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Evaluating the Efficacy of Caregiver Training and Tele-rehabilitation to Facilitate Home-based Cognitive Rehabilitation for a Chronic Stroke Patient

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INTRODUCTION

Stroke rehabilitation in India is underdeveloped due to a shortage of trained personnel, with organized services largely confined to private hospitals in urban areas.[1] This necessitates exploration of innovative approaches to tackle these barriers. A home-based caregiver-supported rehabilitation model has potential for further exploration.[2]

AIM

To evaluate feasibility of ***(i) caregiver training*** and ***(ii) tele-rehabilitation*** to facilitate home-based cognitive rehabilitation using a case study approach.

METHODOLOGY

Patient:

- 51-year-old male
- ***Education:*** Post-graduate
- ***Occupation:*** Lecturer
- ***Stroke:*** ACA aneurysm ruptured, subarachnoid hemorrhage, and hydrocephalus (April 2022)
- Physical, cognitive and behavioural sequelae

Assessment:

- ***Cognitive screening:*** Montreal Cognitive Assessment (MoCA)[3]
- ***Functional difficulties:*** Caregiver (wife) report
- ***Goal setting:*** Bangor Goal Setting Interview (BGI)[4]

Cognitive Assessment → *In-person rehabilitation sessions + Caregiver training* → *Tele-rehabilitation sessions + Caregiver training* → *Survey with caregiver*

Intervention:

In-person rehabilitation:
Feb - May 2024
1 session/ 2 weeks
(9 sessions total)

Increase orientation to time parameters (date. day etc.)	*i. Attention to orientation in conversation, newspaper reading etc.* *ii. Diary to note time parameters daily* *iii. Spaced rehearsal*
Initiate and sustain two-way interaction for at atleast 5 mins	*i. Generate content for conversation* *ii. Rehearse using role play* *iii. Fluency based exercises*

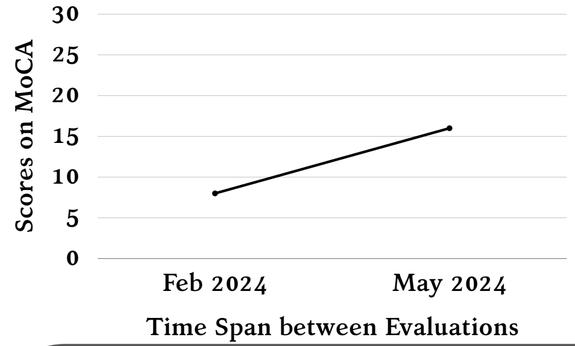
Tele-rehabilitation:
June - Sept 2024
1 session/ month
(6 sessions total)

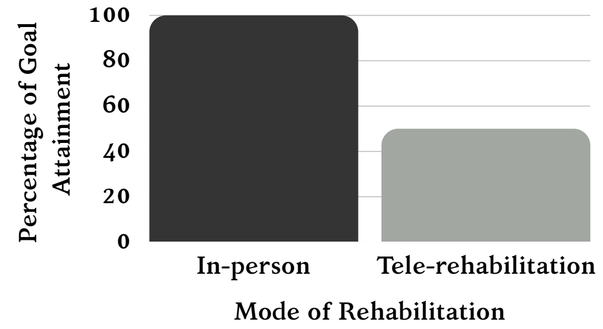
Ask for medicines at designated time	*i. Teaching to set phone alarms* *ii. Pairing memory for alarm with appropriate medicine* *iii. Spaced rehearsal/ practice*
Increase socializing through daily WhatsApp messaging	*i. Teaching use of WhatsApp for messaging* *ii. Helping with choice of receiver and message* *iii. Rehearsal and sending of message*

Caregiver training to facilitate home-based practice:

- Education on cognitive and behaviour sequelae
- Counselling for patient behaviour management
- Video recording of session content for caregiver reference
- Feedback on task administration and soft skills
- Printed daily assignments for homework
- Quantitative tracking of progress on tasks

RESULTS





- ***MoCA scores*** improved from 8/30 (Feb 2024) to 16/30 (May 2024) after in-person sessions.
- With ***therapy intensity*** decreasing from in-person (2 sessions/month) to tele-rehab (1 session/month), ***goal attainment*** also declined from 100% for in-person goals to 50% for tele-rehabilitation goals.

Caregiver Survey:

- Caregiver benefited from patient behaviour management strategies and education on "invisible" cognitive sequalae.
- Able to support patient's goal achievement at home.

	In-person rehabilitation	Tele-rehabilitation
Advantages	i. Increased intensity of cognitive rehabilitation ii. Better engagement and attention	i. Partial goal achievement
Disadvantages	i. Having to stay outside of hometown	i. Limited time and increased stress due to added responsibilities post-returning home ii. No family support for sessions or homework tasks iii. Technological issues and limited tech literacy

CONCLUSION

- Caregiver education and involvement in patient's cognitive rehabilitation has potential to enhance rehabilitation.
- Cognitive rehabilitation can benefit patient even in chronic stage post-stroke.
- Tele-rehabilitation was effective but less efficient than in-person sessions due to limited caregiver availability and caregiver familiarity with using tele-rehabilitation.

FUTURE DIRECTIONS

- Caregiver education module for cognitive and behaviour sequalae post-stroke.
- Evaluate efficacy of training multiple caregivers/ locally based physiotherapists to support cognitive rehabilitation.

REFERENCES

1. Pandian, J. D., & Sudhan, P. (2013). https://doi.org/10.5853/jos.2013.15.3.128
2. Alim, M., Lindley, R., Felix, C. et al. (2016, January 7). https://doi.org/10.1186/s13063-015-1129-8
3. Nasreddine, Z. S., Phillips, N. A., Bédirian, V., Charbonneau, S., Whitehead, V., Collin, I., Cummings, J. L., & Chertkow, H. (2005). https://doi.org/10.1037/t27279-000
4. Clare, L., Collins, R. A., & Kudlicka, A. (2020). University of Exeter.