

Supplementary file 3: Framework of strategies for facilitating home-based exercise adherence post stroke

S.no	Domain	Strategies	Healthcare provider	Stakeholder
1	Education about stroke and recovery	<ul style="list-style-type: none"> • Education on usual time course and speed of recovery after stroke • Impact of practice and exercise on recovery • Negative effects of rest and positive effects of activity on stroke recovery • Importance of secondary risks management • Managing complications (e.g., spasticity, pain, fatigue, contracture, depression and cognitive changes) • Awareness on interventions without evidence (including traditional medicines and religious practices) • Importance of adhering to the exercise program • Dosage of the exercise program • Information about expected outcomes based on severity • Proper positioning techniques • Misconceptions about stroke recovery • Role of a caregiver <p>Education can be delivered via written information, group sessions, individual discussions, testimonials from recovered patients and caregivers, phone calls</p>	Exercise therapist (Physiotherapist, Occupational therapists, Psychiatrist, Stroke nurse) Licensed psychologist trained in health behavior	Patient, Caregiver
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2	Exercise prescription	<ul style="list-style-type: none"> • Relevant exercises for each persons' goals and context • Individually-tailored exercises • Contingency plan and including enough opportunities for independent and autonomous activities • Personalized information/messages on the exercise prescription • Fun and engaging such as gaming or gamification • Use of voice-assisted programs or web-app • Prioritizing and focusing on only a few activities at a time • Demonstration and practice of the prescribed exercises • Written and pictorial instructions (avoid using too many colors and keep it simple and clean) • Videos of exercises • Simple written handout - no more than one printed page • Using a minimum of two and maximum of three mediums (various sensory modalities) when prescribing information • Online tracking application (feed-in everyday progress) • Video recording of patients' exercise performance • Splitting the exercise into smaller and easier steps, and gradually increasing in difficulty 	<p>Exercise therapist (Physiotherapist, Occupational therapists, Psychiatrist, Stroke nurse)</p> <p>Licensed psychologist trained in health behavior</p>	Patient
	Domain	Strategies	Healthcare provider	Stakeholder

3	Feedback and supervision	<ul style="list-style-type: none"> • Maintaining an exercise log • Daily monitoring of health status and updates of patients by the medical team • Exercise charts - with pictures of each step and a simple breakdown of the activities • Clearing doubts • Obtaining information on progress from patients and caregivers and their experience/quality of care/interaction • Evaluate frequency, form, intensity, and duration of exercise • Maintaining some form of regular contact with therapists - in person or via telehealth • Online web applications that can be accessed by the patients, caregivers, and medical team for recording everyday health status • Recorded audio/video clips to guide the exercise session • Individual and group discussion • Internal feedback • Providing verbal/manual cues at salient points during the exercise, and asking the person what went right and what could be improved • Standardized assessment using clinical outcome measures 	<p>Exercise therapist (Physiotherapist, Occupational therapists, Psychiatrist, Stroke nurse)</p> <p>Licensed psychologist trained in health behavior</p>	Patient
	Domain	Strategies	Healthcare provider	Stakeholder
4	Cognitive remediation	<ul style="list-style-type: none"> • Prescribing functional tasks and planning the exercises focusing on patients' goals • Understanding the exercise behavior of the patient before the treatment session • Educating the patients and caregivers about the benefits of performing exercises • Incorporating a schedule, involving group sessions, and relevant tasks • Positive feedback, reinforcement, and giving importance to micro gains • Assessing intention to exercises-use of Motivation Enhancement Therapy or motivational interviewing • Contingency charts and behavioral activation 	<p>Licensed psychologist trained in health behavior</p> <p>Exercise therapist (Physiotherapist, Occupational therapists, Psychiatrist, Stroke nurse)</p>	Patient, caregiver

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5	Involvement of the family members	<ul style="list-style-type: none"> • The family must be involved for a limited amount since it encourages dependency • Management of expressed emotions of the family members that may hinder treatment and restrict the autonomy of the patient • Evaluating caregivers' burden and having frequent sessions to reduce the burnout and to encourage their efforts towards the patient • Assessing knowledge and understanding of the caregivers on the importance of post-stroke exercises • Family can provide emotional support and encouragement • Exercise buddies • Setting up reminders on the patients' phone for anchor points of the day (daily routines/meals/exercise/leisure activities/family time/planned activities) • Developing, demonstrating, and practicing activities with family • Reinforcing adaptive behaviors • Assisting in exercises and preventing complications • Designing a few exercises that involve family members • Rotation of family members for caregiving roles (reduces burnout, improves support, and maintains novelty) • Tracking the progress and delivering rewards to the patient - tangible/intangible 	<p>Licensed psychologist trained in health behavior</p> <p>Exercise therapist (Physiotherapist, Occupational therapists, Physiatrist, Stroke nurse)</p>	Caregiver
	Domain	Strategies	Healthcare provider	Stakeholder
6	Involvement of society	<ul style="list-style-type: none"> • Interaction with colleagues on topics not concerning the illness (preferably the patient's work/politics/current affairs/sports) • Weekly scheduled interactions (phone/face-to-face) with friends, neighbors or colleagues • Creating an association of families caring for stroke or support group 	<p>Licensed psychologist trained in health behavior</p> <p>Exercise therapist (Physiotherapist, Occupational therapists, Physiatrist, Stroke</p>	Community

		<ul style="list-style-type: none"> • Testimonials of recovered patients and their experiences about rehabilitation • Awareness programs for healthy adults • Group exercise for stroke survivors in that particular locality • Peer support or exercise buddies 	nurse)	
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7	Promoting self-efficacy	<ul style="list-style-type: none"> • Use of evidence-based behavior change strategies (e.g., the Capacity Opportunity Motivation-Behavior model, or Intervention Mapping or Coaching Methodology) • Using substitution and optimization principles • Working out with patients on what monitoring will be best for them - exercise practice sheet, paper diary, electronic diary, app • Providing ongoing support once the therapy program has ended • Personal graph chart of success that can be generated weekly or monthly • Ensuring an adequate number of activities in which the patient can engage independently or with minimal supervision and support from the caregivers • Setting reminders on the phone or alarms on the clock; identifying anchors in the day (sleep times/meals/activities - exercise, recreation, social) • Setting a general intention of sticking to their exercise program with more specific goals (i.e., intention and "if/then" plans) • Patients could be advised to think of barriers that would impede their exercise sessions, and list ways of overcoming such barriers • Use of pie-charts/pros-con analysis/identification of cognitive distortions/downward arrow techniques for problem analysis and developing a life brochure and art-based therapeutic activities for promoting self-efficacy 	<p>Licensed psychologist trained in health behavior</p> <p>Exercise therapist (Physiotherapist, Occupational therapists, Psychiatrist, Stroke nurse)</p>	Patient

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8	Motivational strategies	<ul style="list-style-type: none"> Tracking and reporting exercise adherence Showing functional improvement Measuring performance-repetitions, duration of exercise, exercise intensity, or distance walked Positive feedback mechanisms at home with the help of caregivers to reward adherence and home activities Importance to micro gains Reminding positive experiences with exercise before a stroke Measuring functional improvements using clinical measures that can help patients appreciate improvements in their health Telehealth, self-monitoring, diaries Devise individual graphs (every three sessions plus monthly) Have a display board/wall of fame where "patient of the month" and photos of patients achieving good outcomes is displayed online or in clinical setup Telephonic follow-up where the medical team provides words of encouragement Productivity monitor that has to be filled out by the patient to code the level of functioning for every day in various domains Maintaining a positive log (paper-pencil or online) two events each day gave the patient a reason to be happy Feedback at regular intervals using objective outcomes Setting progressive but achievable targets and involving patients in goal setting Devising color bands (coded for level of recovery and mastery of tasks). Reinforcing the patients by providing t-shirts or color bands of a particular color that represents certain level of recovery or mastery of task. Upgradation of color bands with progression of tasks. 	<p>Licensed psychologist trained in health behavior</p> <p>Exercise therapist (Physiotherapist, Occupational therapists, Psychiatrist, Stroke nurse)</p>	Patient

		<ul style="list-style-type: none"> • Conducting intra-group competitions for patients (within a given color band) during group sessions • Providing tokens and badges for improvement - which can be exchanged for tangible rewards • Interactive community - can add friends to motivate each other using web app or in community centers 		
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9	Reminder strategies	<ul style="list-style-type: none"> • Calling them on a regular basis and visiting them weekly or fortnightly • Tally sheet, mobile applications, pamphlets, SMS reminders or WhatsApp reminders • Using videos to show exercise steps and giving the same material for home practice • Auditory - use voice recording during the exercise session so that the patient can use the same tapes at home during practice • Alarms/music clips to indicate the time to switch between exercises • Technology - sending small surveys about feedback, information, some scientific literature, and progress card • Daily logs - either electronic or paper-pencil to track mood, exercise, food intake, sleep, social engagement, and grooming activities • Audio – alarms to orient patient to engage in tasks and taking medications. • Weekly reviewing the exercise log • Cues/prompts such as sticky notes in the patients' homes • Follow-up phone calls from the health care professionals • Visible wall posters on exercises 	Exercise therapist (Physiotherapist, Occupational therapists, Physiatrist, Stroke nurse)	Patient, caregiver