Development and evaluation of a 3D printing service for occupational therapists in rehabilitation

No registrations found.

Ethical review	Positive opinion
Status	Pending
Health condition type	-
Study type	Observational non invasive

Summary

ID

NL-OMON22653

Source NTR

Brief title ET3DP

Health condition

Clients who receive care in rehabilitation centres, amongst others adults and/or elderly people with stroke, spinal cord injury, children with cerebral palsy.

Sponsors and support

Primary sponsor: None Source(s) of monetary or material Support: Taskforce for Applied Research (SIA)

Intervention

Outcome measures

Primary outcome

Satisfaction and experiences of the clients, occupational therapists, and other participants (e.g. technicians, managers) with the developed 3D printing service and supporting toolbox.

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Secondary outcome

Number of 3D designed and printed assistive aids

Study description

Background summary

This project aims to develop and evaluate a 3D printing service and accompanying toolbox for occupational therapists working in rehabilitation centres to co-create with their clients assistive aids to support activities of daily living. Three rehabilitation centres (with 4 sites) participate in the study with a variety of clients, such as elderly people and adults with brain injuries, spinal cord injury, but also children with cerebral palsy who experience disabilities in activities of daily living (ADL). At each rehabilitation centre a learning community is established consisting of at least 2 occupational therapists, client(representatives), manager, rehabilitation doctor, technicians, a researcher and/or students of Zuyd University. In the learner community action research is conducted during five iterations for a period of 14-months, from the composition of the learning community to evaluation of the entire process and developed service/toolbox. In each iteration the 3D printing service and accompanying tool box is developed, evaluated and adapted/developed further. In total, each of the sites (n=4) will include 5 clients during each iteration (n=20) and run through the 3D printing process to create a tailormade 3D printing solution for the clients' problem. In total, after 5 iterations 100 assistive aids designed and produced by 3D printing will be created and experiences about the process, service and toolbox will be collected. Primary outcomes of the study are satisfaction and experiences of clients, occupational therapists and other people involved with the developed 3D printing service and toolbox. If 3D printing proves to be a succesfull service for occupational therapists in rehabilitation, implementation of the service will be examined further.

Study objective

3D printed tailormade assistive aids may better fulfill the requirements and needs of clients with disabilities to support them in performing their activities of daily living than the currently available aids or handmade aids provided by occupational therapists.

Study design

Satisfaction of clients with the developed assistive aids is assessed for each client after 1 month of using the aid with the D-Quest questionnaire. Satisfaction of the participating occupational therapists is measured after each iteration the 3D printing process is ran through, using individual interviews with each of the occupational therapists (n=8), other participants such as technicians, 3D experts (n=8) and als 8 clients who participated in the iteration. After 9, 13 and 18 months a focus group interview will be conducted to exchange

excperiences between the occupational therapists (n=8) of the three contexts (rehabilitation centres). During each iteration the occupational therapists will keep diaries in which they describe the complete process for each partipating client. Information on the request for help, problems experienced in daily living, clients needs, design of the 3D printing solution, materials used, time invested will be registered.

Intervention

3D printing

Contacts

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Eligibility criteria

Inclusion criteria

Inclusion criteria for each of three learning communities:

1) Occupational therapists who have affinity with technology, specifically 3D Printing, who on a regular basis have to do with selection of assistive devices, aids for their clients.

2) Rehabilitation doctor who is part of the multidisciplinary team of the occupational

therapists and who is responsible for the clients' treatment.

3) Manager who is related to the occupational therapists.

4) Client(representative) who has a need for or can think of needs for assistive devices of rehabilitation clients.

5) Lecturer in the field of engineering, and one or more students engineering

6) A researcher (expert in technology in care).

7) Any other professional participants from the rehabilitation centers regard relevant for their learning community, such as a (medical) engineer, technician or else.

Exclusion criteria

Persons who do not speak or understand Dutch language. Clients who do not need a tailormade assistive aid, but for whom an already available aid on the market is sufficient.

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

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NL	
Recruitment status:	Pending
Start date (anticipated):	01-02-2021
Enrollment:	136
Туре:	Anticipated

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Positive opinion	
Date:	18-01-2021
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL9213
Other	METC Z : METC20200197

Study results