

A New Clinical Tool to Measure Balance and Mobility in Hemophilia: the Community Balance and Mobility Scale.

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Introduction:

While recent studies have demonstrated that global proprioceptive performance is impaired in subjects with severe hemophilia, little is known regarding functional, community balance and mobility in this population.^{1,2} The Community Balance and Mobility Scale (CB&M) is a 13-item, 6-point scale evaluating static and dynamic balance and mobility skills necessary for community participation.³ Normative values have been established for ages 8-11 and 20-69.^{4,5} In adults, a score of 50/96 is considered a threshold below which community participation may be reduced.³ The objectives of this study were to explore the scoring patterns of persons with hemophilia using the CB&M and to determine the feasibility of using the CB&M for evaluating function in persons with hemophilia.

Methods:

The CB&M and Hemophilia Joint Health Score (HJHS) were administered to 42 persons with hemophilia (mild, moderate and severe) ages 8-69 years. Descriptive statistics, correlation coefficient and independent t-tests were conducted to determine scoring patterns.

Results:

A significant correlation was observed between CB&M and lower extremity items on the HJHS ($r = -0.473$, $p < 0.05$), while no correlation was observed with upper extremity items. Knee HJHS ($r = -0.524$, $p < 0.05$) was more strongly correlated with CB&M than ankle HJHS ($r = -0.352$, $p < 0.05$). CB&M score was correlated with a diagnosis of severe hemophilia ($r = -0.753$, $p < 0.001$). Subjects with severe hemophilia aged 40-49 and 50-59 scored lower than norms ($p < 0.001$), however lower age groups scored within range of norms. Of all adult subjects, 20.7 percent scored below the cut point of 50/96. Administration of CB&M took a mean of 15 minutes/subject and was performed without incident in all subjects.

	Total	Mild	Mod	Severe	HJHS > 0	HJHS = 0
N	42	14	6	22	24 Severe = 16 Mod = 2 Mild = 6	18 Severe = 6 Mod = 4 Mild = 8
Age in years (Median)	28.5	31	28.5	26	39	15
BMI (Median)	25.1	26.4	24.1	25.0	26.3	20.9
CBM (Median)	76	77	70	73.5	78	75
HJHS (Median)	1	0	0	9.5	10	-

Table 1: Demographics

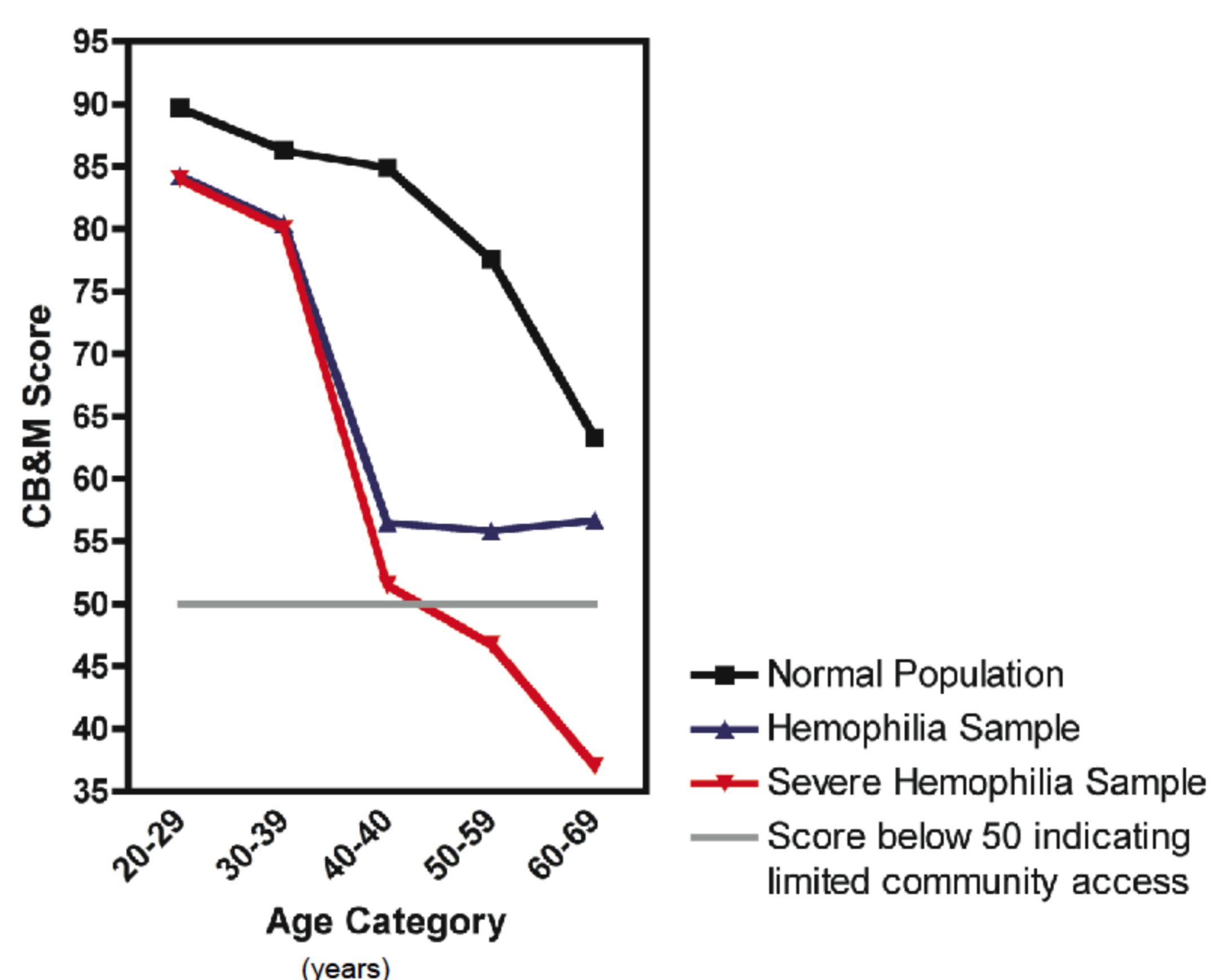


Figure 1: CB&M Score by Age Category, Normal, Hemophilia and Severe Hemophilia

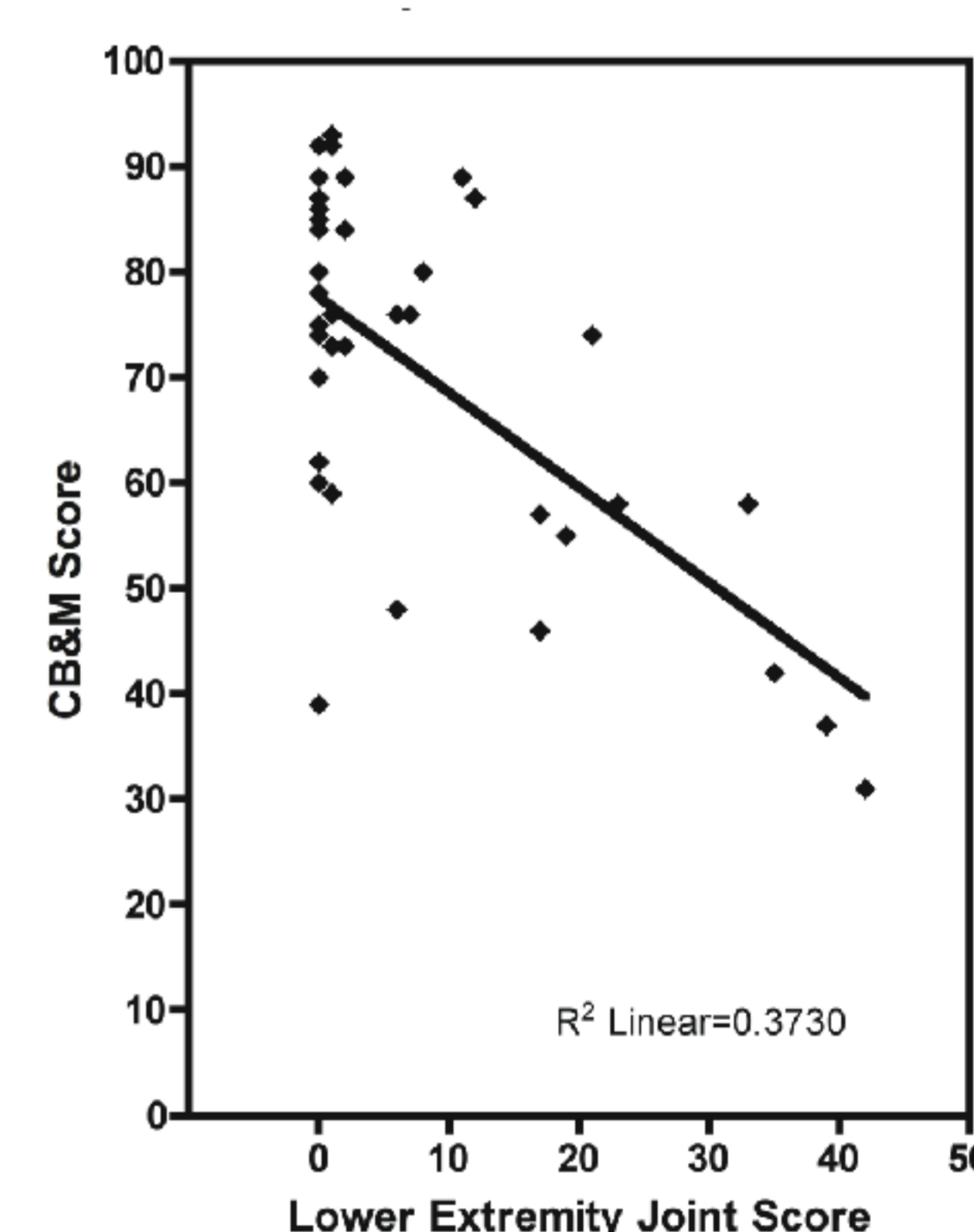


Figure 2: Lower Extremity Subset of HJHS vs. CB&M Score

Conclusions:

This study is the first to suggest the Community Balance and Mobility Scale as a valid measure for use with persons with hemophilia. Balance impairments and mobility limitations may be barriers to participation in persons with hemophilia, particularly with advancing age. The CB&M can be used by the hemophilia care team to quickly and easily assess balance and mobility across the lifespan, and to identify those at risk of limited community participation.

References:

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