The importance of a user-centred approach and scoping work when exploring the potential benefit of computer-based technology within P&O services in LMICs

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Objective

Approximately 100 million people worldwide require prosthetic and orthotics (P&O), yet it is estimated that 80-90% do not have access to P&O services (WHO, 2011). Particularly in lower and middle-income countries (LMICs), key barriers relate to training, infrastructure and funding (Sexton, 2016). Some technology devices have the potential of increasing access to services; however, to optimise their use in LMICs it is essential to understand the social, cultural and historical context of the environment (AHRC, 2016). Scoping work was carried out to explore the potential benefit of data-based technologies within established P&O services in Cambodia.

Materials and Methods

Prior to applying for a large grant, pump-priming funding was utilised to carry out a mixed- methods exploratory study to ensure the potential technologies were beneficial within the specific context and met the needs of the user and wider stakeholders. This involved four key parts:

1. Field work (observations and note taking) within P&O centres and community visits to understand environment and service issues;
2. Qualitative semi-structured interviews with 14 healthcare professionals working in P&O services to gain a wide range of perspectives regarding potential use of technologies to meet client and service needs;
3. Small-cohort assessment of the reliability of one example technology: candidate 3D scanners for limb shape capture;
4. Retrospective analysis of client notes to provide requirements for documentation and rehabilitation outcomes.

Results

The results from all four parts of this study provided a clear insight into the specific needs of the user and wider service, and were essential for developing the next stage of the work in three key ways:

1. Preliminary study of scanning technology:
   - devices were trialled in the field to understand environment and establish accuracy, and
   - healthcare professionals' views of benefits and barriers were gathered, and adapted the project.

2. Remit of the future study:
   - specific infrastructure needs were identified, and the study remit was adapted to include technologies to support computerised records, with
   - a need to address the importance of sustainability and business factors.

3. Working relationships:
   - building relationships, rapport and trust,
   - identifying reciprocal factors,
   - building capacity, and
   - working as co-researchers

Discussion and Conclusion

This study highlighted the importance of carrying out in-depth scoping and preparatory work within a user-led framework prior to the development of research aimed at introducing new technologies within a service.

Through this process, we have identified user-defined, complementary technologies that have the potential of enhancing P&O services and clinical efficiency, which we now investigate within a larger study.