

Assessing the physical risks in assisting clients to move

- Home Care and Nursing Home work

Risk assessment is a starting point in the management of physical load. Risk assessment consists of following steps: hazard/ problem identification and risk estimation & evaluation.

ErgocareBank-project risk assessment has a dual aim:

- to help the participating organizations to identify the risk factors and to apply **strategies** and **solutions** to reduce these risks. These solutions will be made available for students, teachers and workers in internet.

The Technical Report (TR) titled 'Manual handling of People in the Healthcare Sector' (ISO/TR 12296: 2012) gives an overview of evidence based methods to assess problems and risks associated with manual patient handling, and details how to identify and apply **strategies** and **solutions** to reduce these risks. It reviews hazard identification and **risk assessment**, not just in relation to health risks, but also in identifying and solving problems. Two major objectives of Technical Report, but do fit also for the ErgocareBank:

-To improve caregivers' working conditions by decreasing the risk of biomechanical overload, limiting work-related illness and injury, and the consequent absenteeism and costs;

- To ensure clients' quality of care, safety, dignity and privacy while continuing to meet their needs, including personal care and hygiene

Technical Report presents a number of evidence based methods for risk assessment in patient handling. Based on expert experience the following 3 practical methods were chosen to be tested in the home care and the nursing homes:

- 1) Care Thermometer (Knibbe and Friele 1999, www.carethermometer.com)
- 2) Patient Transfer Assessment Instrument PTAI-method (Karhula et al. 2009)

The guide and forms for the PTAI-method are available in

http://tyosuojelujulkaisut.wshop.fi/documents/2009/04/TSJ_83.pdf

- 3) Dortmund Approach (Jäger et al. 2010)

The task was to test which one of above methods is most suitable for risk assessments in both home care and nursing home settings. The method had to be relatively fast and easy to use, but nevertheless give reliable results.

The PTAI-method turned out to be the most practical tool in home care and the nursing homes and best revealed the presence of several risk factors and how they are related. The Care Thermometer assessments are strongly based on the use of helping devices and availability of height adjustable beds, while these are seldom in order in the home care work, although in little better condition in the nursing homes. So the assessment results nevertheless neglects other possible risk factors.

The Care Thermometer is not specific enough for individual assessments and also PTAI gives a rough estimation only about the physical load. Therefore, the Dortmund Approach can be used in addition to the PTAI-method for rapid evaluation of low-back loading in specific patient handling situations.

Following factors/situations caused risks in home care:

- Lack of space
- Low beds
- Hygiene care in toilet
- Dressing
- Patient handling skill of workers particularly in these situations:

- Assisting a fallen client to get up from the floor
- Assisting a client from lying to sitting at the edge of the bed
- Raising a client from sitting to an upright- standing-position or assisting a client at the edge of the bed to the wheelchair.

These situations were chosen for testing and finding an ergonomic safe solution.

Safety management is the comprehensive management of safety. It applies equally to voluntary as statutory activity. Safety management is taken to mean the management of procedures, people and operations such that safety and health is promoted at the workplace systematically and proactively. Continuous planning, performance, and the monitoring and assessment thereof are all aspects of safety management.

Safe working environment requirements in nursing homes and at home.

Room space recommendations

At home, the elderly mostly like to place their bed at the side of the wall, which works fine as long a person manages to get up from the bed by himself. This arrangement needs to be changed when this is no longer possible as there must then be sufficient room around the bed to accommodate the use of various mechanical aids.

Recommendations of needed space for elderly persons are found in both the room dimension and task-based activities literature. Arjo Huntleigh's recommendations (2014) are depending on the person's functional capacity and needed assistance and helping devices. In the recommendations the functional capacity is expressed in the Mobility Gallery Classification from A to E. *(one could link into page where the Mobility Gallery is explained)*

Recommendations of needed space for elderly person are but two: the Canadian recommendations (Villeneuve 2006) and the Arjo Huntleigh Guidebook (2014); minimum space need 3,0 m x 3.0 m equalling to 9.0 m² for the independent user (A).

Recommendations of needed room space for elderly persons for different tasks

Task	Width m	Length m	Area m²	-Reference
Transfer in the room	3.8	3.2	12.6	Villeneuve 2008
Transfer to bathroom	3.55	3.35	11.89	Villeneuve 2008
Transfer to shower trolley	2.75	3.15	8.66	Villeneuve 2008
Independent user (A)	3	3	9,0	Arjo Huntleigh 2014
Walking device user (B)	3.1	3.0	9.3	Arjo Huntleigh 2014
Transfer with stand aid (B)	3.2	3.0	9.6	Arjo Huntleigh 2014
Transfer to chair with sit to stand device (C)	3.5	3.0	10.5	Arjo Huntleigh 2014
Transfer to chair with hoist (D and E)	3.5	3.0	10.5	Arjo Huntleigh 2014
Transfer from bed to shower trolley	3.5	3.0	10.5	Arjo Huntleigh 2014

Space recommendations for toilets and shower rooms

As the majority of care is needed in residents' bathroom and toilet, working in these areas tends to put the heaviest burden on care giver. It is important that these spaces are suitable for both care needs and the resident's own independent needs. For the latter the most important is how and where the resident can find support. They need a supporting rail when they stand, turn and sit down to the toilet seat and stand up, but there must be also sufficient needed space for a caregiver and for the use of assistive devices. The smallest recommendation 4.0 m² is suitable for an Albert-level person (A), independent user. Sipiläinen's recommendations for the independent user is 4.92 m², but this is including the shower space. More space is needed when some assisting device, like a walking frame or a stand aid lift, are used.

In the ISO Technical Report (TR) 12296 Ergonomics –Manual handling of people in the healthcare sector. (2012) one can find many more requirements for toilets and shower room.

Recommendations of needed toilet and shower space for elderly persons

Task	Width m	Length m	Area m²	Reference
Toilet + shower room Independent user (A)	2.4	2.05	4.92	Sipiläinen 2011
Toilet + shower room Walking frame /stand aid (B)	2.4	2.4	5.76	Sipiläinen 2011
Toilet Independent user (A) and walking frame (B)	2.0	2.0	4.0	Arjo Huntleigh 2014
Toilet Wheelchair user and with hoist (C,D)	2.2	2.2	4.84	Arjo Huntleigh 2014

References

Arjo Huntleigh (2014): Guidebook for Architects and Planners. Functional design for Mobilisation and Ergonomics. 4th edition. Malmö, Sweden.

ISO Technical Report (TR)(2012): 12296 Ergonomics –Manual handling of people in the healthcare sector.

Jäger M, Jordan C, Theilmaier A, Luttman A & the Dolly Group (2010): Lumbar load quantification and overload – risk prevention for manual patient handling – the Dortmund Approach. Proceedings of the 8th Int Conf Occup Risk Prevention ORP 2010 (CD-rom). Valencia, Spain.

Karhula K, Rönholm T, Sjögren T (2009): A method for evaluating the load of patient transfers. Finnish Institute of Occupational Health. Vol 83.

Knibbe J, Friele RD (1999): The use of logs to assess exposure to manual handling of patients illustrated in an intervention study in home care nursing. International Journal of Industrial Ergonomics 24; 445-454.

Sipiläinen P (2011): Demands on dwelling for the elderly in home care. (in Finnish: Kuntouttavan hoivatyön vaatimukset ikäihmisten asunnoille.) Aalto-yliopiston julkaisusarja. Doctoral thesis 4/2011. Aalto-yliopisto, Helsinki.

Villeneuve J (2006): Physical environment for provision of nursing care. Design for safe patient handling. In Nelson A. (Eds.) Safe Patient Handling and Movement. New York Springer Publishing Company.