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GREEN WALK: A NATURE-BASED GAIT TRAINING TO IMPROVE THE QUALITY OF LIFE AMONG SUB-ACUTE STROKE PATIENTS

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RESEARCH TITLE

GREEN WALK: A NATURE-BASED GAIT TRAINING TO IMPROVE THE QUALITY OF LIFE AMONG SUB-ACUTE STROKE PATIENTS

RATIONALE

Stroke survivors often face significant challenges in mobility, communication, and social interactions, even after regaining some independence. The subacute phase of stroke recovery, spanning 7 days to 6 months post-stroke, is a critical period for rehabilitation. During this time, the brain undergoes neuroplasticity, a process of neural reorganization that supports the recovery of lost functions (Gillette, 2023). Early and intensive rehabilitation during this phase maximizes recovery by improving motor skills, cognitive function, and overall quality of life. Rehabilitation during this phase requires active participation from patients, caregivers, and healthcare providers to restore physical, mental, and social abilities. For example, intensive gait training has been shown to effectively restore walking ability, particularly when combined with advanced technologies (Stephan et al., 2021).

Green spaces like parks and gardens offer numerous benefits for stroke rehabilitation, promoting physical activity, reducing stress, and enhancing recovery. Guided walks in nature improve physical fitness and mental well-being, easing anxiety and depression (Astell-Burt et al., 2022). These environments also support cardiovascular health, foster social connections, and encourage movement (Yeager et al., 2020).

Nature-based settings aid sensory and motor recovery by challenging balance on uneven terrain and providing positive sensory experiences like fresh air and soothing sounds (Mehrholz et al., 2021). Such settings complement traditional therapies by encouraging long-term engagement (Shen et al., 2021). Additionally, green spaces can reduce social isolation and foster community interaction, as seen in studies from Iran (Dadvand et al., 2019). Walking on varied terrains improves motor skills, balance, and independence in early stroke recovery (Teodoro et al., 2024).

Global studies highlight the value of nature in rehabilitation, showing that walking in natural environments improves mobility, reduces stress, and enhances cognitive function (Bratman et al., 2019). Combining physical activity with nature exposure also alleviates anxiety and depression, offering holistic benefits (Ma et al., 2023).

The natural landscapes of Ilocos Norte provide a rich setting to explore the impact of nature on stroke recovery. This study aims to position the region as a model for integrating nature-based interventions into rehabilitation programs. Research on the effectiveness of guided nature walks in improving the quality of life for stroke survivors will provide valuable data to help rural communities worldwide implement sustainable and accessible rehabilitation strategies. This approach also highlights the importance of maintaining green spaces for programs like GREEN Walk (Guided Recovery Engaging in ENvironment). Such initiatives align with Sustainable Development Goal 3 (SDG3) by promoting health literacy and well-being. Therefore, the GREEN Walk study seeks to explore the interconnected effects of green space exposure on the quality of life of subacute stroke patients. It further advocates for using nature as a cost-effective, accessible, and engaging dimension of the rehabilitation process, ultimately supporting optimal recovery for stroke survivors.

OBJECTIVES OF THE STUDY

This study aims to:

1. determine the demographic and clinical characteristics of the participants in terms of:
 - a. age;
 - b. sex;
 - c. type of stroke;
 - i. duration of stroke
 - ii. severity of stroke
 - iii. area of affectation
 - d. history of PT rehabilitation
2. determine the pre- and post-test measurements of the participants as to:
 - a. gait speed;
 - b. balance;
 - c. lower extremity strength;
 - d. mental health;
 - e. social participation; and
 - f. Health-Related Quality of Life (HRQoL).
3. determine whether there is a significant difference between the pre- and post- test measurement of the participant.
 - a. gait speed;
 - b. balance;
 - c. lower extremity strength;
 - d. mental health;
 - e. social participation; and
 - f. Health-Related Quality of Life (HRQoL).
4. determine whether there is a significant difference between the pre- and post- test measurement of the participant.

SIGNIFICANCE OF THE STUDY

Stroke patients. This study will be beneficial for stroke patients on their health-related quality of life.

Clinics and healthcare providers. The result of the study can serve as a basis for clinics to incorporate nature spaces into rehabilitation practices as part of a cost-effective option for treatment plan.

Physical Therapy students. The result of the study could give an insight of nature spaces as part of the rehabilitation process. It will also allow students to integrate pre-existing rehabilitation methods into merging it with nature.

The community. This study can help the community to promote the development of green spaces and design spaces like parks, gardens, and playgrounds that encourage green areas that are accessible and help promote physical activity, relaxation and opportunities for social interaction.

Municipalities. This study can help municipalities to improve and develop accessible green spaces that can benefit the community by integrating the green spaces to urban spaces or utilizing green spaces to promote environmental sustainability and encourage community interaction.

Future researchers. This study can be used as a reference for future studies and the long-term effects of nature-based rehab on the overall quality of life of stroke patients.

METHODOLOGY AND PROCEDURES

This study will use a single group, interrupted time-series, quasi-experimental research design. This research design will allow the researchers to determine how the GREEN Walk training program affects the participants overall quality of life. In this design, the participants will undergo assessments at three important points; before the intervention (pre-test), after one week, after four weeks, and after six weeks post-test. In application of this design, the participants will undergo pre-test measurement of the different outcome measures included in the study, which will serve as a baseline measurement. After the initial assessment, participants will undergo the intervention, and a post-test measurement of the same outcome will be conducted a week later to assess immediate changes in their quality of life. The participants will continue the intervention until the end of the month, at which point another post-test will be administered to check for greater significant changes. This cycle of intervention and post-testing will be repeated until two months.

The study will be conducted in the green spaces at the Sunken Garden, located at the Administrative Building of Mariano Marcos State University in Batac City, Ilocos Norte. The pre- and post-test assessment will be administered at the University Physical Therapy and Rehabilitation Center (UPTRC) of MMSU in Batac City, Ilocos Norte. This program will be conducted in the morning over a period of eight weeks, with three sessions per week a total of 24 sessions. The study will involve 30 sub-acute stroke patients who will be selected from major towns of Ilocos Norte. These participants will be limited to individuals who are 3 to 6 months post-stroke.

The treatment program will be preceded by patient education on the proper mechanics on walking on different surfaces of the ground. The program will be administered consisting of five licensed physical therapists, two nurses, and one psychologist. Among the physical therapists, two will serve as assessors, while the remaining three will administer the intervention and serve as guides during the intervention. The psychologist will be responsible for administering the mental health screening tool and the social functioning outcome measures. The two nurses will monitor the patients' vital signs during the intervention, which is essential for ensuring the safety of subacute stroke patients. Close monitoring helps prevent complications during physical activities.

The GREEN walking exercise program entails for eight weeks. The experimental group will be given warm-up exercises to prepare the body for physical activity, the warm-up exercise consists of: stretching the quadriceps and the gastrocnemius each held for seven second hold for three repetitions, march in place for 2 minutes, and a sit to stand training for 2 minutes. Following the warm-up exercise, participants will be engaging in a 20-minute walking intervention.

The program will progress over the 6-week period with different progress (*please see attached GREEN Walk Exercise Protocol*)

Each session will culminate to a 5-minute low-intensity cool-down exercise, which entails: stretching the quadriceps and the gastrocnemius each held for seven second hold for three repetitions, march in place for 2 minutes, and a sit to stand training for 2 minutes.

A. RESEARCH INSTRUMENT

Screening Tool

- Timed Up and Go test will be used for screening tool to check how well a person can move and to ensure the safety of the participants before proceeding with the intervention without the risk of falling
- Montreal Cognitive Assessment (MoCA) is a screening tool to evaluate participants' cognitive function and identify potential impairments that may impact their ability to safely and effectively engage in the intervention.

Outcome Measurements

- Short Physical Performance Battery to assess the function of lower extremity functioning in older persons, including the balance, gait speed, and lower limb strength.
- Depression, Anxiety, and Stress Scale (DASS) will be used to assess the fundamental symptoms of depression, anxiety, and stress.
- Social Skills Intervention Scale (SSIS) to assess participants social participation.
- HRQoL SF-36 will be used to determine the Health-Related Quality of Life of the participants.

B. POPULATION AND SAMPLING

The study will use a non-probability, purposive sampling design in selecting the participants for this study. This sampling is used to purposely ensure that the selected participants are aligned to the research objectives which is to assess the impact and effectiveness of nature-based rehabilitation using the GREEN Walk Training program among the identified population. The sample size will be calculated later on based on the available data of sub-acute stroke within the locality with addition of 10% in line with possible attrition rate. Nevertheless, according to Wu et al., a minimum of 30 participants is adequate to observe significant changes based on the improvement on the balance and mood state of the elderly patients walking around the forest environment. Therefore, the researchers will select 30 participants to adequately represent the targeted population for detectable change and consider the dropout rates in the application of the intervention.

C. INCLUSION/EXCLUSION CRITERIA

Inclusion Criteria:

The participants in the study will include individuals who:

1. are medically diagnosed with subacute stroke regardless of:
 - a. sex
 - b. age
 - c. race
 - d. type of stroke
 - e. laterality of brain affectation
 - f. having or not having history of physical rehabilitation
2. belong to the sub-acute group ranges from 3 to 6 months
3. can understand both verbal and written information, which will be assessed by using the Montreal Cognitive Assessment with a score of 26 or higher is considered as normal.
4. can walk independently with or without the help of an assistive device, which will be assessed by the use of Time-Up and Go with a cutoff time of less than 13.5 seconds.
5. have given informed consent to willingly participate in the study.

Exclusion Criteria:

Participants will be excluded in the study if they meet any of the following exclusion criteria.

1. Medically diagnosed with other co-morbidity or condition such as but not limited to neurologic or musculoskeletal conditions, especially those affecting ambulation
2. Has environmental restrictions such as, but not limited to, allergy, sensitivity to temperature, or dust.
3. Unable to respond informed consent.

D. DATA COLLECTION PROCEDURES

The data gathering procedure will follow a chronological sequence to ensure the systematic collection of relevant information for the research study.

- The researchers will seek certification and approval from the University Ethics Review Board (URERB).
- Formal request letters will be submitted to the Dean of the College of Health and Sciences and the Chairman of the Department of Physical Therapy for approval of the study's implementation.
- A letter requesting the list of medically diagnosed participants with stroke will be forwarded to the RHUs of Laoag City, San Nicolas, and Batac City as well as major hospitals in Ilocos Norte namely the Mariano Marcos Memorial Hospital-Medical Center (MMMHC), Gov. Roque B. Ablan Sr. Memorial Hospital (GRBASM), Laoag City General Hospital (LCGH), Karmelli Clinic & Hospital (KCHC), Ranada General Hospital (RGH), The Black Nazarene Hospital Inc., and Gertes Clinic & Hospital. A letter will also be forwarded to the Provincial Persons with Disability Affairs Office (PDAO).
- Potential participants who meet the inclusion criteria will be identified and invited to participate in the study.
- Informed consent documents will be distributed, providing participants with a maximum of 2 (2) days to review and decide whether to participate.
- Participants will undergo baseline assessments two (2) days before the start of the intervention. The following screening tool will be assessed: Timed Up and Go (TUG) Test and Montreal Cognitive assessment. The following outcome measures will also be assessed, Short Physical Performance Battery (SPPB), Depression Anxiety Stress Scale (DASS), Social Skills Inventory Scale, and Short-Form Health Survey (SF-36).
- Participants will engage in nature-based walk training for sixty (60) minutes, three (3) days per week, for four (4) weeks at a designated nature trail.
- Sessions will be supervised by researchers to ensure adherence and safety.
- Two (2) days after the final intervention session, participants will undergo post-testing using the same outcome measures as in pre-testing to evaluate changes in physical, mental, and social outcomes.
- Data collection will be systematically recorded, ensuring confidentiality and privacy.
- Researchers will analyze the data to determine the effectiveness of the GREEN WALK intervention.
- Throughout the study, researchers will monitor participant adherence, address any concerns, and ensure the integrity of the intervention.
- Participants will be required to follow their designated schedules consistently throughout the four-week intervention period. Any deviations or adverse events will be documented and managed accordingly.

E. STATISTICAL ANALYSIS PLAN/DATA ANALYSIS PLAN

Descriptive and comparative statistics will be utilized to analyze the study's results.

Specifically, for the descriptive statistics frequency, percentages, and mean will be used, while the paired t-test will be used for comparative statistics. The paired t-test is chosen to compare the pre- and post-test results of the different outcomes that will be used in the study. Using a paired t-test, it effectively controls the individual's variability to ensure accurate measurement on the true effect of the intervention.

The level of significance will be set at $p < 0.05$. All data will be analyzed using the SPSS version 20.

F. OTHER INFORMATION, AS APPLICABLE

ETHICAL CONSIDERATIONS

a. Informed Consent Process

The informed consent process will be conducted exclusively by authorized researchers who will ensure that all participants or their legal representatives fully understand the study before consenting. Participation in this study is entirely voluntary, and all participants will be given a detailed explanation of the research objectives, methodology, potential benefits, and risks before providing their informed consent. If participants are unable to provide consent due to cognitive or legal constraints, a legally authorized representative will provide consent on their behalf.

b. Vulnerability of Subject

Measures will be taken to protect the rights of vulnerable individuals, and additional ethical precautions will be implemented as needed. Special ethical considerations will be applied since the study involves stroke patients, a potentially vulnerable population. To safeguard their well-being, all participants will be closely monitored, with emergency protocols in place to address any medical concerns. The walking sessions will be supervised by trained professionals, and care will be taken to ensure that all activities align with each participant's physical capacity. The research team will maintain transparency and integrity throughout the study by accurately reporting data, acknowledging study limitations, and preventing any form of data manipulation. Bias will be minimized through reflective journaling, which will help researchers monitor their own perspectives and ensure objectivity in data collection and analysis.

c. Privacy and Confidentiality

The study will adhere to the Data Privacy Act of the Philippines (Republic Act No. 10173, 2012) to ensure the confidentiality, integrity, and security of all collected data. This law mandates the protection of personal and sensitive information across both government and private sectors, with compliance overseen by the National Privacy Commission. The researchers will strictly implement data privacy measures to safeguard participant information from unauthorized access, misuse, or disclosure.

To uphold confidentiality, the following measures will be observed:

1. No participant's identity will be disclosed, and all collected data will be anonymized.
2. The study's findings will be used solely for academic and research purposes and will not be shared for commercial or non-research-related activities.
3. Only authorized researchers will have access to the data, ensuring strict confidentiality.
4. Participants will only receive access to their results, while raw data will remain confidential and will not be shared outside the research team.
5. All data will be securely stored for two to three years, after which it will be permanently destroyed.

To reinforce security, an encrypted hard drive and flash drive will be used for digital storage, ensuring that only individuals with the correct password or decryption key can access the data. Hard copies will be stored in locked filing cabinets with restricted access. After the retention period of two to three years, all data will be permanently deleted or shredded. A record of data destruction will be maintained, detailing what data was disposed of, when, how, and by whom. Participants may request a copy of this record as proof of compliance with data protection regulations.

d. Risk and Benefits

Participants will be thoroughly briefed on the potential hazards and risks associated with injuries. While the GREEN WALK intervention aims to improve physical, mental, and social well-being, certain risks and inconveniences may arise. Physical risks may include but not limited to fatigue, muscle soreness, potential risk of falls, and increase of blood pressure or musculoskeletal injuries such as ankle sprains, muscle strains, or dislocations. Environmental risks may include uneven terrain or unpredictable weather conditions, while psychological discomfort may arise if participants feel self-conscious or frustrated with their progress. To minimize these risks, the study will be conducted in safe and accessible green spaces, with physical activity modifications tailored to match the participants' abilities. All sessions will be supervised by licensed physical therapists with expertise in stroke rehabilitation. Additionally, two nurses will be present to monitor vital signs and provide emergency care if needed. A well-equipped first aid kit and an on-site medical team will be available throughout the sessions to provide immediate response to any medical concerns.

The researchers will assume full accountability for any injuries sustained during the study and will provide insurance coverage for one year, including accidental death, disablement or dismemberment, motorcycling accidents, burial assistance, cash assistance, and educational support. Any injured participants will be transported immediately to the nearest emergency center for further medical attention.

The study offers several benefits to participants. The GREEN walk intervention aims to improve overall quality of life. The GREEN walk intervention is designed to improve physical mobility by enhancing balance, strength, and walking efficiency, which are critical for stroke recovery. Participants may experience improved endurance and coordination through the walking sessions. In addition to physical benefits, the intervention aims to improve mental health by reducing stress and anxiety levels, as exposure to natural environments has been shown to promote relaxation and mental clarity. Socially, the group walking sessions may foster a sense of belonging and encourage positive interactions, helping participants rebuild their confidence and interpersonal skills after a stroke. Conducting sessions in green spaces may provide additional advantages, as the participants will also contribute to research that can inform future rehabilitation programs, benefiting not only themselves but also their communities.

e. Incentives or Compensation

The study does not provide monetary compensation, but all participants will receive free travel reimbursements, meals, and snacks throughout the intervention. Upon completion of all sessions, participants will also be given a grocery pack as a token of appreciation for their time, effort, and cooperation. These provisions aim to reduce financial burdens and ensure that participants can fully engage in the study without concerns about additional costs.

f. Conflict of interest

The study acknowledges the potential for conflicts of interest and ensures that no financial, familial, or proprietary interests will influence the research process. The researchers declare that the study is conducted solely for academic and scientific purposes, free from any external financial pressures or biases. Special ethical considerations will be applied since the study involves stroke patients, a potentially vulnerable population. To safeguard their well-being, all participants will be closely monitored, with emergency protocols in place to address any medical concerns. The walking sessions will be supervised by trained professionals, and care will be taken to ensure that all activities align with each participant's physical capacity.

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APPENDICES

Screening Tools

Timed Up and Go Instructions
<p><u>General Information (derived from Podsiadlo and Richardson, 1991):</u></p> <ul style="list-style-type: none">• The patient should sit on a standard armchair, placing his/her back against the chair and resting his/her arms chair's arms. Any assistive device used for walking should be nearby.• Regular footwear and customary walking aids should be used.• The patient should walk to a line that is 3 meters (9.8 feet) away, turn around at the line, walk back to the chair, and sit down.• The test ends when the patient's buttocks touch the seat.• Patients should be instructed to use a comfortable and safe walking speed.• A stopwatch should be used to time the test (in seconds).
<p><u>Set-up:</u></p> <ul style="list-style-type: none">• Measure and mark a 3 meter (9.8 feet) walkway• Place a standard height chair (seat height 46cm, arm height 67cm) at the beginning of the walkway
<p><u>Patient Instructions (derived from Podsiadlo and Richardson, 1991):</u></p> <ul style="list-style-type: none">• Instruct the patient to sit on the chair and place his/her back against the chair and rest his/her arms chair's arms.• The upper extremities should not be on the assistive device (if used for walking), but it should be nearby.• Demonstrate the test to the patient.• When the patient is ready, say "Go"• The stopwatch should start when you say go, and should be stopped with the patient's buttocks touch the seat.
Timed Up and Go Testing Form
Name: _____
Assistive Device and/or Bracing Used: _____
Date: _____
TUG Time: _____
Date: _____
TUG Time: _____
Date: _____
TUG Time: _____
Date: _____
TUG Time: _____
Date: _____
TUG Time: _____

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MONTREAL COGNITIVE ASSESSMENT (MoCA®) Version 8.3 English										Name:	Education:	Date of birth:		
										Sex:	DATE:			
VISUOSPATIAL / EXECUTIVE													POINTS	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Copy bed</p> </div> <div style="width: 45%;"> <p>Draw CLOCK (Five past ten) (3 points)</p> </div> </div>										<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>1 → A</p> <p>Begin</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>C</p> <p>E</p> <p>End</p> </div> <div style="width: 30%;"> <p>[]</p> </div> <div style="width: 30%;"> <p>[]</p> </div> </div>			<div style="display: flex; justify-content: space-around;"> [] [] [] </div> <p>Contour Numbers Hands</p>	<p>___/5</p>
NAMING														
<div style="display: flex; justify-content: space-around;"> </div>										<div style="display: flex; justify-content: space-around;"> <p>[]</p> <p>[]</p> <p>[]</p> </div>			<p>___/3</p>	
MEMORY														
Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.										LEG COTTON SCHOOL TOMATO WHITE			NO POINTS	
1st TRIAL														
2nd TRIAL														
ATTENTION														
Read list of digits (1 digit / sec.). Subject has to repeat them in the forward order. [] 2 4 8 1 5														
Subject has to repeat them in the backward order. [] 4 2 7													___/2	
Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors.										[] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B			___/1	
Serial 7 subtraction starting at 60. [] 53 [] 46 [] 39 [] 32 [] 25										4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt			___/3	
LANGUAGE														
Repeat: The child walked his dog in the park after midnight. []														
The artist finished his painting at the right moment for the exhibition. []													___/2	
Language Fluency. Name maximum number of words in one minute that begin with the letter B. [] _____ (N ≥ 11 words)													___/1	
ABSTRACTION														
Similarity between e.g. banana - orange = fruit [] hammer - screwdriver [] matches - lamp													___/2	
DELAYED RECALL														
(MIS) Has to recall words WITH NO CUE										LEG COTTON SCHOOL TOMATO WHITE			Points for UNCUE recall only	
X3														
X2 Category cue														
X1 Multiple choice cue													MIS = ___/15	
ORIENTATION														
[] Date [] Month [] Year [] Day [] Place [] City													___/6	
© Z. Nasreddine MD www.mocatest.org MIS: /15														
Administered by: _____										(Normal ≥ 26/30)				
Training and Certification are required to ensure accuracy. Add 1 point if ≤ 12 yr education										TOTAL			___/30	

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Outcome Measurements

DASS				
Name:		Date:		
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you <i>over the past week</i> . There are no right or wrong answers. Do not spend too much time on any statement.				
The rating scale is as follows:				
0 Did not apply to me at all				
1 Applied to me to some degree, or some of the time				
2 Applied to me to a considerable degree, or a good part of time				
3 Applied to me very much, or most of the time				
1	I found myself getting upset by quite trivial things	0	1	2 3
2	I was aware of dryness of my mouth	0	1	2 3
3	I couldn't seem to experience any positive feeling at all	0	1	2 3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2 3
5	I just couldn't seem to get going	0	1	2 3
6	I tended to over-react to situations	0	1	2 3
7	I had a feeling of shakiness (eg, legs going to give way)	0	1	2 3
8	I found it difficult to relax	0	1	2 3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2 3
10	I felt that I had nothing to look forward to	0	1	2 3
11	I found myself getting upset rather easily	0	1	2 3
12	I felt that I was using a lot of nervous energy	0	1	2 3
13	I felt sad and depressed	0	1	2 3
14	I found myself getting impatient when I was delayed in any way (eg, elevators, traffic lights, being kept waiting)	0	1	2 3
15	I had a feeling of faintness	0	1	2 3
16	I felt that I had lost interest in just about everything	0	1	2 3
17	I felt I wasn't worth much as a person	0	1	2 3
18	I felt that I was rather touchy	0	1	2 3
19	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0	1	2 3
20	I felt scared without any good reason	0	1	2 3
21	I felt that life wasn't worthwhile	0	1	2 3
Reminder of rating scale:				
0 Did not apply to me at all				
1 Applied to me to some degree, or some of the time				
2 Applied to me to a considerable degree, or a good part of time				
3 Applied to me very much, or most of the time				
22	I found it hard to wind down	0	1	2 3
23	I had difficulty in swallowing	0	1	2 3
24	I couldn't seem to get any enjoyment out of the things I did	0	1	2 3
25	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2 3
26	I felt down-hearted and blue	0	1	2 3
27	I found that I was very irritable	0	1	2 3
28	I felt I was close to panic	0	1	2 3
29	I found it hard to calm down after something upset me	0	1	2 3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2 3
31	I was unable to become enthusiastic about anything	0	1	2 3
32	I found it difficult to tolerate interruptions to what I was doing	0	1	2 3
33	I was in a state of nervous tension	0	1	2 3
34	I felt I was pretty worthless	0	1	2 3
35	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2 3
36	I felt terrified	0	1	2 3
37	I could see nothing in the future to be hopeful about	0	1	2 3
38	I felt that life was meaningless	0	1	2 3
39	I found myself getting agitated	0	1	2 3
40	I was worried about situations in which I might panic and make a fool of myself	0	1	2 3
41	I experienced trembling (eg, in the hands)	0	1	2 3
42	I found it difficult to work up the initiative to do things	0	1	2 3

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Social Skills Inventory (Revised from Novotni Social Skills Checklist, see myADHD.com)	
Person Evaluated : _____ Key: 0 = Not a problem or rarely a problem	
Age: _____ Date: _____ 1 = Sometimes a problem or issue	
Evaluator: _____ Relationship: _____ 2 = Definitely a problem and needs improvement	
Score	Basic Manners – The ability to do the following in social situations
0 1 2	Uses polite words like please, thank you, and you're welcome
0 1 2	Expresses appreciation
0 1 2	Receives compliments without discounting them
0 1 2	Apologizes
0 1 2	Accepts the apologies of others
0 1 2	Introduces himself/herself
0 1 2	Uses appropriate greetings
0 1 2	Has appropriate phone manners
0 1 2	Uses appropriate ending comments
0 1 2	Eats with mouth closed, follows the lead of the host/hostess
0 1 2	Will use napkins, ask for items to be passed, keep elbows off table
0 1 2	Asks to be excused from the table
0 1 2	When hosting, makes guests feel comfortable in his/her home
0 1 2	Offers to help others
_____ Total score Basic Manners	
Verbal Communication Skills - In conversation with others, the ability to:	
0 1 2	Joins a conversation smoothly, without disruption
0 1 2	Reflective listening – repeats what another says and asks if they understood them right
0 1 2	Tracking - Identifies and reflects the feelings of others
0 1 2	Reflects content and feelings of others
0 1 2	Uses brief "encouragers" to let others know they are following the conversation ("I see")
0 1 2	Uses open ended questions to keep the conversation going
0 1 2	Asks for help when needed or wanted
_____ Total Score Verbal Communication Skills	
NonVerbal Communication Skills – Looking attentive when listening - When talking to others, do you (they):	
0 1 2	Keep an open posture
0 1 2	Faces the person
0 1 2	Leans forward to show interest
0 1 2	Maintains appropriate eye contact
0 1 2	Looks relaxed
_____ Total Score NonVerbal Communication Skills	
Self Care	
0 1 2	Is able to nurture himself or herself
0 1 2	Is clean and neat in appearance, appropriate to situation
0 1 2	Is able to identify and express his or her feelings
0 1 2	Has good self-esteem
0 1 2	Participates in groups
0 1 2	Has a sense of humor (that doesn't denigrate others)
0 1 2	Hope – has a positive outlook
_____ Total Score Self Care	
Communication Roadblocks	
0 1 2	Inattentive - misses pieces of information
0 1 2	Uses closed questions (ones that can be answered with a "yes" or a "no")
0 1 2	Voice volume – speaks too loud or too soft
0 1 2	Speech tempo – speaks too slowly or too quickly
0 1 2	Interrupts others – breaks into conversations without considering the flow
0 1 2	Too quiet – rarely speaks in conversations
0 1 2	Domineering - orders or bosses others around
0 1 2	Criticizes – judges or evaluates others
0 1 2	Is not considerate, or minimizes other's feelings
_____ Total Score Communication Roadblocks	
Self Control	
0 1 2	Takes turns, waits for his or her turn
0 1 2	Ability to handle the frustration of waiting
0 1 2	Effectively managing conflict with others
0 1 2	Is able to negotiate and compromise with others
0 1 2	Effectively manage anger without insult, intimidation or destruction
0 1 2	Refrains from fighting, aggressive behavior
0 1 2	Is able to assert themselves, ask for what they want without bullying
0 1 2	Avoids impulsive spending
0 1 2	Avoids impulsive decision-making
0 1 2	Avoids blurting out things that hurt others
0 1 2	Avoids inappropriate touching of others
0 1 2	Is able to relax
0 1 2	Is able to sit still and not fidget
_____ Total Score Self Control	
Relationship Skills	
0 1 2	Is sensitive to the needs of others
0 1 2	Is patient – can allow the other to get their needs met first at times
0 1 2	Is creative
0 1 2	Is fun to be with
0 1 2	Flexible – can "go with the flow"
0 1 2	Respects the boundaries of others
0 1 2	Treats others with respect
0 1 2	Tolerates differences in others
0 1 2	Initiates invitations to others
0 1 2	Tolerates closeness and intimacy without running away
0 1 2	Has at least 3 close friends
_____ Total Score Relationships Skills	
Adult ADD Organizational Problems	
0 1 2	Difficulty with deadlines
0 1 2	Difficulty being on time for meetings and appointments
0 1 2	Difficulty remembering special occasions
0 1 2	Difficulty managing money
0 1 2	Is too organized or rigid
0 1 2	Difficulty managing money, bills, bank accounts
0 1 2	Disorganized with his or her possessions, domicile
0 1 2	Does not do what they agree to do
0 1 2	Does not finish projects
_____ Total Score Adult ADD Organizational Problems	

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SF-36 QUESTIONNAIRE		
Name: _____	Ref. Dr: _____	Date: _____
ID#: _____	Age: _____	Gender: M / F
Please answer the 36 questions of the Health Survey completely, honestly, and without interruptions.		
GENERAL HEALTH:		
In general, would you say your health is:		
<input type="radio"/> Excellent	<input type="radio"/> Very Good	<input type="radio"/> Good <input type="radio"/> Fair <input type="radio"/> Poor
Compared to one year ago, how would you rate your health in general now?		
<input type="radio"/> Much better now than one year ago		
<input type="radio"/> Somewhat better now than one year ago		
<input type="radio"/> About the same		
<input type="radio"/> Somewhat worse now than one year ago		
<input type="radio"/> Much worse than one year ago		
LIMITATIONS OF ACTIVITIES:		
The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?		
Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.		
<input type="radio"/> Yes, Limited a lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Lifting or carrying groceries		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Climbing several flights of stairs		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Climbing one flight of stairs		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Bending, kneeling, or stooping		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Walking more than a mile		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Walking several blocks		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Walking one block		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
Bathing or dressing yourself		
<input type="radio"/> Yes, Limited a Lot	<input type="radio"/> Yes, Limited a Little	<input type="radio"/> No, Not Limited at all
PHYSICAL HEALTH PROBLEMS:		
During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?		
Cut down the amount of time you spent on work or other activities		
<input type="radio"/> Yes	<input type="radio"/> No	
Accomplished less than you would like		
<input type="radio"/> Yes	<input type="radio"/> No	
Were limited in the kind of work or other activities		
<input type="radio"/> Yes	<input type="radio"/> No	
Had difficulty performing the work or other activities (for example, it took extra effort)		
<input type="radio"/> Yes	<input type="radio"/> No	
EMOTIONAL HEALTH PROBLEMS:		
During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?		
Cut down the amount of time you spent on work or other activities		
<input type="radio"/> Yes	<input type="radio"/> No	
Accomplished less than you would like		
<input type="radio"/> Yes	<input type="radio"/> No	
Didn't do work or other activities as carefully as usual		
<input type="radio"/> Yes	<input type="radio"/> No	
SOCIAL ACTIVITIES:		
Emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?		
<input type="radio"/> Not at all	<input type="radio"/> Slightly	<input type="radio"/> Moderately <input type="radio"/> Severe <input type="radio"/> Very Severe
PAIN:		
How much bodily pain have you had during the past 4 weeks?		
<input type="radio"/> None	<input type="radio"/> Very Mild	<input type="radio"/> Mild <input type="radio"/> Moderate <input type="radio"/> Severe <input type="radio"/> Very Severe
During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?		
<input type="radio"/> Not at all	<input type="radio"/> A little bit	<input type="radio"/> Moderately <input type="radio"/> Quite a bit <input type="radio"/> Extremely

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ENERGY AND EMOTIONS:

These questions are about how you feel and how things have been with you during the last 4 weeks. For each question, please give the answer that comes closest to the way you have been feeling.

Did you feel full of pep?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

Have you been a very nervous person?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

Have you felt so down in the dumps that nothing could cheer you up?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

Have you felt calm and peaceful?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

Did you have a lot of energy?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

Have you felt downhearted and blue?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

Did you feel worn out?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

Have you been a happy person?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

Did you feel tired?

- ☐ All of the time
☐ Most of the time
☐ A good Bit of the Time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

SOCIAL ACTIVITIES:

During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

- ☐ All of the time
☐ Most of the time
☐ Some of the time
☐ A little bit of the time
☐ None of the Time

GENERAL HEALTH:

How true or false is each of the following statements for you?

I seem to get sick a little easier than other people

- ☐ Definitely true ☐ Mostly true ☐ Don't know ☐ Mostly false ☐ Definitely false

I am as healthy as anybody I know

- ☐ Definitely true ☐ Mostly true ☐ Don't know ☐ Mostly false ☐ Definitely false

I expect my health to get worse

- ☐ Definitely true ☐ Mostly true ☐ Don't know ☐ Mostly false ☐ Definitely false

My health is excellent

- ☐ Definitely true ☐ Mostly true ☐ Don't know ☐ Mostly false ☐ Definitely false

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GREEN Walk Exercise Protocol

Week	Session focus	Activities	Duration
1	Leveled surface	Warm-up for 5 minutes Walk 300m in a straight line on leveled surface start for 25 minutes Walk 400m with a cone parallel to one another on leveled surface for 25 minutes Cool down for 5 minutes	60 mins
2	Unleveled surface	Warm-up for 5 minutes Walk 150m in a straight line on leveled surface for 5 minutes Walk 200m with a cone parallel to one another on leveled surface for 10 minutes Walk 250m in a straight line on unleveled surface for 15 minutes Walk 400m with a cone parallel to one another on unleveled surface for 20 minutes Cool down for 5 minutes	60 mins
3	Walking on a curb	Warm up for 5 minutes Walk 150m in a straight line on leveled surface start for 5 minutes Walk 200m with a cone parallel to one another on unleveled surface for 5 minutes Practice stepping up and down on a curb for 15 minutes Walk 600m on a curb with one 5cm box, one 10 cm box and one 20 cm box along the pathway for 25 minutes Cool down for 5 minutes	60 mins
4	Walking on a ramp	Warm up for 5 minutes Walk 300m on a curb with one 5cm box, one 10 cm box and one 20 cm box along the pathway for 10 minutes Walk on ramp focusing ascending for 10 minutes Walk on ramp focusing descending for 10 minutes Walk 500m on a ramp in a zigzag route, passing five cones with a 2m distance for 20 minutes Cool down for 5 minutes	60 mins
5	Walking on the stairs	Warm up for 5 minutes Walk 300m on a ramp in a zigzag route, passing five cones with a 2m distance for 10 minutes Practice walking up on a stairs for 10 minutes Practice walking down on a stairs for 10 minutes Ascend and descend at least three to five flight of stair for 20 minutes Cool down for 5 minutes	60 mins
6	Combination	Warm up for 5 minutes Walk in a straight line on flat and uneven surface for 10 minutes Walk on a curb with one 5cm box, one 10cm box, and two 20cm boxes along the pathway for 10 minutes Walk on a ramp in a zigzag route, passing five cones with 2m distance for 15 minutes Ascend and descend at least three to five flight of stairs for 15 minutes Cool down for 5 minutes	60 mins