This is a Sample version of the
Berg Balance Scale (BBS)

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comes without 'sample' watermark.

The full complete (12 page) version includes –

- Overview
- Administration Instructions
- (Elderly Falls) Clinical Analysis and Review.
- Complete 14 item BBS questionaire

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Usefulness of the Berg Balance Scale to Predict Falls in the Elderly

Contents:
- Clinical Analysis and review
- Bergs Balance Scale (In Appendix)

ABSTRACT

Objective: The purpose of this systematic review was to complete a comprehensive search and review of the literature to determine the ability of the Berg Balance Scale (BBS) to predict falls in the elderly with and without pathology. Specifically, the cutoff score that is most predictive of falls in the older adults and the sensitivity and specificity of the BBS in predicting falls.
Methods: A search of English-language–based literature with relevant search terms using the OVID, CINAHL, PubMed, and MEDLINE search engines from 1985 to March 2009.
Results: Nine studies warranted inclusion in this systematic review after evaluation for article objectives, inclusion criteria, and scoring 5 or more out of 10 on the Physiotherapy Evidence Database scale. Five studies addressed the elderly population ($\bar{x} = 65$ years) without pathology. The remaining 4 studies addressed elderly participants with neurological disorders. All 9 studies reported sensitivity and specificity of the BBS in predicting falls. Sensitivity and specificity results varied greatly depending on the cutoff score and the author's objectives. Eight of the 9 studies recommended specific cutoff scores.
Discussion and Conclusion: The BBS alone is not useful for predicting falls in the older adults with and without pathological conditions. Given the varied recommended cutoff scores and psychometric values, clinicians should use the BBS in conjunction with other tests/measures considering unique patient factors to quantify the chances of falls in the older adults. This study recommends research to formulate a scoring algorithm that can further enhance the clinician's ability to predict falls in the older adults.
Key Words: Berg Balance Scale, cutoff scores, elderly, falls, psychometrics

(*J Geriatr Phys Ther* 2011;34:3-10.)

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BACKGROUND

Falls among the older adults are a major health concern and may be associated with significant health care costs. Falls are the leading cause of injury deaths, nonfatal injuries, and hospitalizations for trauma among the older adults. In 2000, direct medical expenses for fatal falls totaled $179 million, and $19 billion for nonfatal injuries that may reach up to $54 billion by 2020.[1,2] Defining falls and balance, predicting who is at risk for falls, and improving balance in the older adults are some of the leading topics in geriatric physical therapy today. Balance has been defined in terms of specific pathologies by several authors including participants with neurological diseases, orthopedic deficits, and vestibular disorders.[3,4] Falls, for the purposes of this paper, are defined as a precipitous unplanned descent to the floor resulting in either injury or no injury. Many instruments have been developed to assess balance and predict falls in the older adults. One of the most reliable[5-10] and valid[10-17] outcomes measures tested in a variety of settings with differing populations and diagnoses developed today is the Berg Balance Scale (BBS).

Appendix:

<u>Berg Balance Scale</u>

<u>Description:</u>
14-item scale designed to measure balance of the older adult in a clinical setting.

<u>Equipment needed:</u>   Ruler, 2 standard chairs (one with arm rests, one without)
Footstool or step, Stopwatch or wristwatch, 15 ft walkway

<u>Completion:</u>
    <u>Time:</u>   15-20 minutes
    <u>Scoring:</u>   A five-point ordinal scale, ranging from 0-4. "0" indicates the lowest level
        of function and "4" the highest level of function. Total Score = 56

<u>Interpretation:</u>   41-56 = low fall risk
        21-40 = medium fall risk
        0 –20 = high fall risk

<u>Criterion Validity:</u>
"Authors support a cut off score of 45/56 for independent safe ambulation".

Riddle and Stratford, 1999, examined 45/56 cutoff validity and concluded:
- Sensitivity = 64% (Correctly predicts fallers)
- Specificity = 90% (Correctly predicts non-fallers)
- Riddle and Stratford encouraged a lower cut off score of 40/56 to assess fall risk

<u>Comments:</u>   Potential ceiling effect with higher level patients. Scale does not include gait items

<u>Norms:</u>
Lusardi, M.M. (2004). Functional Performance in **Community Living Older Adults**.
Journal of Geriatric Physical Therapy, 26(3), 14-22.

Table 4. Berg Balance Scale Scores: Means, Standard Deviations, and Confidence Intervals by Age, Gender, and Use of Assistive Device

Age (y)	Group	N	Mean	SD	CI
60-69	Male	1	51.0	—	35.3 – 66.7
	Female	5	54.6	0.5	47.6 – 61.6
	Overall	6	54.0	1.5	52.4 – 55.6
70-79	Male	9	53.9	1.5	48.7 – 59.1
	Female	10	51.6	2.6	46.6 – 56.6
	Overall	19	52.7	2.4	51.5 – 53.8
80-89	Male	10	41.8	12.2	36.8 – 46.8
	Female	24	42.1	8.0	38.9 – 45.3
	No Device	24	46.3	4.2	44.1 – 48.5
	Device	10	31.7	10.0	28.3 – 35.1
	Overall	34	42.0	9.2	38.8 – 45.3
90-101	Male	2	40.0	1.4	28.9 – 51.1
	Female	15	36.9	9.7	32.8 – 40.9
	No Device	7	45	4.2	40.9 – 49.1
	Device	10	31.8	7.6	28.4 – 35.2
	Overall	17	37.2	9.1	32.5 – 41.9

Berg Balance Scale

SITTING TO STANDING
INSTRUCTIONS: Please stand up. Try not to use your hand for support.
( ) 4   able to stand without using hands and stabilize independently
( ) 3   able to stand independently using hands
( ) 2   able to stand using hands after several tries
( ) 1   needs minimal aid to stand or stabilize
( ) 0   needs moderate or maximal assist to stand

STANDING UNSUPPORTED
INSTRUCTIONS: Please stand for two minutes without holding on.
( ) 4   able to stand safely for 2 minutes
( ) 3   able to stand 2 minutes with supervision
( ) 2   able to stand 30 seconds unsupported
( ) 1   needs several tries to stand 30 seconds unsupported
( ) 0   unable to stand 30 seconds unsupported

If a subject is able to stand 2 minutes unsupported, score full points for sitting unsupported. Proceed to item #4.

SITTING WITH BACK UNSUPPORTED BUT FEET SUPPORTED ON FLOOR OR ON A STOOL
INSTRUCTIONS: Please sit with arms folded for 2 minutes.
( ) 4   able to sit safely and securely for 2 minutes
( ) 3   able to sit 2 minutes under supervision
( ) 2   able to able to sit 30 seconds
( ) 1   able to sit 10 seconds
( ) 0   unable to sit without support 10 seconds

STANDING TO SITTING
INSTRUCTIONS: Please sit down.
( ) 4   sits safely with minimal use of hands
( ) 3   controls descent by using hands
( ) 2   uses back of legs against chair to control descent
( ) 1   sits independently but has uncontrolled descent
( ) 0   needs assist to sit

TRANSFERS
INSTRUCTIONS: Arrange chair(s) for pivot transfer. Ask subject to transfer one way toward a seat with armrests and one way toward a seat without armrests. You may use two chairs (one with and one without armrests) or a bed and a chair.
( ) 4   able to transfer safely with minor use of hands
( ) 3   able to transfer safely definite need of hands
( ) 2   able to transfer with verbal cuing and/or supervision
( ) 1   needs one person to assist
( ) 0   needs two people to assist or supervise to be safe

STANDING UNSUPPORTED WITH EYES CLOSED
INSTRUCTIONS: Please close your eyes and stand still for 10 seconds.
( ) 4   able to stand 10 seconds safely
( ) 3   able to stand 10 seconds with supervision
( ) 2   able to stand 3 seconds
( ) 1   unable to keep eyes closed 3 seconds but stays safely
( ) 0   needs help to keep from falling

STANDING UNSUPPORTED WITH FEET TOGETHER
INSTRUCTIONS: Place your feet together and stand without holding on.
( ) 4   able to place feet together independently and stand 1 minute safely
( ) 3   able to place feet together independently and stand 1 minute with supervision
( ) 2   able to place feet together independently but unable to hold for 30 seconds
( ) 1   needs help to attain position but able to stand 15 seconds feet together
( ) 0   needs help to attain position and unable to hold for 15 seconds