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EXAMINATION OF STRENGTH AND IMMUNITY W.S.R. TO BALA PRAMANA

Dr. Roshani Verma,

M. D. Swasthavritta (Ayurveda), Ayurveda Medical Officer,

Govt. Ayurveda College, M. P., India

Corresponding Author Email ID: dr.roshaniverma@gmail.com

INTRODUCTION

DASHAVIDHA PAREEKSHYA BHAVA CH.VI. 8/84

Karan (cause): The physician serves as the causative factor for the achievements of the object i. e. the maintenance of the equilibrium of dhatus.

Karana (instrument): Medicaments

Karyayoni (source of action): Disturbance of the equilibrium of dhatus.

Karya (action itself): maintenance of the equilibrium of dhatus.

Karyaphala (fruits of action): Attainment of happiness, i.e. the state of freedom from a disease.

Anubandha (subsequent manifestation): Longevity

Desha (habitat): Both the land as well as the patient constitute desha or habitat.

Kala (time): The year consisting of seasons and the state of the disease constitute kala or time.

Pravritti (initiation): Therapeutic action.

Upaya (means of action): Excellence of the physician and the correctness of the therapy constitute upaya or means of action.

DESHA:

DASHAVIDHA PAREEKSHA: is for **BALA PRAMANA GYAN**

Prakriti	Constitution
Vikriti	Abnormality/ disorder
Sara	Essential predominance
Samhanana	Compactness of body
Pramana	Measurements of body parts
Satmya	Suitability
Sattva	Psyche
Aharashakti	Power of ingestion & digestion
Vyayamshakti	Power of exercise
Vaya	Age

Relation between Ojas & Bala:

Slesma in the normalcy gives strength to the body and known as bala. In abnormal state it is like mala i.e. excreta, which should be expelled out of the body. This balait self is considered as ojas.

Dalhana in his commentary mentions a slight difference between ojas and bala. Ojas the essence of all dhatus is nourished by unctuousness and its rasa (taste), guna (quality) and varna (colour) etc. are mentioned. Bala is gauged by capacity to do work, like carrying heavy weights and strength. Their rasa, guna and virya are not mentioned.

Natural strength:

Bala the strength, both mental and physical are present naturally by birth. Certain people are strong by birth due to their excellence of dhatus. This depends on healthiness of shukra, excellence of time and place.

Strength depending on time factor:

The strength due to favorable conditions like youth, season etc. the person naturally has less strength in childhood and old age, strength increases during visargakala i.e. period of nourishment.

Acquired strength:

Strength acquired by the intake of diet such as flesh, ghee etc, which enhance strength, correct exercise, rest, and rejuvenating and strength enhancing drugs.

Factors which enhance bala:

Place where the persons are strong like sindhu region, season when strength is more like Hemanta and Shishirritu, healthy male gamete, female gamete and uterus, food which enhance strength and ojas, robust body, conductive food and regimen, strong mind, practice of exercise, young age and action which bring about pleasantness of mind are factors which enhance strength.

Rationale for Test Items

Aerobic Endurance Assessments

What is the rationale for assessing aerobic endurance?

Aerobic endurance is the most critical element of physical fitness. Research indicates that healthy levels of aerobic endurance are associated with reduced risk of high blood pressure, coronary heart disease, obesity, diabetes, some forms of cancer, and other health problems in adults. Aerobic endurance is also referred to as cardiorespiratory fitness. The benefits of cardiorespiratory fitness are summarized in Physical Activity and Health: A Report of the Surgeon General (U.S. Department of Health and Human Services, 1996).

What is the rationale for the P.A.C.E.R. test?

The P.A.C.E.R. (Progressive Aerobic Cardiovascular Endurance Run) is a multi-stage aerobic fitness test that provides a built-in warm-up and helps children pace themselves effectively. It is suggested that the test be set to a musical pace to create a valid, fun alternative to the one-mile run for aerobic endurance. Pilot testing shows that most students had a positive experience in performing the PACER, the test helps students to learn the skill of pacing, and negative experience of some students in finishing last in a distance run is eliminated in this test.

What is the rationale for the one-mile run test?

The one-mile run has been a standard element of the Connecticut Physical Fitness Assessment Program since its inception. Many students enjoy distance running and are highly motivated by the activity both for sport and recreation. Numerous physical education and athletic programs across the state include curricular and extra-curricular distance running activities. There is significant research that has been conducted over a long period of time that supports the value of running for children as well as the validity and reliability of evaluating aerobic fitness with the one-mile run test.

Flexibility Assessments

Back-Saver Sit-and-Reach

What is the rationale for the back-saver sit-and-reach test?

The recommended item for lower body flexibility assessment is the Back-Saver Sit - and-Reach Test. The assessment is conceptually similar to the more traditional Sit-and-Reach test but is intended to be safer on the back by restricting flexion somewhat. With the traditional sit and reach assessment, the forward flexion movement of the trunk with the legs extended causes the anterior portion of the vertebrae to come closer together such that the discs bulge posteriorly and the muscles, facia, and ligaments of the back are stretched. It also involves a forward rotation of the pelvis and sacrum which elongates the hamstrings. Cailliet (1988) has pointed out that stretching both hamstrings simultaneously results in "overstretching" the low back, especially in terms of excessive disc compression and posterior ligament and erector spinae muscle strain. An additional advantage of the Back saver Sit and Reach is that it allows the legs to be evaluated separately. This allows for the determination of symmetry (or asymmetry) in hamstring flexibility. In addition, testing one leg at a time eliminates the possibility of hyperextension of both knees.

Shoulder Stretch

What is the rationale for including the shoulder stretch? 18

The shoulder stretch has been added to the CPFA3P as an option to try and illustrate to students that flexibility is important throughout the body – not just in the hamstrings, and that flexibility is very specific to each joint. It is intended to parallel the strength/endurance functional assessment of the upper arm and shoulder girdle. Too often, just assessing one flexibility item gives students the false impression that a single result

indicates their total body flexibility, which, of course, is not true. No validity or reliability data are available for the shoulder stretch.

Muscular Strength and Endurance

Why is muscular fitness important?

Balanced, healthy functioning of the musculoskeletal system requires that muscles be able to exert force or torque (measured as strength), resist fatigue (measured as muscular endurance), and move freely through a full range of motion (measured as flexibility). Positive relationships have been demonstrated between musculoskeletal fitness and health status (risk factors, disease development and all-cause mortality) in adults (Brill, Macera, Davis, Blair, & Gordon, 2000; Fitzgerald, Barlow, Kampert, et al., 2004; Jurca, Lamonte, Barlow, et al., 2005; Katzmarzyk& Craig, 2002; Kell, Bell &Quinney, 2001; Mason, Brien, Craig, Gauvin, &Katzmarzyk, 2007; Payne, Gledhill, Katzmarzyk, Jamnik& Ferguson, 2000b). The tracking of neuromuscular fitness has been shown to be moderately high (and higher than cardiovascular respiratory fitness) from adolescence to young adulthood (Twisk, Kemper, &vanMechelen, 2000). For these reasons, strength, endurance and flexibility are viewed as important dimensions of health-related fitness.

Upper Body Strength and Endurance - The 90° Push-up Test

What is the rationale for the 90° push-up test?

A number of assessments of upper arm and shoulder girdle strength/endurance have been used in various youth fitness batteries. The most commonly used assessment is the push up test. The 90° push-up was selected as the recommended test item in the CPFA3P because it has some very practical advantages over the pull-up. The most important advantages are that it requires no equipment and very few zero scores occur. The use of a cadence (20 reps per minute) with the push-up has been found to eliminate many of the concerns about all-out speed tests. The majority of children can successfully perform the 90° push-up assessment and have a more favorable experience.

Abdominal Strength and Endurance - The Curl-Up Test

What is the rationale for the curl-up test?

A cadence-based curl-up test is recommended for abdominal strength/endurance testing in the *CPF3AP* battery. The selection of this test over a full sit-up assessment was based on

extensive research and biomechanical analyses of arm placement, leg position, feet support, and range of motion of the movement (Plowman, 1992b). The use of a cadence (20 reps per minute) with the curl-up has been found to eliminate many of the concerns about the ballistic nature of one-minute all-out speed tests (Jette, Sidney, &Cicutti, 1984; Liemohn, Snodgrass, & Sharpe, 1988). Such timed tests with legs straight or bent often result in bouncing, jarring movements and reflect more power than strength or endurance properties and/or allows the use of accessory muscles (Sparling, Milard-Stafford, & Snow, 1997). The use of a pace helps to avoid early fatigue based on starting too fast, standardizes the movement from person to person, and makes it easier to judge whether a full proper repetition has been completed. In addition, the use of a cadence allows students to focus on their own performance. There can be no competitive speeding up. In practice the 3-second pace is slow enough to accomplish the intended goals described above and fast enough to allow for efficient mass testing in school settings.

The mental status examination (MSE) is a very important component of patient assessment in psychiatric settings. The MSE focuses on the patient's current state in terms of thoughts, feelings and behaviors. The categories of the MSE help organize a summary of the information gathered during the initial patient assessment.

Categories	Information
General appearance	Type, condition and appropriateness of clothing (for age, season, setting), grooming, cleanliness, physical condition, posture
Behaviors during the interview	Degree of cooperation, resistance and engagement
Social skills	Friendliness, shyness or withdrawal
Amount and type of motor activity	Psychomotor agitation or retardation, restlessness, tics, tremors, hypervigilance or lack of activity
Speech patterns	Amount, rate, volume, tone, pressured speech, mutism, slurring or stuttering
Degree of concentration	Attention span
Orientation	To time, place, person, person, situation and level of consciousness
Memory	Immediate recall, recent, remote, amnesia and confabulation
Intellectual Functioning	Educational level, use of language and knowledge, abstract versus concrete thinking (proverbs) and calculations (serial sevens)
Affect	Labile, blunted, flat, incongruent or inappropriate
Mood	Specific moods expressed or observed- euphoria, depression, anxiety, anger,guilt or fear
Thought clarity	Coherence, confusion, vagueness
Thought content	Helplessness, hopelessness, worthlessness, suicidal thoughts or plans, suspiciousness, phobias, obsessions, compulsions, preoccupations, poverty of content, denial, hallucinations, (auditory, visual, tactile, gustatory, olfactory) or delusions (of reference, influence, persecution, grandeur, religious, nihilistic, somatic)
Insight	Degree of awareness of illness, behaviors, problems and their causes
Judgment	Soundness of problem solving and decisions
Motivation	Degree of motivation for treatment.

MSE with Marlene Aguilar			
General Appearance	Dressed appropriately for seasons, clothes are clean but not depressed ; hair is unwashed and uncombed; slouched shoulders, pale blank expression.	Memory	Immediate recall: Remembers nurse's name; Recent: Difficulty organizing sequence but mostly complete, except for last week; Remote: Good detail on birth of children
Behaviors during the interview	Degree of cooperation, resistance, and engagement: slow to respond but cooperative	Intellectual Functioning	College education evident in vocabulary; calculations and proverbs were not done; abstract thinking evident in discussion of love and fidelity.
Social skills	Withdrawn; no unusual habits; reduced socialization; poor eye contacts	Affect	Blunted
Amount and type of motor activity	Slowed; crying at times; no tics or tremors noted	Mood	Depressed; anxiety level is moderate; guilt and covert anger expressed.
Speech patterns	Amount is reduced with slowed rate and soft tone	Thought clarity	Clear; coherent
Degree of concentration and attention span	Decreased concentration; easily distracted by stimuli; slight shortening of attention span	Thought content	Expressing helplessness; hopelessness and suicidal thoughts without a plan; fears being alone; no evidence of hallucinations or delusions
Orientation	Aware of person, place and time; responsive	Insight	Aware of problems in facing divorce but not yet able to describe factors leading to separation
Judgment	No impairment until last two weeks when she became unable to make decisions, take action or seek support	Motivation for treatment	Wants help with depression, fatigue and handling divorce; unable to sate what type of help she needs.

GENERAL APPROACH TO EVALUATION OF IMMUNITY:

The type of evaluation to be performed depends on:

- Type of infections
- Age of the patient
- Family history
- Presence of the signs and laboratory findings

In addition, the frequency of various PIDs also significantly influences the evaluation to be performed.