

National Taipei University of Nursing and Health Sciences

Doctoral Dissertation Proposal

School of Nursing

**The Effect of a Yoga Intervention for Reducing Stress among People Living
with HIV in Indonesia: A Randomized Controlled Trial
(Study Protocol and Statistical Analysis Plan)**

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Advisor: Miao-Yen Chen RN, PhD

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1. Yoga protocol intervention

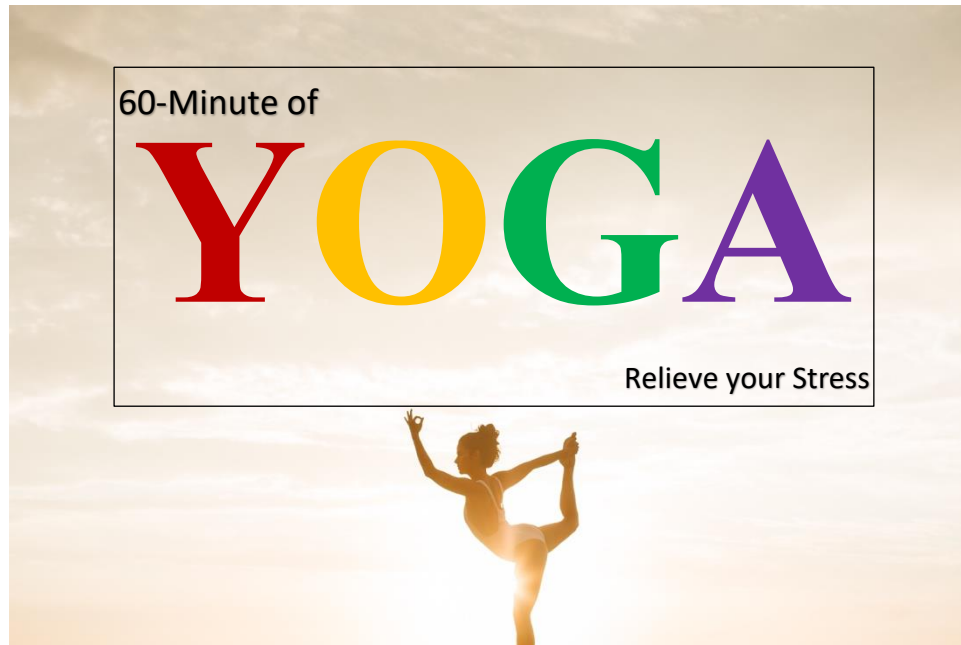
Participants in the yoga group engaged in eight biweekly online Hatha yoga classes for 120 minutes each at home. Classes began with 15 minutes of sitting meditation; breathing exercises; shoulder, neck, and back stretches; and sun salutations (either seated or standing). Following that, ten minutes of standing poses, fifteen minutes of balancing poses, and ten minutes of abdominal and back-bend positions will be performed. After 10 minutes of cool-down stretches and a final time of rest, all sessions was concluded. Physical postures and supportive props were modified to accommodate participants of all abilities. Participants was given an honorarium of Rp 50.000 or 3.49 USD at the baseline and final assessments. The full version of the yoga protocol is available in appendix III.

Table 3: Yoga protocol

Position	Main content	Length time
1. Warm-up	(1) Seated meditation, (2) Alternate (3) Nostril breathing, (4) Bellows breath, (5) Shoulder/neck stretches, (6) Cat-cow forward fold, (7) Sun salutations.	10 minutes
2. Standing poses	(1) Warrior one, (2) Warrior two, (3) Triangle, (4) Extended side angle, (5) Reverse warrior, (6) High lunge with twist.	10 minutes
3. Balance poses	(1) Tree pose, (2) Standing holding knee, (3) Modified warrior three (chair support), (4) Half-moon.	10 minutes

4. Abdominal and back bends	(1) Bird-dog, (2) Side plank, (3) Bridge, (4) Cobra, (5) Sphinx, (6) Baby position	10 minutes
5. Meditation	Full lotus, half lotus, Burmese	10 minutes
6. Cool down	(1) Twist, (2) Cobbler's pose, (2) Hip (3) Stretches, (4) Corpse pose, (5) Side-lying, (6) Seated on.	10 minutes

The Yoga Protocol



A Hatha Yoga protocol to reduce stress among people living with HIV

Jufri Hidayat
Doctoral student



National Taipei University of Nursing and Health Sciences

Yoga intervention for stress reduction among people living with HIV

Estimated length of time per session: 60 minutes

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Preface




This 60-minute yoga protocol was developed for participants in the research project, “The effect of a yoga intervention for reducing stress among people living with HIV during the covid-19 pandemic in Indonesia, a randomized controlled trial.”


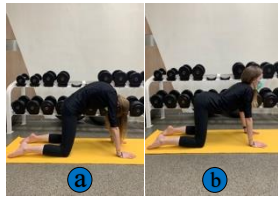

You have been given a copy of this protocol because you are an HIV positive person and are undertaking a yoga intervention program to reduce stress. This protocol has an instructor and pictures of yoga poses to help you to practice yoga correctly. Share this protocol with your family, friends, or community who might need help to recover from stress related to HIV.

Jufri Hidayat




Doctoral student

February 3rd, 202

Position	Activity/purpose	Action plan		
Warm up (15 minutes)	<p><u>Activity:</u> (1) Seated meditation, (2) Alternate nostril breathing, (3) Bellows breath, (4) Shoulder/neck stretching, (5) Cat-cow forward fold, (6) Sun-salutation.</p> <p><u>Maximum duration:</u> 15 minutes</p> <p><u>Purpose:</u></p> <ul style="list-style-type: none"> Warming up for hatha yoga aims to help participants to prepare their minds to be centered, calm, and focused. A distracted mind prevents participants from reaping the deepest psychological and spiritual benefits from yoga practice. <p><u>Equipment:</u> Yoga mattress, chair, sport clothes, chair</p>	 <p>1. Seated meditation</p>	 <p>2. Alternate nostril breathing</p>	 <p>3. Bellows breath</p>
		<p>Sit on yoga mat with legs crossed and body relaxed. Place both hands on legs. Keep your lower jaw parallel to the ground. Relax your abdomen, feet, pelvis, and shoulders. Sit upright so your spine is centered between your left and right shoulders, with your eyes closed. Observe the breath</p>	<p>Sit on yoga mat with legs crossed and body relaxed. Place left hand on left knee. Raise your right hand towards your nose and exhale completely. Use your right thumb to close your right nostril while you inhale through the left nostril. Then close your left nostril with your index finger as you open the right nostril, exhaling</p>	<p>Instruction: Sit as in seated meditation, with shoulders relaxed. Take a few deep breaths, breathing in and out from nose. With each inhale, expand your belly fully with your breath. Begin bellows breath by exhaling forcefully through your nose at the rate of one breath per second. These are a series of short sharp exhales, with passive</p>

		<p>coming in and going out, letting thoughts float away like logs rolling down the river.</p>	<p>through the right side. Next inhale through your right nostril, then close it as you open the left nostril and exhale through the left side. This is one cycle. Repeat 5 times.</p>	<p>inhalation happening in between. Make sure the breath comes from your diaphragm, with your belly moving in and out. head, neck, shoulders, and chest</p>
		 <p>4. Shoulder/neck stretching</p>	 <p>5. Cat-cow forward fold</p>	 <p>6. Sun salutation</p>
		<p>Instruction: sit as in seated meditation. Place one of your hands behind your back with the other hand on top of your head. With the hand on your head, gently pull your ear toward your shoulder. Feel the stretch at the side of the neck. Hold it for 20 seconds and repeat three times. Then</p>	<p>Instruction: Begin on your hands and knees in the table pose, with your spine relaxed. As you exhale, come into cat pose by rounding your spine outward like a cat arching its back, tucking your tailbone in, and drawing your stomach in. Next, as you inhale, move into cow pose by lifting your sit bones</p>	<p>Instruction: Begin in a standing position with your feet slightly apart and parallel to each other, your palms turned out, and shoulders relaxed. Then follow this sequence of positions: mountain pose (i.e., standing with the palms of your hands facing towards your body alongside your thighs), Inhaling, lift both</p>

		<p>repeat these steps for the other side.</p>	<p>upward, pressing your chest down and forward, lifting your head up and allowing your belly to sink.</p> <p>Relax your shoulders away from your ears, gazing straight ahead.</p>	<p>arms up. Exhaling, fold forward at the hips bringing your hands down to the mat. Step the right leg back and lunge. Then step the left leg back in plank, keeping body parallel to the floor. Then, bending your elbows bring the chest down to the ground. Push up with your hands, straightening the elbows and sliding forward into up dog. Curl the toes under, press down on feet and hands, lifting your hips up. Straighten elbows and knees. Then step your right foot forward so your right foot is parallel with your hands. Bring left foot up to the right foot and you are standing flexed at the hips in forward fold. Inhaling and standing up, swoop the arms out to the sides and above your head. Bring the palms together</p>
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				and lower them to your heart in namaste and back to mountain pose. The yoga instructor will demonstrate how to do this.
Standing pose (10 minutes)	<p><u>Activity:</u> (1) Warrior one, (2) Warrior two, (3) Triangle, (4) Extended side angle, (5) Reverse warrior, (6) High lunge with twist.</p> <p><u>Maximum duration:</u> 10minutes</p> <p><u>Purpose:</u></p> <ul style="list-style-type: none"> • Strengthen and stretch all muscle groups in the legs, particularly the thighs, hamstrings, buttocks, calves and ankles. • Build balance and stability and improve flexibility. • Reduce stress and promote better sleep. 	 <p>1. Warrior one</p> <p>Instruction: Begin by standing. Then extend your right foot forward. Bend your right knee into a lunge with your feet parallel and toes pointing forward. Keep your left leg straight behind you and turn your left heel approximately 45</p>	 <p>2. Warrior two</p> <p>Instruction: Start in standing (i.e., mountain) pose. Step your right foot out to your side with your feet wider than shoulder length apart in a five-pointed star position. Turn your right foot out to the right at a 45 degree angle. Bend your right</p>	 <p>3. Triangle</p> <p>Instruction: Begin standing, then spread your feet apart to a position wider than your shoulders. Bend your left leg slightly and raise your arms out from your sides until they are parallel to the ground, forming a “T” shape. Place your left hand</p>

		<p>degrees outward. Raise your arms straight above your head, keeping shoulders down. Squeeze your shoulder blades together and pull them downward. Lift your chin to gaze at your hands overhead. Hold this pose, then lower your arms and repeat on the left side.</p>	<p>knee until the knee is above your ankle. Extend your arms parallel to the ground. Relax your shoulders downwards. Turn your left foot out 90 degrees, then bend your right knee into a lunge. Be sure to keep the knee of your right leg above your ankle and pointing past your toes. Turn your head to the left and look beyond your fingers. Repeat this on the other side.</p>	<p>either on your left leg or touching the mat in the front of your left foot. Raise your right arm, extending it overhead and hold. Then repeat on the other side.</p>	
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4. Extended side angle

Instruction:
Start in warrior two pose and reach your left arm up. Then, extend your left arm up above your ear, turning your thumb up and your pinky down. Continue to plant your feet firmly on the mat as you reach up. Then lean back slightly to gently twist your chest and core open. Press your right knee open toward your little toe. As you reach over your ear, keep abdominal muscles active and extend your spine, reaching your



5. Reverse warrior










Instruction:
Start in warrior two, lift your right arm up to the ceiling. At the same time lower your left hand and slide it down your left leg. Move your shoulder blades together and pull your lower ribs in, lifting your chest as you come into a gentle backbend. Look at your raised hand. Stay in the pose for up to 5 breaths.



6. High lunge with twist

Instruction:
Start in warrior one, bend the knee of the back leg a little, lengthen your tailbone towards the floor. Stretch through your back leg, opening and stretching the sole of the foot. Open your chest and draw your front ribs down into your torso. Stay in this position for five breaths.

		hand down to the floor or to a yoga block placed in front of your foot.			
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<p>Balance pose</p>	<p><u>Activity:</u> (1) Tree pose, (2) Standing holding knee, (3) Modified warrior three (chair support), (4) Half moon.</p> <p><u>Maximum duration:</u> 15 minutes</p> <p><u>Purpose:</u></p> <ul style="list-style-type: none"> • Strengthening and lengthening the muscles. • Exploring your center of gravity and improving the body's equilibrium. • Improving focus, concentration, and memory and relieving stress 	<table> <tr> <td>  <p>1. Tree poses</p> </td><td>  <p>2. Standing holding knee</p> </td><td>  <p>3. Modified warrior 3 (Chair support)</p> </td></tr> <tr> <td> <p>Instruction: Begin in mountain pose. Shift your weight onto your left leg. Bend your right knee and place your right foot on the inside of your left leg, either above or below the knee joint, pressing your foot against your inner thigh. Pull your left hip in over your left foot (use chair or wall to help balance if needed). Lengthen your spine, loosen shoulders and tuck your chin slightly in and back, bringing</p> </td><td> <p>Instruction: Begin in mountain pose. Place your left hand on your hip. Moving very slowly, draw your right knee up towards your chest. With your right hand, hug your knee to your chest. Lengthen your spine, tightening the muscles of your left side and abdomen. Stiffen your left leg, but do not lock your knee. Drop your right hip slightly until it is in line</p> </td><td> <p>Instruction: Begin with warrior one on the right side. Bring your palms together and begin to lean forward. Lift the left leg off the floor, keeping the body, arms, and raised left leg parallel to the floor, flexing the toes. Strengthen the standing leg and your arms. Fix your gaze looking down, hold the pose and breathe. Then lower your leg back down into warrior 1 position, then practice on the other side.</p> </td></tr> </table>	 <p>1. Tree poses</p>	 <p>2. Standing holding knee</p>	 <p>3. Modified warrior 3 (Chair support)</p>	<p>Instruction: Begin in mountain pose. Shift your weight onto your left leg. Bend your right knee and place your right foot on the inside of your left leg, either above or below the knee joint, pressing your foot against your inner thigh. Pull your left hip in over your left foot (use chair or wall to help balance if needed). Lengthen your spine, loosen shoulders and tuck your chin slightly in and back, bringing</p>	<p>Instruction: Begin in mountain pose. Place your left hand on your hip. Moving very slowly, draw your right knee up towards your chest. With your right hand, hug your knee to your chest. Lengthen your spine, tightening the muscles of your left side and abdomen. Stiffen your left leg, but do not lock your knee. Drop your right hip slightly until it is in line</p>	<p>Instruction: Begin with warrior one on the right side. Bring your palms together and begin to lean forward. Lift the left leg off the floor, keeping the body, arms, and raised left leg parallel to the floor, flexing the toes. Strengthen the standing leg and your arms. Fix your gaze looking down, hold the pose and breathe. Then lower your leg back down into warrior 1 position, then practice on the other side.</p>
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your hands in front of your heart (prayer position). Stay in this pose for 30 seconds or 1 minute, then repeat on the other side.

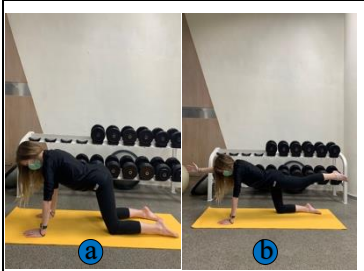
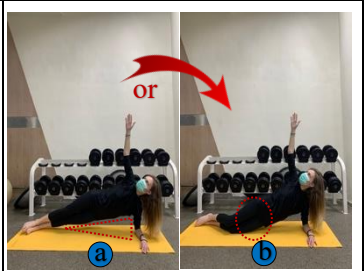

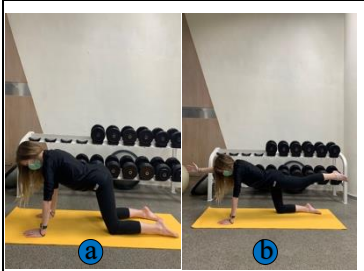
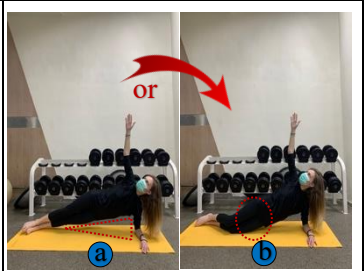

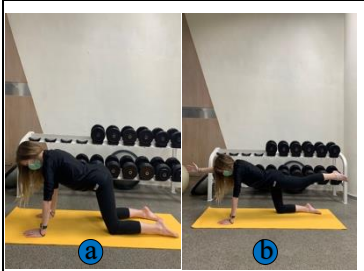
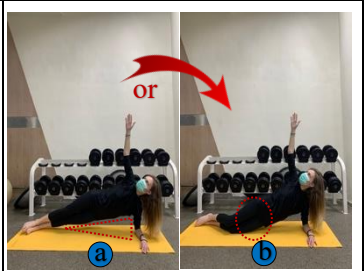

with your left hip. Hold for 1 minute.









4. Half-moon pose (chair support)




Instruction:
Start in warrior 2 with a chair beside you. Bring your right hand to your hip and turn your head to look at the floor. Bend your front leg and shift your weight onto your front foot. Move your hand a little forward and place your forearm on the chair

		<p>directly beneath your shoulder. Press down through your fingers to steady yourself. Lift your back leg until your thigh is parallel to the floor. Slowly turn your chest to face the right. Extend your other arm toward the ceiling. Either keep your gaze on the floor or slowly bring it to your hand above.</p>	
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<p>Abdominal and back bends</p>	<p><u>Activity:</u> (1) Bird-dog, (2) Side plank, (3) Bridge, (4) Cobra, (5) Sphinx.</p> <p>Duration: 10 minutes</p> <p>Purpose:</p> <ul style="list-style-type: none"> • Lengthen and strengthen spine, promoting flexibility, mobility, and good posture. • Stretch shoulders, chest, and abdomen. • Reduce stress and anxiety. 	<table border="1"> <tr> <td>  <p>1. Bird-dog</p> </td><td>  <p>2. Side plank</p> </td><td>  <p>3. Bridge</p> </td></tr> <tr> <td> <p>Instruction: Begin with hands and knees on the floor in the tabletop position, with knees under hips and hands under your shoulders. Maintain a neutral spine by firming up your abdominal muscles. Draw your shoulder blades together, raising right arm and left leg. Keeping shoulders and hips parallel to the floor, extend the back of your neck and tuck your chin into your chest to gaze down at the floor. Hold this position for a</p> </td><td> <p>Instruction: Begin with plank pose (with your weight on both forearms) and press your palms into the mat as you lift up through your shoulder). Turn onto the outside of your right foot, stacking your left foot on top of it. Rotate your entire body to face forward with your flank toward the floor. Press your right hand down, keeping your body even from heel to fingers, as you raise your left arm up toward the sky. Take 5 to 10 deep breaths.</p> </td><td> <p>Instruction: Lying on your back, place your feet flat on the floor, with your arms next to your ribcage. Inhale and press the back of your shoulders and your feet into the floor and lift your hips. Actively press the inside of feet down and keep your knees from spreading out wide. You're your belly in and slide your shoulder blades down your back, keeping your neck neutral. You can clasp your hands</p> </td></tr> </table>	 <p>1. Bird-dog</p>	 <p>2. Side plank</p>	 <p>3. Bridge</p>	<p>Instruction: Begin with hands and knees on the floor in the tabletop position, with knees under hips and hands under your shoulders. Maintain a neutral spine by firming up your abdominal muscles. Draw your shoulder blades together, raising right arm and left leg. Keeping shoulders and hips parallel to the floor, extend the back of your neck and tuck your chin into your chest to gaze down at the floor. Hold this position for a</p>	<p>Instruction: Begin with plank pose (with your weight on both forearms) and press your palms into the mat as you lift up through your shoulder). Turn onto the outside of your right foot, stacking your left foot on top of it. Rotate your entire body to face forward with your flank toward the floor. Press your right hand down, keeping your body even from heel to fingers, as you raise your left arm up toward the sky. Take 5 to 10 deep breaths.</p>	<p>Instruction: Lying on your back, place your feet flat on the floor, with your arms next to your ribcage. Inhale and press the back of your shoulders and your feet into the floor and lift your hips. Actively press the inside of feet down and keep your knees from spreading out wide. You're your belly in and slide your shoulder blades down your back, keeping your neck neutral. You can clasp your hands</p>
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		few seconds, then do the other side.		behind your back. Stay in this position for 5 to 15 breaths.
				
		4. Cobra	5. Sphinx	6. Baby position
		<p>Introduction:</p> <p>Lie on your stomach, with your toes pointing straight back. Position your hands underneath your shoulders, with elbows close to your body. With legs engaged, pull the belly in and up, lifting your chest from the back of your heart. Sticking your chest out, pull your shoulder blades together and down along the spine. Come down</p>	<p>Introduction: Lying down on your belly with your shoulders over your elbows, with your forearms flat on the floor. Bring your shoulder blades together sliding down your back and feel your chest pushing slightly forward. Breathe into your lower back and abdomen. To come out of the pose, lower your torso, bringing your elbows toward your sides and</p>	<p>Introduction: Place your hands and knees on the mat. Spread your knees the same width as the mat and extend your big toe with your big toe on the floor. Place your stomach between your thighs and your forehead on the floor. Relax your shoulders, chin and eyes. If you're not good at putting your forehead on the floor, put your forehead on a</p>

		gradually as you exhale. Repeat that two times.	rest your forehead on your hands.	stack of fist blocks or two
Cool down	<p><u>Activity:</u> (1) Twist, (2) Cobbler's pose, (3) Hip stretches, (4) Corpse pose, (5) Side-lying, (6) Seated on.</p> <p>Duration: 10 minutes</p> <p>Purpose:</p> <ul style="list-style-type: none"> • Gradually slow down allowing heart rate to return to normal, preventing muscle soreness. • Reduce stress and improve relaxation. 	 <p>1. Twist</p> <p>Instruction: Begin in seated meditation pose with right leg crossed on top of your left. Inhale and bring your right hand straight up beside your right ear. Exhale and twist your torso to the left, bringing your right elbow to the outside of your left knee and place your left palm on the floor slightly behind</p>	 <p>2. Cobbler's pose</p> <p>Instruction: Bend your knees and bring the soles of your feet together. As you let your knees fall down to either side, draw your feet in towards your body as far as you comfortably can. Press the outer edges of your feet together firmly. You can use your hands to pull</p>	 <p>3. Hip stretches</p> <p>Instruction: Lie on your back with your knees bent and feet flat on the floor. Bend your right knee until your lower leg is perpendicular to the floor. Then bring your left knee up, rotating your left leg outward at the hip so you can rest your left ankle on your right thigh just above the knee. Bring your right hand to the outside of the right thigh and pass your left</p>

		<p>your sit bones. Direct your gaze over your left shoulder without straining your neck. On each inhale, lengthen your spine upwards. On each exhale, deepen the twist slightly.</p>	<p>your feet together and toward your body.</p>	<p>hand through the opening formed by your crossed left leg. As you pull your right thigh toward your chest with your hands, press your left thigh with your left elbow. Hold for 30 seconds.</p>
		 <p>4. Corpse pose</p>	 <p>5. Side-lying</p>	 <p>6. Seated on</p>
		<p>Introduction: Lie on your back. Separate your legs slightly and allow your feet to fall open to either side. Bring your arms down alongside your body, at a small distance from your torso. Turn your palms to face upwards but let the fingers curl in. Tuck your shoulder blades into</p>	<p>Instruction: Rest on the mat on your most comfortable side. Use your arm or a folded blanket to support your head and another to separate your knees. Roll the top hip slightly forward and shift the bottom hip slightly</p>	<p>Instruction: This seated meditation pose is the last pose of the yoga series, exactly the same as the first one. Hold this position for one minute.</p>

		<p>your back. Once you have put your limbs in place, relax completely without making an effort to holding them in position. Relax your entire body, including your face. Feel the weight of your body against the floor.</p>	<p>back so the hip joints are not stacked on top of each other. Relax the belly and breathe slowly and deeply. Feel the breath in your body as you gently observe each inhale and exhale.</p>	
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3. Statistical analysis plan

Before performing statistical procedures, all data was entered into a computer and checked for errors. To analyze the data, the researcher then used SPSS computer software version 20. The data for all variables was manually coded before using the SPSS application, including demographic characteristics of patients, the perceived stress scale results brief health status survey, and coping self-efficacy. The alpha value was set at $\alpha=0.05$ to determine the statistical significance of the variables. For demographic characteristics, the data analysis was descriptive statistics to identify the frequencies and percentages for categorical variables and the means and standard deviations for continuous variables. Before the statistical data processing begins, the data for independent and dependent variables was tested to determine its distribution and normality using plot histograms, logs and square roots, and checking residuals.

This study took repeated assessments over time and used a Generalized Estimating Equation (GEE) approach to model each study outcome and to predict the relationship of the variables while accounting for correlated data within the repeated measures (Hardin & Hilbe, 2007). The GEE technique, introduced by Liang and Zeger (1986), was the most often used strategy in marginal models, and it was a variation of Generalized Linear Modelling (GLM). GEE can handle correlated data with discrete, continuous, or binary outcomes. GEE is a non-likelihood or quasi-likelihood data modeling approach that specifies one of many working correlation matrix architectures to account for within-subject correlations (Liang & Zeger, 1986).