Physical Therapy Healthy Lifestyle Appraisal: Final Phase for Establishing Reliability

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Background

Many chronic diseases can be prevented with lifestyle changes, yet they remain the leading cause of death in the United States.[1]

Physical therapists are in an optimal position to provide primary prevention strategies to patients. These strategies include providing education on the importance of health, wellness, and fitness initiatives, and coaching patients to modify health behaviors.[2] The following health behaviors affect a person's overall health and wellness, and can be impacted by physical therapy intervention:[3]

- Healthy Eating
- Physical Activity (Aerobic & Strengthening)
- Sleep
- Stress Management
- Tobacco Use

Transtheoretical Model (Stages of Change Model)

The transtheoretical model of health behavior change describes how individuals change and adapt their behavior over time[4]. Readiness for behavior change occurs in five stages:
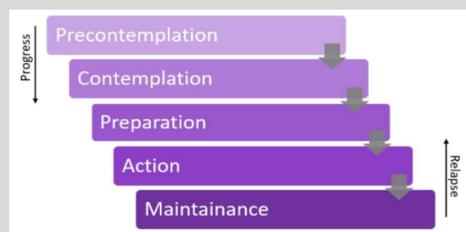
The following stages were combined in this phase of the study. Contemplation and Preparation were identified as the optimal stages to provide coaching for positive health behavior change.

Why are physical therapists not assessing and discussing health behavioral changes with patients? The following barriers were reported:

- Lack of time or reimbursement
- Lack of training and self-efficacy
- Concern of appropriateness
- Concern of effectiveness[5, 6]

Physical therapists need a comprehensive tool like the Physical Therapy Healthy Lifestyle Appraisal (PTHLA) to assess patients' readiness and confidence to make a change to one or more health behaviors.

Purpose

The purpose of this study was to determine the test-retest reliability of the revised 18-item Physical Therapy Healthy Lifestyle Appraisal (PTHLA).

Methods (continued)

Phases 1 & 2

Evaluation of psychometric properties of the original PTHLA (108 items)

Results

- Stage of change questions had higher reliability than the readiness rulers
- Moderate to strong correlation between the multiple-item self-efficacy scales and confidence rulers

Subsequent Changes

- Multiple-item self-efficacy scales and readiness rulers were removed

Phase 3

- Evaluated the revised 18-item questionnaire following all modifications
  - Health behavior definition, multiple choice stage of change question, 10-point confidence and importance rulers for each health behavior

Statistical Analysis

- Descriptive statistics used to analyze patient demographics
- Weighted Kappa was used to determine test-retest reliability for the multiple-choice items
- Intraclass Correlation Coefficient (ICC) was used to determine test-retest reliability for the confidence and importance rulers

Distribution

- 50 identical sets of questionnaires distributed to an outpatient physical therapy clinic in Lake Elmo, MN.
  - PTs determined eligibility of patients based on inclusion criteria
  - Patients were given the questionnaires and informational letter that served as informed consent
  - Test-retest period of 2-7 days

Inclusion Criteria

- Patients >18 years old
- Able to read and write in English
- Currently receiving or recently discharged from PT

Results (continued)

Descriptive Statistics

Patient Demographics	
Response Rate (n)	56% (28/50)
Mean Age (range)	67 (52-80)
Female (%)	22 (79%)
Male (%)	6 (21%)

Test-Retest Reliability

Kappa Values: Stage of Change Items

Health Behavior	Kappa Value
Healthy Eating	0.621*
Physical Activity (Aerobic)	0.799**
Sleep Hygiene	0.555*
Physical Activity (Strength)	0.672*
Stress Management	0.905**
Tobacco Use	0.48

* = moderate test-retest reliability
** = good test-retest reliability[7]

ICC Values for 10-point Importance Rulers

Health Behavior	ICC	95% Confidence Interval	
		Lower Bound	Upper Bound
Healthy Eating	0.818**	0.641	0.913
Physical Activity (Aerobic)	0.394	0.020	0.670
Sleep Hygiene	0.803**	0.617	0.905
Physical Activity (Strength)	0.864**	0.727	0.935
Stress Management	0.729*	0.487	0.867
Tobacco Use	1.0**	-	-

* = moderate test-retest reliability
** = good test-retest reliability[7]

ICC Values for 10-point Confidence Rulers

Health Behavior	ICC	95% Confidence Interval	
		Lower Bound	Upper Bound
Healthy Eating	0.662*	0.388	0.828
Physical Activity (Aerobic)	0.898**	0.790	0.952
Sleep Hygiene	0.780**	0.578	0.892
Physical Activity (Strength)	0.872**	0.745	0.938
Stress Management	0.795**	0.601	0.901
Tobacco Use	1.0*	-	-

* = moderate test-retest reliability
** = good test-retest reliability[7]

Discussion

Adequate reliability for clinical use

- Test-retest reliability moderate to good across all items except:
  - Importance ruler for aerobic activity (ICC = 0.394) Assumed to be due to an outlier found in the data
  - Stage of change for tobacco use (Kappa = 0.48) Assumed to be due to a testing error

Strengths

- Established test-retest reliability from phases 1 & 2
- High response rate
- Ability to generalize results to outpatient population due to a variety in ages and diagnoses reported

Limitations

- Smaller sample size than phases 1 & 2
- Unable to confirm test-retest time period
- The same clinic was used as in phases 1 and 2, leading to a possible learning effect
- Discussion of health behaviors with clinician may influence patient response (Hawthorne's bias)

Implications

- The PTHLA is a comprehensive tool used to assess patients' readiness and confidence to change
- The PTHLA is an easy-to-use, efficient, and reliable tool for physical therapists to incorporate into clinical practice

Future research

- Qualitative study using focus groups of physical therapists in outpatient clinics
  - Feasibility, impact of use, patient response, successful and unsuccessful use, barriers
  - Use in other physical therapy settings and populations

Clinical Significance

The third version of the PTHLA is a simple, efficient, and reliable tool to assess and address an individual's health behaviors in an outpatient physical therapy setting.

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