Appendix 2: The main topics, key messages and learning tasks of back counseling

Session 1: The natural history of low back pain (LBP) — why do we experience pain?

- LBP is caused by excessive or other vice harmful loading of the lumbar tissue.
- Nursing includes heavy patient lifting and transferring, and awkward postures.
- Back can endure heavy loading if trunk muscles efficiently stabilize the spine.
- Adequate movement control (i.e. motor skills) and muscular endurance/strength are needed in relation to demands of the task.

LEARNING TASKS / DISCUSSION TOPICS

- Write down tasks or physical functions, which have caused your LBP.
- Do you believe that participating in these counselling sessions will help you to manage your LBP?

Homework 1: Have you given up some hobbies or tasks due to your LBP? If yes, which ones and why?

HEALTHY BACK & ADEQUATE PHYSICAL FUNCTIONING
Session 2: Control of the lumbar neutral zone (NZ) helps to avoid harmful loading

**INCREASED RISK OF LOW BACK INJURY & PAIN** = fully flexed lower back
- Physically strenuous tasks such as lifting and bending
- Light tasks, such as making the bed, filling in the washing machine, picking up things from the floor
- Sitting, driving a bike or a car

<table>
<thead>
<tr>
<th>Task</th>
<th>In NZ?</th>
<th>NZ Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifting and bending</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Making the bed, filling in the washing machine</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Picking up things from the floor</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Sitting, driving a bike or a car</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**DECREASED RISK OF LOW BACK INJURY & PAIN** = keeping lumbar spine in NZ, i.e. close to the position it is in normal standing posture. HOW?
- Place your feet apart and keep the front foot facing forward rather than parallel. This helps to keep the lower back in NZ.
- Leaning over with one leg automatically hinders full flexion of lower back.

**LEARNING TASKS / DISCUSSION TOPICS**
- Write down 3 of your work tasks that you believe to be harmful for the back.
- Choose one of the 3 listed work tasks and imagine how to maintain the control of lumbar NZ while performing it.

**Homework 2:** Apply the control of NZ to the selected work task in real life situation.
Sessions 3 & 6: You don’t need to fear the pain — choose active strategy to cope!

The usual cause of non-specific LBP is tissue damage, which will heal in time

- The brain processes the sensation of acute pain: it is a warning signal that hinders further damage.
- Experience of pain is personal, effected by former experiences, beliefs and knowledge, and as current state of mind (alertness, depression).
- Prolonged pain can changed the functioning of the brain (central nervous system): it is not longer a sign of immediate danger but rather a “waking bad memory of former pain.”

**ACTIVE STRATEGY TO COPE WITH LBP:**
- Ask questions and seek information to better understand your LBP
- Experience the limits of you pain: what makes it worse or better?
- Maintain positive attitude and work out possible problems
- Make plans and stay active

**ACTIVITIES THAT PLEASE YOU WILL LESSEN THE EXPERIENCE OF PAIN**

**LEARNING TASKS / DISCUSSION TOPICS**
- Are there work tasks or other physical functions that you have avoided due to fear pain? If yes, describe them to others.

**NEW ACUTE EPISODE OF LBP — WHAT TO DO?**
- Avoid excessive bed rest
- Keep-up daily activities within limits of pain
- Walking within the limits of pain may enhance recovery — very slow walking may also aggravate it due to higher loading on back
- Exercise is not recommended in acute phase
- Use pain killers as prescribed earlier if effective
- Heavy physical work is not recommended in acute pain – be aware of the danger of prolonged sickness absence leading to chronic pain & disability
- After pain has subsided you may try slight extension-flexion movement of lower back while on fours or side-bridge (knees flexed) with control of NZ.
- The load of above mentioned movements on lower back is low
Session 5: You have the same back 24 h/day

"Keep training the way you move"
• Your back does not “know” whether you are working, exercising or vacuuming
• It is important that you control the lumbar NZ at all times

Session 2-10: Motor control training (5 min) for the control of the lumbar neutral zone

Practise weight transfer while turning from right to left and back (“Warrior”):
- first flex the knees slightly to be more stable and ready to move
- imagine using this movement pattern while treating bed patients

Practise the correct squatting technique with the stick i.e.
learn to differentiate hip flexion from lumbar flexion:
- keep the stick in contact with the back of your head, thoracic spine (level of shoulder blades) and sacrum during the whole movement cycle
- do the same movement with one leg and extend the free leg backwards in line with the trunk

LEARNING TASKS / DISCUSSION TOPICS
✓ Write down 3 of your work tasks that you believe to be harmful for back.
✓ Choose one of the 3 listed work tasks and imagine how to maintain the control of lumbar NZ while performing it.
Homework 3: Apply the control of NZ to the selected work task in real life situation at work.
Homework 5: Apply the control of lumbar NZ to common domestic and other tasks inside and outside.
Sessions 4 & 8: Physical inactivity and sedentary behavior are “poison” for your back

Physical activity (PA) has potential to improve major risk factors for persistent LBP:
(1) overweight, (2) depression, low mood, anxiety, (3) deconditioning

PA decreases the risk of cardiovascular and metabolic diseases, cancer and osteoporosis.

Regular PA is the only means to maintain physical functioning and a powerful medication to control musculoskeletal pain.

LEARNING TO BE PHYSICALLY ACTIVE is the major goal in the prevention of LBP related disability!

LEARNING TASKS
✓ Understand the contents of the current health-enhancing PA recommendation, presented in the “Physical Activity Pie”. (PAP)
✓ Filling in the empty “PAP” according to one’s current PA habits and assessing their adequacy in relation to the PAP.

DISCUSSION
✓ What components of fitness are important in nursing tasks?
✓ Is my current fitness status adequate compared to the physical demands of my work?

FINAL TASKS: Completing one’s PAP-plan for half a year, and renewing it at 6 months for the next half a year.