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Evidence Supporting the Effectiveness of Standardized Assessments at Predicting Safe Performance of Activities of Daily Living for Patients in Skilled Nursing Facilities

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Evidence Supporting the Effectiveness of Standardized Assessments at Predicting Safe Performance
of Activities of Daily Living for Patients in Skilled Nursing Facilities

May 2021

This evidence project, submitted by

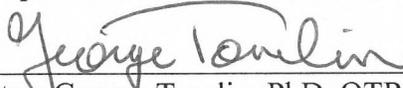
Jenna Mangiagli, Bridget Manion, McKenzie Roque, and Olivia Wasilenski



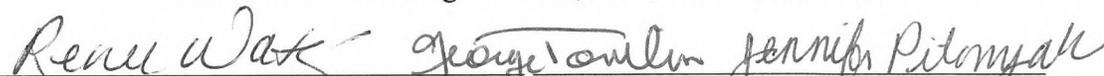
has been approved and accepted
in partial fulfillment of the requirements for the degree of
Master of Science in Occupational Therapy from the University of Puget Sound.



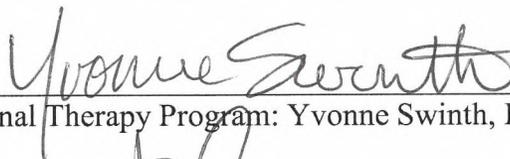
Project Chairperson: Aimee Sidhu, OTD, MA, OTR/L



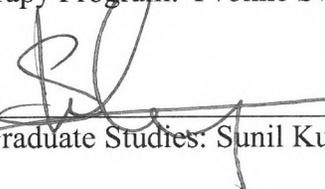
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Key words: standardized assessment, activities of daily living, skilled nursing facilities

Abstract

The research question was “What is the evidence to support the effectiveness of standardized assessments at predicting safe performance of ADLs for patients in skilled nursing facilities (SNFs)?” The literature review results indicate that there is strong evidence to support the effectiveness of the Barthel Index (BI), Modified Barthel Index (MBI), and Functional Independence Measure (FIM) at predicting safe performance of ADLs for patients in SNFs. It is recommended that practitioners use the MBI to predict safe performance of ADLs for patients at intake and discharge from SNFs. To support implementation of the research findings, a fact sheet and pre-recorded presentation were developed to assist practitioners with incorporating valid and reliable assessments into clinical practice for patients in SNFs. The impact of knowledge translation was measured through a satisfaction survey sent to collaborators. There is not sufficient survey data to support effectiveness of knowledge translation measures. This research highlights a need for further research to capture psychometric data of standardized assessments in SNFs.

Executive Summary

This research project is the result of a year-long collaboration with administrative staff at Life Care Centers of America (LCCA), a large, U.S. based organization of skilled nursing and rehabilitation facilities. The MBI is the primary assessment used within the Eastern division of the organization. The collaborators sought to identify whether the MBI is the most effective assessment in determining level of assistance upon discharge. Initially, the research question was specific to cardiopulmonary and multiple medical diagnoses as common diagnoses identified by OT practitioners associated with safe performance of ADLs. This resulted in challenges identifying relevant articles during the search process, leading to an expansion of the question to include all diagnoses prevalent in adult rehabilitation settings. The initial assessment criteria focused on assessments' overall ability to predict skills at discharge. The criteria was later narrowed to focus on safe performance of ADLs in order to obtain more relevant articles.

The literature review identified outcome studies, qualitative studies, and descriptive studies providing information on ADL assessments used in SNFs. Patients in SNFs will benefit most from implementation of the most effective standardized assessments to determine their competence and safety in community living after discharge. For practitioners, this literature review provides a resource to assist in incorporating valid and reliable assessments into existing clinical practice. Due to high productivity requirements and time constraints, practitioners have limited time to conduct independent research to determine which assessments are deemed best practice based on the evidence. This information identified in the literature review helps identify and support use of assessments that are easily administered, affordable, psychometrically-sound, accessible, and provide direction in determining appropriate occupational therapy (OT) interventions. The MBI is

evidence-based and is recommended for use in SNFs to assess ADL performance, however contribution to development of further research would be beneficial to strengthen confidence in use of the MBI as well as other moderate to strongly supported ADL assessments.

In order to best meet the learning needs of LCCA practitioners and faculty, knowledge translation was formatted to include a video recorded inservice as well as an informational handout. The video recorded inservice included information on the MBI including psychometric data, feasibility, and comparisons of assessments which are supported with strong to moderate evidence. The research collaborators were most interested in development of a one-to-two page “Did You Know?” handout validating use of the MBI in practice for assessment of ADL performance and additionally providing resources for lesser known moderately supported ADL assessments. These knowledge translation resources serve to engage practitioners in the learning process while also validating the MBI as the optimal assessment to use with each patient. In order to measure the knowledge translation, satisfaction by the LCCA regional directors will be monitored through a satisfaction survey. Due to limitations in the existing research, it is recommended that more research be conducted specific to assessment effectiveness in predicting safety in ADL performance at discharge. We were not able to collect sufficient data on effectiveness of our knowledge translation due to time constraints and limited survey responses to report outcomes.

CAT Final**Focused Question**

PACO: What is the evidence to support the effectiveness of standardized assessments at predicting safe performance of ADLs for patients in skilled nursing facilities?

Prepared By

Jenna Mangiagli, Bridget Manion, McKenzie Roque, Olivia Wasilenski

Date Literature Review Completed

January 26th, 2021

Professional Practice Scenario

The vice president of practice standards and two rehabilitation directors of Life Care Centers of America, a large organization of skilled nursing and rehabilitation facilities, want to identify the most effective standardized assessment for predicting safe performance of activities of daily living (ADLs) at discharge. The Modified Barthel Index (MBI) is the primary assessment used in the Eastern divisions of the United States. The collaborators would like to ensure that the MBI is the most effective assessment in determining level of assistance upon discharge.

Search Strategy

Categories	Key Search Terms
Activities of daily living	Self-care, ADL
Adults	Older adults, elderly adults, geriatric population
Assessment	Evaluation, functional assessment, occupational standardized assessment, outcome assessment, ADL Profile, Assessment of Motor and Process Skills (AMPS), Assessment of Life Habits (Life-H), Functional Performance Measure (FPM), Rivermead ADL Assessment, Personal Care Participation Assessment (PC-PART), Edmans ADL Index, Melville-Nelson Self-Care Assessment (SCA), Klein-Bell ADL, Modified Barthel Index (MBI), Barthel Index (BI), Functional Independence Measure (FIM), Performance Assessment of Self Care Skills (PASS), Personal Care Participation Assessment (PCPA), World Health Organization Disability Assessment Schedule 2.0 scale (WHODAS 2.0), International Stroke Trial Measure (ISTM), Functional autonomy measure (SMAF)
Occupational therapy	OT
Outcomes	Results, results at follow-up, outcomes at follow-up, effects, discharge outcomes, evidence
Performance	Effectiveness, safe performance, safety
Psychometric properties	Reliability, validity, specificity, sensitivity
Skilled nursing facility	SNF, skilled nursing, skilled nursing facilities, long-term care, nursing home

Databases, Sites, and Sources Searched
AJOT
AOTJ
BJOT
CINAHL
CJOT
Medline
NCBI
ProQuest
PubMed
Radomski, M. V., & Trombly Latham, C. A. (2014). <i>Occupational therapy for physical dysfunction</i> . (7th ed.). Baltimore, MD: Lippincott Williams & Wilkins.
Life Care Centers of America - https://lcca.com

Search Tracking Table

Search Terms or Strategies (note Limits, MESH, etc.)	Date Searched	Resource Used (database, search engine)	# Hits	# Excluded	# Kept	Citations
“Evaluation” AND “long term care”	10/26/2020	CJOT	102	98	4	<p>Douglas, A., Letts, L., Richardson, J., & Eva, K. (2013). Validity of predischarge measures for predicting time to harm in older adults. <i>Canadian Journal of Occupational Therapy</i>, 80(1), 19-27. doi:10.1177/0008417412473577</p> <p>Zur, B., Rudman, D., Johnson, A., Roy, E., & Wells, J. (2013). Examining the construct validity of the Cognitive Competency Test for occupational therapy practice. <i>Canadian Journal of Occupational Therapy</i>, 80(3), 171-180. doi: 10.1177/0008417413491918</p> <p>Vertesi, A., Darzins, P., Lowe, S., McEvoy, E., & Edwards, M. (2000). Development of the Handicap Assessment and Resource Tool (HART). <i>Canadian Journal of Occupational Therapy</i>, 67(3). 120-127. doi:10.1177/000841740006700305</p> <p>Fioravanti, A., Bordignon, C., Pettit, S., Woodhouse, L., & Ansley, B. (2012). Comparing the responsiveness of the Assessment of Motor Process Skills and the Functional Independence Measure. <i>Canadian Journal of Occupational Therapy</i>, 79(3), 167-174. doi:10.2182/cjot.2012.79.3.6</p>
“ADL” AND “Assessment” AND “skilled nursing facility”	10/28/2020	CINAHL	53	51	2	<p>Shah, S., Tartaro, C., Chew, F., Morris, M., Wood, C., & Wuzzardo, A. (2013). Skilled nursing facility functional rehabilitation outcome: Analyses of stroke admissions. <i>International Journal of Therapy & Rehabilitation</i>, 20(7), 352–360. doi:10.12968/ijtr.2013.20.7.352</p> <p>Shah, S., Tartaro, C., Chew, F., Morris, M., Wood, C., & Wuzzardo, A. (2012). Rehabilitation efficiency and effectiveness in medical-surgical conditions: A pilot study of</p>

						234 patients. <i>Physical & Occupational Therapy in Geriatrics</i> , 30(4), 288–300. doi:10.3109/02703181.2012.731481
“FIM” AND “ADL” AND “skilled nursing or SNF or long term care”	10/28/2020	PubMed	14	13	1	Jette, D. U., Warren, R. L., & Wirtalla, C. (2005a). Functional independence domains in patients receiving rehabilitation in skilled nursing facilities: Evaluation of psychometric properties. <i>Archives of Physical Medicine and Rehabilitation</i> , 86(6), 1089–1094. doi:10.1016/j.apmr.2004.11.018
“ADL assessments” AND “SNF”	10/28/2020	AJOT	22	21	1	Nelson, D. L., Melville, L. L., Wilkerson, R. A., Grech, J. L., & Rosenberg, J. A. (2002). Interrater reliability, concurrent validity, responsiveness, and predictive validity of the Melville-Nelson Self-Care Assessment. <i>American Journal of Occupational Therapy</i> , 56(1), 51–59. doi:10.5014/ajot.56.1.51
“AMPS” AND “Assessment” AND “ADL” AND “Effectiveness”	10/28/2020	ProQuest	438	434	4	<p>Wales, K., Clemson, L., Lannin, N., & Cameron, I. (2016). Functional assessments used by occupational therapists with older adults at risk of activity and participation limitations: A systematic review. <i>PLoS One</i>, 11(2). doi:10.1371/journal.pone.0147980</p> <p>Bouwens, S. F. M., Van Heugten, C. M., Aalten, P., Wolfs, C. A. G., Baarends, E. M., Van Menxel, D. A. J., & Verhey, F. R. J. (2007). Relationship between measures of dementia severity and observation of daily life functioning as measured with the assessment of motor and process skills (AMPS). <i>Dementia and Geriatric Cognitive Disorders</i>, 25(1), 81-7. doi:10.1159/000111694</p> <p>Merritt, B. K. (2011). Validity of using the Assessment of Motor and Process Skills to determine the need for assistance. <i>American Journal of Occupational Therapy</i>, 65, 643–650. doi:10.5014/ajot.2011.000547</p> <p>Klein, S., Barlow, I., & Hollis, V. (2008). Evaluating ADL measures from an occupational therapy perspective. <i>Canadian Journal of Occupational Therapy</i>, 75(2), 69-81. doi:10.1177/000841740807500203</p>

<p>“ADL” AND “assessment” AND “evaluation” AND “skilled nursing”</p>	<p>10/29/2020</p>	<p>ProQuest</p>	<p>1087</p>	<p>1084</p>	<p>3</p>	<p>Dromerick, A. W., Edwards, D. F., & Diringier, M. N. (2003). Sensitivity to changes in disability after stroke: A comparison of four scales useful in clinical trials. <i>Journal of Rehabilitation Research and Development</i>, 40(1), 1-8. Retrieved from http://ezproxy.ups.edu/login?url=https://www-proquest-com.ezproxy.ups.edu:2443/docview/71583285?accountid=1627</p> <p>Moore., D. J., Palmer, B. W., Patterson., T. L., & Jeste., D. V. (2007). A review of performance-based measures of functional living skills. <i>Journal of Psychiatric Research</i>, 41, 97-118. doi:10.1016/j.jpsychires.2005.10.008</p> <p>Stein, J., Bettger, J. P., Sicklick, A., Hedeman, R., Magdon-Ismael, Z., & Schwamm, L. H. (2015). Use of a standardized assessment to predict rehabilitation care after acute stroke. <i>Archives of Physical Medicine and Rehabilitation</i>, 96, 210-217. doi:10.1016/j.apmr.2014.07.403</p>
<p>“Skilled nursing facilities” AND “evaluation” AND “psychometric properties”</p>	<p>10/29/2020</p>	<p>PubMed</p>	<p>3</p>	<p>2</p>	<p>1</p>	<p>Jette D., Warren, R., & Wirtalla, C. (2005b). Validity of functional independence staging in patients receiving rehabilitation in skilled nursing facilities. <i>Archives of Physical Medicine and Rehabilitation</i>, 86(6), 1095-1101. doi:10.1016/j.apmr.2004.11.035</p>
<p>“Functional assessment” AND “skilled nursing facility”</p>	<p>10/29/2020</p>	<p>CINAHL</p>	<p>108</p>	<p>107</p>	<p>1</p>	<p>Kerber, K. A., Skolarus, L. E., Feng, C., & Burke, J. F. (2020). Validation of medicare rehabilitation functional assessments in routine care. <i>JAMA Network Open</i>, 3(5). doi:10.1001/jamanetworkopen.2020.4702</p>
<p>“ADL” AND “assessment” AND (“older adults” OR “SNF”)</p>	<p>10/29/2020</p>	<p>PubMed</p>	<p>432</p>	<p>428</p>	<p>4</p>	<p>Hartigan, I. (2007). A comparative review of the Katz ADL and the Barthel Index in assessing the activities of daily living of older people. <i>International Journal of Older People Nursing</i>, 2(3), 204–212. doi:10.1111/j.1748-3743.2007.00074.x</p>

						<p>Arik, G., Varan, H. D., Yavuz, B. B., Karabulut, E., Kara, O., Kilic, M. K., ... Cankurtaran, M. (2015). Validation of Katz index of independence in activities of daily living in Turkish older adults. <i>Archives of Gerontology and Geriatrics</i>, 61(3), 344–350. doi:10.1016/j.archger.2015.08.019</p> <p>Pashmdarfard, M., & Azad, A. (2020). Assessment tools to evaluate activities of daily living (ADL) and instrumental activities of daily living (IADL) in older adults: A systematic review. <i>Medical Journal of the Islamic Republic of Iran</i>, 34(33), 1-16. doi:10.34171/mjiri.34.33</p> <p>Wales, K., Lannin, N. A., Clemson, L., & Cameron, I. D. (2018). Measuring functional ability in hospitalized older adults: A validation study. <i>Disability and Rehabilitation</i>, 40(16), 1972–1978. doi:10.1080/09638288.2017.1323021</p>
“Personal Care Participation Assessment” AND “activities of daily living” AND “outcome assessment”	10/29/2020	CJOT	1	0	1	<p>Darzins, S., Imms, C., Stefano, M., & Radia-George, C. (2016). Personal Care Participation Assessment. <i>Canadian Journal of Occupational Therapy</i>, 83(4), 237-248. doi:10.1177/0008417416648446</p>
“Performance assessment of self-care skills” AND “activities of daily living”	10/29/2020	BJOT	13	12	1	<p>Chisholm, D., Toto, P., Raina, K., Holm, M., & Rogers, J. (2014). Evaluating capacity to live independently and safely in the community: Performance Assessment of Self-Care Skills. <i>British Journal of Occupational Therapy</i>, 77(2), 59-63. doi:10.4276/030802214X13916969447038</p>
“Functional assessment” AND “skilled	10/29/2020	NCBI	1	0	1	<p>Jette, A. M., Haley, S. M., & Ni, P. (2003). Comparison of functional status tools used in post-acute care. <i>Health Care Financing Review</i>, 24(3), 13–24.</p>

nursing facility”						
“AMPS” AND “Assessment” AND “ADL” AND “Effectiveness”	10/28/2020	ProQuest	438	434	4	<p>Donnelly, C. & Carswell, A. (2002). Individualized outcome measures: A review of the literature. <i>Canadian Journal of Occupational Therapy</i>, 69(2), 84-94. doi:10.1177/000841740206900204</p> <p>Unsworth, C. (2000). Measuring the outcome of occupational therapy: Tools and resources. <i>Australian Occupational Therapy Journal</i>, 47, 147-158. doi:2443/10.1046/j.1440-1630.2000.00239.x</p> <p>Demers, L., Desrosiers, J., Nikolova, R., Robichaud, L., & Bravo, G. (2010). Responsiveness of mobility, daily living, and instrumental activities of daily living outcome measures for geriatric rehabilitation. <i>Archives of Physical Medicine and Rehabilitation</i>, 91(2), 233–240. doi:10.1016/j.apmr.2009.10.007</p> <p>De Morton, N. A., Keating, J. L., & Davidson, M. (2008). Rasch analysis of the Barthel Index in the assessment of hospitalized older patients after admission for an acute medical condition. <i>Archives of Physical Medicine and Rehabilitation</i>, 89(4), 641–647. doi:10.1016/j.apmr.2007.10.021</p>

<p>“Evaluation” AND “psychometric properties” AND “skilled nursing facility or nursing home or SNF or long term care”</p>	<p>11/4/20</p>	<p>Medline</p>	<p>557</p>	<p>553</p>	<p>4</p>	<p>Lu, W.-S., Lien, B. Y.-H., & Hsieh, C.-L. (2015). Psychometric properties of the Balance Computerized Adaptive Test in residents in long-term care facilities. <i>Archives of Gerontology and Geriatrics</i>, 61(2), 149–153. doi:10.1016/j.archger.2015.04.009</p> <p>Bouwstra, H., Smit, E. B., Wattel, E. M., van der Wouden, J. C., Hertogh, C. M. P. M., Terluin, B., & Terwee, C. B. (2019). Measurement properties of the Barthel Index in geriatric rehabilitation. <i>Journal of the American Medical Directors Association</i>, 20(4), 420-425. doi:10.1016/j.jamda.2018.09.033</p> <p>Baxter, R., Lövheim, H., Björk, S., Sköldunger, A., Lindkvist, M., Sjögren, K., Sandman, P.-O., Bergland, Å., Winblad, B., & Edvardsson, D. (2019). The thriving of older people assessment scale: Psychometric evaluation and short-form development. <i>Journal of Advanced Nursing</i>, 75(12), 3831–3843. doi:10.1111/jan.14180</p> <p>Boyd, P. A., Wilks, S. E., & Geiger, J. R. (2018). Activities of daily living assessment among nursing home residents with advanced dementia: Psychometric reevaluation of the Bristol Activities of Daily Living Scale. <i>Health & Social Work</i>, 43(2), 101–108. doi:10.1093/hsw/hly010</p>
<p>“ADL assessments” AND “psychometric properties” AND “skilled nursing facility or nursing home or SNF or long term care”</p>	<p>11/4/20</p>	<p>Medline</p>	<p>9</p>	<p>8</p>	<p>1</p>	<p>Weening-Dijksterhuis, E., Kamsma, Y. P. T., & van Heuvelen, M. J. G. (2011). Psychometric properties of the PAT: An assessment tool for ADL performance of older people living in residential homes. <i>Gerontology</i>, 57(5), 405–413. doi:10.1159/000318151</p>

<p>“Assessment” AND “adult” AND “ADL”</p>	<p>11/04/2020</p>	<p>AOTJ</p>	<p>9055</p>	<p>9053</p>	<p>2</p>	<p>Bottari, C., Dutil, E., & Lamoureux, J. (2020). Structural validity and internal consistency of an ecological observation-based assessment, the Activities of Daily Living Profile. <i>Australian Occupational Therapy Journal</i>, 67, 407-416. doi: 10.1111/1440-1630.12654</p> <p>Sangha, H., Lipson, D., Foley, N., Salter, K., Bhogal, S., Pohani, G., & Teasell, R. W. (2005). A comparison of the Barthel Index and the Functional Independence Measure as outcome measures in stroke rehabilitation: Patterns of disability scale usage in clinical trials. <i>International Journal of Rehabilitation Research</i>, 28(2), 135-139. doi:10.1097/00004356-200506000-00006</p>
<p>“Assessment of life habits” AND “older adults”</p>	<p>11/04/2020</p>	<p>PubMed</p>	<p>20</p>	<p>18</p>	<p>2</p>	<p>Desrosiers, J., Noreau, L., Robichaud, L., Fougereyrollas, P., Rochette, A., & Viscogliosi, C. (2004). Validity of the Assessment of Life Habits in older adults. <i>Journal of Rehabilitation Medicine</i>, 36(4), 177-182. doi:10.1080/16501970410027485</p> <p>Poulin, V., & Desrosiers, J. (2009). Reliability of the LIFE-H satisfaction scale and relationship between participation and satisfaction of older adults with disabilities. <i>Disability and Rehabilitation</i>, 31(16), 1311-1317. doi:10.1080/09638280802572957</p>
<p>“Modified Barthel Index” AND “assessment”</p>	<p>10/07/2020</p>	<p>PubMed</p>	<p>318</p>	<p>317</p>	<p>1</p>	<p>Galli, T., Mirata, P., Foglia, E., Croce, D., Porazzi, E., Ferrario, L., . . . Banfi, G. (2018). A comparison between WHODAS 2.0 and Modified Barthel Index: Which tool is more suitable for assessing the disability and the recovery rate in orthopedic rehabilitation? <i>ClinicoEconomics and Outcomes Research</i>, 10, 301-307. doi: 10.2147/CEOR.S150626</p>
<p>“Modified Barthel Index”</p>	<p>1/17/21</p>	<p>PubMed</p>	<p>1549</p>	<p>1540</p>	<p>9</p>	<p>Ohura, T., Hase, K., Nakajima, Y. & Nakayama, T. (2017). Validity and reliability of a performance evaluation tool based on the Modified Barthel Index for stroke patients. <i>BMC Medical Research Methodology</i>, 17(131), 1-8. doi:10.1186/s12874-017-0409-2</p>

					<p>Yang, C. M., Wang, Y., Lee, C., Chen, M., & Hsieh, C. (2020). A comparison of test-retest reliability and random measurement error of the Barthel Index and modified Barthel Index in patients with chronic stroke. <i>Disability and Rehabilitation</i>, 1-4. doi:10.1080/09638288.2020.1814429</p> <p>Hulsbæk, S., Larsen, R. F., Rosthøj, S., & Kristensen, M. T. (2019). The Barthel Index and the Cumulated Ambulation Score are superior to the de Morton Mobility Index for the early assessment of outcome in patients with a hip fracture admitted to an acute geriatric ward. <i>Disability and Rehabilitation</i>, 41(11), 1351-1359. doi:10.1080/09638288.2018.1424951</p> <p>Leung, S. (2006). Development of a Chinese version of the Modified Barthel Index - validity and reliability. <i>Clinical Rehabilitation</i>, 21, 912-922. doi:10.1177/0269215507077286</p> <p>Shah, S. & Muncer, S. (2000). Sensitivity of Shah, Vanclay and Cooper's modified Barthel Index. <i>Clinical Rehabilitation</i>, 14, 551-552. doi:10.1191/0269215500cr360oa</p> <p>Nazzal, M., Sa'Adah, M. A., Al-Ansaris, D., Al-Awadi, O., Inshasi, J., & Eyadah, A. A. (2009). Stroke rehabilitation: Application and analysis of the modified Barthel Index in an Arab community. <i>Disability and Rehabilitation</i>, 23, 36-42. doi:10.1080/09638280150211284</p> <p>Damiani, C., Mangone, M., Paoloni, M., Goffredo, M., Franceschini, M., Servido, M., . . . Bernetti, A. (2020). Trade-offs with rehabilitation effectiveness (REs) and efficiency (REy) in a sample of Italian disabled persons in a post-acute rehabilitation unit. <i>Annali di Igiene</i>, 32(4), 327-336. doi:10.7416/ai.2020.2356.</p> <p>de Morton, N. A., Brusco, N. K., Wood, L., Lawler, K., Taylor, N. F. (2011). The de Morton Mobility Index (DEMMI) provides a valid method for measuring and monitoring the mobility of patients making the transition from hospital to the</p>
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						<p>community: an observational study. <i>Journal of Physiotherapy</i>, 57, 109-116. doi:10.1016/S1836-9553(11)70021-2</p> <p>Kim, D. Y., & Pyun, S. (2019). Prediction of functional outcome and discharge destination in patients with traumatic brain injury after post-acute rehabilitation. <i>International Journal of Rehabilitation Research</i>, 42(3), 256-262. doi:10.1097/MRR.0000000000000353</p>
“Evidence” AND “FIM” AND “BI”	01/26/2021	PubMed	11	10	1	<p>Hobart, J. C., Lamping, D. L., Freeman, J. A., Langdon, D. W., McLellan, D. L., Greenwood, R. L., & Thompson, A. J. (2001). Evidence-based measurement: Which disability scale for neurological rehabilitation? <i>Neurology</i>, 57, 639-644. doi:10.1212/WNL.57.4.639</p>

Search Process: Procedures for the selection and appraisal of articles

Inclusion Criteria

Studies considering adults, skilled nursing facilities, standardized assessments, and peer reviewed articles were included.

Exclusion Criteria

Articles dated prior to the year 2000, participants younger than 18 years old, systematic reviews, and diagnoses not relevant to skilled nursing facilities were excluded.

MASTER CITATION TABLE

Citation	Included (Y/N) (abstract)	Maybe (explain) (abstract)	Final decision Y/N (paper)	If no, reason to exclude	Reviewer
<p>Douglas, A., Letts, L., Richardson, J., & Eva, K. (2013). Validity of pre-discharge measures for predicting time to harm in older adults. <i>Canadian Journal of Occupational Therapy</i>, 80(1), 19-27. doi:10.1177/0008417412473577</p>	<p>Y (BM) - Provides AMPS reliability/validity data, directly relating to safety post d/c</p>	<p>Maybe - predicting harm outcome in community (OW)</p> <p>Maybe- pts recruited from inpatient rehabilitation units (JM)</p> <p>CPT doesn't address ADL performance, AMPS was best "predictor of time to incident of harm" so not sure how this relates to safe performance of ADLs (MR)</p>	<p>N</p>	<p>D/c to LTC in exclusion criteria</p>	<p>OW JM MR BM</p>
<p>Zur, B., Rudman, D., Johnson, A., Roy, E., & Wells, J. (2013). Examining the construct validity of the Cognitive Competency Test for occupational therapy practice. <i>Canadian Journal of Occupational Therapy</i>, 80(3), 171-180. doi: 10.1177/0008417413491918</p>	<p>Y (OW)</p> <p>N - pts recruited from inpatient and outpatient clinics (JM)</p> <p>Y (MR)</p> <p>Y (BM)</p>		<p>N</p>	<p>Focus on IADLs not relevant to research question</p>	<p>BM MR OW JM</p>
<p>Vertesi, A., Darzins, P., Lowe, S., McEvoy, E., & Edwards, M. (2000). Development of the Handicap Assessment and Resource Tool (HART). <i>Canadian Journal of Occupational Therapy</i>, 67(3), 120-127. doi:10.1177/000841740006700305</p>	<p>Y (OW)</p> <p>Y (JM)</p> <p>Y (MR)</p> <p>Y (BM)</p>		<p>Y</p>		<p>OW MR BM JM</p>
<p>Fioravanti, A., Bordignon, C., Pettit, S., Woodhouse, L., & Ansley, B. (2012). Comparing the responsiveness of the Assessment of Motor Process Skills and the Functional Independence Measure. <i>Canadian Journal of Occupational</i></p>	<p>Y (OW)</p> <p>Y (JM)</p> <p>Y (MR)</p>		<p>N</p>	<p>D/c to LTC in exclusion criteria</p>	<p>OW JM MR</p>

<p><i>Therapy</i>, 79(3), 167-174. doi:10.2182/cjot.2012.79.3.6</p>	<p>Y (BM)</p>				<p>BM</p>
<p>Shah, S., Tartaro, C., Chew, F., Morris, M., Wood, C., & Wuzzardo, A. (2013). Skilled nursing facility functional rehabilitation outcome: Analyses of stroke admissions. <i>International Journal of Therapy & Rehabilitation</i>, 20(7), 352–360. doi:10.12968/ijtr.2013.20.7.352</p>	<p>Y (OW) Y (JM) Y (MR) Y (BM)</p>		<p>Y</p>		<p>OW JM MR BM</p>
<p>Shah, S., Tartaro, C., Chew, F., Morris, M., Wood, C., & Wuzzardo, A. (2012). Rehabilitation efficiency and effectiveness in medical-surgical conditions: A pilot study of 234 patients. <i>Physical & Occupational Therapy in Geriatrics</i>, 30(4), 288–300. doi:10.3109/02703181.2012.731481</p>	<p>Y (OW) Y (JM) Y (MR) Y (BM)</p>		<p>Y</p>		<p>JM MR BM OW</p>
<p>Jette, D. U., Warren, R. L., & Wirtalla, C. (2005a). Functional independence domains in patients receiving rehabilitation in skilled nursing facilities: Evaluation of psychometric properties. <i>Archives of Physical Medicine and Rehabilitation</i>, 86(6), 1089–1094. doi:10.1016/j.apmr.2004.11.018</p>	<p>Y (OW) Y (JM) Y (BM) Y (MR)</p>		<p>Y</p>		<p>OW JM MR BM</p>
<p>Nelson, D. L., Melville, L. L., Wilkerson, R. A., Grech, J. L., & Rosenberg, J. A. (2002). Interrater reliability, concurrent validity, responsiveness, and predictive validity of the Melville-Nelson Self-Care Assessment. <i>American Journal of Occupational Therapy</i>, 56(1), 51–59. doi:10.5014/ajot.56.1.51</p>	<p>Y (OW) Y (JM) Y (BM) Y (MR)</p>		<p>Y</p>		<p>OW MR BM JM</p>
<p>Wales, K., Clemson, L., Lannin, N., & Cameron, I. (2016). Functional assessments used by occupational therapists with older adults at risk of activity and participation limitations: A systematic review. <i>PLoS One</i>, 11(2). doi:10.1371/journal.pone.0147980</p>	<p>N (OW) N (JM) N (BM) N (MR)</p>		<p>N</p>	<p>Systematic review</p>	<p>OW MR BM JM</p>
<p>Bouwens, S. F. M., Van Heugten, C., M., Aalten, P., Wolfs, C. A. G., Baarends, E. M., Van Menxel, D., A. J., & Verhey, F. R. J. (2007). Relationship between measures of dementia severity and observation of daily life functioning as measured with the assessment of motor and process skills (AMPS). <i>Dementia and Geriatric</i></p>	<p>N - measures dementia severity (JM) N (BM)</p>	<p>Maybe - specific to assessment of dementia severity (OW) Maybe - provides useful information</p>	<p>N</p>	<p>Population not relevant to research question</p>	<p>OW BM JM MR</p>

<i>Cognitive Disorders</i> , 25(1), 81-7. doi:10.1159/000111694		about AMPS (MR)			
Merritt, B. K. (2011). Validity of using the Assessment of Motor and Process Skills to determine the need for assistance. <i>American Journal of Occupational Therapy</i> , 65, 643-650. doi:10.5014/ajot.2011.000547	Y (BM) Y (MR)	Maybe - abstract doesn't identify population (OW) Maybe- does not specify setting (JM)	Y		MR BM OW JM
Klein, S., Barlow, I., & Hollis, V. (2008). Evaluating ADL measures from an occupational therapy perspective. <i>Canadian Journal of Occupational Therapy</i> , 75(2), 69-81. doi:10.1177/000841740807500203	Y (BM) Y (MR)	Maybe - abstract doesn't identify population (OW) Maybe- does not specify setting (JM)	Y		OW MR BM JM
Dromerick, A. W., Edwards, D. F., & Diringer, M. N. (2003). Sensitivity to changes in disability after stroke: A comparison of four scales useful in clinical trials. <i>Journal of Rehabilitation Research and Development</i> , 40(1), 1-8. Retrieved from http://ezproxy.ups.edu/login?url=https://www-proquest-com.ezproxy.ups.edu:2443/docview/71583285?accountid=1627	Y (OW) Y (JM) Y (MR) Y (BM) - has direct comparison of FIM and BI		Y		BM JM MR OW
Moore., D. J., Palmer, B. W., Patterson., T. L., & Jeste., D. V. (2007). A review of performance-based measures of functional living skills. <i>Journal of Psychiatric Research</i> , 41, 97-118. doi:10.1016/j.jpsychires.2005.10.008	Y (OW) Y (JM) N (MR) N (BM)		N	Systematic review	BM OW JM MR
Stein, J., Bettger, J. P., Sicklick, A., Hedeman, R., Magdon-Ismail, Z., & Schwamm, L. H. (2015). Use of a standardized assessment to predict rehabilitation care after acute stroke. <i>Archives of Physical Medicine and Rehabilitation</i> , 96, 210-217. doi:10.1016/j.apmr.2014.07.403	Y (OW) Y (JM) Y (MR) Y (BM)		Y		MR BM JM OW

Jette D., Warren, R., & Wirtalla, C. (2005b). Validity of functional independence staging in patients receiving rehabilitation in skilled nursing facilities. <i>Archives of Physical Medicine and Rehabilitation</i> , 86(6), 1095-1101. doi:10.1016/j.apmr.2004.11.035	Y (OW) Y (JM) Y (MR) Y (BM)		Y		MR BM OW JM
Kerber, K. A., Skolarus, L. E., Feng, C., & Burke, J. F. (2020). Validation of medicare rehabilitation functional assessments in routine care. <i>JAMA Network Open</i> , 3(5), e204702. doi:10.1001/jamanetworkopen.2020.4702	Y (OW) Y (JM) Y (MR) Y (BM)		Y		MR BM JM OW
Hartigan, I. (2007). A comparative review of the Katz ADL and the Barthel Index in assessing the activities of daily living of older people. <i>International Journal of Older People Nursing</i> , 2(3), 204–212. doi:10.1111/j.1748-3743.2007.00074.x	Y (OW) Y (JM) Y (MR) Y (BM)		Y		MR BM OW JM
Arik, G., Varan, H. D., Yavuz, B. B., Karabulut, E., Kara, O., Kilic, M. K., ... Cankurtaran, M. (2015). Cankurtaran, M. (2015). Validation of Katz index of independence in activities of daily living in Turkish older adults. <i>Archives of Gerontology and Geriatrics</i> , 61(3), 344–350. doi:10.1016/j.archger.2015.08.019	Y (OW) Y (JM) Y (MR) Y (BM)		Y		MR BM JM OW
Pashmdarfard, M., & Azad, A. (2020). Assessment tools to evaluate activities of daily living (ADL) and instrumental activities of daily living (IADL) in older adults: A systematic review. <i>Medical Journal of the Islamic Republic of Iran</i> , 34(33), 1-16. doi:10.34171/mjiri.34.33	N (OW) - systematic review N (JM) N (MR) N (BM)		N	Systematic review	MR BM OW JM
Wales, K., Lannin, N. A., Clemson, L., & Cameron, I. D. (2018). Measuring functional ability in hospitalized older adults: A validation study. <i>Disability and Rehabilitation</i> , 40(16), 1972–1978. doi:10.1080/09638288.2017.1323021	N (JM) N (OW) N (BM) N (MR)		N	Systematic review	MR BM OW JM
Darzins, S., Imms, C., Stefano, M., & Radia-George, C. (2016). Personal Care Participation Assessment. <i>Canadian</i>	Y (JM) Y (BM) - standardized ADL	Maybe - no identification of ADL but	Y		BM MR

<p><i>Journal of Occupational Therapy</i>, 83(4), 237-248. doi:10.1177/0008417416648446</p>	<p>assessment used for intervention planning & d/c planning related to ADL performance</p> <p>Y (MR)</p>	<p>discusses d/c planning (OW)</p>			<p>JM</p> <p>OW</p>
<p>Chisholm, D., Toto, P., Raina, K., Holm, M., & Rogers, J. (2014). Evaluating capacity to live independently and safely in the community: Performance Assessment of Self-Care Skills. <i>British Journal of Occupational Therapy</i>, 77(2), 59-63. doi:10.4276/030802214X13916969447038</p>	<p>Y (BM) - measures independence and safety</p> <p>Y (MR)</p>	<p>Maybe - doesn't specify population in abstract (OW)</p> <p>Maybe- does not specify population (JM)</p>	<p>Y</p>		<p>MR</p> <p>BM</p> <p>OW</p> <p>JM</p>
<p>Jette, A. M., Haley, S. M., & Ni, P. (2003). Comparison of functional status tools used in post-acute care. <i>Health Care Financing Review</i>, 24(3), 13-24.</p>	<p>Y (BM) - transitional care (90 pts)</p> <p>Y (MR) - addresses spectrum of function that each assessment measures</p>	<p>Maybe - doesn't specify population (OW)</p> <p>Maybe - doesn't specify population (JM)</p>	<p>Y</p>		<p>JM</p> <p>BM</p> <p>OW</p> <p>MR</p>
<p>Donnelly, C. & Carswell, A. (2002). Individualized outcome measures: A review of the literature. <i>Canadian Journal of Occupational Therapy</i>, 69(2), 84-94. doi:10.1177/000841740206900204</p>	<p>Y - (BM) provides psychometric info about the AMPS that can be used to support other articles</p> <p>Y (MR)</p>	<p>Maybe - doesn't specify population (JM)</p> <p>Maybe - doesn't specify population in abstract (OW)</p>	<p>Y</p>		<p>MR</p> <p>BM</p> <p>JM</p> <p>OW</p>
<p>Unsworth, C. (2000). Measuring the outcome of occupational therapy: Tools and resources. <i>Australian Occupational Therapy Journal</i>, 47, 147-158. doi:2443/10.1046/j.1440-1630.2000.00239.x</p>	<p>Y (BM) - provides summaries of different assessments at the bottom, provides ICIDH level & whether or not an OT was involved in development</p> <p>Y (MR)</p>	<p>Maybe - doesn't specify population in abstract (OW)</p> <p>Maybe - does not specify population (JM)</p>	<p>Y</p>		<p>MR</p> <p>BM</p> <p>OW</p> <p>JM</p>

Demers, L., Desrosiers, J., Nikolova, R., Robichaud, L., & Bravo, G. (2010). Responsiveness of mobility, daily living, and instrumental activities of daily living outcome measures for geriatric rehabilitation. <i>Archives of Physical Medicine and Rehabilitation</i> , 91(2), 233–240. doi:10.1016/j.apmr.2009.10.007	N - inpatient & outpatient hospital settings (OW) N- inpatient & outpatient hospital settings (JM)	Not the right setting but feels applicable to use in SNFs (MR) Maybe (BM)	N	Setting not relevant to research question	BM MR JM OW
De Morton, N. A., Keating, J. L., & Davidson, M. (2008). Rasch analysis of the Barthel Index in the assessment of hospitalized older patients after admission for an acute medical condition. <i>Archives of Physical Medicine and Rehabilitation</i> , 89(4), 641–647. doi:10.1016/j.apmr.2007.10.021	N - acute (OW) N - acute care (JM) N (BM) N (MR)		N	Setting not relevant to research question	BM OW MR JM
Lu, W.-S., Lien, B. Y.-H., & Hsieh, C.-L. (2015). Psychometric properties of the Balance Computerized Adaptive Test in residents in long-term care facilities. <i>Archives of Gerontology and Geriatrics</i> , 61(2), 149–153. doi:10.1016/j.archger.2015.04.009	N (JM) N (BM) N (MR)	Maybe (OW)	N	Measurement specific to balance	BM JM MR OW
Bouwstra, H., Smit, E. B., Wattel, E. M., van der Wouden, J. C., Hertogh, C. M. P. M., Terluin, B., & Terwee, C. B. (2019). Measurement properties of the Barthel Index in geriatric rehabilitation. <i>Journal of the American Medical Directors Association</i> , 20(4), 420-425. doi:10.1016/j.jamda.2018.09.033	Y (OW) Y (JM) Y (BM) Y (MR)		Y		MR BM OW JM
Baxter, R., Lövheim, H., Björk, S., Sköldunger, A., Lindkvist, M., Sjögren, K., Sandman, P.-O., Bergland, Å., Winblad, B., & Edvardsson, D. (2019). The thriving of older people assessment scale: Psychometric evaluation and short-form development. <i>Journal of Advanced Nursing</i> , 75(12), 3831–3843. doi:10.1111/jan.14180	Y (OW) N (BM) N (MR) N (JM)		N	Outcome measure not relevant to research question	BM OW MR JM
Boyd, P. A., Wilks, S. E., & Geiger, J. R. (2018). Activities of daily living assessment among nursing home residents with advanced dementia: Psychometric reevaluation of the Bristol Activities of Daily Living Scale. <i>Health & Social Work</i> , 43(2), 101–108. doi:10.1093/hsw/hly010	Y (MR) N (BM)	Maybe - specific to advanced dementia pts (OW) Maybe- specific to dementia pts (JM)	N	Population not relevant	BM MR JM OW

<p>Weening-Dijksterhuis, E., Kamsma, Y. P. T., & van Heuvelen, M. J. G. (2011). Psychometric properties of the PAT: an assessment tool for ADL performance of older people living in residential homes. <i>Gerontology</i>, 57(5), 405–413. doi:10.1159/000318151</p>	<p>Y (OW) Y (JM) Y (MR) Y (BM)</p>		<p>Y</p>		<p>MR BM JM OW</p>
<p>Bottari, C., Dutil, E., & Lamoureux, J. (2020). Structural validity and internal consistency of an ecological observation-based assessment, the Activities of Daily Living Profile. <i>Australian Occupational Therapy Journal</i>, 67, 407-416. doi: 10.1111/1440-1630.12654</p>	<p>N (OW) N (JM) N (BM) N (MR)</p>		<p>N</p>	<p>Age range not relevant to research question</p>	<p>BM MR OW JM</p>
<p>Desrosiers, J., Noreau, L., Robichaud, L., Fougeyrollas, P., Rochette, A., & Viscogliosi, C. (2004). Validity of the Assessment of Life Habits in older adults. <i>Journal of Rehabilitation Medicine</i>, 36(4), 177–182. doi:10.1080/16501970410027485</p>	<p>Y (BM) Y - as long as we only focus on the skilled nursing component (MR)</p>	<p>Maybe - 87 older adults in 3 different settings: own home, nursing home, LTCC (OW) Maybe - 3 different settings (JM)</p>	<p>Y</p>		<p>BM MR OW JM</p>
<p>Poulin, V., & Desrosiers, J. (2009). Reliability of the LIFE-H satisfaction scale and relationship between participation and satisfaction of older adults with disabilities. <i>Disability and Rehabilitation</i>, 31(16), 1311–1317. doi:10.1080/09638280802572957</p>	<p>Y (OW) Y (JM) Y (MR) Y (BM)</p>		<p>Y</p>		<p>MR BM JM OW</p>
<p>Sangha, H., Lipson, D., Foley, N., Salter, K., Bhogal, S., Pohani, G., & Teasell, R. W. (2005). A comparison of the Barthel Index and the Functional Independence Measure as outcome measures in stroke rehabilitation: Patterns of disability scale usage in clinical trials. <i>Journal of Rehabilitation Research</i>, 28(2), 135-139. doi:10.1097/00004356-200506000-00006</p>	<p>N - systematic review (MR) N (BM) N - systematic review (JM)</p>	<p>Maybe - population not listed in abstract (OW)</p>	<p>N</p>	<p>Systematic review</p>	<p>BM JM MR OW</p>
<p>Galli, T., Mirata, P., Foglia, E., Croce, D., Porazzi, E., Ferrarrio, L., . . . Banfi, G. (2018). A comparison between WHODAS 2.0 and Modified Barthel Index: Which tool is more suitable for assessing the disability and the recovery rate in orthopedic rehabilitation? <i>ClinicoEconomics and Outcomes</i></p>	<p>Y (MR) Y (BM) Y (JM) Y (OW)</p>		<p>Y</p>		<p>MR BM OW JM</p>

<p><i>Research</i>, 10, 301-307. doi: 10.2147/CEOR.S150626</p>					
<p>Ohura, T., Hase, K., Nakajima, Y., & Nakayama, T. (2017). Validity and reliability of a performance evaluation tool based on the Modified Barthel Index for stroke patients. <i>BMC Medical Research Methodology</i>, 17(131), 1-8. doi: 10.1186/s12874-017-0409-2</p>	<p>N (JM) - only specific to stroke pts, pts with comorbidities excluded</p> <p>N (MR) - there's another article by the same authors in 2011 that describes how the PET-MBI is different from MBI - might be more useful info</p>	<p>Maybe (BM) - it's unclear how much the PET-MBI differs from the MBI</p> <p>Maybe - need more info on PET-MBI to make a decision (OW)</p>	<p>N</p>	<p>There's another article by the same authors in 2011 that describes how the PET-MBI is different from MBI</p>	<p>BM</p> <p>JM</p> <p>MR</p> <p>OW</p>
<p>Yang, C. M., Wang, Y., Lee, C., Chen, M., & Hsieh, C. (2020). A comparison of test-retest reliability and random measurement error of the Barthel Index and modified Barthel Index in patients with chronic stroke. <i>Disability and Rehabilitation</i>, 1-4. doi:10.1080/09638288.2020.1814429</p>	<p>Y (BM)</p> <p>Y (OW)</p> <p>Y (JM)</p> <p>Y (MR)</p>		<p>N</p>	<p>Outpatient setting</p>	<p>BM</p> <p>JM</p> <p>MR</p> <p>OW</p>
<p>Hulsbæk, S., Larsen, R. F., Rosthøj, S., & Kristensen, M. T. (2019). The Barthel Index and the Cumulated Ambulation Score are superior to the de Morton Mobility Index for the early assessment of outcome in patients with a hip fracture admitted to an acute geriatric ward. <i>Disability and Rehabilitation</i>, 41(11), 1351-1359. doi:10.1080/09638288.2018.1424951</p>	<p>Y (BM) - "geriatric ward" seems like it would have a similar population to post-acute SNF</p> <p>Y (OW)</p> <p>Y (JM)</p> <p>Y (MR)</p>		<p>Y</p>		<p>BM</p> <p>JM</p> <p>MR</p> <p>OW</p>
<p>Leung, S. (2006). Development of a Chinese version of the Modified Barthel Index - validity and reliability. <i>Clinical Rehabilitation</i>, 21, 912-922. doi:10.1177/0269215507077286</p>	<p>N (JM) - setting is a general hospital & day hospital</p> <p>N (MR) doesn't seem relevant to collaborators - it's just a translation but seems like it isn't any different from the one we use in US</p>	<p>Maybe (BM) - It's presented as a translation to Chinese rather than a modified version of the MBI. If that's the case we can probably exclude Ohura et al.</p> <p>Maybe - changes made to content & rating criteria with translation</p>	<p>N</p>	<p>Setting irrelevant to research question</p>	<p>BM</p> <p>JM</p> <p>MR</p> <p>OW</p>

		to Chinese so need more info on differences between this version and MBI (OW)			
Shah, S. & Muncer, S. (2000). Sensitivity of Shah, Vanclay and Cooper’s modified Barthel Index. <i>Clinical Rehabilitation</i> , 14, 551-552. doi:10.1191/0269215500cr360oa	N (MR) not peer reviewed and appears to be a summary of pre-2000 studies	Maybe (BM) - This article is a letter to the editor rather than a standard peer-reviewed article. It includes very useful psychometric data Maybe - I would say Y as long as we are able to use letter format (OW) Maybe (JM) - our inclusion criteria states peer reviewed articles	N	Not a peer-reviewed article	BM JM MR OW
Nazzal, M., Sa’Adah, M. A., Al-Ansaris, D., Al-Awadi, O., Inshasi, J., & Eyadah, A. A. (2009). Stroke rehabilitation: Application and analysis of the modified Barthel Index in an Arab community. <i>Disability and Rehabilitation</i> , 23, 36-42. doi:10.1080/09638280150211284	Y (OW) Y (JM) Y (MR)	Maybe (BM) - acute/inpatient setting but includes valuable information about feasibility of implementation	Y		BM JM MR OW
Damiani, C., Mangone, M., Paoloni, M., Goffredo, M., Franceschini, M., Servido, M., . . . Bernetti, A. (2020). Trade-offs with rehabilitation effectiveness (REs) and efficiency (REy) in a sample of Italian disabled persons in a post-acute rehabilitation unit. <i>Annali di Igiene</i> , 32(4), 327-336. doi:10.7416/ai.2020.2356.		Maybe (BM & MR) - retrospective review of data with hospital pts. May be applicable to post-acute SNF Maybe - intensive rehab unit of hospital (OW)	N	Setting irrelevant to research question	BM JM MR OW

		Maybe (JM) - Setting			
de Morton, N. A., Brusco, N. K., Wood, L., Lawler, K., Taylor, N. F. (2011). The de Morton Mobility Index (DEMMI) provides a valid method for measuring and monitoring the mobility of patients making the transition from hospital to the community: an observational study. <i>Journal of Physiotherapy</i> , 57, 109-116. doi:10.1016/S1836-9553(11)70021-2	N (BM) - hospital based transition care N (OW) N (JM) N (MR)		N	Setting	BM JM MR OW
Kim, D. Y., & Pyun, S. (2019). Prediction of functional outcome and discharge destination in patients with traumatic brain injury after post-acute rehabilitation. <i>International Journal of Rehabilitation Research</i> , 42(3), 256-262. doi:10.1097/MRR.0000000000000353	Y (BM) Y (MR) pt ages: 64.23 ± 14.76	Maybe - post-acute rehab but population mean age not specified (OW) Maybe (JM) - I am also curious about population mean age	Y		BM JM MR OW
Hobart, J. C., Lamping, D. L., Freeman, J. A., Langdon, D. W., McLellan, D. L., Greenwood, R. L., & Thompson, A. J. (2001). Evidence-based measurement: Which disability scale for neurological rehabilitation? <i>Neurology</i> , 57, 639-644. doi:10.1212/WNL.57.4.639	Y (BM) Y (JM) Y (MR) Y (OW)		Y		BM JM MR OW

Search Outcomes/Quality Control/Review Process

The initial research question was specific to cardiopulmonary and multiple medical diagnoses. This resulted in challenges identifying relevant articles during the search process, leading to an expansion of the question to include all diagnoses prevalent in adult rehabilitation settings. The initial assessment criteria focused on assessments' general ability to predict skills at discharge. The criteria was later narrowed to focus on safe performance of ADLs in order to obtain more relevant articles.

The search process was refined by population, rehabilitation setting, assessment type, article date, and study design. Articles that included assessments focused on ADL performance and outcomes in the adult population across various practice settings were included in the project. Research conducted in settings other than SNFs were accepted if they met inclusion criteria. Systematic reviews were excluded from the study but were used for cross-referencing. Forty-eight articles were initially identified. After review, 22 of the 48 articles were rejected from inclusion in CAT tables. Of the 22 rejected articles, three were excluded for not matching the patient population, 11 were excluded for not fully meeting inclusion criteria, two were rejected because they included discharge to SNF as exclusion criteria, and five systematic reviews were

rejected. One research article conducted by Unsworth (2020) was reviewed but not included in the CAT table. Twenty-six articles met all inclusion criteria to be included in the project.

Key individuals involved in establishing this project include Clemente Aquino, John Fischer, Tina Brouillet, George Tomlin, and Aimee Sidhu. Clemente, John, and Tina represent Life Care Centers of America; Clemente is the vice president of rehabilitation practice standards, John is the division rehabilitation director for the eastern region of the United States, and Tina is the division rehabilitation director for the northeastern region of the United States. George and Aimee are faculty members in the Occupational Therapy department at the University of Puget Sound.

Results of Search

Summary of Study Designs of Articles Selected for the CAT Table

Pyramid Side	Study Design/Methodology of Selected Articles	Number of Articles Included
Experimental	___ Meta-Analyses of Experimental Trials ___ Individual Blinded Randomized Controlled Trials ___ Controlled Clinical Trials ___ Single Subject Studies	0
Outcome	___ Meta-Analyses of Related Outcome Studies <u>4</u> Case-Control or Pre-existing Groups Studies <u>8</u> One Group Pre-Post Studies	12
Qualitative	___ Meta-Syntheses of Related Qualitative Studies <u>1</u> Group Qualitative Studies w/ more Rigor ___ <u>X</u> prolonged engagement with informants ___ <u>X</u> triangulation of data (multiple sources) ___ confirmation (peer/member-checking; audit trail) ___ comparisons among individuals, w/in a person ___ Group Qualitative Studies w/ less Rigor ___ Qualitative Study on a Single Person	1
Descriptive	___ Systematic Reviews of Related Descriptive Studies <u>11</u> Association, Correlational Studies <u>3</u> Multiple Case Series, Normative Studies, Descriptive surveys ___ Individual Case Studies	14

<p>AOTA Levels I-0 II-2 III-8 IV-16 V-1 Qual-1</p> <p>Comments: There are 28 AOTA levels and 27 pyramid levels of evidence listed above. Inclusion of mixed methods studies resulted in additional pyramid and AOTA levels for multiple entries. The research conducted by Donnelly and Carswell (2002) is a literature review, which has no assigned pyramid level.</p>	
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PRISMA Flow Diagram

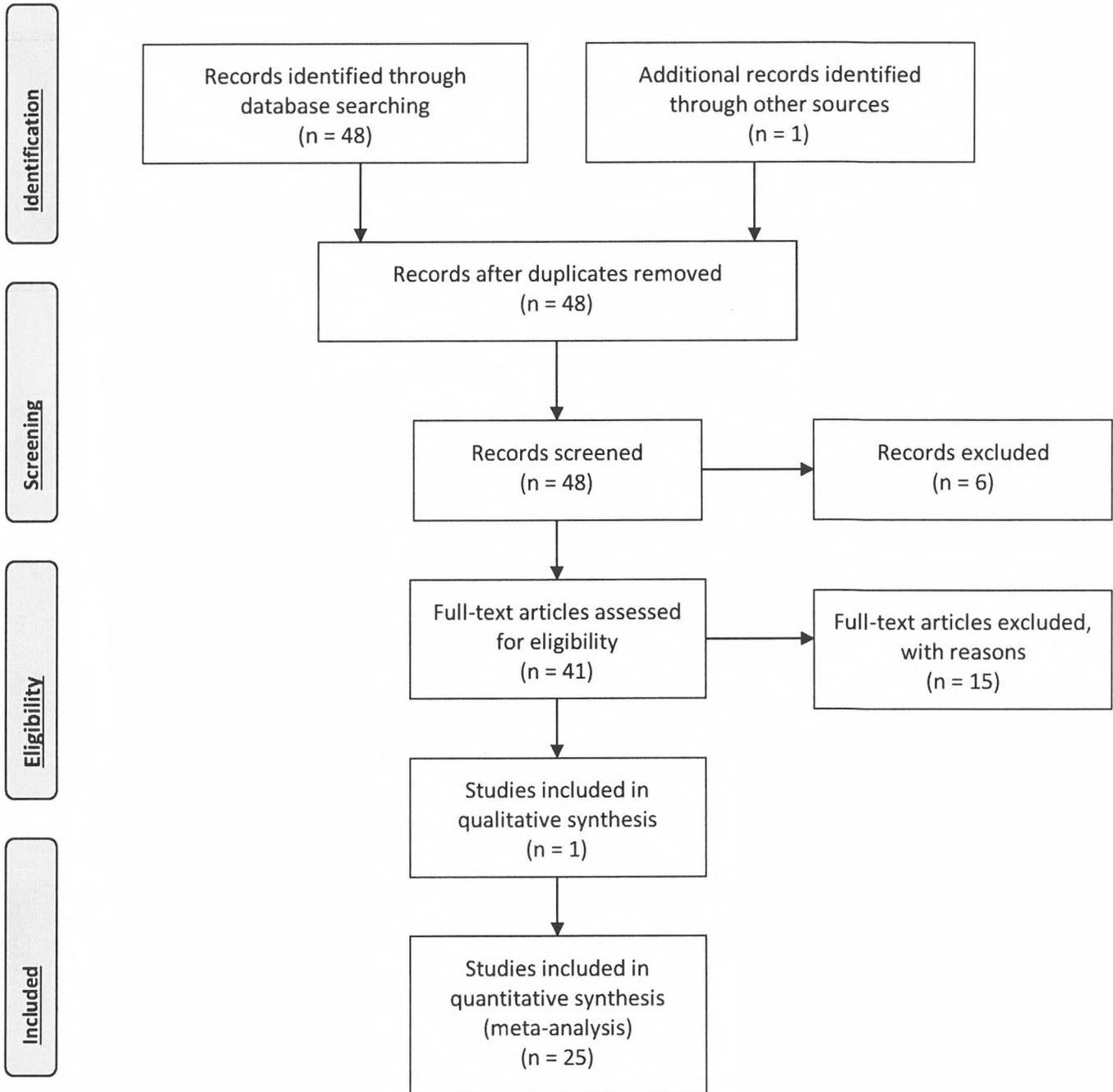


Table Summarizing **QUANTITATIVE** Evidence

<u>Author</u> <u>Year</u> <u>Journal</u> <u>Country</u>	Study Objectives	Study Design/Level of Evidence	Participants: Sample size, Description Inclusion & Exclusion Criteria	Interventions & Outcome Measures	Summary of Results	Study Limitations
Galli et al. 2018 ClinicoEconomics & Outcomes Research Italy	Compare ADL BI & WHODAS 2.0 to identify tool for assessing disability & “recovery rate”	Observational study Pyramid = O3 AOTA = IV	<i>N</i> = 79, after attrition of 1 pt M: <i>n</i> = 25 F: <i>n</i> = 55 <i>m</i> age: 70 yo Incl = ≥ 18 yo, hospitalization for hip or knee arthroplasty, rehab in IRU, complete consent form Excl = pts w/ cog impairments, pts who don’t understand Italian	WHODAS 2.0: self-assessment of disability; scale: 0 (completely healthy) to 100 (completely disabled); accounts for pt & caregiver perception ADL BI: objective assessment measuring ADL performance; scale: 0 (completely dependent) to 20 (completely I); conducted @ d/c	Avg WHODAS 2.0 scores 12.21% higher than ADL BI Recovery rate w/ WHODAS 2.0 +36.39% (incorrect CI), recovery rate w/ ADL BI +77.69% (incorrect CI) Eval time w/ ADL BI 6 ± 0.159 min/pt; w/ WHODAS 2.0 25 ± 0.749 min/ pt; (<i>p</i> ≤ 0.001)	Convenience sampling
Arik et al. 2015 Archives of Gerontology & Geriatrics Turkey	Assess validity & reliability of Turkish version of Katz ADL in geriatric pts	Two groups non-randomized Pyramid = O2 AOTA = II	<i>N</i> = 211 M: <i>n</i> = 84 F: <i>n</i> = 127 <i>m</i> age: 75.7 +/- 7.1 yo 2 groups: 65 - 74 yo & ≥ 75 yo Incl = ≥ 65 yo pts consecutively admitted to geriatric OP clinic from July 2014 to October 2014	Reliability assessed through internal consistency, interrater & test-retest analysis Cross-sectional Katz ADL, Folstein MMSE, YGDS, MNA-sf, Lawton-Brody IADLs, BI, SF-36 PF, & self-reported health status questionnaire all administered through	<i>m</i> Katz score = 4.7 +/- 1.6 Katz ADL: Internal consistency (alpha = 0.838); Test-retest reliability (ICC = 1.000, 95% CI 0.999-1.000); Inter-rater reliability (ICC = 0.999); Construct validity: correlation w/ BI (<i>p</i> < 0.001) & w/ SF-36 PF good (<i>p</i> < 0.001)	Unable to assess predictive validity Hospitalized older adults not included in sample Only self-reported limitations in scoring of Katz ADL used

			Excl = pts w/ acute illnesses or infections, pts w/ delirium	interviewing pts & caregivers	Nursing home residents Katz score < pts @ home	
Poulin & Desrosiers 2009 Disability & Rehab Canada	Document reliability of LIFE-H to measure satisfaction level of older adults w/ fxnl disabilities & explore relationships between level of participation & satisfaction	Outcome study Pyramid = O4 AOTA = III	$N = 30$ Incl = ≥ 65 yo, SMAF ≥ 10 , speak French, live in home or seniors' residence, received day hospital services or have been hospitalized in inpatient or short-term geriatric in last 5 years Excl = unable to consent, mod-severe aphasia, mod-severe cog deficits (3MS < 5th% in age & schooling)	Pts met 2 times in home or center w/ same OT (6-8 days in between assessment) LIFE-H: measures participation & satisfaction w/ level of participation in each activity SMAF: measures fxnl disabilities in 5 areas	High reliability in daily activities & social roles. Life domain ICCs: Community life (0.65), communication (0.88) Moderate positive association between participation & satisfaction w/ daily activity participation subscore ($p = 0.049$) & LIFE-H score ($p = 0.017$)	Other variables influence pt appraisal of participation outcomes Excluded employment & education items of LIFE-H Non-random sampling Restricted recruitment sources Small sample size
Nelson et al. 2002 AJOT USA	Investigate psychometric properties of Melville-Nelson SCA	Outcome study Pyramid = O4 AOTA = III	$N = 68$ M: $n = 14$ F: $n = 54$ 7 lost to attrition $N = 40$ for post d/c validity testing 28 lost to attrition Incl = subacute rehab including OT @ facility, informed consent, assignment to an OT participating in study, availability of OT graduate students Excl = initial care plan called for d/c to LTC	8 raters in 4 teams including OTR/L & OTS collected info on admission & d/c & conducted assessments Graduate students conducted inter-rater reliability procedures Raters all scored independently Melville-Nelson SCA, MDS 2.0, FIM, Klein-Bell ADL Scale, Caregiving time	SCA Inter-rater reliability: 6/7 m ICCs (0.94), bathing ICC (0.77) Concurrent validity: SCA correlated w/ FIM (-0.85) & Klein-Bell ADL (-0.85) Predictive validity: SCA score @ d/c is predictor of caregiving & fxn SCA highly responsive to change	Small sample size Graduate student & therapist rating Recruitment procedure based on availability Each team only assessed 15-19 pts

<p>Weening-Dijksterhuis et al. 2011 Gerontology Switzerland</p>	<p>Examine reliability & validity of PAT w/ elderly individuals</p>	<p>Outcome Study Pyramid = O4 AOTA = III</p>	<p><i>N</i> = 40 <i>m</i> age: 85 +/- 7.5 yo Incl = adults ≥ 65 yo, residential homes in Netherlands, walk ≥ 10 m I, understand Dutch language, no cog impairment Excl = pts w/ progressive neurological diseases, severe heart failure, high blood pressure</p>	<p>PAT: measure of 16 items including ADLs & IADLs GARS: self-report ADL & IADL measure Assessed by 2 trained students @ baseline & 2 weeks later in pt residential homes Duration of testing = 2 hrs</p>	<p>Test- retest reliability of PAT items = 0.316 – 0.950 Validity of PAT compared to GARS = 0.612 – 0.763 (<i>p</i> < 0.01)</p>	<p>Small sample size Excl of pts w/ cog impairment</p>
<p>Shah et al. 2012 Physical & OT in Geriatrics USA</p>	<p>Investigate ADL measurement system in SNFs that consistently tracks data relating to clients' safe performance of ADLs</p>	<p>Pilot Study Pyramid = O4 AOTA = III</p>	<p><i>N</i> = 234 <i>m</i> age: 77.54 +/- 13.08 yo Incl = adults ≥ 77 yo, complex medical-surgical conditions, rehab in SNF, Medicare A Excl = pts w/ 1-day ADL care then d/c, pts w/ medical complications & d/c to acute care</p>	<p>MBI: measure of 10 ADLs @ admission & d/c in 13 SNFs Assessed by OTs</p>	<p><i>m</i> LOS: 27.2 +/- 20.36 days <i>m</i> MBI admission: 55.04 +/- 22.97 <i>m</i> MBI d/c: 80 +/- 22.34 Improvement from admission to d/c (<i>p</i> ≤ 0.01)</p>	<p>Nonrandomized recruitment of pts Pts w/ Medicare B not included Attrition of pts not specified</p>
<p>Shah et al. 2013 International Journal of Therapy & Rehab UK</p>	<p>Investigate an ADL measurement system in SNFs w/ psychometric properties that tracks clients' dependency in ADLs</p>	<p>Outcome Study Pyramid = O4 AOTA = III</p>	<p><i>N</i> = 2,041 <i>m</i> age: 75.89 +/- 13.69 yo Incl = adults ≥ 75 yo, stroke dx, rehab in SNF, Medicare A Excl = pts w/ 1-day ADL care then d/c, pts w/ medical</p>	<p>MBI: measure of 10 ADLs @ admission & d/c in 138 SNFs Assessed by OTs</p>	<p>MBI reliability of 0.93 (<i>p</i> < 0.001) <i>m</i> LOS: 31.15 +/- 21.82 days 62.3% d/c home <i>m</i> MBI admission: 43.13 +/- 23.14</p>	<p>Nonrandomized recruitment of pts</p>

			complications & d/c to acute care		<i>m</i> MBI d/c: 66.18 +/- 27.42 Improvement from admission to d/c ($p \leq 0.001$)	
Merritt 2011 AJOT USA	Evaluate validity of using AMPS measures as evidence of need for assistance in community	Outcome Study Pyramid = O4 AOTA = III	<i>N</i> = 64,463 data records from AMPS Project International in Fort Collins, CO. Data from pts assessed by OTs in hospitals, pt homes, & rehab clinics Incl = ≥ 16 yo; not associated w/ rater scoring error; not scored by multiple raters as part of rater calibration; known sex, age, & global fxnl level ratings Excl = pts < 16 yo, data before 1999 or after 2005	AMPS: contains 16 ADL motor skill & 20 ADL process skill items; ADL skill items scored using 4-point ordinal rating scale: (1 = deficient performance &/or task breakdown, 2 5 ineffective performance, 3 5 questionable performance, 4 5 competent performance	Global fxnl level associated w/ ADL motor ability, $F(2, 64463) = 8,728, p < 0.01$, & process ability, $F(2, 64463) = 15,916, p < 0.01$. Sensitivity of ADL motor cutoff measure of 1.5 logits = 0.68, specificity = 0.72; process cutoff measure of 1.0 logit = 0.81, specificity = 0.70 65% of validation sample matched predicted decisions, sensitivity = 0.85 specificity = 0.83	Lack of evidence supporting validity & reliability of AMPS global fxnl ratings Dx-specific AUC statistics do not provide conclusive evidence OTs may have failed to observe & accurately score ADL motor skills Potential inaccuracy of OTs ratings of global fxnl level
Bouwstra et al. 2019 Journal of American Medical Directors Association USA	Investigate validity, reliability, & interpretability of the BI among geriatric pts	Study 1: Prospective cohort study Pyramid = O4 AOTA = III Study 2: Cross-sectional study Pyramid = O3 AOTA = II	Study 1: <i>N</i> = 207 M: 42% <i>m</i> age: 80 yo Incl = new pts admitted for geriatric rehab in 11 nursing homes across Netherlands Excl = lack of decisional capacity (rated by physician), not mastering Dutch language	BI: measure of physical fxn during 10 ADLs @ admission & d/c in nursing homes	Study 1: Pts assessed w/ BI @ baseline (0.5% - 2%) & @ d/c (0.6% - 22%) 86% w/ complete BI & d/c destination <i>m</i> change score = 4.8 (SD = 4) (95% CI 2.0 - 4.2) 87.5% pts w/ completed Global Rating Scale & BI	Estimation of pt-based MIC could be affected by poor memory of physical abilities of pt @ admittance, especially in pts w/ impaired cog fxn @ admittance

			<p>Study 2: $N = 37$ M: 39% <i>m</i> age: 74 yo</p> <p>Incl = pts admitted to a nursing home w/ 3 wards</p>		<p>improved in physical fxn, $m = 5.1$ (SD = 3.8)</p> <p>Study 2: BI outcome: ward A ($p = 0.19$), ward B ($p = 0.63$), ward C ($p = 0.2$)</p> <p>Significant difference between 2 observers ($p = 0.02$) ICC 0.96 ($n = 37$, 95% CI 0.93 - 0.98)</p>	
<p>Desrosiers et al. 2004 Journal of Rehab Medicine Canada</p>	<p>Study construct validity of LIFE-H w/ older adults w/ fxnl limitations</p>	<p>Pre-existing groups comparison w/ covariates</p> <p>Pyramid = O2 AOTA = IV</p>	<p>$N = 87$ <i>m</i> age: 78 yo 71% F</p> <p>Pts lived in own home (33.3%), private nursing home (34.5%), or LTCC (32.2%) in Quebec</p> <p>Incl = ≥ 60 yo w/ fxnl limitations in ADL, IADL, or mobility activities</p> <p>Excl = pts unable to give consent, severe aphasia or cog deficits</p>	<p>Pts evaluated 1x w/ LIFE-H 3.0 (short version) & SMAF in their own environment</p> <p>Statistical analysis w/ Pearson's correlation coefficient</p>	<p>SMAF scores in private nursing homes < scores of living @ home or day hospital.</p> <p>LTC higher SMAF scores (more fxnl limitations) than other groups</p> <p>Discriminant validity for daily activities ($p = < 0.001$)</p> <p>SMAF & LIFE-H mod correlated (0.70)</p>	<p>Selection strategy</p>
<p>Kerber et al. 2020 JAMA Network Open USA</p>	<p>Investigate validity of FIM, MDS, & Outcome & Assessment Info Set compared to NHATS assessments in Medicare rehab settings</p>	<p>Correlational Study</p> <p>Pyramid = D2 AOTA = IV</p>	<p>$N = 1,036$ M: $n = 366$ F: $n = 670$ 64.8% ≥ 80 yo</p> <p>Incl = adults ≥ 65 yo, IRF, SNF, or HHA d/c claims</p>	<p>Medicare rehab assessments: FIM, MDS, & Outcome & Assessment Info Set</p> <p>NHATS Assessments</p>	<p><i>m</i> rehab fxnl score = 27.5</p> <p><i>m</i> NHATS fxnl score = 30.5</p> <p>Correlation of assessments = 0.63 (95% CI 0.59 - 0.66)</p>	<p>Few components of FIM overlap w/ NHATS assessments</p> <p>Small sample size from IRF alone</p>

			Excl = pts w/ medical complications & d/c to hospital	Overlapping measures of eating, toilet hygiene, bathing, dressing, bed transfers, & mobility Setting: Medicare rehab		New measures such as QRP have been implemented in IRFs instead of FIM
Jette et al. 2003 Health Care Financing Review USA	Examine comparisons between 4 PAC fxml assessments	Retrospective Chart Review Pyramid = D2 AOTA = IV	<i>N</i> = 485 <i>m</i> age: 62.7 yo Incl = adults ≥ 18 yo, received OT, PT, or speech therapy in acute inpatient rehab, transitional care, or community settings, English speaking Excl = pts who don't speak or understand English	58 core activity items from FIM, OASIS, MDS, & PF-10 Setting: acute inpatient rehab, transitional care, or community settings	Internal consistency: MDS Cronbach's α = 0.97, OASIS Cronbach's α = 0.99, FIM Cronbach's α = 0.99, PF-10 Cronbach's α = 0.99 Range of fxml ability measured: greatest for MDS & OASIS compared to FIM & PF-10 Measurement precision: MDS-high precision @ low fxn w/ some @ high fxn, OASIS-high precision @ low fxn, FIM- high precision @ mod fxn, PF-10 low precision	Sample only representative of 6 networks in Boston Errors in assessment scores reported in charts reviewed
Stein 2015 Archives of Physical Medicine & Rehab USA	Pilot formal assessment of rehab needs that included standardized measures of fxn & sociodemographic factors known to influence referral & utilization of rehab after acute stroke	Prospective pilot project Pyramid = D2 AOTA = IV	<i>N</i> = 736 pts w/ acute ischemic or hemorrhagic stroke F: 50.5% <i>m</i> age: 68.914.8 yo Incl = data collected by existing clinical staff, including nurses, PTs, OTs, &	BI: includes 10 items & provides score of 0 to 100 of ADL abilities Short Portable Mental Status Questionnaire: 10-point scale w/ higher score indicating	BI associated w/ d/c destination, w/ 218 of 245 (89.0%) pts w/ BI score of 85 or higher return home compared w/ pts w/ BI score of 80 or lower, of whom 382 of 491 (77.8%) were	Convenience sample Overrepresentation of academic medical centers No specific requirement established regarding timing of data

			<p>SLPs; routine collection & recording of data on pts w/ ischemic & hemorrhagic strokes as part of routine eval of disability & LTC needs</p> <p>Excl = pts for whom BI was not recorded</p>	<p>more severe cog impairment</p> <p>MRS: estimates prestroke disability on basis of medical records &/or interview of caregiver</p>	<p>d/c to rehab (IRF, SNF, or LTAC) BI score associated w/ return home vs d/c to rehab post stroke ($p < 0.001$)</p>	<p>collection during hospital stay</p> <p>No formal training provided for data collection</p>
<p>Jette et al. 2005a Archives of Physical Medicine & Rehab USA</p>	<p>Provide evidence for validity of using FIM items to derive 4 domains of fxnl I (mobility, ADLs, sphincter management, EF) in pts receiving rehab in SNFs</p>	<p>Retrospective Chart Review</p> <p>Pyramid = D2 AOTA = IV</p>	<p>$N = 7526$ M: $n = 2827$ F: $n = 4699$</p> <p>Incl = pts covered by Medicare+Choice, admitted for short-term rehab for 1st time in 1 of 70 SNFs associated w/ SeniorMetrix in 2002</p> <p>Excl = 1064 pts who died; pts who were admitted to acute care from SNF; cases w/ negative values for time from impairment onset to SNF admission; cases w/ episode lengths of > 100 days</p>	<p>FIM: instrument w/ good inter-rater reliability (ICC > 0.90)</p>	<p>Internal consistency: Mobility Cronbach's $\alpha = 0.76$ EF Cronbach's $\alpha = 0.96$ ADL Cronbach's $\alpha = 0.89$ Sphincter management Cronbach's $\alpha = 0.91$</p> <p>20% of pts measurements have floor or ceiling effects</p> <p>Floor effects for sphincter management (34.4%) & mobility (43.1%) & ceiling effects for EF (26.7%)</p>	<p>Use of secondary data</p> <p>Only included pts covered through Medicare+Choice</p>
<p>Jette et al. 2005b Archives of Physical Medicine & Rehab</p>	<p>Study applicability of FIS system for pts in SNFs</p>	<p>Retrospective Chart Review</p> <p>Pyramid = D2 AOTA = IV</p>	<p>$N = 7526$</p> <p>Incl = 1st admittance to 1 out of 70 SNFs associated w/ SeniorMetrix in 2002</p>	<p>Construct validity - determine relationship between FIS score, d/c to community & disease complexity</p>	<p>pt w/ no concomitant disease more likely to have higher FIS score in ADL ($p = 0.001$), sphincter management ($p = 0.001$), & EF ($p = 0.001$). No</p>	<p>Analysis of secondary data</p> <p>Sample limited to pts covered under Medicare+Choice @ SNF</p>

<p>USA</p>			<p>Excl = death or d/c to acute care</p>	<p>Sensitivity to change - admission to d/c scores</p> <p>Predictive validity - admission FIS score & likelihood to d/c to community</p>	<p>difference in mobility scores.</p> <p>Higher odds of d/c to community w/ higher stage in sphincter management (OR = 1.32-1.72), mobility (OR = 1.93-4.66), EF (OR = 1.50-4.15); Higher ADL, sphincter management, mobility, & EF score @ d/c than admission ($p = 0.001$); Only ADL (OR = 1.26-3.73) stage 2-6 & EF (OR = 1.60-5.05) predict d/c to community.</p>	<p>Sample has lower FIM scores (74.8) @ admission compared to population & had greater LOS <i>m</i> (19 days)</p>
<p>Dromerick et al. 2003 Journal of Rehab Research & Development USA</p>	<p>Compare 4 scales' sensitivity to changes in disability after stroke</p>	<p>Prospective study Pyramid = D2 AOTA = IV</p>	<p>$N = 95$ M: $n = 42$ F: $n = 53$ w/ <i>m</i> interval from stroke to rehab admission of 9.0 + 6.4 days, LOS on rehab service of 19.5 + 8.3 days</p> <p>Incl = consecutive admissions to academic tertiary care stroke rehab service; pts w/ previous stroke or cerebrovascular disease dx</p> <p>Excl = primary rehab dx other than stroke;</p>	<p>Global scales: MRS: disability scale from 0 (no symptoms) to 6 (dead)</p> <p>ISTM: stroke scale from 0 (alive & fully recovered from stroke) to 4 (dead)</p> <p>ADL scales: BI: items rated & weighting: 15 points = walking, transfers; 10 points = feeding, bowel, bladder, toileting, dressing, stairs; 5 points = bathing, grooming</p>	<p>Global scales: little distribution of score shift in ISTM ADL scales: large score shift of pts w/ high fxnl levels; ceiling & floor effect w/ BI MRS: change in 33 pts who were unchanged w/ ISTM ($X^2 = 17.56, p < 0.001$) FIM: change in 18 pts who were unchanged w/ BI ($X^2 = 9.33, p < 0.001$); change in more pts than MRS ($X^2 = 8.07, p < 0.005$)</p>	<p>Criterion for what constitutes real change in BI may be overly rigorous</p> <p>Results may not be generalizable to pts in all acute & PAC stroke trials</p> <p>Reliability, validity, specificity, & practicality not considered</p>

PREDICTING SAFE PERFORMANCE OF ADLS

			incomplete data; discontinued rehab because of medical or neurological complications
Chisholm et al. 2014 BJOT USA	Explore clinical utility of PASS in OT practice	Review of clinical methodological study databases Pyramid = D2 AOTA = IV	<i>N</i> = 941 Incl = Clinical research incl d/x of bipolar disorder, congestive heart failure, dementia, depression, heart transplant, macular degeneration, osteoarthritis, & cerebrovascular accident; I & S constructs measured Excl = informed consent not available
Nazzal et al. 2000 Disability & Rehab Kuwait	Provide experience w/ MBI that assures quality of work & identifies deficiencies, familiarize staff w/ feasibility of its use, collect measurable & reproducible data, & identify local factors that adversely affect outcomes.	Retrospective chart review Pyramid = D2 AOTA = IV	<i>N</i> = 80 pts w/ completed stroke, ages 26-80 yo <i>M</i> = 38 <i>F</i> = 42 Incl = pts admitted to PMRH in Kuwait during year 1989- 1990, ability to follow 2-3-step commands, ability to remember & apply info learned in session from day before, dx of acute cerebral thrombosis, embolism or hemorrhage w/ weakness

FIM: 18 equally rated items from 1 (completely dependent) to 7 (I w/o device)	BI: change in 25 more pts than MRS ($X^2 = 9.92, p < 0.002$); more sensitive than MRS & ISTM	
Psychometric properties Outcome Responsiveness Clinical utility	PASS test-retest reliability (I, $r = 0.92 - 0.96$) (S, 89-90% agreement), inter-observer agreement (I, 96%) (S, 97%) content validity, construct validity	Lack of incl/excl criteria from studies reviewed No rigor &/or level of evidence provided for studies
MBI: weighted scale that assesses performance in self-care (feeding, dressing, bathing, toileting, bowel & bladder care) & mobility (transfer, ambulation, stair climbing) 15 items are subdivided for scoring as I and dependent, each of which consists of 2 categories. Sum ranges from 0-115	Interrater reliability: 0.94 & 0.96 on admission & discharge, respectively	Used pt records from before year 2000

			Excl = dx of tumor, subdural hematoma, abscess, trauma caused by hemiplegia			
Kim & Pyun 2019 International Journal of Rehabilitation Research South Korea	Investigate predictors of d/c destination & fxnl outcome in pts w/ TBI	Retrospective chart review Pyramid = D2 AOTA = IV	<i>N</i> = 86 <i>m</i> age = 64.23 +/- 14.76 <i>M</i> = 66 <i>F</i> = 20 Incl = Pts admitted to rehab unit at tertiary care hospital from 2010 to 2017, within 90 days onset of TBI, available magnetic resonance imaging, or computed tomography data Excl = previous TBI, brain disorders, psychiatric illness, or other cog disorders, critical medical issues requiring life support devices, inability to perform ADL independently prior to injury	MBI = Korean version of the MBI used at admission & d/c. Pts divided into 2 groups based on d/c destination (home or other rehab facility). High MBI values indicate functional independence.	MBI score of 67 pts post-rehab was cut-off value for d/c home (area under curve = 0.853, sensitivity = 78.6%, specificity = 75.9%) MBI at admission strongly associated w/ MBI post-rehab (<i>r</i> = 0.771, <i>p</i> < 0.001) Underlying vascular risk factors (OR = 0.138, <i>p</i> = 0.015) MBI score after rehab (OR = 1.085, <i>p</i> < 0.001) & deductible-free insurance (OR = 0.211, <i>p</i> = 0.032) predictive factors for home d/c. No association between MBI score at admission and d/c home.	Small sample size limits factors selected for multivariate logistic regression analysis Retrospective design does not account for psychophysiological factors such as quality of life or depression. Only considers d/c destination immediately post d/c from rehab unit Does not include LOS
Hulsbæk et al. 2019 Disability & Rehab UK	Compare psychometric properties of DEMMI, MBI, CAS, & 30-s CST	Comparative study Pyramid = D2 AOTA = IV	<i>N</i> = 222 pts postop hip fx in geriatric ward <i>M</i> : <i>n</i> = 64 <i>F</i> : <i>n</i> = 158 <i>m</i> age: 83	Assessments given on first postop day & @ d/c DEMMI: measure of 15 mobility items	DEMMI: floor effect @ baseline (39%) & d/c (31%), effect size = 0.76 MBI: floor effect @ baseline (12%) & d/c	Missing data present Not all assessments are measuring the same constructs- DEMMI & CAS solely focus on mobility

			<p>Incl = ≥ 65 yo, walking ability w/ or w/o assistive aids</p> <p>Excl = death during hospitalization, weight-bearing precautions</p>	<p>MBI: measure of 10 ADLs w/ expanded scoring scale</p> <p>CAS: basic mobility measure of pt independence w/ assistive devices</p> <p>30-s CST: measure of LE strength & # of stands in 30-s</p>	<p>(5%), effect size = 1.78</p> <p>CAS: floor effect @ baseline (22%) & d/c (6%), effect size = 1.04</p> <p>30-s CST: floor effect @ baseline (98%) & d/c (89%)</p> <p>Strong convergent validity between DEMMI & CAS ($p = 0.76$), moderate between DEMMI & MBI ($p = 0.58$), & moderate between CAS & MBI ($p = 0.49$)</p>	<p>Frequency of physiotherapy not specified</p>
<p>Hobart et al. 2001 Neurology UK</p>	<p>Compare the BI, FIM, & FIM + FAM in assessing disability in neurologic disorders</p>	<p>Comparative study Pyramid = D2 AOTA = IV</p>	<p>$N = 149$ m age = 46.2 Age range = 16 - 77 $F = 81$ $M = 68$</p> <p>Incl = Inpatients at two rehab units in South England specializing in neurologic disorders, 1st 2 admissions each week for 18 months @ Neuro Rehab unit, consecutive admission at rehab research unit in 12 month period, range of 3 weeks - 12 years post-stroke</p>	<p>Observer-rate, multi-item, summed rating scales to evaluate disability in terms of dependency</p> <p>BI = Collin et al. version, 10-item w/ 2, 3, 4 point response options</p> <p>FIM = 18-item, 7 point response options, total, motor, & cog subscales</p> <p>FIM + FAM = 30-item, 7 point response options, total, motor, & cog response options</p>	<p>Motor Disability BI = Internal consistency ($\alpha = 0.94$), range floor/ceiling effect 0-20 (2.7/5.4), validity measuring disability (0.84), validity of responsiveness (0.56), less time consuming</p> <p>FIM = Internal consistency ($\alpha = 0.95$), range floor/ceiling effect 19-122 (0/0), test reproducibility (0.98), validity measuring disability (0.82)</p>	<p>Study specific to pts in neurologic rehab which may decrease generalizability of findings</p> <p>Does not include newer psychometric methods, such as Rasch & Item Response Theory models</p>

			Excl = Pts following the 1st 2 admitted to neuro rehab unit each week		FIM + FAM = Internal consistency ($\alpha = 0.96$), range floor/ceiling effect 32-204 (0/0), interrater reproducibility (0.98), correlation between substests ($r = 0.75 - 0.79$)	
Hartigan 2007 International Journal of Older People Nursing Ireland	Compare significance & usefulness of Katz ADL & BI to nursing practice of older adults Investigate Katz ADL & BI for reliability	Comparative Review Pyramid = D3 AOTA = IV	Katz ADL & BI compared w/ existing literature Incl = Katz ADL & BI Excl = other assessments, assessments focused on individuals other than older adults	Comparison & correlation measures discussed Articles cited from 1963 to 2007 Multiple sources for data triangulation Reviewed administration, reliability & validity testing of assessments	BI: High agreement in administration among 4 rating methods; less reliable w/ pts w/ cog impairment; shows tasks client unable to complete & help req Katz ADL: Predictive in long-term & adaptation of pts w/ multiple conditions; used over BI w/ assessing specificity & predictive value; used extensively to identify fxnl abilities of older adults in clinic & home	Only addresses 2 methods of assessing ADL of older adults
Vertesi et al. 2000 CJOT Canada	Develop HART to identify fxnl abilities & caregiver support for pts in acute care, LTC, & @ home	Pilot study - group study w/ less rigor Pyramid = D3 AOTA = IV	$N = 50$ (acute) $N = 26$ (community) Age = 33 - 96 yo Incl = pts referred to OT for d/c planning, pts receiving OT services in Iroquois Falls	Literature review conducted prior to development of the HART Questionnaire & focus group	Time to complete HART = 50 min 90% of pts provided positive feedback for usefulness & acceptability HART: comprehensive assessment	Small sample size High attrition rates in acute Community convenience sample Sensitivity & specificity data not tested

			Excl = Pts not receiving OT for d/c planning		addressing meaning of being assessed by HART; measures client fxn & supports available to them - explicitly determines handicap - safer d/c planning w/ no significant handicaps overlooked	Testing conducted by experienced, highly motivated OT practitioners
Klein et al. 2008 CJOT Canada	Compare measures of performance-based ADL w/ principles of OT practice & intended outcomes	Mixed methods Descriptive: Pyramid = D3 AOTA = IV Quan: Pyramid = O4 AOTA = III	Descriptive: N = 10 OTs from 1 tertiary-care rehab hospital & 3 researchers w/ avg of 10.6 (SD = 5.3) years as OTs, & 9.3 (SD = 5.4) years work in adult rehab Quan: N = 18 ADL measures Incl = standardized performance as observed by OT; peer-reviewed; developed for use w/ adult population w/ physical dysfxn Excl = non-ADL measures	Developed 5 OT constructs: holism; client-centered practice; dynamic interaction; uniqueness of individual; uniqueness of performance Construct list developed into series of questions & formatted into ADL Construct Rating Review Form for use when evaluating ADL measures for congruence w/ OT practice	ADL Profile, AMPS, FPM, Rivermead ADL Assessment, Edmans ADL Index, & Melville-Nelson SCA received highest ratings ADL Profile met most construct criteria	Critiquing measures employed in same hospital Issues that OTs identified may be specific to tertiary rehab setting & may not be generalizable OTs only used CMOP to identify constructs congruent w/ OT principles Use of multiple raters in rating process may have affected scoring consistency
Donnelly & Carswell 2002 CJOT Canada	Review individualized outcome measures that have previously been identified in literature	Mining of the literature Pyramid = N/A AOTA = V	Incl = individualized outcome measures, target fxn	GAS: goal outcomes on 5 point scale, inter-rater AMPS: performance based, observational measure	GAS: (r = .51 - .91), low to mod concurrent validity, good responsiveness, higher clinical utility when modified, outcome measure & tx tool	Small number of research articles available

				<p>COPM: semi-structured interview considering pt goals, including self-rates performance and satisfaction</p>	<p>AMPS: inter-rater ($r = .93$), test-retest (motor, $r = .88$) (process, $r = .86$), High validity, including cross-culturally, responsive</p> <p>COPM: no reliability data, weak concurrent validity, good construct validity & responsiveness</p>	
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Table Summarizing *QUALITATIVE* Evidence

<i>Author</i>	<i>Study Objectives</i>	<i>Study Design/ Level of Evidence</i>	<i>Participants: Sample Size, Description Inclusion and Exclusion Criteria</i>	<i>Methods for enhancing rigor</i>	<i>Themes and Results</i>	<i>Study Limitations</i>
<p><i>Year</i></p> <p><i>Journal</i></p> <p><i>Country</i></p>						
<p>Darzins et al.</p> <p>2016</p> <p>CJOT</p> <p>Canada</p>	<p>Determine occupational therapists' perception of PC-PART & clinical utility</p>	<p>Explanatory, sequential, mixed-methods design</p> <p>Pyramid = Q2 a & b</p> <p>AOTA = Qual</p>	<p>N = 9 out of 25 eligible pts</p> <p>Questionnaire (n = 9)</p> <p>Focus group (n = 6)</p> <p>Incl = occupational therapists from large metropolitan health service in Australia, experience w/ PC-PART, written consent</p>	<p>Triangulation of data collection methods, use of I moderator & observer to run focus group, saturation w/ in focus group, peer review during data analysis, audit trail</p>	<p>Mod clinical utility (- 5.4 on VAS), increased by familiarity w/ assessment</p> <p>Perceived to collect info needed for intervention & d/c planning related to ADL</p> <p>Barriers to routine use - info duplication, sensitivity to change in level of dependence, time & effort</p>	<p>Views of pts & non-pts may differ</p> <p>Some therapists only used PC-PART in clinical trial</p>

Abbreviation Table

Abbreviation	Word
30-s CST	30-s Chair Stand Test
3MS	Modified Mini-Mental State
ADL	activities of daily living
AMPS	Assessment of Motor & Process Skills
Avg	average
BADL	basic activities of daily living
BI	Barthel Index
CAS	Cumulated Ambulation Score
CI	confidence interval
Cog	cognitive
COPM	Canadian Occupational Performance Measure
d/c	discharge
DEMMI	de Morton Mobility Index
dx	diagnosis
EF	executive functioning
Excl	exclusion
F	female
FAM	Functional Assessment Measure
FIM	Functional Independence Measure
FIS	Functional Independence Staging

PREDICTING SAFE PERFORMANCE OF ADLS

FPM	Functional Performance Measure
Fx	fracture
Fxn	function
Fxnl	functional
GARS	Groningen Activity Restriction Scale
GAS	Goal Attainment Scaling
HART	Handicap Assessment and Resource Tool
HHA	home health agencies
hr/hrs	hour/hours
I	independence
IADL	instrumental activity of daily living
ICC	intraclass correlation coefficients
Incl	inclusion
Info	information
IRF	inpatient rehabilitation facility
ISTM	International Stroke Trial Measure
LE	lower extremity
LIFE-H	Assessment of Life Habits
LOS	length of stay
LTCC	long term care center
M	male
m	meter

<i>m</i>	mean
MBI	Modified Barthel Index
MDS	Minimum Data Set
MIC	minimal important change
Min	minute(s)
MMSE	Mini-Mental State Examination
MNA-sf	Mini Nutritional Assessment - Short Form
mod	moderate
MRS	Modified Rankin Scale
<i>N</i>	sample size
NHATS	National Health and Aging Trends Study
OASIS	Outcome and Assessment Information Set for Home Health Care
OP	outpatient
OR	odds ratio
OT	occupational therapy
OTR/L	occupational therapist registered/licensed
OTS	occupational therapy student
<i>p</i>	p-value
PAC	post-acute care
PASS	Performance Assessment of Self Care Skills
PAT	Performance ADL Test
PC-PART	Personal Care Participation Assessment and Resource Tool

PREDICTING SAFE PERFORMANCE OF ADLS

PF-10	Physical Function Scale
PMRH	Hospital of Physical Medicine and Rehabilitation
Postop	postoperatively
Pt/pts	patient/patient's
PT	physical therapy
QRP	quality reporting program
Rehab	rehabilitation
req	require
S	safety
SCA	Self-Care Assessment
SD	standard deviation
SF-36 PF	SF-36 Physical Functioning Subscale
SMAF	Système de Mesure de L'autonomie Fonctionnelle (Functional Autonomy Measure)
SNF	skilled nursing facility
TBI	traumatic brain injury
UK	United Kingdom
USA	United States of America
VAS	Visual Analog Scale
w/	with
w/o	without
YGDS	Yesavage Geriatric Depression Scale
yo	years old

Summary of Key Findings

Summary of Experimental Studies

No experimental studies were found in the search process, resulting in no experimental evidence to support the research question.

Summary of Outcome Studies

Outcome studies were grouped according to research methodology and pyramid levels. Arik et al. (2015), an outcome level 2 study, assessed validity and reliability of the Turkish version of the Katz ADL and found it has high validity, reliability, and internal consistency. Desrosiers et al. (2004), another level 2 study, found good discriminant validity for the LIFE-H and a moderate correlation with the SMAF. Galli et al. (2018), an outcome level 3 study, found that WHODAS 2.0 scores were higher than the ADL BI, whereas the recovery rate was higher for the ADL BI. Confidence intervals are reported incorrectly in this article. Bouwstra et al. (2019) contains two studies, outcome level 3 and 4. Both study results concluded that the BI is sufficient in measuring and interpreting changes in the physical function capabilities of patients in a geriatric rehabilitation setting. Seven other articles, outcome level 4, investigated the psychometric properties of standardized assessments. Poulin and Desrosiers (2009) found that the LIFE-H has high reliability in measuring daily activities. Klein et al. (2008) evaluated four performance-based ADL measures and determined that the ADL Profile met the greatest number of constructs congruent with OT principles. Nelson et al. (2002) found that the Melville-Nelson SCA has good interrater reliability, predictive validity, and sensitivity to change. Weening-Dijksterhuis et al. (2011) found that the PAT had satisfactory test-retest reliability and validity for assessing ADL performance. In a study to determine validity of the AMPS, Merritt et al. (2011) found that the association between global functional level and ADL motor and process ability is statistically significant. The AMPS has high sensitivity and specificity.

Two additional outcome studies considered the ADL measurement system in SNFs. Shah et al. (2012) found statistically significant differences in MBI at admission and discharge. Shah et al. (2013) investigated the psychometric properties of the MBI and ability to track independence in ADLs with a large sample size. The MBI had good reliability and statistically significant improvement from admission to discharge.

Summary of Qualitative Studies

Qualitative studies were grouped according to research methodology. One qualitative study was level 2 on the research pyramid. Darzins et al. (2016) used a mixed-methods design to determine perception and clinical utility of the PC-PART. OT practitioners rated the assessment as having moderate clinical utility, which is influenced by experience, change in level of dependence, time, and effort.

Summary of Descriptive Studies

Descriptive studies were grouped according to research methodology. Eleven descriptive studies were level 2 on the research pyramid and AOTA level IV. Kerber et al. (2020)

compared the FIM, MDS, and the OASIS to NHATS, which are moderately, positively correlated. Jette et al. (2003) compared four PAC functional assessments. The FIM, OASIS, MDS, and PF-10 had high internal consistency, the MDS and OASIS measured the greatest functional range, and the PF-10 had low precision. The MDS displayed the most precision among the greatest spread of patient functional levels. Stein et al. (2015) investigated the need for standardized measures of function and sociodemographic information relevant to referral and post-acute rehabilitation. This study found that the BI is associated with discharge destination. Hobart et al. (2001) compared the BI and FIM in assessing disability in neurologic disorders. The BI and FIM have high internal consistency and strong validity of measuring disability. Jette et al. (2005a) found that the FIM has good reliability, validity, and internal consistency in determining ADL performance, sphincter management, mobility, and executive functioning. In a supplementary study, Jette et al. (2005b) found that patients with no concomitant disease had higher FIS scores in ADL and sphincter management. A higher FIS stage is associated with increased odds that the patient will discharge to the community. Dromerick et al. (2003) conducted a comparative study considering the sensitivity of MRS, ISTM, BI, and FIM for patients post-stroke. ADL scales showed greater change in functional levels than global scales. Chisholm et al. (2002) conducted a review of research databases and found that patients with CVA had the lowest safety and independence PASS scores for functional mobility and activities of daily living. Kim and Pyun (2019) conducted a retrospective chart review of patients with TBI and found that the MBI score at discharge is predictive of discharge destination. In another retrospective chart review, Nazzal et al. (2000) found that the MBI has high interrater reliability at admission and discharge. Hulsbæk et al. (2019) compared four functional assessments. The DEMMI, CAS, and 30-s CST are mobility based assessments that do not account for client performance of ADLs. Researchers found that the MBI has a small floor effect at baseline and discharge.

Three articles were level 3 on the research pyramid and AOTA level IV. Hartigan (2007) compared the usefulness of Katz ADL and BI to nursing practice of older adults. The BI displayed high agreement in administration among four rating methods and is less reliable with cognitively impaired patients. The Katz ADL was identified as a good predictor of long-term care, is adaptable with patients of multiple conditions, and is preferred over the BI to identify functional abilities of older adults. Vertesi et al. (2000) investigated the usefulness of the HART to identify functional abilities and caregiver support for patients in long term care. They found that the HART is a comprehensive assessment that addresses patient function and determines safe discharge planning for older adults. Klein et al. (2008) recruited 10 OTRs to identify five OT constructs in order to evaluate four performance-based measures of ADLs. The OT practitioners developed the construct list into a series of questions to create a form for evaluating ADL measures for congruence with OT practice.

One AOTA level V study was reviewed. Donnelly and Carswell (2002) reviewed individualized outcome measures in OT literature. The results suggest that the GAS is reliable, responsive, and has higher clinical utility when modified. The AMPS has high reliability, validity, and responsiveness (Donnelly & Carswell, 2002). Unsworth (2000) conducted a literature review to establish information about assessments currently used in OT practice. The researchers reported that the BI measures basic activities of daily living,

the FIM measures disability, and the AMPS measures competence in activities of daily living. This article was not included in the CAT table.

Strong Evidence

Assessment	# of articles	Inter-Rater Reliability	Test-Retest Reliability	Internal Consistency	Construct Validity	Predictive Validity	Other
BI	5	ICC 0.93 ⁹ - 0.96 ^{9,2}	**	Cronbach's $\alpha = 0.83^2 - 0.965^9$ Cronbach's $\alpha = 0.94^{10}$	Correlated w/ PULSES profile (-0.74 - -0.90) ⁹ Comparative fit index; Tucker-Lewis index > 0.95, RMSEA < 0.06 ²	Good predictive value noted ⁹	Less reliable w/ pts w/ cognitive deficits ⁹ More sensitive than MRS ($p < 0.001$) & ISTM, less sensitive than FIM ⁷ Predictive of d/c destination & LOS ²⁴ Assessment lacking scoring guidelines ⁹ Ceiling/floor effects noted ⁷ Range of floor/ceiling effect 0-20 (2.7/5.4) ¹⁰ Eval time 6 ± 0.159 min ⁸ High BI score (85 - 100) predictive of return home ($p = 0.001$) ²⁴
MBI	5	R = 0.94 at admission, 0.96 at discharge ¹⁹	0.93 ($p < 0.001$) ²³	**	**	**	Improvement from admission to d/c ($p < 0.001$) ^{22,23} Inter-rater reliability ensured through quick summary reference sheet ^{22,23} Floor effect at baseline (12%) & discharge (5%), effect size = 1.78 ¹¹ MBI score after rehab (OR = 1.085, $p < 0.001$) predictive of d/c destination ¹⁶

FIM	5	0.99 (ICC > 0.90) ¹⁴	ICC = 0.98 ¹⁰	Cronbach's α = 0.99 ¹² Cronbach's α for ADL domain = 0.89 ¹³ Cronbach's α = 0.95 ¹⁰	**	**	Concurrent validity SCA w/ FIM (-0.85) ²⁰ FIM detected more change amongst pts than change identified w/ BI ($p < 0.001$) & MRS ($p < 0.005$) ⁷ Correlation of FIM, MDS, & OASIS compared to NHATS = 0.63 ¹⁵ New measures implemented in IRF's instead of FIM ¹⁵ Range of floor/ceiling effect 19-122 (0/0) ¹⁰
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Moderate Evidence

Assessment	# of articles	Inter-Rater Reliability	Test-Retest Reliability	Internal Consistency	Construct Validity	Predictive Validity	Other
LIFE-H	2	ICCs = 0.65 - 0.88 ²¹	ICCs = 0.79 - 0.93 ²¹	**	**	**	Reliability data reflects assessment of life domains ²¹ Satisfaction positively associated with total score ($p < 0.05$) ⁵ Discriminant validity: $p = < 0.001$ ⁵ Convergent validity: correlation between ADL categories of SMAF & LIFE-H (0.02-0.94) ⁵
Katz ADL	2	ICC = 0.999 ¹	ICC = 0.999 ¹	Cronbach's α = 0.838 ¹	**	**	Preferred over ADL BI for specificity & predictive value ⁹

							Sensitivity limitations ⁹ Convergent validity ($p < 0.001$) w/ ADL BI ¹
AMPS	2	$R = 0.93^6$	Motor: $r = 0.88^6$ Process: $r = 0.86^6$	**	**	**	Global fxnl level associated w/ ADL motor ability ($p < 0.01$) & process ability ($p < 0.01$) ¹⁸ Sensitivity of ADL motor cutoff measure of 1.5 logits = 0.68, specificity = 0.72; process cutoff measure of 1.0 logit = 0.81, specificity = 0.70 ¹⁸ 65% of validation sample matched predicted decisions, sensitivity = 0.85, specificity = 0.83 ¹⁸ Lack of evidence supporting validity & reliability of AMPS global fxnl ratings ¹⁸ All noted research on validity, reliability, & responsiveness was completed prior to 2000 ⁶
Melville-Nelson SCA	1	ICCs = 0.94 ²⁰	**	**	**	SCA score @ d/c is predictor of caregiving & fxn ²⁰	Concurrent validity: SCA correlated w/ FIM (-0.85) & Klein-Bell ADL (-0.85) ²⁰ SCA highly responsive to change ²⁰
PASS	1	**	$r = 0.92 - 0.96^3$	**	**	**	Inter-observer agreement: (I, 96%) (S, 97%) ³
GAS	1	**	$r = 0.51 - 0.91^6$	**	**	**	Good responsiveness, higher clinical utility when modified ⁶

							Low to mod concurrent validity ⁶
PAT	1	**	$r = 0.316 - 0.950^{26}$	Cronbach's $\alpha = 0.731 - 0.881^{26}$	PAT compared to GARS = $0.612 - 0.763 (p < 0.01)^{26}$	**	Satisfactory test-retest reliability and validity for assessing ADL performance ²⁶
FIS	1	**	**	**	<p>Pts w/out concomitant disease more likely to have higher ADL score than moribund pts (41.1, $p < 0.001$)¹⁴</p> <p>Pts at ADL stages 4, 5, 6 at d/c more likely to d/c to community than pts at stage 1 (OR = 1.35, 2.55, 4.92, respectively)¹⁴</p>	<p>Admission ADL stage predicted odds of d/c to community increasing at each stage up to stage 6 (OR = 1.26, 1.95, 2.75, 3.32, 3.73, respectively)¹⁴</p>	Sensitivity to change: d/c scores in ADL domain higher than admission scores ($z = -62.8, p < 0.001$) ¹⁴

Limited Evidence

Assessment	# of articles	Inter-Rater Reliability	Test-Retest Reliability	Internal Consistency	Construct Validity	Predictive Validity	Other
WHODAS 2.0	1	**	**	**	**	**	<p>Average scores are higher for WHODAS 2.0 than ADL BI⁸</p> <p>Administration takes 25 ± 0.749 minutes, longer than the ADL BI⁸</p> <p>Incorrect confidence intervals reported⁸</p>
SMAF	1	ICC = 0.96^5	ICC = 0.95^5	**	**	**	SMAF & LIFE-H moderately correlated (0.70) ⁵

							Validity (r = 0.88) ⁵
MDS	3	**	**	0.97 ¹²	**	**	<p>Sample only representative of 6 networks, errors in assessment scores¹²</p> <p>Range of fxnl ability greatest for MDS compared to FIM & PF-10¹²</p> <p>High measurement precision @ low fxn¹²</p> <p>Correlation of FIM, MDS, and OASIS compared to NHATS = 0.63¹⁵</p>
OASIS	1	**	**	0.99 ¹²	**	**	<p>Sample only representative of 6 networks, errors in assessment scores¹²</p> <p>Range of fxnl ability greater for OASIS compared to FIM & PF-10¹²</p> <p>High measurement precision @ low fxn¹²</p> <p>Correlation of FIM, MDS, & OASIS compared to NHATS = 0.63¹⁵</p>
PF-10	1	**	**	0.99 ¹²	**	**	<p>Low measurement precision for in-patient, high precision for out-patient¹²</p> <p>Lower range of fxnl ability measured compared to MDS & OASIS¹²</p>

NHATS	1	**	**	**	**	**	Correlation of FIM, MDS, & OASIS compared to NHATS = 0.63 ¹⁵
MRS	1	**	**	**	**	**	Higher sensitivity to change compared to ISTM ($X^2 = 17.56$, $p < 0.001$) but not as sensitive as FIM & BI ⁷
ISTM	1	**	**	**	**	**	Least sensitive to change compared to MRS, FIM, & BI ⁷
ADL Profile	1	**	**	**	**	**	OTs only used CMOP to identify constructs congruent with OT principles ¹⁷ Inconsistency between items scores due to multiple raters in rating process ¹⁷
PC-PART	1	**	**	**	**	**	Mod clinical utility (5.4 on VAS) ⁴ Barriers to routine use: info duplication, sensitivity to change in dependence level, time & effort req ⁴
HART	1	**	**	**	**	**	Addresses client function & determines safe discharge planning for older adults ²⁵ 90% of pts provided positive feedback for usefulness & acceptability ²⁵ 50-min administration ²⁵

							No noted research on reliability, validity, & sensitivity to change ²⁵
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** indicates no data available

Implications for Consumers

Consumers include patients in SNFs requiring ADL training to safely discharge home. Conducting effective assessments allows for appropriate goal establishment and implementation of interventions that are congruent with patient preferences and priorities. In preparation for discharge from OT services, consumers expect that tools are reliable and valid in order to ensure safety in performance of ADLs post-discharge. Assessments should reflect progress towards goals and meet the individual needs of the client considering context and environment of discharge. Patients in SNFs will benefit from the implementation of the most effective standardized assessments to determine their competence and safety in community living after discharge.

Implications for Practitioners

This literature review provides OT practitioners a resource to assist in incorporating valid and reliable assessments into existing clinical practice for patients in SNFs. Due to high productivity requirements and time constraints, practitioners have limited time to conduct independent research to determine which assessments are deemed best practice based on the evidence. This information helps identify assessments that are easily administered, affordable, psychometrically-sound, accessible, and provide direction in determining appropriate OT interventions. Furthermore, it provides evidence for measures that are consistent with OT practice principles, values, and beliefs. Following the ethical principle of beneficence, OT practitioners should “use, to the extent possible, evaluation, planning, intervention techniques, assessments, and therapeutic equipment that are evidence based, current, and within the recognized scope of occupational therapy practice” (AOTA, 2015). In order to practice nonmaleficence, OT practitioners must carefully consider functional abilities prior to discharge to prevent re-injury or hospitalization (AOTA, 2015).

This research allows for effective discharge planning and prediction of need for assistance in the community after discharge. Providing OT practitioners with a simple and straightforward reference of the evidence will aid clinical decision-making. This research indicates that OT practitioners should consider patient desires, life context, impairments, practitioner experience, and feasibility factors, such as cost, availability, and time to administer, when selecting an assessment. There is strong evidence to support the effectiveness of the BI, MBI, and FIM at predicting safe performance of ADLs for patients in SNFs. The BI and FIM assessments are used less frequently in practice than newer, updated assessments such as the MBI. The FIM takes 30 - 45 minutes to administer (Bland & Byl, 2016) and good test-retest reliability (0.98) (Hobart et al., 2001). The original BI required approximately 20 minutes for administration (DiGiacomo et al., 2020), whereas the MBI requires 10 minutes, but may take longer when relying on observation alone (“MBI Score”, 2018). The MBI was adapted from the BI and has test-retest reliability of 0.93 (Shah et al., 2013). The MBI is evidence-based and is recommended for use in SNFs to assess ADL performance. Contribution to the development of further research is beneficial to strengthen confidence in the use of the MBI and other moderate to strongly supported ADL assessments.

Implications for Researchers

This review demonstrates that further research needs to be conducted to evaluate the effectiveness of standardized assessments at predicting safe performance of ADLs for patients in SNFs. More evidence-informed practice may be accomplished by conducting further direct comparison studies to identify clinical utility of various assessments. Specifically, it would be useful for researchers to conduct further studies that measure the validity, reliability, and sensitivity of standardized assessments. In this critical analysis, components of reliability and validity were established in 15 of the 22 measures. Furthermore, sensitivity data was only established in 8 of the 22 measures.

There appear to be inconsistencies in data supporting use and frequency of use for the BI and MBI. Current data shows the BI have limited sensitivity with ceiling and floor effects and no scoring guidelines. It is recommended that future researchers evaluate cost effectiveness and feasibility of assessments for implementation in the SNF setting.

Bottom Line for Occupational Therapy Practice/ Recommendations for Best Practice

There is strong evidence to support the effectiveness of the BI, MBI, and FIM at predicting safe performance of ADLs for patients discharging from SNFs. The FIM and BI are used less frequently in practice than newer, updated assessments such as the MBI. Use of the MBI is recommended as the FIM is currently being phased out of OT practice due to floor and ceiling effects (Jette et al., 2005a). Contribution to the development of further research is beneficial to strengthen confidence in the use of such assessments. Overall, more research evaluating psychometric data and feasibility of implementation in clinical practice is needed.

Practitioners should continuously monitor whether traditionally used assessments are supported by empirical evidence and appropriate for the individual patient. Practitioners should consider the evidence regarding effectiveness and feasibility of assessments including accessibility, cost, and administration protocol. Rehabilitation organizations should review assessment protocols to ensure best practice. They should take into account clinician experience and professional reasoning when developing practice standards.

Involvement Plan

Introduction

Focused PACO Question. What is the evidence to support the effectiveness of standardized assessments at predicting safe performance of ADLs for patients in skilled nursing facilities?

The literature review identified strong evidence to support the effectiveness of the BI, MBI, and FIM at predicting safe performance of ADLs for patients in SNFs. Research collaborators currently use the MBI and sought confirmation that it is an evidence-based assessment tool.

The research team met with Tina Brouillet, John Fischer, and Jenny Jenkins of LCCA on February 22nd, 2021. The primary collaborator, Clemente Aquino was absent due to medical leave and provided input upon his return to work. After presenting the evidence matrix and research implications, the collaborators indicated that they were pleased by the research results, given that initial implementation of the MBI was due to feasibility, rather than evidence. Two options for knowledge translation were provided: video recorded inservice and an information booklet. Collaborators were most interested in the development of a one- to two-page, bulleted “Did You Know?” sheet validating the use of the MBI in practice and providing resources for lesser known ADL assessments.

To accommodate all learning styles, the rehabilitation directors suggested a recorded lecture for employee access through their online learning portal, Healthcare Academy. The collaborators recommended that the video include psychometric data, feasibility, and comparisons of assessments supported by strong and moderate evidence to engage practitioners

in the learning process while validating the MBI as the optimal assessment to use with each patient.

Context

There were concerns for organizational readiness, organizational structure, leadership, and funding. LCCA encompasses over 200 SNFs which required research implementation to be widespread. This resulted in challenges with adoption of a new, evidence-based assessment or with dissemination of an informative document to all practitioners, managers, and leaders in the LCCA community. Widespread dissemination of the knowledge translation document to hundreds of facilities nationwide was facilitated through existing protocols for distribution of directives. The organization currently requires the use of the MBI, which is free. Providing access to various alternative assessments provided a greater scope of functional measurement than the MBI alone. Regarding political directives and funding, the amount of funding or insurance to support these alterations was uncertain. Collaborators reported that insurance companies and other individuals have critiqued the use of the MBI, rather than more commonly used assessments of ADL performance. Limited responsiveness and/or acceptance of the knowledge provided from directors and managers limits our ability to measure adherence to the resources provided.

Tension for change, feedback, and intra-organizational communication were opportunities at the organizational level that could positively impact the knowledge translation process (Palinkas & Soydan, 2012). Practitioners in administrative positions are interested in establishing the use of the MBI as evidence based practice. They were also invested in identifying whether the MBI is the most effective and feasible assessment for continued use at LCCA. This indicates that the research was of interest to the audience, but specifically at the

administrative level. If knowledge is implemented within one regional area and the directors and staff provide positive feedback, this would support the knowledge to be spread amongst a greater number of facilities within LCCA. Collaborative communication between the vice president of practice standards and two directors of rehabilitation provided evidence of adequate communication systems between different facilities to help information carry over (Palinkas & Soydan, 2012).

Knowledge translation was supported by strengths at a departmental level (Palinkas & Soydan, 2012). First, there was positive intra-departmental communication within LCCA. Opportunities for continuing education were available through Healthcare Academy. In this format, practitioners can create and upload videos to inform others of evidence based practice guidelines. This allowed for information to be dispersed in a meaningful way to many practitioners within different departments. Next, there is strong departmental leadership within LCCA. Directors of rehabilitation may be occupational therapists, physical therapists, or speech and language pathologists. As such, opportunities to integrate knowledge and methods from different disciplinary perspectives were supported (Palinkas & Soydan, 2012). However, knowledge translation involves a multifaceted chain. Directors of rehabilitation from different disciplines require an understanding of OT clinical reasoning related to use of a particular assessment tool. By educating all departments of evidence-based assessments including the MBI, LCCA legitimized OT services.

LCCA currently employs over 42,000 individuals across the country, which posed a challenge in informing every practitioner of the knowledge translation data provided across all departments, regardless of location. Additionally, individuals may disagree that the MBI aligns with evidence-based practice, despite the available research supporting the MBI. In the past,

education of occupational therapists was centered on OT models, rather than empirical research due to limited studies supporting assessment and intervention. As a result, some therapists may place less value on empirical evidence and prioritize clinical history and experience. It is pertinent that each individual feels that implementation of the plan supports their personal therapeutic goals for their clients (Palinkas & Soydan, 2012). Furthermore, due to the high demand and responsibilities required of each individual, there is limited time for practitioners to acquire additional knowledge about available assessments. This may result in resistance to accepting external knowledge.

Description of Activities and Products Completed

As indicated by the contextual factors identified above, it was determined that two knowledge translation tools were needed that supported the systems already in place within the organization. The first product involved a two-page bulleted “Did You Know?” sheet validating the use of the MBI in practice and providing resources for lesser known moderate evidence ADL assessments (see Appendix A & B). In order to accommodate other learning styles, the second product involved a 15-minute, recorded lecture for employee access through LCCA’s online learning portal, Healthcare Academy (see Appendix C). The recorded lecture video included psychometric data, feasibility, and comparisons of assessments supported by strong and moderate evidence to engage practitioners in the learning process while validating the MBI as the optimal assessment to use with each patient.

The research team scheduled interim dates for project completion and conducted research regarding administration protocols, costs, and training guidelines of assessment tools supported by moderate and strong evidence. The collaborator provided example “Did You Know?” forms and an in-service training to best meet needs and expectations. The group began

developing the products simultaneously to support LCCA needs. The finalized “Did You Know?” fact sheet is a user-friendly guide that highlights the effectiveness of the MBI in SNFs. It displays background information on the MBI, empirical evidence of the MBI, relevance to LCCA practitioners, and considerations of using the assessment. The last page of the document offers practitioners information on lesser known ADL assessments supported by moderate evidence. Furthermore, the finalized “Did You Know?” fact sheet guided the format of the recorded lecture. The collaborator wanted the recorded lecture to flow as an informative 15-minute presentation. The research team developed the PowerPoint and video script and one group member completed a voiceover to ensure the presentation was cohesive and easy to follow. The finalized recorded lecture will be accessible to all LCCA practitioners through their online learning platform. Lastly, the activities were supplemented with a satisfaction survey to measure the effectiveness of the knowledge translation process. This satisfaction survey was aimed at the collaborator, Clemente Aquino, and two of the LCCA regional directors, John Fischer and Tina Brouillet. Due to their involvement and guidance in the knowledge translation process and the nature of LCCA being such a large organization, it was best to gather feedback on the products developed.

The “Did You Know?” fact sheet and recorded lecture did not present any particular challenges for the research team other than ensuring that resources were user-friendly. As OT students, group members are well versed in technical research terms, which may not be very universally understood by practitioners. Student occupational therapists and practicing clinicians have experience with different assessments, as the MBI is standard practice at LCCA. As such, the recorded lecture offers practitioners a quick reference guide on administration protocols, costs, and training guidelines of assessments supported by moderate evidence.

Interim Dates of Knowledge Translation Completion

Task/Products	Target Dates	Dates Completed
Met with collaborator	Monday - February 22nd, 2021	Monday - February 22nd, 2021
Received approval from Clemente	Monday - March 1st, 2021	Monday - March 1st, 2021
Fact Sheet: Identify cost effective tools supported by moderate or strong evidence	Monday - March 8th, 2021	Monday - March 8th, 2021
Fact Sheet: Review sample “Did You Know?” forms from collaborator	Monday - March 8th, 2021	Friday - March 19th, 2021
Recorded Lecture: Review sample in-service from collaborator	Monday - March 8th, 2021	Friday - March 19th, 2021
Fact Sheet: Developed comparison chart	Friday - March 19th, 2021	Saturday - March 20th, 2021
Recorded Lecture: Developed video script	Friday - March 19th, 2021	Saturday - March 20th, 2021
Fact Sheet: Presented rough draft to mentor & chair	Monday - March 22nd, 2021	Sunday - March 21st, 2021
Fact Sheet: Sent rough draft to LCCA team	Monday - March 22nd, 2021	Friday - March 19th, 2021
Survey developed	Monday - March 22nd, 2021	Monday - March 22nd, 2021
Fact Sheet: Finalized “Did You Know?” handout	Monday - April 12th, 2021	Sunday - April 11th, 2021
Recorded Lecture: PowerPoint slides & voiceover finalized	Monday - April 12th, 2021	Sunday - April 11th, 2021
Knowledge translation implemented	Tuesday - April 13th, 2021	Sunday - April 11th, 2021
Survey development completed and sent to collaborators	Tuesday - April 13th, 2021	Sunday - April 11th, 2021

Sent reminders to non-respondents	Monday - April 19th, 2021	Monday - April 19th, 2021
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Outcomes and Effectiveness

To measure knowledge translation, satisfaction by the regional directors was monitored. A satisfaction survey was submitted to the collaborators to gather feedback on the fact sheet. Following a reminder, one collaborator returned a completed survey. The remaining two collaborators did not return a completed survey; therefore, there is not sufficient feedback to generate a report regarding collaborator satisfaction. Continued collaboration may be appropriate to expand upon the findings of this literature review. It is inconclusive at this time if that group will consist of members of the University of Puget Sound OT doctoral program, LCCA clinical students, or if there will be a transition to an outside research institute aligned with LCCA.

The knowledge translation products were distributed to a large organization, provided directly to administrative staff. As a result, a satisfaction survey was provided to assess the effectiveness of the “Did You Know?” fact sheet and the recorded video inservice. The approach to knowledge translation was to share this information at one LCCA facility first, in order to identify outcomes. Due to limited time for completion of the knowledge translation and the limited practitioners provided with this information within project deadlines, the focus was to gather feedback on collaborator satisfaction. All collaborators received a satisfaction survey via email to provide feedback on their experience with the “Did You Know?” handout and recorded inservice. Sufficient data was not collected to report outcomes for knowledge translation due to time constraints and limited survey responses.

Evaluation of the Overall Process of Project

The group process in establishing a clear evidence question and literature review proved difficult given the topic and collaborator needs. However, with the assistance of the project

mentor, the research question was expanded due to limited research. This process enabled us to find clinically relevant data to support the use of evidence-based ADL assessments in SNFs. We identified a need for continued research to establish the feasibility and sensitivity of assessments used with adult populations in SNFs.

Having the opportunity to collaborate with practitioners representing a national corporation presented a unique opportunity to learn about the OT process in different parts of the country. While this was beneficial to the learning experience, there were challenges with scheduling meetings due to collaborators and students residing in different time zones and needing to meet their individual role requirements. The need to reschedule several meetings led to limited time to gather feedback on our completed knowledge translation project. Overall, this project provided our group with experience collaborating and communicating in a professional setting that will be beneficial to our future practice and contribution to research.

We are satisfied with our final products and believe that the knowledge translation process will benefit practitioners at LCCA by establishing confidence in their current use of the MBI in practice. Learning how to create visually- and auditorily-pleasing inservices will benefit our implementation of knowledge translation moving forward as practitioners as well as the outcomes for our future clientele. We enjoyed completing this collaborative project and feel that this experience will be advantageous throughout fieldwork II and as future OT practitioners.

Recommendations for the Future

The literature review demonstrated that further research evaluating the effectiveness of standardized assessments at predicting safe performance of ADLs for patients in SNFs should be conducted to achieve more evidence-informed practice. Researchers should identify validity, reliability, and sensitivity of standardized assessments. Furthermore, there were identified

inconsistencies in data supporting the use and frequency of use for the BI and the MBI. Future researchers should consider these recommendations as well as evaluate cost effectiveness and feasibility of assessment administration for implementation in SNFs.

For practitioners, there is strong evidence supporting use of the BI, MBI, and FIM at predicting safe performance of ADLs for patients discharging from SNFs. However, we found that the FIM and BI are used less in practice compared to that of the MBI which is a newer, updated, evidence-based assessment tool. Moving forward, practitioners should continuously monitor if assessments used are supported by empirical evidence and appropriate for each patient. The organizations encompassing these practitioners should continuously review the assessment protocols to ensure best practice in their facilities.

References

- American Occupational Therapy Association. (2015). Occupational therapy code of ethics. *American Journal of Occupational Therapy*, 69(Suppl. 3).
- Ampudia, J., Heidle, C., Sok, J., & Yi, J. (2019). Assessment of Motor and Process Skills. *Shirley Ryan AbilityLab*. Retrieved from: <https://www.sralab.org/rehabilitation-measures/assessment-motor-and-process-skills>
- *Arik, G., Varan, H. D., Yavuz, B. B., Karabulut, E., Kara, O., Kilic, M. K., ... Cankurtaran, M. (2015). Validation of Katz index of independence in activities of daily living in Turkish older adults. *Archives of Gerontology and Geriatrics*, 61(3), 344–350.
doi:10.1016/j.archger.2015.08.019
- Bland, M. & Byl, N. (2016). Functional Independence Measure. *Shirly Ryan Ability Lab*. Retrieved from: <https://www.sralab.org/rehabilitation-measures/fimr-instrument-fim-fimr-trademark-uniform-data-system-fro-medical>
- *Bouwstra, H., Smit, E. B., Wattel, E. M., van der Wouden, J. C., Hertogh, C. M. P. M., Terluin, B., & Terwee, C. B. (2019). Measurement properties of the Barthel Index in geriatric rehabilitation. *Journal of the American Medical Directors Association*, 20(4), 420-425.
doi:10.1016/j.jamda.2018.09.033
- *Chisholm, D., Toto, P., Raina, K., Holm, M., & Rogers, J. (2014). Evaluating capacity to live independently and safely in the community: Performance Assessment of Self-Care Skills. *British Journal of Occupational Therapy*, 77(2), 59-63.
doi:10.4276/030802214X13916969447038
- *Darzins, S., Imms, C., Stefano, M., & Radia-George, C. (2016). Personal Care Participation

Assessment. *Canadian Journal of Occupational Therapy*, 83(4), 237-248.

doi:10.1177/0008417416648446

*Desrosiers, J., Noreau, L., Robichaud, L., Fougereyrollas, P., Rochette, A., & Viscogliosi, C.

(2004). Validity of the Assessment of Life Habits in older adults. *Journal of*

Rehabilitation Medicine, 36(4), 177–182. doi:10.1080/16501970410027485

DiGiacomo, M., Harter, S., Stone, K., & Ward, A. (2020). Barthel Index. *Shirley Ryan*

AbilityLab. Retrieved from: <https://www.sralab.org/rehabilitation>

-measures/barthel-index

*Donnelly, C. & Carswell, A. (2002). Individualized outcome measures: A review of the

literature. *Canadian Journal of Occupational Therapy*, 69(2), 84-94.

doi:10.1177/000841740206900204

*Dromerick, A. W., Edwards, D. F., & Diringer, M. N. (2003). Sensitivity to changes in

disability after stroke: A comparison of four scales useful in clinical trials. *Journal of*

Rehabilitation Research and Development, 40(1), 1-8. Retrieved from

<http://ezproxy.ups.edu/login?url=https://www-proquest-com.ezproxy>

.ups.edu:2443/docview/71583285?accountid=1627

*Galli, T., Mirata, P., Foglia, E., Croce, D., Porazzi, E., Ferrarrio, L., . . . Banfi, G. (2018). A

comparison between WHODAS 2.0 and Modified Barthel Index: Which tool is more

suitable for assessing the disability and the recovery rate in orthopedic rehabilitation?

ClinicoEconomics and Outcomes Research, 10, 301-307. doi: 10.2147/CEOR.S150626

General information: Performance Assessment of Self-Care Skills (PASS). (n.d.) Retrieved

from:<https://health.utah.edu/sites/g/files/zrelqx131/files/files/migration/image/pass.pdf>

*Hartigan, I. (2007). A comparative review of the Katz ADL and the Barthel Index in assessing

the activities of daily living of older people. *International Journal of Older People Nursing*, 2(3), 204–212. doi:10.1111/j.1748-3743.2007.00074.x

- *Hobart, J. C., Lamping, D. L., Freeman, J. A., Langdon, D. W., McLellan, D. L., Greenwood, R. L., & Thompson, A. J. (2001). Evidence-based measurement: Which disability scale for neurological rehabilitation? *Neurology*, 57, 639-644. doi:10.1212/WNL.57.4.639
- *Hulsbæk, S., Larsen, R. F., Rosthøj, S., & Kristensen, M. T. (2019). The Barthel Index and the Cumulated Ambulation Score are superior to the de Morton Mobility Index for the early assessment of outcome in patients with a hip fracture admitted to an acute geriatric ward. *Disability and Rehabilitation*, 41(11), 1351-1359. doi:10.1080/09638288.2018.1424951
- *Jette, A. M., Haley, S. M., & Ni, P. (2003). Comparison of functional status tools used in post-acute care. *Health Care Financing Review*, 24(3), 13–24.
- *Jette, D. U., Warren, R. L., & Wirtalla, C. (2005a). Functional independence domains in patients receiving rehabilitation in skilled nursing facilities: Evaluation of psychometric properties. *Archives of Physical Medicine and Rehabilitation*, 86(6), 1089–1094. doi:10.1016/j.apmr.2004.11.018
- *Jette D., Warren, R., & Wirtalla, C. (2005b). Validity of functional independence staging in patients receiving rehabilitation in skilled nursing facilities. *Archives of Physical Medicine and Rehabilitation*, 86(6), 1095-1101. doi:10.1016/j.apmr.2004.11.035
- *Kerber, K. A., Skolarus, L. E., Feng, C., & Burke, J. F. (2020). Validation of medicare rehabilitation functional assessments in routine care. *JAMA Network Open*, 3(5), e204702. doi:10.1001/jamanetworkopen.2020.4702
- *Kim, D. Y., & Pyun, S. (2019). Prediction of functional outcome and discharge destination in

patients with traumatic brain injury after post-acute rehabilitation. *International Journal of Rehabilitation Research*, 42(3), 256-262. doi:10.1097/MRR.0000000000000353

*Klein, S., Barlow, I., & Hollis, V. (2008). Evaluating ADL measures from an occupational therapy perspective. *Canadian Journal of Occupational Therapy*, 75(2), 69-81. doi:10.1177/000841740807500203

Lannigan, E. L. (2016). Occupational therapy service outcome measures for certified community behavioral health centers (CCBHCs): Framework for occupational therapy service with rationale for outcome measures selection and listing of occupational therapy outcome measure tools. *Mental Health Special Interest Section Quarterly*. Retrieved from: <https://www.aota.org/-/media/Corporate/Files/Practice/MentalHealth/occupational-therapy-outcome-measures-community-mental-health-services.pdf>

Life-H 4.0. (2021). *Réseau international sur le processus de production du handicap*. Retrieved from: <https://mhavie.ca/boutique/en/mhavie/mhavie-4-0-c99c75/>

*Merritt, B. K. (2011). Validity of using the Assessment of Motor and Process Skills to determine the need for assistance. *American Journal of Occupational Therapy*, 65, 643-650. doi:10.5014/ajot.2011.000547

Modified Barthel Index Score (MBI). (2018). *Participation and Quality of Life*. Retrieved from: <https://parqol.com/modified-barthel-index-score-mbi/>

*Nazzal, M., Sa'Adah, M. A., Al-Ansaris, D., Al-Awadi, O., Inshasi, J., & Eyadah, A. A. (2000). Stroke rehabilitation: Application and analysis of the modified Barthel Index in an Arab community. *Disability and Rehabilitation*, 23, 36-42. doi:10.1080/09638280150211284

*Nelson, D. L., Melville, L. L., Wilkerson, R. A., Grech, J. L., & Rosenberg, J. A. (2002).

Interrater reliability, concurrent validity, responsiveness, and predictive validity of the Melville-Nelson Self-Care Assessment. *American Journal of Occupational Therapy*, 56(1), 51–59. doi:10.5014/ajot.56.1.51

Palinkas, L. A., & Soydan, H. (2012). *Translation and implementation of evidence-based practice*. New York, NY: Oxford University Press, Inc.

Pham, T. (2020). Goal Attainment Scale. Retrieved from:

<https://www.sralab.org/rehabilitation-measures/goal-attainment-scale>

*Poulin, V., & Desrosiers, J. (2009). Reliability of the LIFE-H satisfaction scale and relationship between participation and satisfaction of older adults with disabilities. *Disability and Rehabilitation*, 31(16), 1311–1317. doi:10.1080/09638280802572957

Radomski, M. V., & Trombly Latham, C. A. (2014). *Occupational therapy for physical dysfunction*. (7th ed.). Baltimore, MD: Lippincott Williams & Wilkins.

*Shah, S., Tartaro, C., Chew, F., Morris, M., Wood, C., & Wuzzardo, A. (2012). Rehabilitation efficiency and effectiveness in medical-surgical conditions: A pilot study of 234 patients. *Physical & Occupational Therapy in Geriatrics*, 30(4), 288–300. doi:10.3109/02703181.2012.731481

*Shah, S., Tartaro, C., Chew, F., Morris, M., Wood, C., & Wuzzardo, A. (2013). Skilled nursing facility functional rehabilitation outcome: Analyses of stroke admissions. *International Journal of Therapy & Rehabilitation*, 20(7), 352–360. doi:10.12968/ijtr.2013.20.7.352

*Stein, J., Bettger, J. P., Sicklick, A., Hedeman, R., Magdon-Ismail, Z., & Schwamm, L. H. (2015). Use of a standardized assessment to predict rehabilitation care after acute stroke. *Archives of Physical Medicine and Rehabilitation*, 96, 210-217. doi:10.1016/j.apmr.2014.07.403

- Template Roller. (2021). "Modified Barthel Index" (Shah Version): Self care assessment form. Retrieved from: <https://www.templateroller.com/template/243346/modified-berthel-index-shah-version-self-care-assessment-form.html>
- Unsworth, C. (2000). Measuring the outcome of occupational therapy: Tools and resources. *Australian Occupational Therapy Journal*, 47, 147-158. doi:2443/10.1046/j.1440-1630.2000.00239.x
- *Vertesi, A., Darzins, P., Lowe, S., McEvoy, E., & Edwards, M. (2000). Development of the Handicap Assessment and Resource Tool (HART). *Canadian Journal of Occupational Therapy*, 67(3). 120-127. doi:10.1177/000841740006700305
- *Weening-Dijksterhuis, E., Kamsma, Y. P. T., & van Heuvelen, M. J. G. (2011). Psychometric properties of the PAT: an assessment tool for ADL performance of older people living in residential homes. *Gerontology*, 57(5), 405-413. doi10.1159/000318151
- White, D. K., Wilson, J.C., & Keysor, J. J. (2011). Measures of adult general functional status: SF-36 Physical Functioning Subscale (PF-10), Health Assessment Questionnaire (HAQ), Modified Health Assessment Questionnaire (MHAQ), Katz Index of Independence in Activities of Daily Living, Functional Independence Measure (FIM), and Osteoarthritis-Function-Computer Adaptive Test (OA-Function-CAT). *Arthritis Care & Research*, 63(S11), S297-S307. doi: 10.1002/acr.20638
- Yoshida, R. & Anderson, H. (2013). Assessment of Life Habits. *Shirley Ryan AbilityLab*. Retrieved from: <https://www.sralab.org/rehabilitation-measures/assessment-life-habits>
- Zuczek, W., Vong, N., & Andriopoulos, K. (2018). Melville-Nelson Education System. *Shirley Ryan AbilityLab*. Retrieved from: <https://www.sralab.org/rehabilitation-measures/melville-nelson-evaluation-system>

*Indicates articles included in CAT tables

Appendix A

Did You Know?

The Modified Barthel Index (MBI)⁹ is an assessment of a patients’ ability to safely perform activities of daily living (ADLs) and functional mobility. There is strong empirical evidence to support the use of this assessment in the SNF setting.

- The MBI is recommended for the following populations/conditions: Brain injury, stroke, Parkinson’s disease, and chronic conditions.^{5,10}
- The MBI has 10 ADL/mobility activities including: feeding, bathing, grooming, dressing, bowel control, bladder control, toileting, chair transfer, ambulation, and stair climbing.⁵
- Performance rated based on the amount of assistance required to complete each activity.^{5,20}

Why Use the MBI?

	Test-Retest Reliability	Inter-Rater Reliability	Predictivity of d/c destination
Psychometric Data	0.93 ($p < 0.001$) ⁹	R = 0.94 & 0.96 ¹⁵	OR = 1.085, $p < 0.001$ ⁹
Rating	Good	Good	Strong

- The original BI required approximately 20 minutes for administration⁹, whereas the MBI requires 10 minutes, but may take longer when relying on skilled observation alone.¹³
- The MBI is free for practitioners to use.⁵
- High interrater reliability at admission and discharge.¹⁵
- The MBI has good reliability and tracked statistically significant improvement in independence in ADLs from admission to discharge ($p < 0.001$).¹⁹
- A retrospective chart review of patients with TBI found that the MBI score at discharge is predictive of discharge destination.¹⁰

Relevance to LCCA Practitioners

- There is strong evidence to support the effectiveness of the MBI at predicting safe performance of ADLs for patients in SNFs.
- The MBI is easily administered, affordable, psychometrically-sound, accessible, and provides direction in determining appropriate interventions for patients.
- The MBI allows for effective patient discharge planning and prediction of need for assistance in the community after discharge.
- Due to high productivity requirements and time constraints in SNFs, practitioners have limited time to conduct independent research to determine which assessments are deemed best practice based on the evidence.

Considerations

- The MBI has a small floor effect at baseline and discharge and may not be appropriate for patients with significant disability.⁹
- Practitioners should continuously monitor whether traditionally used assessments are supported by empirical evidence.
- Ensure that the assessment is appropriate for the individual patient

Appendix B

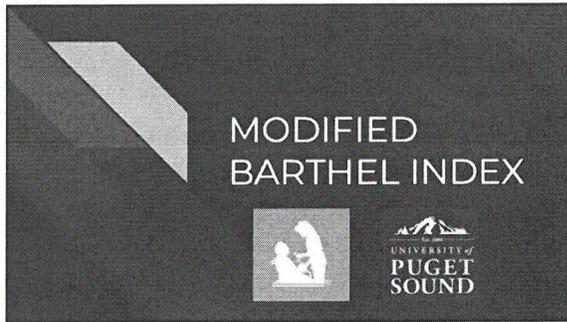
Alternative Assessments with Moderate Evidence

Assessment	Inter-Rater Reliability	Test-Retest Reliability	Cost	Training Required?	Time to Administer	Other
Assessment of Life Habits (LIFE-H)	ICCs = 0.65 - 0.88 ¹⁸	ICCS = 0.79 - 0.93 ¹⁸	\$100 annual subscription ¹²	N ²²	Short form: 20 - 40 min ²² Long form: 20 - 120 min ²²	Reliability data reflects assessment of life domains ¹⁸ Satisfaction positively associated with total score ($p < 0.05$) ⁴ Discriminant validity: $p < 0.001$ ⁴ Convergent validity: correlation between ADL categories of SMAF & LIFE-H (0.02-0.94) ⁴
Katz ADL	ICC = 0.99 ²	ICC = 0.999 ²	Free ²¹	N ²¹	~5 min ²¹	Preferred over ADL BI for specificity & predictive value ⁸ Sensitivity limitations ⁸ Convergent validity ($p < 0.001$) w/ ADL BI ² Internal Consistency: Cronbach's $\alpha = 0.838$ ²
Assessment of Motor and Process Skills (AMPS)	R = 0.93 ⁶	Motor: r = 0.88 ⁶ Process: r = 0.86 ⁶	\$795 ¹	Y ¹ (Certification required)	30 - 40 min ¹	Global fxnl level associated w/ ADL motor ability ($p < 0.01$) & process ability ($p < 0.01$) ¹¹ Sensitivity of ADL motor cutoff measure of 1.5 logits = 0.68,

						<p>specificity = 0.72; process cutoff measure of 1.0 logits = 0.81, specificity = 0.70¹³</p> <p>65% of validation sample matched predicted decisions, sensitivity = 0.85, specificity = 0.83¹³</p> <p>Lack of evidence supporting validity & reliability of AMPS global fxnl ratings¹³</p> <p>All noted research on validity, reliability, & responsiveness was completed prior to 2000⁶</p>
Melville-Nelson Self-Care Assessment	ICCs = 0.94 ¹⁶	**	Free ²³	N ²³	60 - 90 min ²³	<p>Concurrent validity: SCA correlated w/ FIM (-0.85) & Klein-Bell ADL (-0.85)¹⁶</p> <p>Predictive Validity: SCA score @ d/c is predictor of caregiving & fxn¹⁶</p> <p>SCA highly responsive to change¹⁶</p> <p>Sub-occupations may not be relevant to client²³</p>
Performance Assessment of Self-Care Skills (PASS)	**	r = 0.92 - 0.96 ³	Free ¹¹	N ⁷	1.5 - 3 hrs ⁷	<p>Inter-observer agreement: (I, 96%) (S, 97%)³</p> <p>Subtests can stand alone⁷</p>

Goal Attainment Scaling (GAS)	**	r = 0.51 - 0.91 ⁶	Free ¹⁷	Y ¹⁷ (Training course)	5 - 60 min ¹⁷	Good responsiveness, higher clinical utility when modified ⁶ Low to mod concurrent validity ⁶
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Appendix C



What is the Modified Barthel Index (MBI)?

- The MBI is an assessment of a patient's ability to safely perform activities of daily living (ADLs) and functional mobility.⁵
- The MBI has 10 ADL/mobility activities including: feeding, bathing, grooming, dressing, bowel control, bladder control, toileting, chair transfer, ambulation, and stair climbing.⁵

How to administer the MBI

- Scoresheet
- Patient, family, caregiver report
- Skilled observation
- Goal: Establish degree of independence

Scoring of the MBI^{5, 20}

- Performance rated based on the amount of assistance required to complete each activity.
- Scores range from total dependence to independence.
- Score and Interpretation:
 - o 0-20: Total Dependence
 - o 21-60: Severe Dependence
 - o 61-90: Moderate Dependence
 - o 91-99: Slight Dependence
 - o 100: Independence

Scoring of the MBI (cont.)^{5, 20}

- Score and Prediction:
 - o Less than 40: Unlikely to go home - dependent in mobility and self-care
 - o 60: Pivotal score where patients move from dependency to assisted independence
 - o 60-80: If living alone will probably need a number of community services to cope
 - o More than 85: Likely to be discharged to community living - independent in transfers and able to walk or use wheelchair independently

Example: Dressing²⁰

0 = Patient is dependent in all aspects of dressing and is unable to participate in the activity
2 = Patient is able to participate in some degree, but is dependent in all aspects of dressing
5 = Assistance is needed in putting on, and/or removing any clothing
8 = Only minimal assistance is required with fastening clothing such as buttons, zips, bras, shoes, etc.
10 = Patient is able to put on, remove, corset, braces, as prescribed

Who is the MBI appropriate for?^{5, 10}

- Brain injury
- Stroke
- Parkinson's disease
- Chronic conditions

Feasibility of the MBI

- Approximately 10 minutes to administer¹⁴
 - o Self report: 2-5 min
 - o Direct observation: 20 min
- Free, downloadable PDF score sheet available online⁵
- No extra training required

Evidence supporting the MBI

	Test-Retest Reliability	Inter-Rater Reliability	Predictivity of d/c destination
Psychometric Data	0.93 ($p < 0.001$) ¹⁹	= 0.94 & 0.96 ¹⁵	OR = 1.085, $p < 0.001$ ⁹
Rating	Good	Good	Strong

Evidence supporting the MBI (cont.)

- The MBI has good reliability and tracked statistically significant improvement in independence in ADLs from admission to discharge ($p < 0.001$).¹⁹

Considerations

- The MBI has a small floor effect at baseline and discharge and may not be appropriate for patients with significant disability.⁹
- Ensure that the assessment is appropriate for the individual patient.
- Practitioners should continuously monitor whether traditionally used assessments are supported by empirical evidence.

Relevance to LCCA Practitioners

- There is strong evidence to support the effectiveness of the MBI at predicting safe performance of ADLs for patients in SNFs.
- The MBI is easily administered, affordable, psychometrically-sound, accessible, and provides direction in determining appropriate interventions for patients.

Alternate Assessments with Moderate Evidence

- Assessment of Life Habits (LIFE-H)
- Katz ADL
- Assessment of Motor and Process Skills (AMPS)
- Melville-Nelson Self-Care Assessment
- Performance Assessment of Self-Care Skills (PASS)
- Goal Attainment Scaling (GAS)

Assessment of Life Habits

- Cost: \$100 annual subscription¹²
- Training: No²²
- Time to Administer:
 - Short form: 20-40 min²²
 - Long form: 20-120 min²²
- Inter-Rater Reliability: ICCs = 0.65 - 0.88¹⁹
- Test-Retest Reliability: ICCS = 0.79 - 0.93¹⁹

Katz ADL

- Cost: Free²¹
- Training: No²¹
- Time to Administer: approximately 5 minutes²¹
- Inter-Rater Reliability: ICC = 0.99²
- Test-Retest Reliability: ICC = 0.999²
- Convergent Validity: ($p < 0.001$) w/ ADL BI²
- Internal Consistency: Cronbach's α = 0.838²

Assessment of Motor and Process Skills (AMPS)

- Cost: \$795
- Training: Yes - certification required¹
- Time to Administer: 30 - 40 minutes¹
- Inter-Rater Reliability: R = 0.93⁵
- Test-Retest Reliability:
 - Motor: $r = 0.88$ ⁵
 - Process: $r = 0.86$ ⁶

Melville Nelson Self-Care Assessment

- Cost: Free²³
- Training: No²³
- Time to Administer: 60-90 min²³
- Inter-Rater reliability: ICCs = 0.94¹⁷
- Concurrent validity: SCA correlated w/ FIM (-0.85) & Klein-Bell ADL (-0.85)¹⁷
- Predictive Validity: SCA score at discharge is predictor of caregiving & function¹⁷

Performance Assessment of Self-Care Skills (PASS)

- Cost: Free¹¹
- Training: No⁷
- Time to Administer: 1.5 - 3 hours⁷
- Test-Retest Reliability: r = 0.92 - 0.96³
- Inter-Rater Reliability: (I, 96%) (S, 97%)⁷

Goal Attainment Scale (GAS)

- Cost: Free¹⁷
- Training: Yes¹⁷
- Time to Administer: 5 - 60 minutes¹⁷
- Test-Retest Reliability: r = 0.51 - 0.91¹⁷

References

Aspella, J., Smith, C., Su, J., & Yi, J. (2015). Assessment of Motor and Process Skills. *Stroke Risk Ability Lab*. Retrieved from: <https://www.mskcc.org/rehabilitation-research/assessment-motor-and-process-skills>

Arak, O., Wain, H. D., Yasar, B. H., Karahodin, F., Kar, O., Kili, M. E., ... Cankaranar, M. (2015). Validation of Katz index of independence in activities of daily living in Turkish older adults. *Archives of Gerontology and Geriatrics*, 51(3), 134-136. doi:10.1016/j.archger.2015.08.019

Chachick, D., Tain, T., Bates, K., Hains, M., & Rogers, J. (2014). Evaluating capacity to live independently and safely in the community: Performance Assessment of Self-Care Skills. *Pract Journal of Occupational Therapy*, 71(2), 59-63. doi:10.4276/030802214X1391509447035

Chambers, J., Narain, L., Robinson, L., Fitzgibbon, P., Bickham, A., & Yonagisawa, C. (2004). Validity of the Assessment of Life Habits in older adults. *Journal of Rehabilitation Medicine*, 36(4), 177-181. doi:10.1080/165019704100072481

D'Ottaviani, M., Harris, S., Stone, K., & Wood, A. (2020). Bartel Index. *Stroke Risk Ability Lab*. Retrieved from: <https://www.mskcc.org/rehabilitation-research/bartel-index>

Dowling, C., & Carroll, A. (2002). Individualized outcome measures: A review of the literature. *Canadian Journal of Occupational Therapy*, 69(2), 64-68. doi:10.1177/004414170206900204

General Information: Performance Assessment of Self-Care Skills (PASS). (n.d.). Retrieved from: <https://search.mskcc.libhost.com/fulfill/doi/10.1101/016310/govinfo/stroke-pass.pdf>

References

Haringa, J. (2007). A comparative review of the Katz ADL and the Bartel Index in assessing the activities of daily living of older people. *International Journal of Older People Nursing*, 2(3), 204-212. doi:10.1111/j.1748-3743.2007.00074.x

Haskick, S., Lerman, R. F., Rostag, S., & Krieger, M. T. (2019). The Bartel Index and the Caregiver Burden Index are superior to the de Morton Mobility Index for the early assessment of outcome in patients with a hip fracture admitted to an acute geriatric ward. *Disability and Rehabilitation*, 41(11), 1331-1339. doi:10.1080/09638238.2018.1424891

Katz, L. V., & Poin, S. (2019). Prediction of functional outcome and discharge destination in patients with traumatic brain injury after post-acute rehabilitation. *International Journal of Rehabilitation Research*, 42(3), 256-262. doi:10.1097/S0885066619000551

Lanagan, E. G. (2016). Occupational therapy service delivery outcomes for certified community behavioral health centers (CCBHHCs): Framework for occupational therapy service with research for outcome measure selection and linking of occupational therapy outcome measure code. *Medical Health Special Interest Journal Quarterly*. Retrieved from: <https://www.ama-assn.org/speical-interest-journals/occupational-therapy-outcome-measure-outcomes-certified-behavioral-health-centers.pdf>

References

17. Doi:10.46 (2021). *Bartel Index and its predictor for performance in handwriting*. Retrieved from: <https://search.mskcc.libhost.com/fulfill/doi/10.1101/016310/govinfo/stroke-pass.pdf>

18. Mendel, B. E. (2011). Validity of using the Assessment of Motor and Process Skills to determine the need for assistance. *American Journal of Occupational Therapy*, 65, 641-650. doi:10.5014/ajot.65.11.06043

19. Modified Bartel Index Score (MBIS). (2019). Participation and Quality of Life. Retrieved from: <https://www.mskcc.org/rehabilitation-research/modified-bartel-index-score>

20. Crystal, M., de Arak, M. A., Al-Azawi, O., Ibrahim, J., & Finkler, A. (2009). Stroke rehabilitation: Application and analysis of the modified Bartel Index to an Arab community. *Disability and Rehabilitation*, 23, 39-42. doi:10.1080/09638230802521234

21. Nelson, D. E., Mark-Silla, L. L., Wilkerson, P. A., Grech, J. L., & Rosecrance, J. A. (2003). Intratester reliability, concurrent validity, response rates, and predictive validity of the Melville-Nelson Self-Care Assessment. *American Journal of Occupational Therapy*, 56(1), 31-35. doi:10.5014/ajot.56.1.31

22. Poin, S. (2019). Goal Attainment Scale. Retrieved from: <https://www.mskcc.org/rehabilitation-research/goal-attainment-scale>

23. Poin, S., & Dowling, C. (2009). Reliability of the LIFE II rehabilitation scale and relationship between participation and satisfaction of older adults with dementia. *Disability and Rehabilitation*, 31(16), 1111-1117. doi:10.1080/0963823080277297

References

24. Sak, S., Tarkin, C., Chen, P., Nivola, M., Wood, C., & Vignola, A. (2013). Self-rated motor facility: Correlates of functional independence in stroke survivors. *International Journal of Therapy and Rehabilitation*, 26(7), 372-380. doi:10.1193/ajot.2012.26.7.372

25. Stroke Risk Ability Lab. (2021). "Modified Bartel Index". *Stroke Risk Ability Lab*. Retrieved from: <https://www.mskcc.org/rehabilitation-research/modified-bartel-index-score>

26. White, D. K., Wilkins, L. C., & Kruse, J. J. (2011). Measure of self-rated general functional status: SF-12 Physical Functioning subscale (SF-12P). Health Assessment Questionnaire (HAQ), Modified Health Assessment Questionnaire (MHAQ), Katz Index of Independence in Activities of Daily Living, Functional Independence Measure (FIM), and Oswestry Disability Questionnaire (ODQ) - Frequent Use (OS-Frequent-Use). *Health Care & Research*, 48(511), 297-307. doi:10.1002/hc.20074

27. Wood, C., & Anderson, H. (2011). Assessment of Life Habits. *Stroke Risk Ability Lab*. Retrieved from: <https://www.mskcc.org/rehabilitation-research/assessment-life-habits>

28. Wood, C., Wang, M., & Andropoulos, K. (2015). Melville-Nelson Education System. *Stroke Risk Ability Lab*. Retrieved from: <https://www.mskcc.org/rehabilitation-research/melville-nelson-education-system>

Appendix References

- ¹Ampudia, J., Heidle, C., Sok, J., & Yi, J. (2019). Assessment of Motor and Process Skills. *Shirley Ryan AbilityLab*. Retrieved from: <https://www.sralab.org/rehabilitation-measures/assessment-motor-and-process-skills>
- ²Arik, G., Varan, H. D., Yavuz, B. B., Karabulut, E., Kara, O., Kilic, M. K., ... Cankurtaran, M. (2015). Validation of Katz index of independence in activities of daily living in Turkish older adults. *Archives of Gerontology and Geriatrics*, *61*(3), 344–350.
doi:10.1016/j.archger.2015.08.019
- ³Chisholm, D., Toto, P., Raina, K., Holm, M., & Rogers, J. (2014). Evaluating capacity to live independently and safely in the community: Performance Assessment of Self-Care Skills. *British Journal of Occupational Therapy*, *77*(2), 59-63.
doi:10.4276/030802214X13916969447038
- ⁴Desrosiers, J., Noreau, L., Robichaud, L., Fougere, P., Rochette, A., & Viscogliosi, C. (2004). Validity of the Assessment of Life Habits in older adults. *Journal of Rehabilitation Medicine*, *36*(4), 177–182. doi:10.1080/16501970410027485
- ⁵DiGiacomo, M., Harter, S., Stone, K., & Ward, A. (2020). Barthel Index. *Shirley Ryan AbilityLab*. Retrieved from: <https://www.sralab.org/rehabilitation-measures/barthel-index>
- ⁶Donnelly, C. & Carswell, A. (2002). Individualized outcome measures: A review of the literature. *Canadian Journal of Occupational Therapy*, *69*(2), 84-94.
doi:10.1177/000841740206900204
- ⁷General information: *Performance Assessment of Self-Care Skills (PASS)*. (n.d.) Retrieved from: <https://health.utah.edu/sites/g/files/zrelqx131/files/files/migration/image/>

pass.pdf

- ⁸Hartigan, I. (2007). A comparative review of the Katz ADL and the Barthel Index in assessing the activities of daily living of older people. *International Journal of Older People Nursing*, 2(3), 204–212. doi:10.1111/j.1748-3743.2007.00074.x
- ⁹Hulsbæk, S., Larsen, R. F., Rosthøj, S., & Kristensen, M. T. (2019). The Barthel Index and the Cumulated Ambulation Score are superior to the de Morton Mobility Index for the early assessment of outcome in patients with a hip fracture admitted to an acute geriatric ward. *Disability and Rehabilitation*, 41(11), 1351-1359. doi:10.1080/09638288.2018.1424951
- ¹⁰Kim, D. Y., & Pyun, S. (2019). Prediction of functional outcome and discharge destination in patients with traumatic brain injury after post-acute rehabilitation. *International Journal of Rehabilitation Research*, 42(3), 256-262. doi:10.1097/MRR.0000000000000353
- ¹¹Lannigan, E. L. (2016). Occupational therapy service outcome measures for certified community behavioral health centers (CCBHCs): Framework for occupational therapy service with rationale for outcome measures selection and listing of occupational therapy outcome measure tools. *Mental Health Special Interest Section Quarterly*. Retrieved from: <https://www.aota.org/-/media/Corporate/Files/Practice/MentalHealth/occupational-therapy-outcome-measures-community-mental-health-services.pdf>
- ¹²Life-H 4.0. (2021). *Réseau international sur le processus de production du handicap*. Retrieved from: <https://mhavie.ca/boutique/en/mhavie/mhavie-4-0-c99c75/>
- ¹³Merritt, B. K. (2011). Validity of using the Assessment of Motor and Process Skills to determine the need for assistance. *American Journal of Occupational Therapy*, 65, 643–650. doi:10.5014/ajot.2011.000547
- ¹⁴Modified Barthel Index Score (MBI). (2018). *Participation and Quality of Life*. Retrieved

from: <https://parqol.com/modified-barthel-index-score-mbi/>

- ¹⁵Nazzal, M., Sa'Adah, M. A., Al-Ansaris, D., Al-Awadi, O., Inshasi, J., & Eyadah, A. A. (2000). Stroke rehabilitation: Application and analysis of the modified Barthel Index in an Arab community. *Disability and Rehabilitation*, 23, 36-42.
doi:10.1080/09638280150211284
- ¹⁶Nelson, D. L., Melville, L. L., Wilkerson, R. A., Grech, J. L., & Rosenberg, J. A. (2002). Interrater reliability, concurrent validity, responsiveness, and predictive validity of the Melville-Nelson Self-Care Assessment. *American Journal of Occupational Therapy*, 56(1), 51–59. doi:10.5014/ajot.56.1.51
- ¹⁷Pham, T. (2020). Goal Attainment Scale. Retrieved from:
<https://www.sralab.org/rehabilitation-measures/goal-attainment-scale>
- ¹⁸Poulin, V., & Desrosiers, J. (2009). Reliability of the LIFE-H satisfaction scale and relationship between participation and satisfaction of older adults with disabilities. *Disability and Rehabilitation*, 31(16), 1311–1317. doi:10.1080/09638280802572957
- ¹⁹Shah, S., Tartaro, C., Chew, F., Morris, M., Wood, C., & Wuzzardo, A. (2013). Skilled nursing facility functional rehabilitation outcome: Analyses of stroke admissions. *International Journal of Therapy & Rehabilitation*, 20(7), 352–360. doi:10.12968/ijtr.2013.20.7.352
- ²⁰Template Roller. (2021). “Modified Barthel Index” (Shah Version): Self care assessment form. Retrieved from: <https://www.templateroller.com/template/243346/modified-berthel-index-shah-version-self-care-assessment-form.html>
- ²¹White, D. K., Wilson, J.C., & Keysor, J. J. (2011). Measures of adult general functional status: SF-36 Physical Functioning Subscale (PF-10), Health Assessment Questionnaire (HAQ), Modified Health Assessment Questionnaire (MHAQ), Katz

Index of Independence in Activities of Daily Living, Functional Independence Measure (FIM), and Osteoarthritis-Function-Computer Adaptive Test (OA-Function-CAT). *Arthritis Care & Research*, 63(S11), S297-S307. doi: 10.1002/acr.20638

²²Yoshida, R. & Anderson, H. (2013). Assessment of Life Habits. *Shirley Ryan AbilityLab*.

Retrieved from: <https://www.sralab.org/rehabilitation-measures/assessment-life-habits>

²³Zuczek, W., Vong, N., & Andriopoulos, K. (2018). Melville-Nelson Education System.

Shirley Ryan AbilityLab. Retrieved from: <https://www.sralab.org/rehabilitation-measures/melville-nelson-evaluation-system>

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