

BACKGROUND

Home programs are a set of exercises or activities provided by a rehabilitation professional to a patient to complete at home without a therapist. Home programs may include but not limited to range of motion exercises, resistance training, home modification, energy conservation techniques, and many more. Home programs are commonly prescribed to patients prior to discharge from inpatient rehabilitation to maintain upper extremity recovery. Up to 65% of stroke survivors report upper extremity hemiparesis six months post-stroke. Only 30.7% of stroke survivors receive outpatient services (Brown and Fichter 2017). Occupation-based interventions include daily activities, leisure or social participation, and meaningful task which patients directly select. (Kim & Park, 2019). Systematic reviews report occupation-based interventions is more effective in improving bilateral upper extremity function (Kim & Park, 2019). Adherence to home programs is low among older people because of low self-efficacy, low motivation, depression, lack of interest, fear of falling, and low expectations. (Room & Hannik, 2017). According to the World Health Organization (WHO), adherence is defined as “the extent to which a person’s behavior – taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider”. Developing occupation-based home programs with strategies to support adherence is important for occupational practitioners to ensure improvement with upper extremity function.

PROGRAM DETAILS

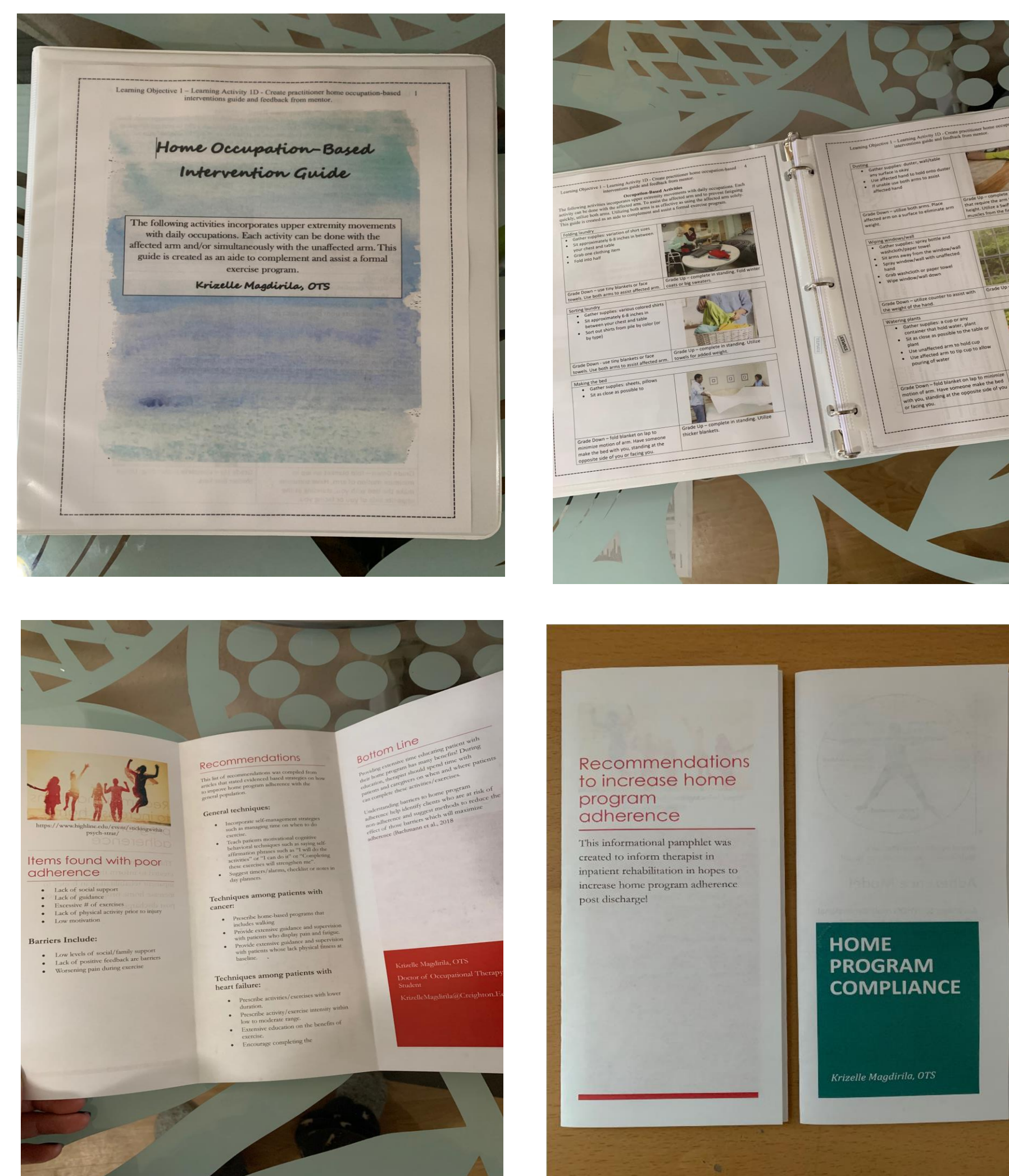
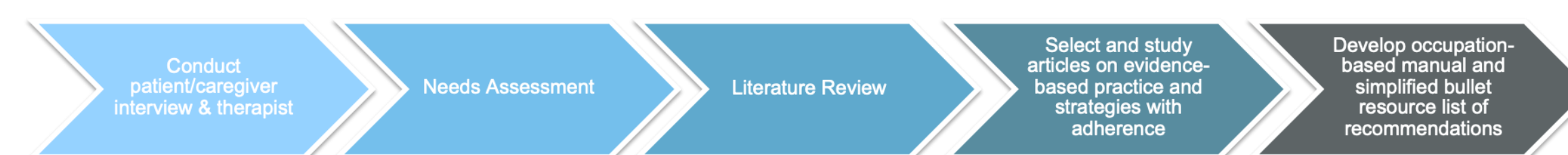
The occupation-based home program complements current home programs such as HEP2go (home exercise program website) and other home exercise programs. Activities on the home program are based on evidence-based practice movements and supported with strategies to support adherence. Home program includes resource on how patients and caregivers can safely handle the hemiparetic arm and activities that can be performed prior to active movement of the arm. Activities/exercises on the home program can be implemented anywhere at no cost, easily obtainable, and integrated into daily routine.

PROJECT FOCUS

To develop an upper extremity home occupation-based program supported by evidenced based practice. To develop evidence-based strategies to promote adherence with home programs with stroke survivors who are discharged from inpatient rehabilitation.

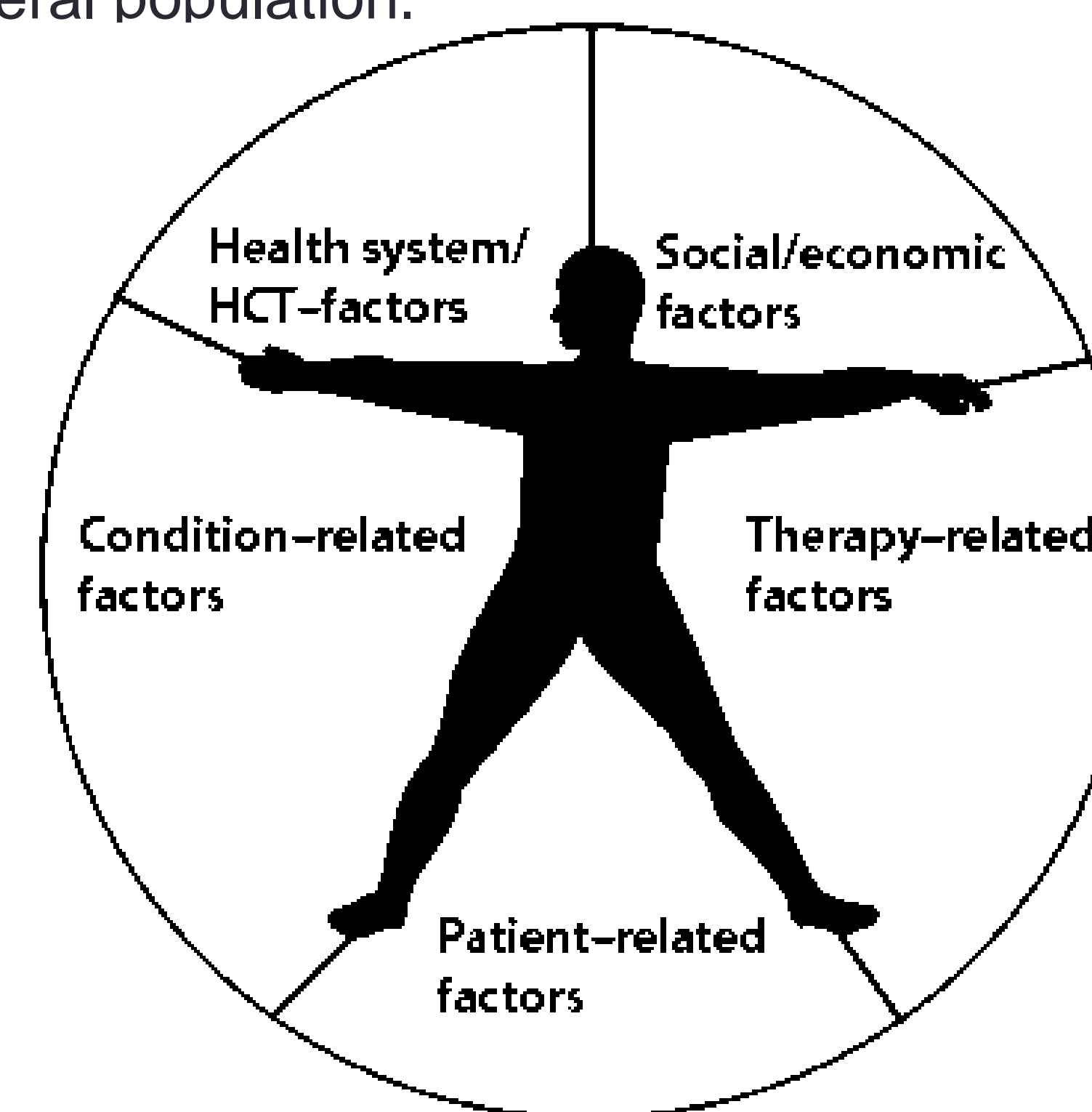
METHODS

- Phase I:
 - Interviewed 5 Occupational Therapist at Encompass Health Rehabilitation Hospital of Desert Canyon on commonly prescribed exercise.
 - Completed literature matrix on evidence-based practice for upper extremity
- Phase II:
 - Developed occupation-based manual.
 - Designed handouts with occupation-based activities
- Phase II:
 - Completed literature matrix on strategies/models commonly used to improve home program adherence/compliance.
 - Ten article were analyzed for increasing and barriers regarding home program adherence.
 - Synthesized findings and develop a simplified bulleted handout with recommendations on how to increase home program compliance based on evidence found on literature matrix.
- Phase III:
 - Presented findings to therapists.



RESULTS

- Developed an occupation-based home program comprised of 5 sections
- Curriculum comprised of:
 - 1 resource sheet on how to protect arm in rest and in motion
 - 1 resource sheet on movements to perform before active movement of arm
 - 1 resource sheet on with 5 hand specific activities
 - 10 occupation-based activities with bullet point activity instruction
 - 1 resource sheet on how to safely handle the affected arm
 - 1 daily log sheet to cross out completion of activities completed
- Each activity included a short description on where the activity can be completed; sitting or standing
- Each activity included 2 methods on how each activity can be graded up and down
- Each activity included 1-3 optional equipment to use
- A total of 10 articles were analyzed for increasing home program adherence
- Identified factors associated with non-adherence were poor guidance, amount of exercises prescribed, motivation, self-efficacy
- Identified recommendations associated with improved adherence:
 - Care giver education
 - Available log sheet
 - Limit activity/exercise to no more than 4
 - Address motivation and self-efficacy
 - Incorporation of activity with daily routine (Example: Watching TV, after breakfast)
 - Encourage family to perform activities with the patient
- Developed a simplified bullet handout with recommendations on improving adherence specifically among stroke population and among the general population.



BOTTOM LINE FOR OT

- Home program is a key component to maintaining upper extremity progress after discharge as it is the bridge in between discharge from inpatient rehabilitation onto the next plan of care (outpatient, skilled nursing facility, home health etc.)
- Occupational therapist should continuously advocate for occupation-based activities as it has better generalization and transfer of learning which increases adherence (Weinstock-Zlotnick et al., 2018)
- Occupational therapist should spend extensive time educating patients with their home program when care givers are present
- Understanding barriers to home program adherence help identify clients who are at risk of non-adherence and suggest methods to reduce the effect of those barriers which will maximize adherence (Bachmann et al., 2018)
- Occupational therapists should spend time on selecting to find the time to incorporate these activities and when and where patients can perform these activities/exercises
- During education and when discharged, encourage family and/or caregivers to perform the activities/exercises with the patient.
- Limit activity/exercises/recommendation up to 4 especially when the movement is complex.
- When compiling a home program, include instructions on movements patients can perform before full recovery (before full active movement of hand/arm) and ways to grade up when they gain full movement and motion
- Include a daily log sheet with their activities/exercises are printed so patients can easily cross out what they have accomplished.

REFERENCES

Bachmann, Caroline, Oesch, Peter, & Bachmann, Stefan. (2018). Recommendations for Improving Adherence to Home-Based Exercise: A Systematic Review. *Physikalische Medizin, Rehabilitationsmedizin, Kurortmedizin*, 28(1), 20-31.

Donoso Brown, E., & Fichter, R. (2017). Home programs for upper extremity recovery post-stroke: A survey of occupational therapy practitioners. *Topics in Stroke Rehabilitation*, 24(8), 573-578.

Kim, S., & Park, J. (2019). The Effect of Occupation-Based Bilateral Upper Extremity Training in a Medical Setting for Stroke Patients: A Single-Blinded, Pilot Randomized Controlled Trial. *Journal of Stroke and Cerebrovascular Diseases*, 28(12), 104335.

Room, J., Hannink, E., Dawes, H., & Barker, K. (2017). What interventions are used to improve exercise adherence in older people and what behavioural techniques are they based on? A systematic review. *BMJ Open*, 7(12), E019221.

Skubik-Peplaski, Camille, Carrico, Cheryl, Nichols, Laurel, Chelette, Kenneth, & Sawaki, Lumy. (2012). Behavioral, neurophysiology, and descriptive changes after occupation-based intervention.(Brief Report)(Report). *AJOT: American Journal of Occupational Therapy*, 66(6), E107.

Weinstock-Zlotnick, G., & Mehta, S. (2019). A systematic review of the benefits of occupation-based intervention for patients with upper extremity musculoskeletal disorders. *Journal of Hand Therapy*, 32(2), 141-152.

World Health Organization. (2001). *Adherence to long term therapist* [PDF file]. Retrieved from https://www.who.int/chp/knowledge/publications/adherence_Section1.pdf