TReAT trial: TeleRehabilitation After Knee Arthroplasty project plan (2021-2026)

Formative phase

Desk Review

- Systematic survey of clinical practice guidelines and recommendations
- Scoping review of various technologies for improving adherence to physical therapy following Knee replacement
- Summarizing literature on reasons for poor adherence using Capability, Opportunity, Motivation - Behaviour framework (COM-B)
- Literature review on experiences and perception of end users of mobile application for Knee replacement care

Primary data collection

Examining practice

E-survey of physiotherapists to identify current practices & preferences followed in India

Problem identification

Study 1 - *(Quantitative survey)*
- Post Knee replacement patients
- Technology and computer literacy
- Home environment modifications
- Expectations & psychological support during recovery

Identifying evidence

Study 2 - *(Mixed method)*
- Patients scheduled/ underwent knee replacement, physiotherapists and surgeons
- Facilitators and barriers of rehabilitation adherence
- Perception on use of technology/m-health for rehabilitation

Determining needs

Study 3 - *(Quantitative survey)*
- Patients scheduled/underwent knee replacement
- Health Literacy Assessment

Designing intervention framework (Behaviour Design thinking)

Feedback & Action Cycle

- Collating behaviour change requirements
- Brainstorming mobile application features
- Documenting Behaviour Change Techniques (BCTs) for app
- Education material contents, exercise contents and therapy plan

Development of m-app prototype

Intervention

m-Health intervention* for rehabilitation monitoring & self-management

Pilot phase

- Pilot testing of intervention delivery
- Trial protocol for evaluating intervention
- Protocol development for economic evaluation (Cost-effectiveness)

Evaluation phase

Randomized controlled trial

- **P** - Population undergoing knee replacement
- **I** - Rehabilitation monitoring via m-health application
- **C** - Usual care
- **O** - Functional outcomes
- **T** - 6 months post knee replacement

One-to-one survey and Stakeholder's consultation for feedback IEC materials, and mobile application prototype/complete intervention package

***Intervention functions**
- Education
- Training
- Enablement
- Persuasion
- Environmental restructuring
- Modelling

TReAT
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