tr2 and Rec1 were discussed by the four-member review committee containing authors PE, YL, AA, and BÖ, all knowledgeable in the research area and physiotherapists, with YL and AA also working clinically. The review committee reached agreement on the forward translation.

Step 3. Expert committee review

An expert committee containing experts from different parts of Sweden and interdisciplinary multiprofessional fields within health care were asked to comment on the translation, wording, phrasing, and understandability of the Delphi DOLBaPP optimal questionnaire (face validity [15, 16]). Furthermore, information was gathered about their expertise, age, and gender.

Step 4. Consensus

All independent reports from the expert committee were examined by the review committee, who reached consensus on a pre-final version of the instrument.

Step 5. Pre-testing
The pre-final version of the instrument was pre-tested in employees from different economic sectors. The inclusion criteria were being employed, age 18–65 years, and fluency in Swedish. Information about the study was sent to employers. In companies willing to participate, the employees received an electronic mail with information about the study. Acceptance to participate was requested in the first question of the online questionnaire that was reached via a link or QR code. The participants were asked to complete the questionnaire within four weeks, with a reminder after two weeks. Questionnaire data was collected between January 14 and February 16, 2021. Two physiotherapy graduate students (authors EG and EL) from Linköping University managed all contacts with the employers and collected the data from the employees.

The online questionnaire contained background questions, the pre-final DOLBaPP optimal questionnaire, and evaluation questions about how the participants perceived the DOLBaPP. Background questions concerned participants gender, age group, and usual physical strenuousness of their work (see Table 2 for details). Inspired by the German DOLBaPP study [10] the evaluation questions were about how long time it took to fill in the questionnaire, what participants thought about the diagram accompanying question 1, if they thought one or some of the questions were unclear, and if so, could they describe the problem(s), and if possible, suggest a solution. Furthermore, they were asked if they missed any question, and invited to provide any other comments they had on the questionnaire (see Table 4 for details). The open questions in the evaluation questionnaire were about the wording, phrasing, or content of the questionnaire.

The pre-test was planned and conducted in accordance with the Helsinki Declaration of 1996, and the European General Data Protection Act [17]. According to Swedish law (2003: 460) on the ethics of human research, it is described that all research performed and dealing with sensitive personal data should be ethically tested. Section 2 of this law states that regional ethical committee assessment is required for "Scientific experimental or theoretical work to acquire new knowledge or scientific quality improvement work, but no such work done in the framework of first or second cycle education [18]. Therefore, because this study was conducted as a part of a bachelor's thesis and did not include sensitive personal data, ethical approval was provided after assessment performed according to the Helsinki declaration by the ethics board of second cycle education at Linköping University. All participants gave written consent after receiving online written information. To further guarantee anonymity it was not recorded at which company participants that filled in the online questionnaire were employed (no patients were involved).

Quantitative data were analysed with the Statistical Package for the Social Sciences (SPSS) version 27. Comparisons between groups were done with the Mann-Whitney U test, independent sample t-test, chi-2 test or Kruskal Wallis test. Comparisons within groups were done with the Wilcoxon test or the dependent sample t-test. Only those reporting that they had LBP in the last 4 weeks (question 1) were included in the follow-up questions 2, 5, 6 and 7. Only those reporting that they had pain that goes down the leg (question 3) were included in the follow-up question 4. For interpretation of pain intensity (question 7) the categories suggested by Ly et al. (2021) [12] are used: “Mild” = ≤ 3/10, “Moderate” = 4 – 6/10, “Severe” = ≥ 7/10.
Step 6. Final Consensus

The comments from all translations, the expert committee and employees that answered the pre-final version of the optimal questionnaire were discussed by the review committee and a final consensus was reached on the Swedish DOLBaPP questionnaires.

Results

The translation and cross-cultural adaptation process was conducted between September 2020 and March 2021. After the forward translation, the review committee agreed on consensus Swedish definitions of the Delphi DOLBaPP and the related questionnaire forms for telephone surveys, and online, paper or face-to-face use (see Table 3 for optimal definition) and telephone surveys.

The review committee discussed the translations by Tr1, Tr2 and Rec, and addressed minor issues (step 2). In Swedish, both the expressions “ländryggssmärta” (low back pain) and “ländryggsbesvär” (low back problems) are commonly used by the public to describe LBP. The review committee decided to consistently use the expression “ländryggssmärta”. The expression "pain that goes down the leg" in question 3 was changed to “radiate” because “radiate” ("strålar ner") better expresses the meaning of the question in Swedish. The review committee reached agreement on the translations.

Eleven experts were approached (step 3) and independently provided comments on the Swedish DOLBaPP optimal questionnaire. The experts’ age was between 35 and 72, seven were women and four were men (see Table 1). Two experts were Swedish language teachers. Nine experts had different medical professions of which two had clinical work, two had academic work, and five had both clinical and academic work. A general comment from the experts was that the instrument was clear, comprehensive, and relevant. Besides comments related to the wording of the questions and answer alternatives (see below) some experts had comments on the content of the questionnaire. A comment was that the diagram accompanying question 1 indicated a larger area on the back than the area subjects would point out in case they had LBP. Another comment was that the pain could originate from kidney (stones) pain. Regarding question 2, some experts commented that it should be split into one question asking if the pain limited your usual activities, and another question asking if the pain changed your daily routine for more than one day. A comment on question 3 was that "pain that goes down the leg" should be clarified: “goes down into one of the legs” with a follow-up question “which leg?”.

In a consensus meeting (step 4), based on the experts comments, in question 2 the expression "var smärtan så kraftig" (was this pain “bad enough”) was changed into “var smärtan så stark” (was the pain so “strong”), and the expression “ändrade vardagliga rutiner under mer än en dag” (“changed daily routines for more than one day”) was changed into “ändrade dina vardagliga rutiner under mer än en dag” (“changed your daily routines for more than one day”). After that the review committee reached agreement on the pre-final version of the optimal questionnaire.
Pre-test

For pre-test of the pre-final questionnaire, 116 companies were invited of which 86 did not respond and 15 declined to participate. The 15 companies within the home care, education, and food and retail sectors that agreed to participate had 522 employees of which 184 (35.2%) participated. Three respondents were excluded because they were older than 65 years of age. Thus, the final sample consisted of 181 participants of which 75.1% (136/181) were women and 24.9% (45/181) were men, see Table 2 for more background information.

The participants responses to the questionnaire are shown in Table 3. More than half of the participants (n = 103/181, 57%) reported that they had LBP in the last four weeks. Thirty-five (19.3%) participants reported pain that goes down the leg, of which 18 (51.4%) had pain that went below the knee. Six participants (3%) reported they had pain in the leg but not LBP in the last four weeks. Thirty-nine (37.9%) participants had mild pain, 42 (40.7%) moderate pain, and 22 (21.4%) reported severe pain. The full scale of the answer alternatives in questions 5, 6 and 7 was utilized.

In total 26 participants erroneously provided answers on questions 2, 5, 6 or 7, because they reported in question 1 that they had not had LBP in the last four weeks. Of these, 22 participants answered that their LBP had not limited their usual activities or changed their daily routine in question 2, while none reported the opposite. Two participants erroneously answered question 5. Ten participants erroneously answered question 7 about pain intensity. However, nine of these reported the pain intensity to be zero and one reported a pain intensity of one. Fifty-two (28.7%) participants erroneously provided an answer on question 4, because they already reported that they had not had LBP that goes down the leg in question 3. However, none of these reported that the pain had gone below the knee in question 4. Altogether, although several participants erroneously answered questions 2, 4, 5, or 7, this had no significant impact on the results.

Participants’ evaluation of the questionnaire

The mean (SD) time to answer the questionnaire was 2.5 (1.3) min and 99% answered the questionnaire within 5 minutes (see Table 4). Participants in age group 56-65 years reported longer time to answer compared to participants in age group 18-25 years (mean (SD) 3.0 (1.4) minutes versus 2.0 (1.1) minutes, respectively, p = 0.046).

The participants gave 70 written comments, of which 15 were excluded because the content was not aimed at the survey questions or could not be interpreted. Forty-four (24.9%) participants had one or two comments.

Most (91.7%) participants found the questions in the questionnaire clear. Five participants expressed that it was unclear if and/or which question(s) they should answer if they responded in question 1 that they had not had LBP in the last 4 weeks. Two participants suggested that the answer option “one day” should be added as an extra alternative to the three answer alternatives for reporting the frequency of the pain in
question 5. Six participants experienced question 6 about time passed since previous LBP period as difficult to understand.

Most participants reported that the diagram accompanying question 1 about LBP was easy to understand, while 6 (3.3%) and 2 (1.1%) participants found it partly difficult or difficult to understand, respectively. One participant wanted to have the same diagram at the end of the questionnaire, five responded that they did not notice or looked at the diagram because they did not have LBP, and two participants commented that the diagram was clear and easy to interpret.

A majority (n = 155, 85.6%) did not miss any question in the form, while 26 (14.4%) participants missed one or more questions. Seventeen participants missed questions about the cause of the pain, and four about the duration of the problems. Six participants wanted to have questions about previous LBP problems and how they affected the individual, two wanted to have questions about physical activity, and two about problems with their feet. Eight participants proposed to add questions about LBP management or treatment. There were no statistically significant differences between men and women in their judgement of the clarity of the questions or the diagram, questions missing, or time needed to answer the questionnaire, but women tended to give more written comments compared to men.

In the final consensus meeting, the review committee decided to make no changes in the pre-final questionnaires used in the pre-test, and consensus was reached on the final Swedish DOLBaPP questionnaires (see Figure 2).

Discussion

The translation and cross-cultural adaptation of the definitions and related Delphi DOLBaPP questionnaires into Swedish using standardized methods [8, 13, 14] resulted in Swedish versions of the Delphi DOLBaPP definitions and can be recommended for use in Swedish speaking populations.

Some problems of conceptual equivalency were found with the original English version, which could be solved with minor modifications. During the translation process the expression “go below the knee” in question 3 was changed to “radiate” as also was done in the German translation [10]. The general comment from the experts was that the questionnaire was clear, comprehensive and relevant. Based on the experts’ comments in question 2 the expression "pain bad enough" ("smärtan så kraftig") was changed into "pain so strong" ("smärtan så stark"), and the expression "changed daily routine" ("ändrade vardagliga rutiner") was rephrased into "changed your daily routine" ("ändrade dina vardagliga rutiner"). One expert remark on the original English DOLBaPP optimal questionnaire was that some people may receive the diagnosis “low back pain” but only have pain in the leg. However, in the current study only 3% (n = 6/181) reported pain in the leg in the last four weeks without reporting LBP, indicating that this is rare. A suggestion for change in question 3 was to clarify "pain that goes down the leg" into "goes down into one of the legs" with a follow-up question “which leg?”.

Most of the 181 participants in the pre-test found the questionnaire easy to understand and clear. For question 5 on pain duration the participants proposed, as in the German DOLBaPP study [10], to add the
additional answer option “on one day”. Some participants had difficulty understanding question 6 about time since previous LBP episode and participants in the German study suggested to remove the negation in the question and to shorten the sentence [10]. As for the German version [10], most participants needed less than 5 minutes to complete the questionnaire.

Furthermore, participants suggested to add questions about the cause of the pain, the duration of the problems, previous LBP episodes, physical activity, and LBP management and treatment. These aspects are well-known and recognized [19]. Questionnaires including more aspects of LBP might be suitable for studies in LBP populations, but not for less extensive prevalence studies. A possibility is to combine the DOLBaPP with existing instruments for e.g. disability, mental health, general health, work ability, and disability-adjusted life years [20–25].

The use of an online survey made it easy to distribute the questionnaire to the employees and was pilot tested to ensure feasibility [26]. The sample chosen for the pre-test consisted of 181 employees from various economic sectors including both blue-collar and white-collar workers. However, younger and older populations were not included, and further evaluation of the instrument in these groups might be useful. The prevalence of LBP was somewhat higher than the about 50% prevalence found in the German DOLBaPP study by Leonhardt et al. [10]. One explanation could be that the German study only included white-collar workers. It is unknown whether employees with LBP were more likely to answer the questionnaire than those without LBP, which might indicate a selection bias. However, this could not be influenced by the research team. The prevalence rates are strongly influenced by the definition, for example in the current study the prevalence range changed from 56.9–13.8% if LBP was combined with activity limitations, and corresponding figures in the German DOLBaPP study were changed from 50–12% [10]. The questionnaire allows to use a combination of reporting LBP with activity limitation, and to report LBP in relation to its burden is often proposed as more relevant to use [19, 27, 28].

Besides filling in the questions the participants provided suggestions for improvement. Similar to the German DOLBaPP paper form questionnaire, several participants that did not report LBP in question 1 erroneously provided answers on questions 2, 5 and 7. Although these erroneous answers had no impact on the prevalence rates and all responses were plausible, they might be avoided. If using the paper questionnaire, an instruction could be added explaining that if participants answer “no” to question 1 on LBP, they can skip to answer the questions 2, 5, 6 and 7, as also suggested by Leonhardt et al. [10]. In case an online form is used, inbuilt data validation rules can ensure that people get the right questions based on the previous answers [29]. The use of the Swedish version of the Delphi DOLBaPP questionnaires allows for further investigation of the measurement properties, such as test-retest reliability. Also, further evaluations of the questionnaires for telephone surveys may be warranted.

Conclusions

The translation and cross-cultural adaptation of the Delphi Definitions of Low Back Pain Prevalence (DOLBaPP) and the corresponding questionnaires into Swedish was successful and required only minor
linguistic adaptation. The DOLBaPP-S can be used in epidemiological studies on the prevalence of LBP in Swedish speaking populations.

**Abbreviations**

LBP
Low Back Pain
DOLBaPP
Definitions of Low Back Pain Prevalence
Tr
Translator
Rec
Reconciler
QR code
Quick Response code
SPSS
Statistical Package for the Social Sciences
SD
Standard Deviation.

**Declarations**

**Ethics approval and consent to participate**

According to Swedish law (2003: 460) on the ethics of human research, it is described that all research performed and dealing with sensitive personal data should be ethically tested. Section 2 of this law states that regional ethical committee assessment is required for "Scientific experimental or theoretical work to acquire new knowledge or scientific quality improvement work, but no such work done in the framework of first or second cycle education [18]. Therefore, because this study was conducted as a part of a bachelor's thesis and did not include sensitive personal data, ethical approval was provided after assessment performed according to the Helsinki declaration by the ethics board of second cycle education at Linkoping University. Informed consent was obtained from each participant. No patients were involved.

**Consent for publication**

Not applicable.

**Availability of data and materials**

Data are available upon request to the corresponding author.
Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

The authors declare the following contributions to the preparation of the manuscript: BÖ and CED initialized the study. CED, BÖ, PE, YL and AA were responsible for study conception and design; PE, YL, EG and EL did the data collection, data analysis and prepared figures 1-2 and tables 1-4. PE prepared the draft of the manuscript. All authors were involved in interpretation of the data and critical revision of the manuscript for important intellectual content; All authors provided final approval of the manuscript and take responsibility for the integrity of the work and agreed to submit the article for publication.

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The diagram in the Delphi DOLBaPP questionnaire (copyrighted material) is used with permission.

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**Tables**

**Table 1** Expert committee members characteristics.
| Expert | Profession and expertise                                                                 | Gender |
|--------|------------------------------------------------------------------------------------------|--------|
| 1      | Language teacher Swedish, level gymnasium.                                               | Man    |
| 2      | Professor emerita (radiology).                                                            | Woman  |
| 3      | Psychologist, University Senior lecturer.                                                 | Man    |
| 4      | Nurse Research and Development, currently working with telephone advice to the public due to the Corona pandemic. | Woman  |
| 5      | Adjunct Professor of Orthopedics, Chief physician university hospital.                    | Man    |
| 6      | Associate Professor and Consultant in Orthopedic Surgery university hospital.             | Man    |
| 7      | Occupational therapist working clinically.                                                | Woman  |
| 8      | Associate Professor Occupational health, Ergonomist and Physiotherapist.                  | Woman  |
| 9      | Medical intern working clinically.                                                        | Woman  |
| 10     | Language teacher Swedish and Swedish for foreigners, level basic school, gymnasium and adult education. | Woman  |
| 11     | Professor, Senior Consultant, Head and attending physician Rehabilitation Medicine university hospital. | Woman  |

**Table 2** Background characteristics participants, n = 181
| Characteristics                      | n (%)   |
|-------------------------------------|---------|
| Sex                                 |         |
| Male                                | 45 (24.9) |
| Female                              | 136 (75.1) |
| Other                               | -        |
| Age group, years                    |         |
| 18 – 25                             | 23 (12.7) |
| 26 – 35                             | 42 (23.2) |
| 36 – 45                             | 33 (18.2) |
| 46 – 55                             | 36 (19.9) |
| 56 – 65                             | 47 (26.0) |
| Usual physical strenuousness of work|         |
| Very, very light                    | 10 (5.5) |
| Very light                          | 30 (16.6) |
| Light                               | 52 (28.7) |
| Somewhat strenuous                  | 58 (32.0) |
| Strenuous                           | 24 (13.3) |
| Very strenuous                      | 7 (3.9)  |
| Very, very strenuous                | -        |

Table 3 Pre-test responses of the optimal Delphi Definitions of Low Back Pain Prevalence (DOLBaPP) Swedish language version (n = 181)
| Item original English (Swedish adaptation) | Number (%) of respondents |
|-------------------------------------------|---------------------------|
|                                            | Yes / Ja  | No / Nej |
|                                            | n (%)     | n (%)    |
| Q1. In the last 4 weeks, have you had     | 103 (56.9)| 78 (74.8)|
| pain in your lower back? Please ignore     |            |          |
| pain caused by menstruation or by an       |            |          |
| illness accompanied by fever. (Har du haft|            |          |
| smärta i ländryggen (det område som       |            |          |
| markerats på bilden) under de senaste 4   |            |          |
| veckorna? Undantag: Bortse från smärta i  |            |          |
| samband med feber eller mens.)             |            |          |
| Q2. If yes, was this pain bad enough to    | 25 (24.3) | 77 (54.7)|
| limit your usual activities or change your |            |          |
| daily routine for more than one day?       |            |          |
| (Om ja, var smärtan så stark att den        |            |          |
| begränsade dina vanliga aktiviteter eller |            |          |
| gjorde att du ändrade dina vardagliga      |            |          |
| rutiner under mer än en dag?)              |            |          |
| Q3. In the last 4 weeks, have you had      | 35 (19.3) | 146 (80.7)|
| pain that goes down the leg? (Har du haft    |            |          |
| smärta som strålar ner i benet under de    |            |          |
| senaste 4 veckorna?)                      |            |          |
| Q4. If yes, has this pain gone below the   | 18 (51.4) | 17 (48.6)|
| knee? (Om ja, har den smärtan nått nedanför |            |          |
| knät?)                                    |            |          |
|                                              | On some    | On most   | Every  |
|                                              | days       | days      | day    |
|                                              | (Några      | (De flesta | (Varje |
|                                              | dagar)     | dagar)    | dag)    |
| Q5. If you had pain in your lower back in   | 69 (67.0)  | 21 (20.4) | 13 (12.6)|
| the last 4 weeks, how often did you have    |            |          |
| the pain? (Om du har haft smärta i ländryggen|            |          |
| under de senaste 4 veckorna, hur ofta hade  |            |          |
| du smärta?)                                |            |          |
|                                              | Less than 3 months | 3 months or more, but less than 7 months | 7 months or more, but less than 3 | 3 years or more (3 år eller mer) |
Q6. If you had low back pain in the last 4 weeks, how long was it since you had a whole month without any low back pain? (Please tick only one box).

| Time Interval | Mean (SD) | Median [25-75%], Minimum - Maximum |
|---------------|-----------|------------------------------------|
| 31 (30.1)     | 29 (28.2) | 15 (14.6)                          |
| 25 (24.3)     | 3 (2.9)   |                                    |

(Not answered)

Mean and standard deviation (SD)

Table 4 Participants’ evaluation of the questionnaire, n = 181
| Evaluation                                                                 | n (%)     |
|---------------------------------------------------------------------------|-----------|
| Time to answer the questionnaire?                                        |           |
| 1 minute                                                                  | 41 (22.7) |
| 2 minutes                                                                 | 68 (37.6) |
| 3 minutes                                                                 | 42 (23.2) |
| 4 minutes                                                                 | 8 (4.4)   |
| 5 minutes                                                                 | 21 (11.6) |
| 6 minutes                                                                 | -         |
| 7 minutes                                                                 | 1 (0.6)   |
| What do you think about the diagram accompanying question 1?              |           |
| Easy to understand                                                        | 173 (95.6)|
| Partly difficult to understand                                            | 6 (3.3)   |
| Difficult to understand                                                   | 2 (1.1)   |
| Is a (are) question(s) unclear?                                           |           |
| Yes                                                                       | 15 (8.3)  |
| No                                                                        | 166 (91.7)|
| Do you miss any question in the questionnaire?                            |           |
| Yes                                                                       | 26 (14.4) |
| No                                                                        | 155 (85.6)|

Figures
Figure 1

Translation and cross-cultural adaptation method. Abbreviations: DoLBaPP, Definitions of Low Back Pain Prevalence.

Step 1: Forward translation
Two independent translators performed the forward translation (one a professional uninformed translator without medical background and the other knowledgeable of the research area and part of the review committee).

Step 2: Synthesis
The two forward translations were reconciled in a common translation by a reconciler. Then the four-member Review Committee compared the three translations and reached agreement in case of differences.

Step 3: Expert committee review
A multidisciplinary team of 11 Experts commented independently on the translation, wording, phrasing, and understandability of the instrument.

Step 4: Consensus
The Review Committee discussed independent comments by the Experts and reached agreement on a pre-final version of the instrument.

Step 5: Pre-test
The pre-final version of the instrument was pre-tested in a sample of 181 Employees at different companies.

Step 6: Final Consensus
The Review Committee discussed the comments from all translations, the Experts, and Employees that answered the pre-final version, and a final consensus was reached on the Swedish DOLBaPP.
1. Hur du haft smärtor i lände (det område som markerats på bilden) under de senaste 4 veckorna? Undantag: Bortse från smärtor i samband med fober eller menc.

| Ja ☐ | Nej ☐ |

2. Om ja, var smärtan så stark att den begränsade dina vanliga aktiviteter eller gjorde att du ändrade dina rutiner under mer än en dag?

| Ja ☐ | Nej ☐ |

3. Har du haft smärtor som sträcker ner i benet under de senaste 4 veckorna?

| Ja ☐ | Nej ☐ |

4. Om ja, har den smärtan satt nedanför knät?

| Ja ☐ | Nej ☐ |

5. Om du har haft smärtor i lände under de senaste 4 veckorna, hur ofta hade du smärtor?

| Några dagar ☐ | De flesta dagar ☐ | Varje dag ☐ |

6. Om du haft smärtor i lände under de senaste 4 veckorna, hur lång tid sedan det gick en hel månad utan att du hade smärtor? (Markera endast ett svarsalternativ).

| Mindre än 3 månader ☐ | 3 månader eller mer, men mindre än 7 månader ☐ | 7 månader eller mer, men mindre än 3 år ☐ | 3 år eller mer ☐ |

7. Om du haft smärtor i lände under de senaste 4 veckorna, hur mycket smärtor hade du i allmänhet på en skala från 0 till 10? 0 betyder ”Ingen smärta” och 10 betyder ”Värsta tänkbara smärta”. (Markera ditt svar).

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Ingen smärta | | | | | | | | | | Värsta tänkbara smärta |

**Figure 2**

Swedish Delphi Definitions of Low back pain (DOLBaPP-S) optimal questionnaire The body diagram was first published in Kuorinka et al. (1987),[30] and is used with the publisher’s permission.