

Template - Course module summary

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| Semester/Term | | | | |
| Course Unit/Module Code: | | | | |
| Course Unit/Module Name: | Clinical Assessment and Outcome measurements | | | |
| Credit Value: | 05 | | | |
| Core/Optional | Core | | | |
| Pre-requisites | None | | | |
| Hourly Breakdown | Theory | Practical | Other (Clinical) | Independent learning |
| | 60 | 20 | 15 | 155 |
| Intended Learning Outcomes: | | | | |
| At the completion of this course student will be able to: | | | | |
| <ul style="list-style-type: none"> ➤ describe principles of the spectrum of assessment methods and outcome measures used in NDDs ➤ critically appraise the role of assessment methods and outcome measures in evaluation of patient with neurological impairments ➤ critically appraise assessment methods and outcome measures commonly used in NDDs ➤ perform commonly used assessment methods and outcome measures in common NDDs ➤ apply appropriate assessment methods and outcome measures in evaluation of patients in common NDDs in multidisciplinary setting | | | | |
| Course Content: (Main Units/Lessons and Sub topics) | | | | |
| <ul style="list-style-type: none"> • Introduction to/overview of the module • Assessment vs. outcome measurement • The art of history taking and clinical examination (General overview) • ICF overview • Differences in impairments between old age and NDDs • Benefits and adverse effects of common NDD therapies • The role of outcome research in NDDs (What is outcomes research, why it is relevant, types of outcomes; Clinical vs scientific use of scales etc.) • Impact of NDDs from the perspective of patients | | | | |

- Impact of NDDs from the perspective of families/caregivers
- Impact of NDDs from the perspective of society
- Concepts and methods for quality assurance of rating scales and assessment instruments
- Clinical interviewing/history taking (including caregivers/family members)
- Methods of assessment in NDD
- Assessing and measuring in PD, DEM, HD and ALS (spectrum of scales)
- Learning of selected scales for PD, DEM, HD and ALS
- Assessing pros & cons of a PD scale, DEM scale, HD scale and ALS scale
- Importance of coordination of various assessments and application of ICF in management of NDDs in multidisciplinary team setting
- Legal and ethical considerations during clinical assessment methods and outcome measures
- Study visit at specialized clinic followed by a task to complete in the student's regular work environment.

Teaching /Learning Methods:

Lectures,
Seminar, Practical/Lab work, Video demonstrations
Clinical practice (Practice at formal or informal care setting)

Assessment Strategy:

Continuous assessments (40%): Case Study (15%), Assignment (15%), Reflective writing (10%)
End course assessment (60%): Theory (40%), OSPE (20%)

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| Formative Assessment (if necessary only) | Summative Assessment | |
| | Continuous assessments 40% | End course assessment 60% |

Recommended Reading – (Books, E Books, Journals, Magazines, Web Based teaching material and sites):

Mandatory

EuroTEQ Theoretical Report Part I – Research Basics.

Available from: <https://euroteq.nu/resources>

Hobart J. Rating scales for neurologists. *Journal of Neurology Neurosurgery & Psychiatry* 2003; 74(Suppl 4): iv22-iv26.

Available from: http://dx.doi.org/10.1136/jnnp.74.suppl_4.iv22

Hobart J, Cano S. Improving the evaluation of therapeutic interventions in multiple sclerosis: the role of new psychometric methods. *Health Technology Assessment* 2009; 13(12).

Available from: <https://doi.org/10.3310/hta13120>

Loong TW. Understanding sensitivity and specificity with the right side of the brain. *BMJ* 2003; 327: 716–719.

Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC200804/>

Polit DF, Beck CT. The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in Nursing and Health* 2006; 29(5): 489-497.

Available

from: https://faculty.ksu.edu.sa/sites/default/files/the_content_validity_index_are_you_sure_1.pdf

Tesio L, Caronni A, Hassan S, Kumbhare D, Caronni A. Why Questionnaire Scores Are Not Measures: A Question-Raising Article. *American Journal of Physical Medicine & Rehabilitation* 2023; 102(1): 75-82.

Available from: <https://doi.org/10.1097/PHM.0000000000002028>

Wright BD, Linacre J M. Observations are always ordinal; measurements, however, must be interval. *Archives of Physical Medicine & Rehabilitation* 1989; 70(12): 857-860.

Available from: <https://www.rasch.org/memo44.htm>

MDS – UPDRS The MDS-sponsored Revision of the Unified Parkinson’s Disease Rating Scale

Available from: https://www.movementdisorders.org/MDS-Files1/PDFs/Rating-Scales/MDS-UPDRS_English_FINAL.pdf

Goetz, C. G., Tilley, B. C., Shaftman, S. R., Stebbins, G. T., Fahn, S., Martinez-Martin, P., Poewe,

W., Sampaio, C., Stern, M. B., Dodel, R., Dubois, B., Holloway, R., Jankovic, J., Kulisevsky, J., Lang, A. E., Lees, A., Leurgans, S., LeWitt, P. A., Nyenhuis, D., Olanow, C. W., Rascol, O., Schrag, A., Teresi, J. A., van Hilten, J. J. and LaPelle, N. (2008), *Movement Disorder Society-sponsored revision of the Unified Parkinson's Disease Rating Scale (MDS-UPDRS): Scale presentation and clinimetric testing results. Mov. Disord.*, 23: 2129-2170.)

The experience of off periods

Available from: www.ncbi.nlm.nih.gov/pmc/articles/PMC8288715/pdf/main.pdf

Armstrong, M. J., Rastgardani, T., Gagliardi, A. R., & Marras, C. (2019). *The experience of off periods: Qualitative analysis of interviews with persons with Parkinson's and carepartners. Clinical parkinsonism & related disorders*, 1, 31–36. <https://doi.org/10.1016/j.prdoa.2019.07.008>

The Alzheimer's Disease Assessment Scale-Cognitive Subscale (ADAS-Cog): Modifications and Responsiveness in Pre-Dementia Populations

Available from: www.ncbi.nlm.nih.gov/pmc/articles/PMC5929311/pdf/jad-63-jad170991.pdf

Kueper, J. K., Speechley, M., & Montero-Odasso, M. (2018). *The Alzheimer's Disease Assessment Scale-Cognitive Subscale (ADAS-Cog): Modifications and Responsiveness in Pre-Dementia Populations. A Narrative Review. Journal of Alzheimer's disease : JAD*, 63(2), 423–444. <https://doi.org/10.3233/JAD-170991>

Rating Scales for Cognition in Huntington's Disease: Critique and Recommendations

Available from: <https://pubmed.ncbi.nlm.nih.gov/29278291/>

Mestre, T. A., Bachoud-Lévi, A. C., Marinus, J., Stout, J. C., Paulsen, J. S., Como, P., Duff, K., Sampaio, C., Goetz, C. G., Cubo, E., Stebbins, G. T., Martinez-Martin, P., & Members of the MDS Committee on Rating Scales Development (2018). *Rating scales for cognition in Huntington's disease: Critique and recommendations. Movement disorders : official journal of the Movement Disorder Society*, 33(2), 187–195. <https://doi.org/10.1002/mds.27227>

Qualitative measures that assess functional disability and quality of life in ALS

Available from:

www.ncbi.nlm.nih.gov/pmc/articles/PMC8781297/pdf/12955_2022_Article_1919.pdf

Hartmaier, S. L., Rhodes, T., Cook, S. F., Schlusser, C., Chen, C., Han, S., Zach, N., Murthy, V., & Davé, S. (2022). *Qualitative measures that assess functional disability and quality of life in ALS. Health and quality of life outcomes*, 20(1), 12. <https://doi.org/10.1186/s12955-022-01919-9>

Revised Amyotrophic Lateral Sclerosis Functional Rating Scale (ALSFRS-R).

Available from: <https://www.mdcalc.com/calc/10166/revised-amyotrophic-lateral-sclerosis-functional-rating-scale-alsfrs-r>

Optional

Cano SJ, Hobart JC. The problem with health measurement. *Patient Preference and Adherence* 2011; 5: 279-290.

Available from: <https://doi.org/10.2147/PPA.S14399>

Hagell P. Measuring Activities of Daily Living in Parkinson's disease: On a road to nowhere and back again? *Measurement* 2019; 132: 109-124.

Available from: <https://doi.org/10.1016/j.measurement.2018.09.050> (https://www.hkr.se/globalassets/transfer/hagell-msrmnt-2019_accepted_ms.pdf)

Howarth P, Redgrave F. *Metrology - In short, 3rd edition*. Albertslund: Euramet, 2008.

Available from: <https://www.euramet.org/publications-media-centre/documents/metrology-in-short>

King MT. A point of minimal important difference (MID): a critique of terminology and methods. *Expert Review of Pharmacoeconomics & Outcomes Research* 2011; 11(2): 171-184.

Available from: https://www.pocog.org.au/doc/QoL/King_MID%20Critique_ExpRevPharOutRes_2011.pdf

Neurological Examination

Available from: <https://www.merckmanuals.com/professional/neurologic-disorders/neurologic->

[examination](#)

Proactive sexual health history

Available from: www.aafp.org/pubs/afp/issues/2002/1101/p1705.pdf

Nusbaum, M. R., & Hamilton, C. D. (2002). *The proactive sexual health history. American family physician, 66(9), 1705–1712.*

The borderland between normal aging and dementia

Available from: www.ncbi.nlm.nih.gov/pmc/articles/PMC5509201/pdf/TCMJ-29-65.pdf

Lo R. Y. (2017). *The borderland between normal aging and dementia. Ci ji yi xue za zhi = Tzu-chi medical journal, 29(2), 65–71.* https://doi.org/10.4103/tcmj.tcmj_18_17

Non-Motor Symptoms Scale (NMSS).

Available from: www.movementdisorders.org/MDS-Files1/PDFs/Rating-Scales/NMSS.pdf

Chaudhuri, K. R., Martinez-Martin, P., Brown, R. G., Sethi, K., Stocchi, F., Odin, P., Ondo, W., Abe, K., Macphee, G., Macmahon, D., Barone, P., Rabey, M., Forbes, A., Breen, K., Tluk, S., Naidu, Y., Olanow, W., Williams, A. J., Thomas, S., Rye, D., ... Schapira, A. H. (2007). *The metric properties of a novel non-motor symptoms scale for Parkinson's disease: Results from an international pilot study. Movement disorders : official journal of the Movement Disorder Society, 22(13), 1901–1911.* <https://doi.org/10.1002/mds.21596>

Harmonization and innovation of cognitive, behavioural and functional assessment in neurodegenerative dementias.

Available from: www.neurodegenerationresearch.eu/wp-content/uploads/2015/10/JPND-Report-Costa.pdf

Harmonization and innovation of cognitive, behavioural and functional assessment in neurodegenerative dementias. Report of a JPND Working Group on Longitudinal Cohorts October, 2015

Which dyskinesia scale best detects treatment response?

Available from: <https://doi.org/10.1002/mds.25321>

*Goetz, C. G., Stebbins, G. T., Chung, K. A., Hauser, R. A., Miyasaki, J. M., Nicholas, A. P., Poewe, W., Seppi, K., Rascol, O., Stacy, M. A., Nutt, J. G., Tanner, C. M., Urkowitz, A., Jaglin, J. A., & Ge, S. (2013). Which dyskinesia scale best detects treatment response? *Movement Disorders*, 28(3), 341-346. <https://doi.org/10.1002/mds.25321>*

Biomarker Testing in Alzheimer's and Related Dementia

Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7841748/>

*Horgan, D., Nobili, F., Teunissen, C., Grimmer, T., Mitrecic, D., Ris, L., Pirtosek, Z., Bernini, C., Federico, A., Blackburn, D., Logroschino, G., & Scarmeas, N. (2020). Biomarker Testing: Piercing the Fog of Alzheimer's and Related Dementia. *Biomedicine hub*, 5(3), 19–40. <https://doi.org/10.1159/000511233>*

Utility of Huntington's Disease Assessments by Disease Stage: Floor/Ceiling Effects

Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8320772/>

*Abreu, D., Ware, J., Georgiou-Karistianis, N., Leavitt, B. R., Fitzer-Attas, C. J., Lobo, R., Fernandes, A. R., Handley, O., Anderson, K. E., Stout, J. C., & Sampaio, C. (2021). Utility of Huntington's Disease Assessments by Disease Stage: Floor/Ceiling Effects. *Frontiers in neurology*, 12, 595679*

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| | | | 5hrs | | |
| 2. Overview of assessment methods and outcome measures | <p>2.1. describe the assessment methods and outcome measures in evaluation of patient with neurological impairments</p> <p>2.2. Classify types of outcome research in NDDs</p> <p>2.3. Discuss the impact of NDDs from the perspective of families/caregivers, and society</p> | <ul style="list-style-type: none"> • Differences in impairments between old age and NDDs • Benefits and adverse effects of common NDD therapies • The role of outcome research in NDDs <ul style="list-style-type: none"> ➤ What is outcomes research, why it is relevant, types of outcomes; Clinical vs scientific use of scales etc. • Impact of NDDs from the perspective of patients <ul style="list-style-type: none"> ➤ Overview of qualitative & PROM-based studies • Impact of NDDs from the perspective of families/caregivers/so <ul style="list-style-type: none"> ➤ Overview of qualitative & caregiver questionnaire based studies • Impact of NDDs from the perspective of society <ul style="list-style-type: none"> ➤ Overview of health economic studies (cost-of-illness studies) | <p>1hr</p> <p>1hr</p> <p>1hr</p> <p>1hr</p> <p>1hr</p> <p>1hr</p> <p>6hrs</p> | Lectures | SAQ/SEQ |

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| <p>3. Assessment methods and outcome measures commonly used in NDDs</p> | <p>3.1. to critically appraise assessment methods and outcome measures commonly used in NDDs</p> <p>3.2. describe the cross-cultural adaptations for the assessment and outcome tools</p> | <p>Concepts and methods for quality assurance of rating scales and assessment instruments</p> <ul style="list-style-type: none"> ➤ Introduction to metrology 1h ➤ Introduction to rating scales and psychometrics 1h ➤ Types of instruments (rating scales, check-lists, screening, self-reported, clinician-reported, PREMs) 1h ➤ Scoring and scaling (check-lists, screening, Likert, Thurstone, Guttman, health economic utilities) 2h ➤ Quality assurance of screening instruments 1h ➤ Reliability 3h ➤ Validity ➤ Responsiveness, MID 1h ➤ Dimensionality (factor analysis and multi-trait scaling) 2h ➤ Rasch measurement theory 3h ➤ Development/construction/design of scales? 1h ➤ Translation and cultural adaptation of scales 2h ➤ COSMIN/other guidelines 1h <p>L-19hrs P-6 hrs</p> | | <p>Lecture Practical Seminar</p> | <p>SAQ/SEQ Assignment</p> |
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| <p>4. Assessment methods and outcome measures in individual patient evaluation</p> | <p>4.1. perform clinical interviewing/history taking and assessment in NDD</p> <p>4.2. perform appropriate assessment methods in individual patient evaluation with Parkinsonism (PD)</p> <p>4.3. perform appropriate assessment methods in individual patient evaluation with Dementia (DEM)</p> <p>4.4. perform appropriate assessment methods in individual patient evaluation with Huntington's Disease (HD)</p> <p>4.5. perform appropriate assessment methods in individual patient evaluation with ALS</p> | <ul style="list-style-type: none"> • Clinical interviewing/history taking (including caregivers/family members) • Methods of assessment in NDD • Assessing and measuring in PD, (spectrum of scales) • Learning of selected scales for PD • Assessing pros & cons of a PD scale • Assessing and measuring in DEM (spectrum of scales) • Learning of selected scales for DEM • Assessing pros & cons of a DEM scale • Assessing and measuring in HD (spectrum of scales) • Learning of selected scales in HD • Assessing pros & cons of a HD scale • Assessing and measuring in ALS (spectrum of scales) • Learning of selected scales for ALS • Assessing pros & cons of a ALS scale | <p>Theory-27h Seminar 14</p> | <p>-Lectures -Video demonstrations -Small group discussion</p> | <p>SAQ/SEQ/OSPE</p> |
| <p>5. Application of assessment methods and</p> | <p>5.1. To integrate various assessments and application of ICF in management of NDDs in multidisciplinary team</p> | <ul style="list-style-type: none"> • Importance of coordination of various assessments and | <p>2h</p> | <p>Lecture Clinical (hospital</p> | <p>SAQ/SEQ/ Case study, Reflective</p> |

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| <p>outcome measures in clinical practice</p> | <p>setting</p> <p>5.2. To explain legal and ethical considerations during clinical assessment methods and outcome measures</p> <p>5.3. To apply assessment methods and outcome measures in clinical practice in management of NDDs in multidisciplinary team setting</p> | <p>application of ICF in management of NDDs in multidisciplinary team setting</p> <ul style="list-style-type: none"> • Legal and ethical considerations during clinical assessment methods and outcome measures <ul style="list-style-type: none"> ➤ Copyright, intellectual property, clinician/respondent burden, matching instrument to purpose/situation/interpretation/use of results) • Study visit at specialized clinic followed by a task to complete in the student's regular work environment. | <p>2h</p> <p>L-4h Clinical - 15h</p> <p>Total L- 61 h P- 20 Clinical - 15hrs</p> | <p>and community)</p> | <p>writing</p> |
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