

Presentation: User needs for hip protectors

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Purpose Falls resulting in hip fractures are one of the main reasons for deteriorating health amongst the elderly¹. Several studies indicate that use of hip protectors can reduce the number of hip fractures related to falls. However other studies report that low compliance is an issue, with acceptance being as low as 37% and adherence as low as 20% in some cases². Our hypothesis is that low compliance can be explained by the current design of hip protectors not meeting the needs of the users. The purpose of the study was to gain an understanding of the user needs in order to improve the design of the next generation of hip protectors.

Method A descriptive qualitative study was performed to elicit user needs. First, we conducted a series of semi-structured interviews (n=17), which included elderly people living in nursing homes, elderly people living at home, doctors, physiotherapists, and social care workers. The research subjects were recruited by use of the snowball sampling method. Two researchers participated in most of the interviews, each lasting 1-1.5 hour. All were conducted in the subjects' usual environment, which further allowed for a certain degree of observation. Second, we conducted a workshop in which four healthcare professionals participated in a modified affinity diagramming process³. The purpose of this was to eliminate misconceptions and consolidate the understanding of the user needs.

Results & Discussion The main user needs related to hip protectors can be aggregated into five distinct groups, covering aesthetics, comfort, availability, usability, and attitude (*Table 1*). Furthermore, user needs are distributed heterogeneously among passive nursing home residents and self-reflective elderly still living at home. This implies a principal need for several parallel solutions instead of one generic type of hip protectors. Applying the underlying specific user needs as the basis for a heuristic evaluation of the existing hip protectors shows a significant gap between needs and affordance. In our opinion this might explain the problems associated with the well-known low compliance rates. By basing the development of the next generation of hip protectors on actual user needs it seems plausible that greater compliance can be achieved in the future.

References

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Table 1. Main user needs for hip protectors

Theme	Nursing home residents	Elderly living at home
Aesthetics	No importance for weaker residents	Concealed or express a healthy/sporty lifestyle
Comfort	Attend to heat, moisture, movement and pressure issues	Attend to heat, moisture, movement and pressure issues
Availability	Fast delivery and easy overview of variants	Easy ordering and reimbursement procedure
Usability	Ergonomic in use by staff	As simple to operate as ordinary clothing
Attitude	Support an encouraging local culture among staff	Adapted to the self-perception of the individual