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Barriers to Exercise and Physical Activity - Insight from the Rural Practitioner

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Barriers to Exercise and Physical Activity – Insight from the Rural Practitioner

An Honors Thesis submitted in partial fulfillment of the requirements for Honors in the *Department of Health Sciences and Kinesiology*

By

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ABSTRACT

Sedentary lifestyles are a growing public health concern. Furthermore, many rural Americans lack adequate access to healthcare resources. When healthcare is sought, the patient-practitioner interactions may serve to influence the patient's lifestyle choices. The practitioners' exercise and physical activity habits may shape the effectiveness of the patient-practitioners interaction. Here, we explored the potential barriers to exercise and physical activity (PA) in licensed physical and occupational therapists. In addition, we aimed to describe barriers to exercise and PA in individuals with a history of stroke from the perspective of the practitioner. Lastly, how current exercise and physical activity habits influence their patient interactions. The top reported barriers from practitioners were found to be a lack of time, energy, and motivation. The practitioner's weekly physical activity habits were found to meet the ACSM recommendations (150 mins of moderate-intensity physical activity and 60 mins of vigorous-intensity physical activity per week) for vigorous-intensity physical activity (*M*= 88.57 mins, *SD*= 126.25 mins) but not moderate-intensity physical activity (*M*= 84.28 mins, *SD*=55.33 mins). The most prominent barriers seen in individuals with a history of stroke were found to be energy level, transportation concerns, and low self-efficacy. This survey enables us to gain a better understanding of what may further aid the adherence to exercise and physical activity by evaluating the most reported barriers. This study also serves to display the importance of the practitioner-patient interactions and influence during and after treatment.

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I am appreciative of my thesis mentor and professor, Dr. Nick J. Siekirk, and the amount of time he devoted to helping me through this process. His expertise in research, professionalism, thoroughness in helping to develop the research framework, and efforts in the recruitment aspect were much appreciated throughout the development of this project.

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Introduction

Exercise and physical activity are concepts of health promotion that are tremendously important for the public to have knowledge of and access to participate in. Recent evidence by Lerma et al. (2020) demonstrated a relationship between inactivity and poor health as well as inactivity and all-cause mortality. As a proactive vehicle to offset an age-related decline in the body and mind (Bademli et al., 2019), exercise and physical activity should be regularly implemented and accessible to every individual. However, barriers in health may often prevent someone from easily doing so, and healthcare providers play an important role as an aide in their treatment to promote an active lifestyle. Those with chronic conditions can especially benefit from further education and ways to implement physical activity throughout their recovery process. The tendency of exercise to improve physical function and optimize overall health may further prevent health risks and conditions in the future as well. In aging adults, risks and injuries related to falling can be due to impaired balance, gait, and lack of muscle strength, which can all be improved or reduced by an increase in physical activity (Miyawaki et al. 2017). Therefore, the way healthcare providers portray information regarding physical activity and provide support both physically and mentally can impact their recovery route and activity level moving forward. The influence of health behaviors of physical therapists has been evaluated in previous research done by Black et al. (2016), but they did not consider the views practitioners may have regarding what may prevent them from participating in regular physical activity.

A stroke is an example of a chronic condition in which survivors experience similar improvements when provided the proper support from physical therapists,

occupational therapists, and their caretakers to partake in physical activity in a safe manner. Due to the long-term difficulties experienced after a stroke, it can become extremely difficult for someone to relearn and regain enough strength for proper gait and physical activity. A new stroke occurs in the United States every 40 seconds, so clinicians regularly treat stroke patients, but each stroke appears differently (Tadi & Lui, 2021). Patients see and rely on many clinicians to support and guide them through relearning how to function under any long-term implications the cerebrovascular event has (Chohan et al. 2019).

The support from healthcare professionals may last for the recovery period in which they are being treated or only for the duration of their treatment sessions. Therefore, clinicians need to provide patients with outside resources that their patients are comfortable and knowledgeable about using on their own when they are no longer being treated. Resources may be available within the community or given to patients that are personally designed for assisting them in daily activities and exercise with proper precautions. However, whether the resources given to a patient are sufficient is on an individual basis, and it is important to know how clinicians perceive their given resources to alleviate the barriers stroke patients may still encounter. While exercise may be advocated for from a health professional's perspective, proper resources to do so may be lacking in Georgia and some of the rural communities in which clinicians were interviewed.

Many barriers and facilitators may contribute to one's functioning following treatment from a healthcare professional. The education from a healthcare professional a patient receives regarding how they may function in a manner that is safe, practical, and

enjoyable is a major contributing factor regarding how one functions post-treatment. This can be either a barrier or a facilitator based on the amount of information given regarding safe functioning without the constant supervision of their healthcare provider. Desveaux et al. (2016) examined several of these factors in a survey comparing the attitudes of individuals with chronic disease to healthcare professionals on motivation levels, exercise confidence, and support from their healthcare provider. Cost of activities and symptoms of distress were found to be barriers among post-stroke patients which was consistent with previous research. However, a facilitator in treatment was community-based exercise programs for individuals with chronic diseases following rehabilitation. Community-based exercise can highly influence participation and adherence to patients' physical activity being that this tends to be an encouraging and social way of doing so. However, it is unclear how prominent community resources are and what kind are offered within an area since this is highly variable.

Resources that are given to a patient such as post-stroke care, assistive technology and assistance with the use of it, instructions on how to exercise, and community resources to utilize for exercise are crucial in many ways. This can influence one's safety in mobility, support from a caregiver, and integration into the community which may encourage social interaction and further education on physical activity. Kitzman et al. (2017) included a program assessment within a rural community in southeastern Kentucky for stroke patients transitioning back to their community in which the following factors were evaluated: compliance with resources, the types of resources accessed by patients, and which patients were readmitted during the duration of the study. Beneficial aspects of this program were support groups for the education of stroke

survivors as well as caregivers. They also discussed factors that may act as barriers during rehabilitation such as inadequate monitoring of patients in terms of risk prevention. Check-ups and communication between caregivers are especially important within a rural community where transportation and lack of gas money may act as barriers to visiting clinicians regularly. Rural areas also tend to have fewer healthcare resources, and this may play a role as a barrier to treatment for those undergoing rehabilitation for a stroke (Daniels et al., 2007). These communities may have a differing selection of resources for physical activity in comparison to suburban communities, and this should be considered from the perspective of discharged patients that may not be as knowledgeable about exercising on their own.

In an age of rapidly developing technology, many devices are being created but also becoming increasingly complex which tends to put those with a disability at a disadvantage. These devices can be extremely useful; however, they are known to best facilitate progress when patients are properly educated on how and when to incorporate them into their rehabilitation (Standen et al. 2015). At-home care or rehabilitation is largely where these devices are known to be used the most out of convenience or normalcy for the patient adjusting to their dependency. This is when it is important to consider that ATs should be designed to be used by the patient or caregiver without total supervision of a healthcare specialist, or it should be guaranteed that the healthcare provider gives a proper demonstration on the utilization of any device provided post-treatment. Assistive devices are known to increase independence and social inclusion. Therefore, if a patient is more comfortable with the use of a device for activities such as walking, talking, or hearing, they may partake in more activities in the community with

the consideration that they are suitable for them to participate. However, due to a more limited population, rural areas may face more barriers when it comes to financial funding for assistive technology.

The purpose of this study is to examine how the current exercise and physical activity of local occupational (OT) and physical therapists (PT) may influence patient recommendations. It will evaluate potential barriers to exercise and physical activity from the perception of rural practitioners. The survey will also examine the average amount of exercise and physical activity Georgia physical and occupational therapists obtain every week. Furthermore, through these findings, the study will explore how these habits may influence practitioner-patient interactions. The surveyed Georgia practitioners will also be asked for their insight regarding the same potential barriers regarding how prominent each may be in the lives of the patients they treat with a history of stroke.

Methods

Participant Recruitment

Participants were recruited from clinical sites that have established a Memorandum of Understanding (MOU) with the Waters College of Health Professions for students to perform experience-based internships or practicums. The contact list was initially screened for sites that employed PTs and OTs. Pediatric facilities were not contacted. A total of (n = 70) clinical sites were contacted by email.

Inclusion Criteria

Interested participants were instructed to contact the research team. Interested participants were screened by researchers. To qualify for the study, participants had to hold a valid Georgia license to practice as an Occupation Therapist (OT) or Physical

therapist (PT) and currently be employed or practicing within the state. Lastly, participants were to have direct patient experience with at least (n = 1) individual with a history of stroke in the last year).

Practitioners meeting inclusion criteria were sent a personalized Qualtrics link that contained both the informed consent and survey. This study was approved by the University's Institutional Review Board.

Survey Format

The survey was constructed on the Qualtrics XM platform (SAP, Provo, Utah, United States) and contained (n = 71) questions (Appendix E). The survey was divided into (n = 6) sections, and it was modeled after the survey designed by Desveaux et al. (2016) in which individuals with chronic disease were interviewed regarding the perceived impact of barriers to their physical activity levels. Qualtrics estimated the completion time to be 23.8 minutes. After providing descriptive data (e.g., years of experience, academic and professional qualifications), participants were asked to examine their lifestyle habits and how their exercise and physical activity may influence patient interaction. The next section of the survey asked participants to examine if and how assistive technology was integrated into their practice or recommendations after discharge. The survey's last sections asked about community resources for patients' post-stroke, and, from the practitioner's perspective, perceived barriers to exercise and physical activity in individuals with a history of stroke.

The survey consisted of 5-point Likert scales, sliding questions, and open-ended written responses. Survey questions were designed to retain a balanced tone to reduce perceived bias or agendas of the research. The survey was designed to balance the

directionality of responses. A sliding scale was also used for participants to rank certain factors on their influence from 0% to 100% (i.e., 0% = this barrier does not influence my ability to be physically active; 50%= the barrier has a moderate influence on my ability to be physically active; 100%= the barrier is clear and heavily influences my ability to be physically active).

Statistical Analysis

Descriptive statistics were calculated in Microsoft Excel (Albuquerque, New Mexico, USA). Likert scale responses were evaluated for Median (*Mdn*) and Standard Error (*SE*). Whereas, sliding scale responses were evaluated and reported as mean (*M*), range (i.e., minimum, and maximum), and standard deviation (*SD*).

Results

Out of 70 practitioners that were contacted, 10% (n = 15) expressed interest, and 47% (n = 7) of practitioners who expressed interest completed the survey. Seven participants completed the survey (n = 7). The mean experience among participants was *M* = 10.43 years (*SD* = 6.60) and ranged from 5 to 20 years of experience. Two of the seven participants were practicing within rural counties in the state of Georgia (i.e., Greene and Camden County) (Appendix F). Academic and professional qualifications are outlined in Table 1.

Terminal Degree	N	Certifications	N
M.S in Physical Therapy	1	Neurodevelopmental Treatment	1
Doctor of Physical Therapy	3	Orthopedic Clinical Specialist	1
M.S. in Occupational Therapy	1	Dry Needling	3
M.S. in Clinical Psychology	1		
B.S. in Allied Health and Occupational Therapy	1		

Table 1: Academic and professional qualifications

Exercise and Physical Activity of the Practitioners

The sliding scale survey questions were used to report the participant's feedback regarding barriers to exercise and physical activity by providing a numerical value (i.e., 0% = this barrier does not influence my ability to be physically active; 50%= the barrier has a moderate influence on my ability to be physically active; 100%= the barrier is clear and heavily influences my ability to be physically active). Participants reported the top barriers to exercise and physical activity to be insufficient time (M = 47.71, SD = 31.81), lack of self-motivation (M = 40.71, SD = 26.17), perceived energy levels (M = 40.71, SD = 28.16), and professional obligations (M = 48.43, SD = 35.73). Whereas the weakest reported barriers to exercise, and physical activity were environmental resources (e.g., parks, trials) (M = 3.57, SD = 8.58), financial cost (M = 1.43, SD = 3.36), availability of facilities (M = 0.14, SD = 0.38), and knowledge on how to exercise (M = 0.14, SD = 0.38). The sample reported (M = 84.29 mins, SD = 55.33 mins, *Range* = 90 mins) of weekly vigorous-intensity exercise and (M = 88.57 mins, SD = 126.25 mins, *Range* = 120 mins) of moderate-intensity exercise.

Recommendations according to the American College of Sports Medicine are 150 minutes of moderate-intensity physical activity and 60 minutes of vigorous-intensity physical activity each week.

Practioners' Views and Influence on Patient Interactions

Responses examining how exercise and physical activity influenced interactions with patients is outlined in Figure 1. Responds to how practitioners allocated time to patient education is outlined in Figures 2 and 3.

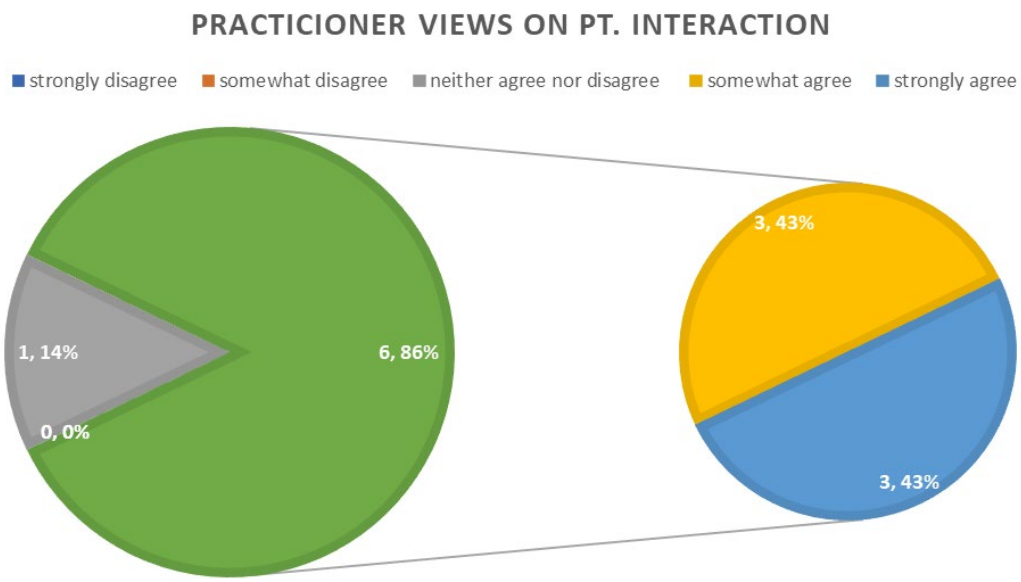

Figure 1: Forty-three percent of participants strongly agreed, 43% of participants somewhat agreed, and 14% of participants neither agreed nor disagreed with the statement "My views on physical activity and exercise influence my interactions with patients or recommendations to patients".

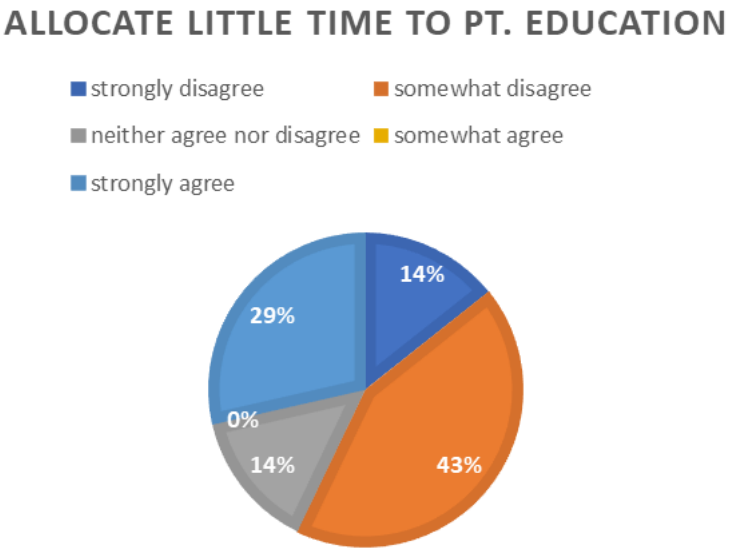

Figure 2: In response to the statement, "I spend little time educating my patients on exercise and physical activity", 14% strongly disagreed, 43% somewhat disagreed, 14% neither agreed nor disagreed, and 29% strongly agreed.

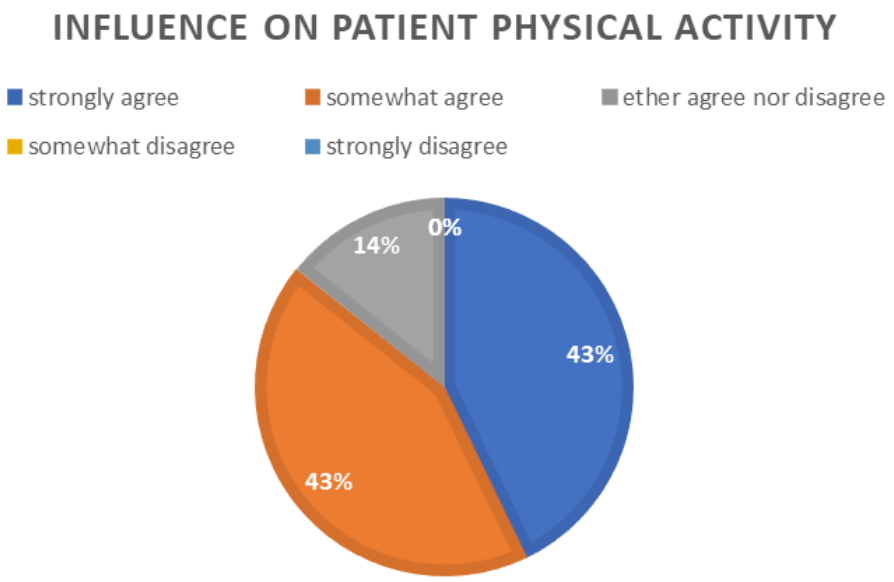

Figure 3: In response to the statement, "I spend little time educating my patients on exercise and physical activity", 14% strongly disagreed, 43% somewhat disagreed, 14% neither agreed nor disagreed, and 29% strongly agreed.

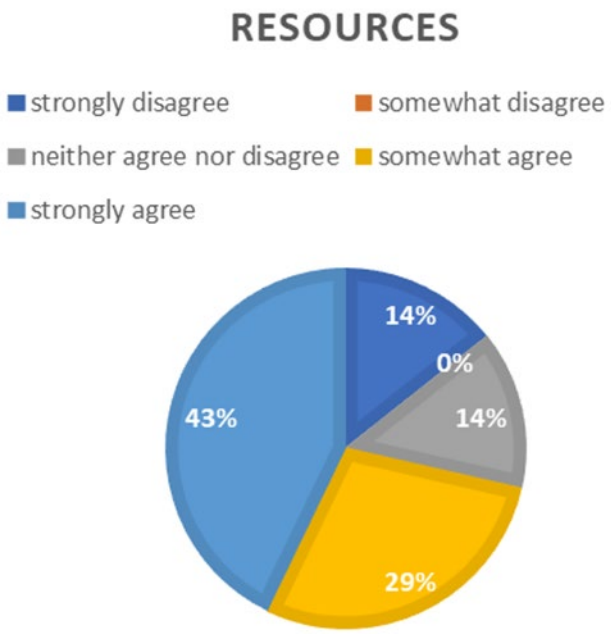

Figure 4: In response to the statement "I provide my patient sufficient resources for the continuation of an exercise program," 29% somewhat agreed, 43% strongly agreed, 14% neither agree nor disagree, and 14% strongly disagreed (Figure 4).

Practitioner's Perspective on Barriers in Stroke

Practitioners reported the strongest barriers to physical activity and exercise in those with history of stroke were energy levels ($M = 73.71$, $SD = 19.78$), transportation

concerns (*M* = 72.14, *SD* = 20.57), and low self-efficacy or knowledge on how to properly exercise (*M* = 66.71, *SD* = 22.24). The least reported barriers were insufficient time (*M* = 7.29, *SD* = 12.45), occupational obligations (*M* = 21.14, SD = 24.13), and fear of being injured (*M* = 9.83, *SD* = 9.84). Figure 4 provides insight to whether or not practitioners provide educational resources regarding exercise post discharge.

Discussion

This descriptive investigation surveyed licensed OTs and PTs in the state of Georgia. The strongest self-reported barriers to exercise and physical activity were time, energy, professional obligations, and lack of self-motivation. Contrary to other factors expected to be perceived as a barrier, available resources and facilities were not found to be an issue in the perceptions of the practitioners. In the current exercise routines of the practitioners surveyed, the ACSM recommendations of a minimum of 60 minutes of moderate physical activity per week were not met ("The American College of Sports Medicine"). However, self-reported vigorous physical activity was met. However, the sample's average time may have been influenced by the 360 minutes self-reported by Participant 7. The sample seems to perceive they spend time educating their patients. The perception that their views influence their patient's exercise and physical activity was agreed with overall among participants. Previous research also showed that physical therapists agreed they have a direct role and influence in prescribing exercise to their patients (Barton et al. 2021). The study by Barton et al. (2021) also concluded that many physical therapists lack proper knowledge and training to provide physical activity recommendations, but those same conclusions in this study were not drawn. The top perceived barriers to exercise and physical activity in individuals with a history of stroke

in Georgia from the perspective of practitioners were energy levels, transportation concerns, and low self-efficacy (lack of confidence in the ability to be physically active). Previous research in a study done by Desveaux et al. (2016) differed from these results showing how the patient's fear of injury, lack of access to facilities, and availability of physical activity programs were the most widely reported barriers.

Delimitations of the Study

The current small sample size was (n = 7). As a result, the descriptive findings of this study should be evaluated with caution. Out of the seven participants, there were also two from rural counties which was a small sample size to generalize about regarding the geographic location in comparison to the other Georgia counties.

Conclusion

Practitioners reported lack of time, energy, and self-motivation as the most prominent barriers to exercise and physical activity. Ways that these barriers may be helped are seeking more support from friends and family to participate in physical activity, finding new forms of physical activity that may be more enjoyable or easier to adhere to, and prioritizing being available for exercise within their daily schedule. Practitioners also indicated that they agreed that their views and physical activity habits influence the interactions they have with their patients. Self-efficacy was also seen to be reported as being higher in practitioners rather than cerebrovascular accident (CVA) survivors since this was seen as a top-reported barrier in CVA survivors but not in practitioners. In relation to the rural aspect of the research, the open-ended portion of the survey indicated that one of the survey respondents did not know of any community

resources suitable for chronic stroke survivors. This was significant displaying how restricted the geographic area of the practice is as well as the interactions between that practitioner and patient in terms of their distribution of resources. Overall, practitioners are highly influential in terms of facilitating the exercise and physical activity habits of their patients throughout the rehabilitative process, and this should be highly considered when seeking professional advice and assistance from the perspective of older adults.

Future Research

Descriptive analysis sets the foundation for pursuing stronger scientific designs. Different populations of practitioners may be surveyed in different states to compare their perceptions to those from other areas. The likelihood of more physical and occupational therapists participating may be increased by being delivered during a seminar in which they are able to partake in a physical activity class or learn more helpful advice in the administration of physical activity education to their patients. Participation throughout this survey was increased at times when it was spread throughout colleagues within a practice, so this may influence the motivational factors that increased the likelihood of participation. It also may be helpful to survey a population of CVA survivors regarding their perceptions of barriers to exercise and physical activity as well which can then be compared to the insight from the practitioner. This could better help understand the practitioner-patient relationship and where there may be information or resources lacking where they are needed.

WORKS CITED

American Heart Association Recommendations for Physical Activity in Adults and Kids. (2021, August 4). Www.Heart.Org. https://www.heart.org/en/healthy-living/fitness/fitness-basics/aha-recs-for-physical-activity-in-adults
Assistive Technology Act of 1998: Report (to accompany S. 2432). (1998). Washington, D.C.: U.S. G.P.O.

Barton, C. J., King, M. G., Dascombe, B., Taylor, N. F., de Oliveira Silva, D., Holden, S., ... & Shields, N. (2021). Many physiotherapists lack preparedness to prescribe physical activity and exercise to people with musculoskeletal pain: A multi-national survey. *Physical Therapy in Sport*, *49*, 98-105.

Bademli, K., Lok, N., Canbaz, M., & Lok, S. (2019). Effects of Physical Activity Program on cognitive function and sleep quality in elderly with mild cognitive impairment: A randomized controlled trial.*Perspectives in Psychiatric Care,* 55(3), 401–408.

Berry, S. M. . Ms. R., Wilson, B. R. A., Ph.D., & Fallon, L. F. J. . M. P. M. (2019). Strokes. *Magill's Medical Guide (Online Edition)*.

Black B, Ingman M, Janes J. Physical Therapists' Role in Health Promotion as Perceived by the Patient: Descriptive Survey. Phys Ther. 2016 Oct;96(10):1588-1596. doi: 10.2522/ptj.20140383. Epub 2016 Apr 14. PMID: 27081205.10.2522/ptj.20110037. Epub 2012 Jul 19. PMID: 22822236.

Chohan, S. A., Venkatesh, P. K., & How, C. H. (2019). Long-term complications of stroke and secondary prevention: an overview for primary care physicians. *Singapore medical journal*, *60*(12), 616–620. https://doi.org/10.11622/smedj.2019158

Desveaux, L., Goldstein, R., Mathur, S., & Brooks, D. (2016). Barriers to Physical Activity Following Rehabilitation: Perspectives of Older Adults with Chronic Disease. Journal of Aging & Physical Activity, 24(2), 223–233.

Joy, K. (2018, October 2). *Ischemic vs Hemorrhagic Stroke: The Difference Between Types of Strokes*. Michigan Health. https://healthblog.uofmhealth.org/ischemic-vs-hemorrhagic-stroke-perfcon

Kitzman, P., Hudson, K., Sylvia, V., Feltner, F., & Lovins, J. (2017). Care Coordination for Community Transitions for Individuals Post-stroke Returning to Low-Resource Rural Communities. *Journal of Community Health*, *42*(3), 565–572. https://doi.org/10.1007/s10900-016-0289-0

Langan, J., Subryan, H., Nwogu, I., & Cavuoto, L. (2018). Reported use of technology in stroke rehabilitation by physical and occupational therapists. Disability & Rehabilitation: Assistive Technology, 13(7), 641–647. https://doi.org/10.1080/17483107.2017.1362043

Lerma, N. L., Cho, C. C., Swartz, A. M., Maeda, H., Cho, Y., & Strath, S. J. (2020). Acceptance and feasibility of seated elliptical pedaling to replace sedentary behavior in older adults. *Journal of Aging and Physical Activity,* 28(6), 844– 853

Miyawaki, Christina E.; Bouldin, E. D.; Kumar, G. S.; Mcguire, L. C. (2017). *Associations between physical activity and cognitive functioning among middle-*

aged and older adults. The journal of nutrition, health & aging, 21(6), 637–647. doi:10.1007/s12603-016-0835-6.

Standen, P. J., Threapleton, K., Connell, L., Richardson, A., Brown, D. J., Battersby, S., Sutton, C. J., & Platts, F. (2015). Patients' Use of a Home-Based Virtual Reality System to Provide Rehabilitation of the Upper Limb Following Stroke. Physical Therapy, 95(3), 350–359. https://doi.org/10.2522/ptj.20130564

Parker, J., Mawson, S., Mountain, G., Nasr, N., Davies, R., & Zheng, H. (2014). The provision of feedback through computer-based technology to promote self-managed post-stroke rehabilitation in the home. DISABILITY AND REHABILITATION: ASSISTIVE TECHNOLOGY, 6, 529.

Tadi P, Lui F. Acute Stroke. (2021). In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK535369/

Swathi Kiran, "What Is the Nature of Poststroke Language Recovery and Reorganization?", *International Scholarly Research Notices*, vol. 2012, Article ID 786872, 13 pages, 2012. https://doi.org/10.5402/2012/786872

Villareal, D. T., Aguirre, L., Gurney, A. B., Waters, D. L., Sinacore, D. R., Colombo, E., Armamento-Villareal, R., & Qualls, C. (2017). Aerobic or Resistance Exercise, or Both, in Dieting Obese Older Adults. *The New England journal of medicine*, *376*(20), 1943–1955. https://doi.org/10.1056/NEJMoa1616338

APPENDIX A

LITERATURE REVIEW

Physical activity

Provider-patient influence

Kava, C. M., Fishleder, S., Steinman, L., Petrescu-Prahova, M., Schrodt, L., & Harris, J. R. (2019). Provider–patient communication and involvement in physical activity programs among patients receiving physical therapy services: A qualitative study. *Journal of Applied Gerontology*, *39*(9), 1000–1007. https://doi.org/10.1177/0733464819847402

Physical therapy providers play a major role in the influence of their patient's physical activity. Kava et al. (2019) explored how these interactions may act as a barrier or facilitator to a patient's involvement in PA programs. Barriers included low instrumental support, physical limitations, lack of motivation, lack of confidence, or lack of knowledge regarding the options for exercise programs. Facilitators were identified as emotional support from loved ones and sufficient information provided to a patient from the provider at discharge. It was found that the healthcare provider can influence how a patient may involve themselves with physical activity programs moving forward.

Health behaviors and attitudes of physical therapists

Black B, Ingman M, Janes J. Physical Therapists' Role in Health Promotion as Perceived by the Patient: Descriptive Survey. Phys Ther. 2016 Oct;96(10):1588-1596. doi: 10.2522/ptj.20140383. Epub 2016 Apr 14. PMID: 27081205.10.2522/ptj.20110037. Epub 2012 Jul 19. PMID: 22822236.

It is important to evaluate how physical therapists and healthcare professionals communicate with their patients regarding healthy habits such as physical activity and nutrition. This study by Black et al. (2016) evaluated the perspectives of patients on how health behaviors are discussed and whether they look to them as role models for these

lifestyle behaviors. It was concluded that patients found this discussion both appropriate and important for them to seek help from a provider and have a positive influence on their habits moving forward.

Community-Based Exercise Programs

Lau, C., Chitussi, D., Elliot, S., Giannone, J., McMahon, M.-K., Sibley, K. M., Tee, A., Matthews, J., & Salbach, N. M. (2016). Facilitating Community-Based Exercise for People With Stroke: Cross-Sectional e-Survey of Physical Therapist Practice and Perceived Needs. Physical Therapy, 96(4), 469–478. https://doi.org/10.2522/ptj.20150117

Community-based exercise programs are an important opportunity for patients being treated for chronic conditions such as a stroke, and an important factor in the education that physical therapists provide to their patients is informing them about these programs. Lau et al. (2016) surveyed physical therapists on whether they provide information regarding community-based exercise programs within the communities of their patients, and a high majority responded saying they do provide resources. However, it was found to not be as consistently provided when evaluating the number of physical therapists surveyed and considering that those who give these resources to patients may have been more likely to participate in the survey.

Potential Exercise Barriers After Stroke

Outermans J; Pool J; van de Port I; Bakers J; Wittink H: What's keeping people after stroke from walking outdoors to become physically active? A qualitative study, using an integrated biomedical and behavioral theory of functioning and disability. (BMC Neurology)

Social influence, self-efficacy, and attitude towards physical activity is important to address in interventions. Improving the patient's ability to walk and creating more opportunities for them to be active are both important considerations throughout

treatment to improve exercise adherence. This study by Outermans et al. (2016) discussed how some participants felt less urgency to leave their homes if they lived alone or did not have other responsibilities to attend to. It stressed the importance of considering behavioral, social, environmental, and physical aspects of walking outdoors after stroke when further exploring this topic.

Assistive Technology

Cooney, D., Merkh, B., & Tender, K. (2019). Stroke Rehabilitation from "Head to Toe": The integration of technology in therapeutic interventions following a stroke can maximize patient motivation and progress. Rehab Management: The Interdisciplinary Journal of Rehabilitation, 32(7), 28–31

Technology has been so useful in that it is heavily incorporated into the field of rehabilitation as well as which technologies are commonly seen regarding different areas of the body typically focused on in post-stroke recovery. It particularly highlights Kessler Institute for Rehabilitation in New Jersey as far as the devices typically used in their practice. Pertaining to communication and swallowing therapy, they use surface electromyography biofeedback to produce visual monitoring and guidance. Separate exercises are also prescribed to improve coordination and strength. Their recovery processes also incorporate an integrated therapy system heavily used for visual-related reaction time, processing, and coordination. Systems of electrical stimulation are also useful in terms of upper extremity work and improving pinching, grasping, and hand functionality activities. Any technology revisiting repetitive activities may help the brain best relearn motor movements and functionality. Overall, this shows the variety of equipment that can be used by patients and how important which kind is used is in terms of motivation and interest. Technology has functioned as more of a facilitator than a barrier in the progression it has displayed in a therapeutic setting.

Langan, J., Subryan, H., Nwogu, I., & Cavuoto, L. (2018). Reported use of technology in stroke rehabilitation by physical and occupational therapists. Disability & Rehabilitation: Assistive Technology, 13(7), 641–647. https://doi.org/10.1080/17483107.2017.1362043

While technology is used in stroke rehabilitation, it is important to consider the continuation of its use as a guide for the patient after inpatient services under the supervision of a healthcare professional. Langan et al. (2018) surveyed a wide range of specialists across the U.S to gain information on their personal preferences and prescriptions of assistive technology focused on the rehabilitation programs of their stroke patients. It examines whether more conventional equipment is more effective in rehabilitation rather than assistive technology and for what reason. Research shows that technology used in the stroke rehabilitative process can not only be more entertaining for the patient to use but better meet needs for modification and assistance once a patient is no longer having full-time care. It presents reasoning to produce technology that is better utilized in a clinical setting and easily used when someone is adopting new rehabilitative practices. They also discussed how implementing these new devices into the field is more difficult than simple recommendations since it can be a matter of financial reasons, resources, experience managing the devices, and confidence in prescribing them. This study also discussed how computer technology can be progressive in terms of quantifying rehabilitation to visibly see objective performance or measures in phases of recovery. This concludes that assistive technology can be useful while continuing rehab in a home program after inpatient care, and it has great potential for an increase in clinical use, especially during the transition to home care. Moving forward, it is also important to acknowledge any barriers technology can have and ways to improve the devices with these improvements in mind.

Cooney, D., Merkh, B., & Tender, K. (2019). Stroke Rehabilitation from “Head to Toe”: The integration of technology in therapeutic interventions following stroke can maximize patient motivation and progress. Rehab Management: The Interdisciplinary Journal of Rehabilitation, 32(7), 28–31

This article provides supportive reasoning as to why technology has been so useful and incorporated into the field of rehabilitation as well as which technologies are commonly seen regarding different areas of the body typically focused on in post-stroke recovery. It particularly highlights Kessler Institute for Rehabilitation in New Jersey as far as the devices typically used in their practice. Pertaining to communication and swallowing therapy, they use surface electromyography biofeedback to produce visual monitoring and guidance. Separate exercises are also prescribed to improve coordination and strength. Their recovery processes also incorporate an integrated therapy system heavily used for visual-related reaction time, processing, and coordination. Systems of electrical stimulation are also useful in terms of upper extremity work and improving pinching, grasping, and hand functionality activities. Any technology revisiting repetitive activities may help the brain best relearn motor movements and functionality. This overall shows the variety of equipment that can be used by patients and how important which kind is used is in terms of motivation and interest. Technology has functioned as more of a facilitator than a barrier in the progression it has displayed in a therapeutic setting.

Barriers and Facilitators in Independence

Marcheschi, E., Von Koch, L., Pessah, R. H., & Elf, M. (2018). Home setting after stroke, facilitators and barriers: A systematic literature review. Health & Social Care in the Community, 26(4), e451–e459. https://doi.org/10.1111/hsc.12518

This study analyzes the interaction of stroke survivors in their home setting as well as identifying any barriers or facilitators in their daily living and evaluates how to

address these gaps in knowledge. It was a literature review that incorporated fifteen articles deemed eligible by the Swedish Council on Health Technology Assessment guidelines. One category identified was architectural barriers such as a small or large home layout for transportation purposes, heights patients are unable to reach, visual impairments and judging depth perception, and having handrails around the home. This would go along with interior design barriers if there were any issues with patients having difficulty maneuvering around their home or surrounding. Another category would be factors of noise, lighting, or sound influencing stroke rehabilitation concentration tasks or calming in general. With this being a more narrowed article in terms of where exactly the solutions for assistive device barriers will be oriented, the literature review in this study was not inclusive of reports with technological aids. It was solely based on the environmental barriers that are reported from a home perspective of stroke rehabilitation patients. However, it is highly valuable in examining new perspectives of stroke care and where there may be potential for future contributions as far as where the technology may function as an aid. My research will progress this study in combining the gap of where technology can develop while keeping these considerations in mind.

APPENDIX B- Research Aims

1. Explore potential barriers to exercise and PA in Georgia PT and OTs.
2. Examine the current exercise and PA routines of Georgia PTs and OTs.
3. Explore how current PA and exercise habits shape the practitioner's patient interactions.
4. Investigate perceived barriers to exercise and PA in individuals with history of stroke in Georgia.

APPENDIX C- Significance of the Study

This will help display where resources may be needed both in the healthcare and community aspects of rehabilitation to approach the needs of individuals to maintain an adequate physical activity level. It will also serve to identify how healthcare professionals may further educate themselves or further assist patients in proper and safe methods of physical activity.

APPENDIX D- Definition of Terms

Stroke

A stroke can be described as the cessation or blockage of blood flow to the brain which may result in numerous impairments that are dependent on the area of the brain in which the trauma occurred (Berry, S. M, et al 2019). Strokes may be classified as acute, subacute, or chronic depending on the severity and the period from which the lesion occurred. The acute phase is the first two weeks after the onset of the incident, the second or subacute phase may follow lasting up to 6 months after the onset, and the chronic phase may range from months to the rest of an individual's lifetime (Kiran, 2012). Long-term complications that may follow a stroke include cognitive impairment, involuntary muscle activity, joint pain, and other musculoskeletal and psychosocial effects.

Ischemic vs. Hemorrhagic stroke

Ischemic strokes may be described as a disruption of blood flow within certain regions in the brain. This is the more common type of stroke and there are two major types. A thrombotic stroke is caused when a blood clot forms in an artery leading to the brain, and an embolic stroke is when the clot occurs elsewhere that breaks the artery and travels to the brain (Joy, 2018). Hemorrhagic strokes happen when a weak blood vessel ruptures and bleeds into the brain. This may be identified by a headache or head pain which does not typically occur with an ischemic stroke. These are often more severe, and there are also two different types. An intracerebral hemorrhage is when a weak blood vessel breaks inside the brain, and a subarachnoid hemorrhage is when a weak blood vessel breaks on the surface of the brain.

Moderate-intensity versus vigorous-intensity exercise

Moderate intensity exercise examples may be brisk walking, water aerobics, dancing, gardening, tennis, and biking slower than ten miles per hour. This level of exercise involves your heart beating faster while breathing harder than normal but still being able to talk ("American Heart Association"). Vigorous -intensity exercises tend to require a higher amount of effort without having an ability to talk as easily. Examples of this include hiking uphill, running, swimming laps, aerobic dancing, heavy yard work, tennis, cycling ten miles per hour or faster, or jumping rope.

Aerobic exercise vs. Resistance training

Aerobic exercise serves to help cardiovascular adaptations to increase oxygen consumption without changing the body's strength (Villareal et al., 2017). Resistance exercise improves neuromuscular adaptations to increase the body's strength without affecting peak oxygen consumption.

Assistive Technology

Assistive technology (AT) is any item, piece of equipment, software program, or product system that is used to increase, maintain, or improve the functional capabilities of persons with disabilities (Assistive Technology Act, 1998). The primary function of assistive devices serves to aid patients in motor functions such as communication or swallowing, restoration of vision, upper or lower extremity movement, and partial weight-bearing either during or post-treatment. These devices have become increasingly popular and prominent in use within rehabilitative settings and can incorporate tools suitable for patients' individual development and recovery.

APPENDIX E: Survey Format

Barriers to Exercise and Physical Activity: Insight from the Rural Practitioner

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Start of Block: Informed Consent

IC1 **Informed Consent for Barriers to Exercise and Physical Activity in after Stroke: Insight from the Rural Practitioner**

This project is being conducted by Erin Tillery (B.S. Student) with the support of Kylee West (M.S. student) under the supervision of Dr. Nick J. Siekirk at Georgia Southern University (Center for Rehabilitation and Independent Living - Waters College of Health Professions).

Purpose: The purpose of this study is twofold; 1 - to examine how current exercise and physical activity of local practitioners (OT, OTa, PT, PTa) may influence patient recommendations and 2 - identify barriers to exercise and physical activity in the community's stroke survivors and their practitioners.

Discomfort and Risks: This survey asks you to critically evaluate your skill set and scope of practice.

Procedures: Participation in this research asks you to complete a Qualtrics survey.

Benefits: Participants, through self-reflection, may benefit by identifying barriers to exercise and physical activity. Participants may also identify strengths and limitations of their practice in conjunction with the potential needs of future patients in their practice and within the community. However, it is possible, participants may not directly benefit. The completion of this survey, may, however, benefit future practitioners.

Duration and Time Required: The estimated completion time is 20 - 30 minutes.

Statement of Confidentiality: All information will be treated confidentially. Every attempt will be made to protect your privacy. We are careful to ensure that the information you voluntarily provide to us is as secure as possible; however, you must be aware that transmissions over the Internet cannot be guaranteed to be completely secure. Your confidentiality will be maintained to the degree permitted by the technology being used. You will be subject to the privacy policy of Qualtrics. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which

protect the anonymity of individuals and institutions. The survey is password protected and only accessible to the principal and co-investigators. Your responses will be anonymous and analyzed as part of the sample's data. Preferred email addresses are obtained for distribution of the informed consent; survey and compensation. We will obtain confirmation that you have received the compensation by email.

Future Use of Data: Your completion of the survey serves as your voluntary agreement to allow the anonymous data gathered to be used to satisfy academic requirements (Honors Thesis). Furthermore, this data will be de-identified and may be used for future academic presentations or publications. Deidentified or coded data from this study may be placed in a publicly available repository for study validation and further research. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

Right to Ask Questions: Questions regarding the purpose or procedures of the research should be directed to Dr. Nick J. Siekirk at (912) 478-7401 or nsiekirk@georgiasouthern.edu. This study has been reviewed by the Georgia Southern University Institutional Review Board (IRB) under tracking number H22168 in accordance with Federal regulations.

Compensation: Participants will receive $20 (Emailed delivery of Prepaid Mastercard) after successfully submitting the Qualtrics survey. Participants are required to confirm receipt of compensation by providing electronic signature through DocuSign. If you are an employee of Georgia Southern University, the compensation you receive for participation will be treated as taxable income and therefore taxes will be taken from the total amount. If you are not employed by the University, total payments within one calendar year that exceed $600 will require the University to annually report these payments to the IRS. This may require you to claim the compensation that you receive for participation in this study as taxable income.

Voluntary Participation: Participation in this research study is voluntary. There is no penalty for deciding not to participate in the study. Participants may end participation at any time with or without reasoning. However, participants who do not complete the entire survey are not eligible for compensation.

Mandatory Reporting: There is one exception to confidentiality that we need to make you aware of. In certain research studies, it is our ethical responsibility to report situations of child or elder abuse, child or elder neglect, or any life-threatening situation to appropriate authorities. However, we are not seeking this type of information in our study nor will you be asked questions about these issues.

You must be 18 years of age or older to consent to participate in this research study.

Please select an option below to indicate whether or not you agree to participate in this research:

☐ Yes, I read the terms above and consent to participation in this research
☐ No, I do not consent to participate in this research.

○ Yes (1)

○ No (2)

End of Block: Informed Consent

Start of Block: Practitioner Background

Display This Question:

If Informed Consent for Barriers to Exercise and Physical Activity in after Stroke: Insight from t... = Yes

Background 1 What is your occupation?

○ Physical Therapist Assistant (PTA) (1)

○ Physical Therapy Technician (2)

○ Physical Therapist (PT) (3)

○ Occupational Therapist (OT) (4)

○ Occupational Therapy Assistant (OTA) (5)

○ Not listed above (write in response below) (6)

_____

Background 2 What zip code(s) do you practice?

_____

Background 3 How many years of experience do you have?

_____

Background 4 Please list academic degrees; licenses and applicable certifications.

_____

Background 5 Do you have a degree in Exercise Science (e.g., B.S., B.A., M.S., Ph.D.)?

_____

End of Block: Practitioner Background

Start of Block: Current Practitioner PA and Exercise Habits (Previous 6 months)

LCH1
Consider your weekly routine over the last 6-months.

Please outline whether you agree with the following sentence:

"Over the last 6 months, I have prioritized exercise."

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

LCH2 In the last 6 months, I have found it difficult to exercise regularly.

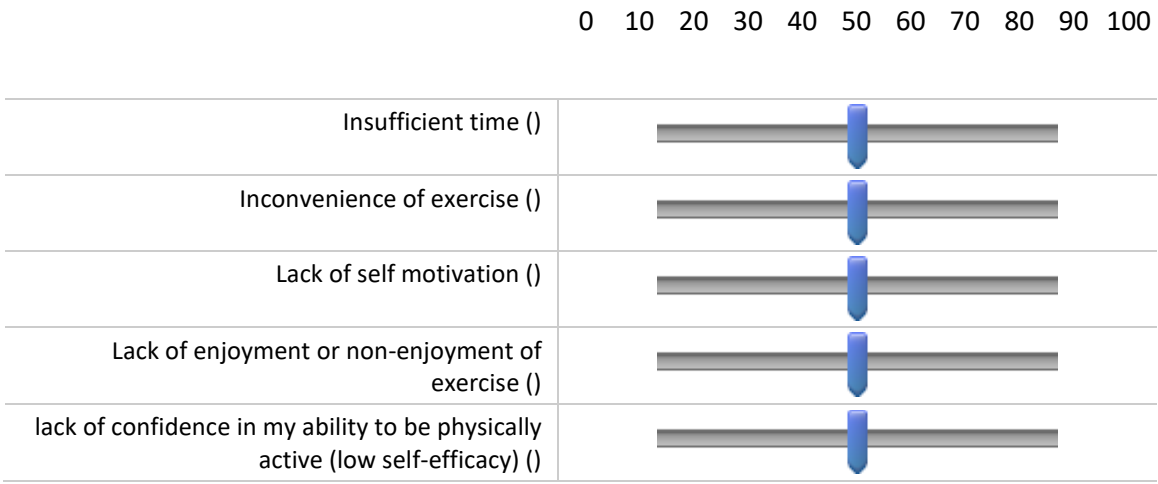
- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

Page Break

LCH3 Consider the impact of each of the following on your exercise or physical activity habits.

Using the sliding scale below; outline the strength of this factor's influence:

0% = this barrier does not influence my ability to be physically active. 50% = the barrier has a moderate influence on my ability to be physically active 100 = the barrier is clear and heavily influences my ability to be physically active.



Page Break

LCH4 Consider the impact of each of the following on your exercise or physical activity habits.

Using the sliding scale below; outline the strength of this factor's influence:

0% = this barrier does not influence my ability to be physically active.
50% = the barrier has a moderate influence on my ability to be physically active
100 = the barrier is clear and heavily influences my ability to be physically active.

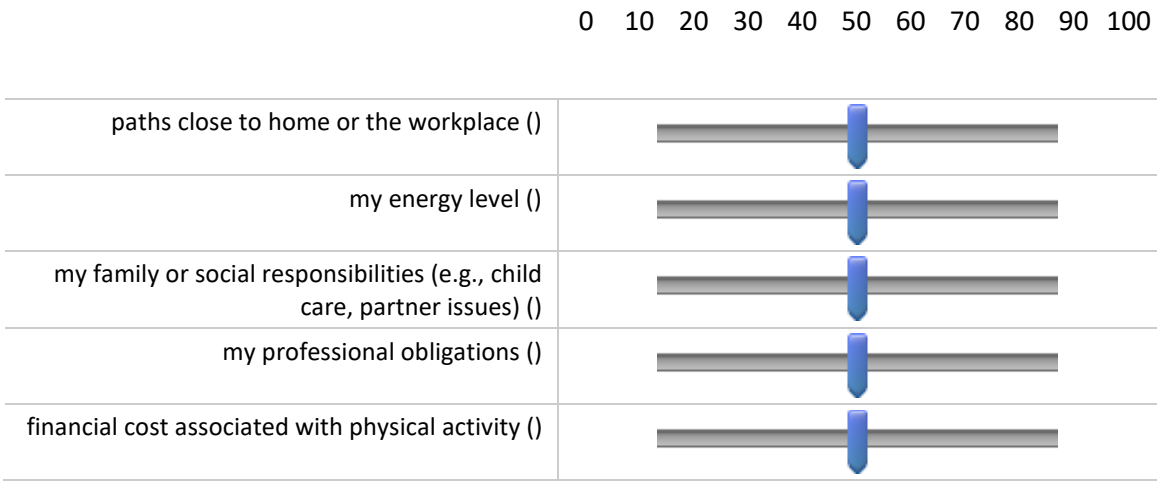
	0 10 20 30 40 50 60 70 80 90 100
fear of being injured or having been injured recently ()	
lack of self-management skills, such as the ability to set personal goals, monitor ()	
progress, or reward progress toward such goals ()	
lack of encouragement, support, or companionship from family and friends ()	
non-availability of parks, sidewalks, bicycle trails, or safe and pleasant walking ()	

Page Break

LCH5 Consider the impact of each of the following on your exercise or physical activity habits. Using the sliding scale below; outline the strength of this factor's influence:

Using the sliding scale below; outline the strength of this factor's influence:

0% = this barrier does not influence my ability to be physically active. 50% = the barrier has a moderate influence on my ability to be physically active. 100 = the barrier is clear and heavily influences my ability to be physically active.

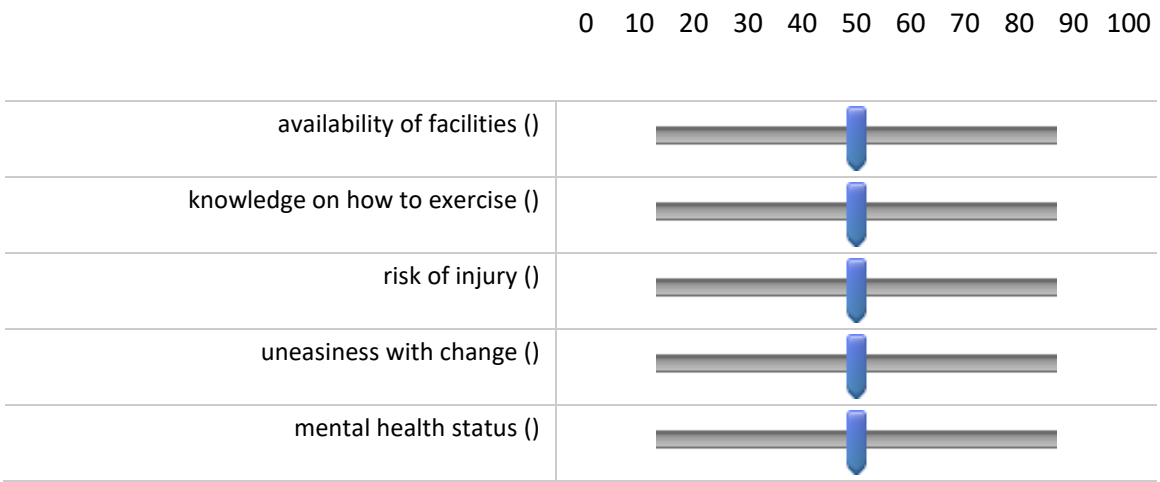


Page Break

LCH6 Consider the impact of each of the following on your exercise or physical activity habits.

Using the sliding scale below; outline the strength of this factor's influence:

0% = this barrier does not influence my ability to be physically active.
50% = the barrier has a moderate influence on my ability to be physically active.
100 = the barrier is clear and heavily influences my ability to be physically active.



Page Break

LCH8 *Per the American College of Sports Medicine, moderate-intensity exercise occurs around 64%-76% of our maximum heart rate (i.e., HRmax) AND is subjectively perceived as "fairly-light" to "somewhat hard". Examples of moderate-intensity exercise include:* 1. Walking very briskly 2. Bicycling (light-moderate effort) 3. Recreational Sports **In the last 6 months, I average _____ minutes per week of moderate-intensity exercise.**

_____

LCH9 Vigorous-intensity exercise can be objectively defined as exercise at 77%-95% of our maximum heart rate (HRmax) AND subjectively perceived as "somewhat hard" to "very hard". Examples of vigorous-intensity exercise may include:
1. Hiking on an incline 2. Jogging at or above 6 mph 3. Bicycling fast (14-16 mph) 4. Competitive Sports
In the last 6 months, I have averaged _____ minutes of vigorous-intensity exercise.

_____

LCH10 **I monitor my physical activity and exercise routine with technology (e.g., smart phone, phone application, exercise journals).**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

LCH11 **I monitor my nutritional intake with technology (e.g., smart phone, phone application, exercise journals).**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

LCH12 **I monitor my sleep (i.e., quality or quantity) with technology (e.g., smartphone, phone application, exercise journals).**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

LCH13 **My mental health status influences my physical activity or exercise routine.**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

End of Block: Current Practitioner PA and Exercise Habits (Previous 6 months)

Start of Block: Patient Education

PAE1 **I feel qualified to teach the public about how to aerobically exercise.**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE1.2 **I feel qualified to teach the public about how to warm up (i.e., prepare to exercise).**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE1.3 **I feel qualified to teach the public about how to weight train (e.g., resistance training).**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE2 **I know how to modify (e.g., progress and regress) an exercise routine.**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE3 **Consider your view on the following statement; "How you exercise is how you adapt"**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE4 **My mental health status influences my interactions with patients or recommendations to patients.**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE5 **My views on physical activity and exercise influence my interactions with patients or recommendations to patients.**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE6 **I routinely provide "at-home" exercise recommendations for my patients to complete between visits.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

Page Break

PAE7 **My exercise recommendations at discharge inform the patient how to modify the exercise (e.g., progress or regress) or routine.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

Page Break

PAE8 **My patients are sufficiently prepared to exercise at home when they are discharged from my supervision.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

PAE8.1 **My patients are sufficiently prepared to exercise with supervision when they are discharged from therapy.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

PAE9 **My patients believe that an exercise is a form of preventative medicine.**

- ○ Strongly disagree (4)
- ○ Somewhat disagree (5)
- ○ Neither agree nor disagree (6)
- ○ Somewhat agree (7)
- ○ Strongly agree (8)

PAE10 **I spend little time educating my patients on exercise and physical activity.**

- ○ Strongly disagree (4)
- ○ Somewhat disagree (5)
- ○ Neither agree nor disagree (6)
- ○ Somewhat agree (7)
- ○ Strongly agree (8)

PAE11 **I routinely speak to my patients about nutrition or healthy eating habits.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

PAE12 **I evaluate my patient's medication list and routinely ask for updates or changes to their medication list.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

PAE13 **For liability reasons, I prefer to not make exercise recommendations after discharge.**

- ○ Strongly disagree (4)
- ○ Somewhat disagree (5)
- ○ Neither agree nor disagree (6)
- ○ Somewhat agree (7)
- ○ Strongly agree (8)

PAE14 **I provide physical activity external resources (e.g., internet links, printed resources, books) to my patients.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

PAE15
I feel confident in my ability to recommend supported and valid exercise/physical activity recommendations to friends and family.

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE16 **How often do you pursue and complete continuing education?**

- ○ Weekly (8)
- ○ Monthly (9)
- ○ Yearly (10)
- ○ Quarterly (11)
- ○ Fill in the blank (12) _____

PAE17 **I feel confident to distinguish the difference(s) between exercise and physical activity.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

PAE18 **Consider the following statement; "Exercise is medicine".**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE19 **The practitioner's ability to motivate the patient affects the patient's effort during treatment.**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE20 **My patient's weekly physical activity is influenced by our interactions.**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE21 **The effectiveness of my treatment is dependent on the degree to which I am reimbursed (e.g., insurance or cash payments).**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

PAE22 **Unfortunately, the patient's duration of treatment is often dictated by insurance.**

- ○ Strongly disagree (7)
- ○ Somewhat disagree (8)
- ○ Neither agree nor disagree (9)
- ○ Somewhat agree (10)
- ○ Strongly agree (11)

End of Block: Patient Education

Start of Block: Stroke Experience

Stroke **Have you treated patients with a history of stroke?**

- ○ Yes (currently) (1)
- ○ Yes (past) (2)
- ○ No (3)

End of Block: Stroke Experience

Start of Block: Community Resources

CR1 **The local community has available resources to help guide my discharged patient.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

CR2 **I refer my patients to personal trainers or exercise physiologists in the community.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

CR3 **I do not have a clear understanding of exercise-related credentials (e.g., personal trainers, exercise physiologists, strength and conditioning coaches, etc.)**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

CR4 **I do not refer my patients to a registered dietician.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

End of Block: Community Resources

Start of Block: Assistive Technology

AT1
Assistive Technology: Any item, piece of equipment, software program, or product system that is used to increase, maintain or improve your functional capabilities.

Do you integrate assistive technology into your treatment plans?

- ○ Yes (1)
- ○ No (2)

AT2
Assistive Technology: Any item, piece of equipment, software program, or product system that is used to increase, maintain or improve your functional capabilities.

Do you make recommendations for assistive technology at discharge?

- ○ Yes (1)
- ○ No (2)

AT3 *Consider the use of assistive technology in your treatment plans.*

Assign the following forms of assistive technology to one of the following groups:
Commonly integrated Integrated less frequently Rarely integrated

Never integrated **Organize each group by rank (top = most common; bottom = least common)**

Commonly integrated	Integrated less frequently	Rarely integrated	Never integrated
_____ Walking, transportation, or mobility devices (e.g., slide boards, medical hoists for stairs, ramps, wheelchair, walker, cane, orthotics/prosthetics, gait belt) (1)	_____ Walking, transportation, or mobility devices (e.g., slide boards, medical hoists for stairs, ramps, wheelchair, walker, cane, orthotics/prosthetics, gait belt) (1)	_____ Walking, transportation, or mobility devices (e.g., slide boards, medical hoists for stairs, ramps, wheelchair, walker, cane, orthotics/prosthetics, gait belt) (1)	_____ Walking, transportation, or mobility devices (e.g., slide boards, medical hoists for stairs, ramps, wheelchair, walker, cane, orthotics/prosthetics, gait belt) (1)
_____ Tools to assist with eating or drinking (2)	_____ Tools to assist with eating or drinking (2)	_____ Tools to assist with eating or drinking (2)	_____ Tools to assist with eating or drinking (2)
_____ Assistive tools to help with dressing, bathing or grooming (3)	_____ Assistive tools to help with dressing, bathing or grooming (3)	_____ Assistive tools to help with dressing, bathing or grooming (3)	_____ Assistive tools to help with dressing, bathing or grooming (3)
_____ Tools to help communication (e.g., Visual, speech or hearing technologies) (4)	_____ Tools to help communication (e.g., Visual, speech or hearing technologies) (4)	_____ Tools to help communication (e.g., Visual, speech or hearing technologies) (4)	_____ Tools to help communication (e.g., Visual, speech or hearing technologies) (4)
_____ Tools to assist sleep (e.g., adjustable beds; medical hoists) (5)	_____ Tools to assist sleep (e.g., adjustable beds; medical hoists) (5)	_____ Tools to assist sleep (e.g., adjustable beds; medical hoists) (5)	_____ Tools to assist sleep (e.g., adjustable beds; medical hoists) (5)
_____ Assistive technologies for occupation or job-specific needs (6)	_____ Assistive technologies for occupation or job-specific needs (6)	_____ Assistive technologies for occupation or job-specific needs (6)	_____ Assistive technologies for occupation or job-specific needs (6)
_____ Assistive devices for use in recreation (e.g., adapted toys, sporting equipment, games) (7)	_____ Assistive devices for use in recreation (e.g., adapted toys, sporting equipment, games) (7)	_____ Assistive devices for use in recreation (e.g., adapted toys, sporting equipment, games) (7)	_____ Assistive devices for use in recreation (e.g., adapted toys, sporting equipment, games) (7)

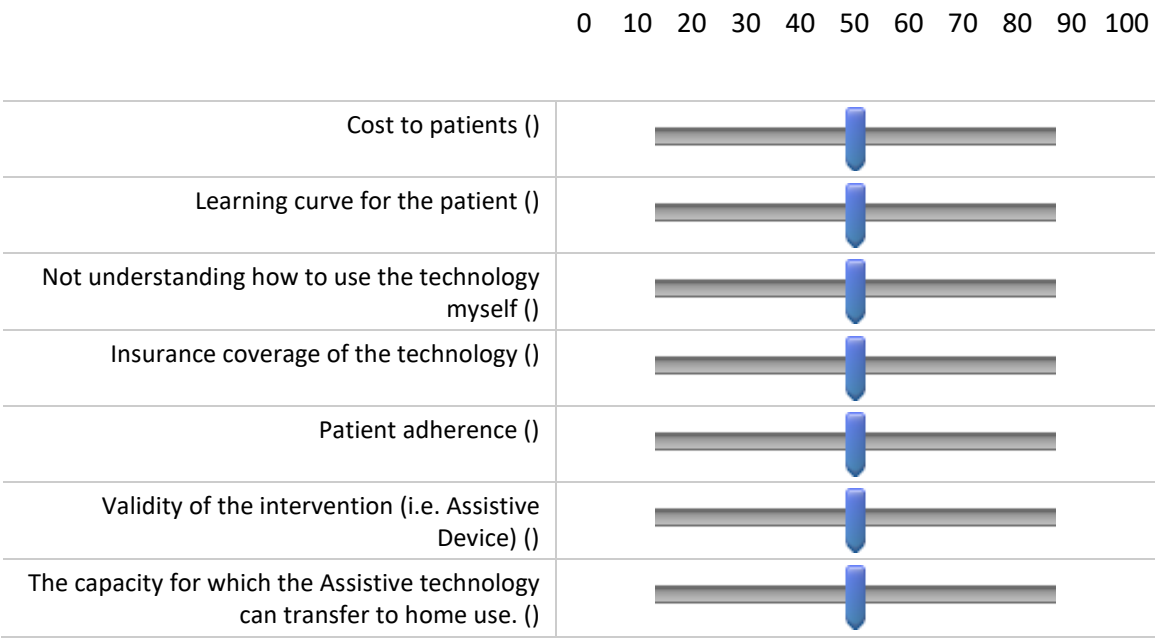
_____ I have not used assistive devices or technology (8)	_____ I have not used assistive devices or technology (8)	_____ I have not used assistive devices or technology (8)	_____ I have not used assistive devices or technology (8)

AT4

Consider what influences your use of assistive technology.

Using the sliding scale, identify the strength of each factor's influence:

0 = No influence
50 = Moderate influence
100 = Clear and potent influence



AT5 **I recommend assistive devices to the majority of my patients**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

AT6 **I often want to recommend an assistive technology but find the technology to be in assessable or unavailable to the patient**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

AT7 **The use of assistive technology is directed by the severity of the patient's impairment(s) or constraints.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

AT8 **Assistive technologies are routinely integrated into my patient's home exercise plans.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

AT9 **Rank the following settings in order of most applicable (top) to least applicable (bottom) for assistive technology:**

_____ Inpatient Rehab (1)
_____ Outpatient Rehab (2)
_____ Assisted Living (3)
_____ Home (5)
_____ Occupational (6)
_____ Transportation (8)

AT10 **Assistive technology is more accessible by those from higher social-economic backgrounds.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

AT11 **Patients often are resistant to using assistive technologies**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

AT12 **Insurance dictates whether I recommend the use of assistive technologies.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

End of Block: Assistive Technology

Start of Block: Stroke

SB1 *Consider the impact of each of the following barriers on physical activity in those with chronic stroke.*

Using the sliding scale below; outline the strength of this factor's influence:

0% = this barrier does not influence those with chronic stroke to be physically active. 50% = the barrier has a moderate influence on individuals with chronic stroke to be physically active. 100% = the barrier is clear and heavily influences those with chronic stroke to be physically active.

0 10 20 30 40 50 60 70 80 90 100

Insufficient time ()	
Inconvenience of exercise ()	
Lack of self motivation ()	
Lack of enjoyment or non-enjoyment of exercise ()	
lack of confidence in their ability to be physically active (low self-efficacy) ()	

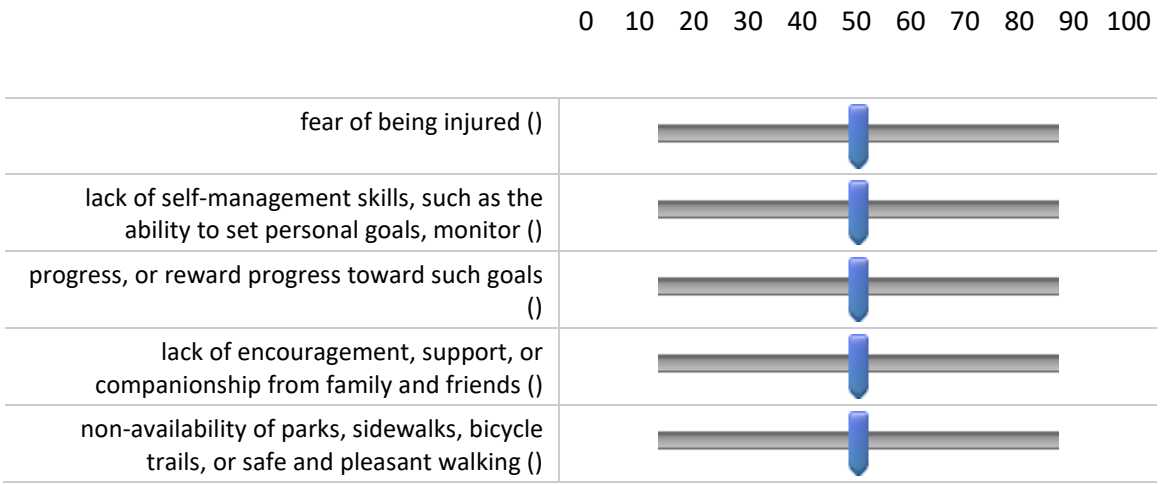
Page Break

SB2 *Consider the impact of each of the following barriers on physical activity in those with chronic stroke.*

Using the sliding scale below; outline the strength of this factor's influence:

0% = this barrier does not influence those with chronic stroke to be physically active.

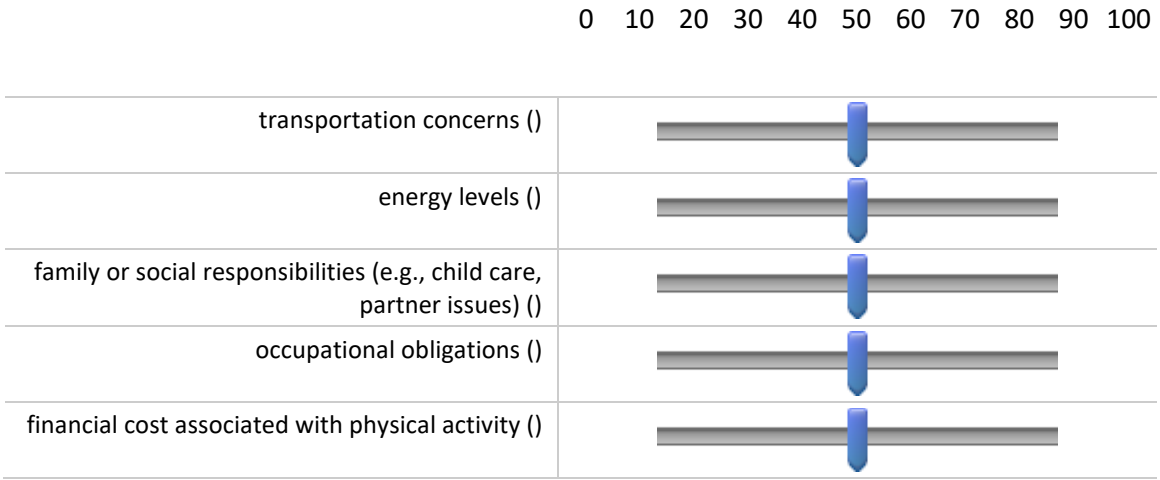
50% = the barrier has a moderate influence on individuals with chronic stroke to be physically active. 100% = the barrier is clear and heavily influences those with chronic stroke to be physically active.



Page Break

SB3 *Consider the impact of each of the following barriers on physical activity on those with chronic stroke.*

Using the sliding scale below; outline the strength of this factor's influence: 0% = this barrier does not influence those with chronic stroke to be physically active. 50% = the barrier has a moderate influence on individuals with chronic stroke to be physically active. 100% = the barrier is clear and heavily influences those with chronic stroke to be physically active.

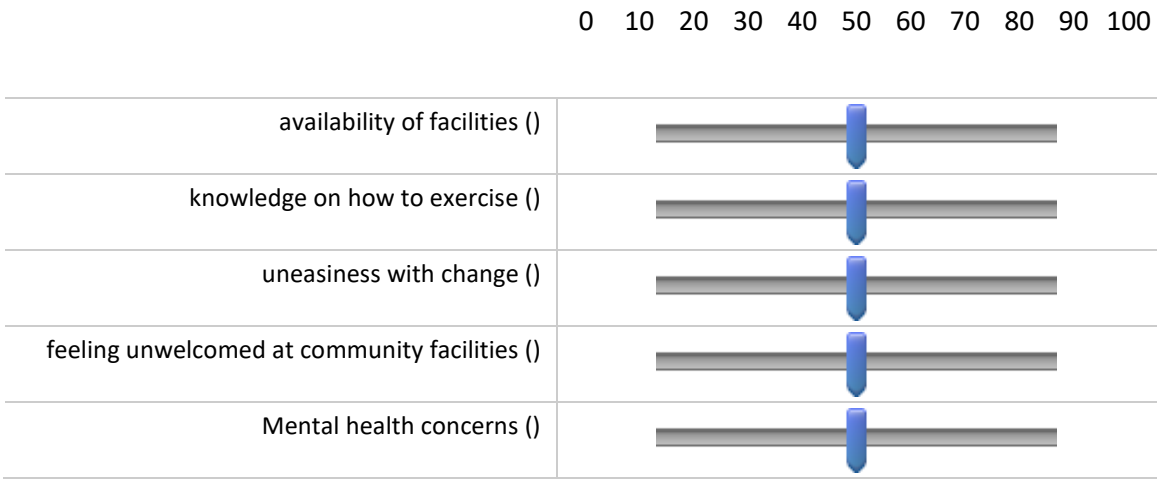


Page Break

SB4 Consider the impact of each of the following barriers on those with chronic stroke.

Using the sliding scale below; outline the strength of this factor's influence:

0% = this barrier does not influence my ability to be physically active. 50% = the barrier has a moderate influence on my ability to be physically active. 100 = the barrier is clear and heavily influences my ability to be physically active.



SB5 **When my patients are discharged, I find they have a clear understanding of their injury (e.g., stroke location; type of stroke) and their needs going forward.**

- ○ Strongly disagree (4)
- ○ Somewhat disagree (5)
- ○ Neither agree nor disagree (6)
- ○ Somewhat agree (7)
- ○ Strongly agree (8)

SB8 **What community resources are available to your patients with a history of stroke?**

_____

SB6 **Our community has sufficient resources to assist individuals with chronic stroke.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

SB7 **Community peer support groups are available and accessible to those with chronic stroke.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

SB9 **The lack of community resources affects my patient's adherence to physical activity post-stroke.**

- ○ Strongly disagree (4)
- ○ Somewhat disagree (5)
- ○ Neither agree nor disagree (6)
- ○ Somewhat agree (7)
- ○ Strongly agree (8)

SB10 **Due to lifestyle factors (e.g., sedentary behavior, tobacco use), the risk for secondary stroke is high among those in our community.**

- ○ Strongly disagree (4)
- ○ Somewhat disagree (5)
- ○ Neither agree nor disagree (6)
- ○ Somewhat agree (7)
- ○ Strongly agree (8)

SB11 **I recommend assistive devices to the majority of my patients with chronic stroke.**

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

SB12 **What do individuals with chronic stroke need most from the community?**

_____

End of Block: Stroke

APPENDIX F: Rural Counties within Georgia