**Appendix 1**

**The JOA back pain evaluation questionnaire (JOABPEQ)**

Q1-1) To alleviate low back pain, you often change your posture.

1) Yes 2) No

Q1-2) Because of the low back pain, you lie down more often than usual.

1) Yes 2) No

Q1-3) Your lower back is almost always aching.

1) Yes 2) No

Q1-4) Because of the low back pain, you cannot sleep well. (If you take sleeping pills because of the pain, select “No”.)

1) No 2) Yes

Q2-1) Because of the low back pain, you sometimes ask someone to help you when you do something

1) Yes 2) No

Q2-2) Because of the low back pain, you refrain from bending forward or kneeling down

1) Yes 2) No

Q2-3) Because of the low back pain, you have difficulty in standing up from a chair

1) Yes 2) No

Q2-4) Because of the low back pain, turning over in bed is difficult

1) Yes 2) No

Q2-5) Because of the low back pain, you have difficulty putting on socks or stockings

1) Yes 2) No

Q2-6) Do you have difficulty in any one of the following motions; bending forward, kneeling or stooping?

1) I have great difficulty 2) I have some difficulty 3) I have no difficulty

Q3-1) Because of the low back pain, you walk only short distance.

1) Yes 2) No

Q3-2) Because of the low back pain, you stay seated most of the day.

1) Yes 2) No

Q3-3) Because of the low back pain, you go up to the stairs more slowly than usual.

1) Yes 2) No

Q3-4) Do you have difficulty in going up the stairs?

1) I have great difficulty 2) I have some difficulty 3) I have no difficulty

Q3-5) Do you have difficulty in walking more than 15 minutes?

1) I have great difficulty 2) I have some difficulty 3) I have no difficulty

Q4-1) Because of the low back pain, you do not do any routine housework these days.

1) No 2) Yes

Q4-2) Have you been unable to do your work or ordinary activities as well as you would like?

1)I have not been able to do them at all.

2)I have been unable to do them most of the time.

3)I have sometimes been unable to do them.

4)I have been able to do them most of the time.

5)I have always been able to do them.

Q4-3) Has your work routine been hindered because of the pain?

1) Generally

2) Moderately

3) Slightly (somewhat)

4) Little (minimally)

5) Not at all

Q5-1) Because of the low back pain, you get irritated or get angry at other persons more often than usual.

1) Yes 2) No

Q5-2) How is your present health condition?

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

Q5-3) Have you been discouraged and depressed?

1) Always 2) Frequently 3) Sometimes 4) Rarely 5) Never

Q5-4) Have you feel exhausted?

1) Always 2) Frequently 3) Sometimes 4) Rarely 5) Never

Q5-5) Have you felt happy?

1) Never 2) Rarely 3) Sometimes 4) Almost always 5) Never

Q5-6) Do you think you are in decent health?

1) Not at all (my health is very poor)

2) Barely (my health is poor)

3) Not very much (my health is average health)

4) Fairly (my health is better than average)

5) Yes (I am healthy)

Q5-7) Do you feel your health will get worse?

1) Very much so

2) A little bit at a time

3) Sometimes yes and sometimes so

4) Not very much

5) Not at all