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A Move Ahead

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References

- Aherne, C., & Coughlan, B. (2016). A preliminary investigation of the suitability of aquatics for people with severe and profound intellectual disabilities. *Journal of Intellectual Disabilities, 22*, 1–16.
- Ainsworth, B. E., Haskell, W. L., Leon, A. S., Jacobs, D. R., Montoye, H. J., Sallis, J. F., & Paffenbarger, R. S. (1993). Compendium of physical activities: Classification of energy costs of human physical activities. *Medicine and Science in Sport and Exercise, 25*, 71–83.
- Alesi, M., & Pepi, A. (2015). Physical Activity Engagement in Young People with Down Syndrome: Investigating Parental Beliefs. *Journal of Applied Research in Intellectual Disabilities, 30*, 71–83.
- Altman, D. G., & Bland, J. M. (2005). Treatment allocation by minimisation. *British Medical Journal, 330*, 843.
- American College of Sports Medicine Position Stand (1998). The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness, and flexibility in healthy adults. *Medicine and Science in Sport and Exercise, 30*, 975–991.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders. 5th edition*. VA, US: American Psychiatric Association.
- Atkins, L., Francis, J., Islam, R., Connor, D. O., Patey, A., Ivers, N., et al. (2017). A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems. *Implementation Science, 12*, 1–18.
- Barbour, R. S. (2001). Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? *British Medical Journal, 322*, 1115–1117.
- Barr, M., & Shields, N. (2011). Identifying the barriers and facilitators to participation in physical activity for children with Down syndrome. *Journal of Intellectual Disability Research, 55*, 1020–1033.
- Bartlo, P., & Klein, P. J. (2011). Physical activity benefits and needs in adults with intellectual disabilities: systematic review of the literature. *American Journal on Intellectual and Developmental Disabilities, 116*, 220–232.
- Bartholomew, L. K., Parcel, G. S., Kok, G., Gottlieb, N. H., & Fernández, M. E. (2011). *Planning health promotion programs: An intervention mapping approach. 3rd edition*. San Francisco, CA, US: Jossey-Bass.
- Bazeley, P. (2013). *Qualitative data analysis: Practical strategies*. London, UK: Sage Publications.
- Beadle-Brown, J., Hutchinson, A., & Whelton, B. (2012). Person-centred active support - increasing choice, promoting independence and reducing challenging behavior. *Journal of Applied Research in Intellectual Disabilities, 25*, 291–307.
- Beadle-Brown, J., Mansell, J., Ashman, B., Ockenden, J., Iles, R., & Whelton, B. (2014). Practice leadership and active support in residential services for people with intellectual disabilities: an exploratory study. *Journal of Intellectual Disability Research, 58*, 838–850.
- Bergström, H., Hagströmer, M., Hagberg, J., & Elinder, L. S. (2013). A multi-component universal intervention to improve diet and physical activity among adults with intellectual disabilities in community residences: A cluster randomised controlled trial. *Research in Developmental Disabilities, 34*, 3847–3857.
- Bidabe, L., & Lollar, J. M. (1995). *MOVE (Mobility Opportunities Via Education) 3rd edition*. Bakersfield, CA, US: Kern Country Superintendent of Schools.
- Bock, R. D. & Aitkin, M. (1981). Marginal maximum likelihood estimation of item parameters:

- Application of an EM algorithm. *Psychometrika*, 46, 443–459.
- Bodde, A. E., & Seo, D.C. (2009). A review of social and environmental barriers to physical activity for adults with intellectual disabilities. *Disability and Health Journal*, 2, 57–66.
- Bolker, B., Brooks, M., Gardner, B., Lennert, C., & Minami, M. (2012). *Owls example: a zero-inflated, generalized linear mixed model for count data*. Retrieved from: <https://groups.nceas.ucsb.edu/non-linear-modeling/projects/owls/WRITEUP/owls.pdf>
- Bossink, L. W. M., Van der Putten, A. A. J., & Vlaskamp, C. (2017). Understanding low levels of physical activity in people with intellectual disabilities: A systematic review to identify barriers and facilitators. *Research in Developmental Disabilities*, 68, 95–110.
- Brooker, K., Mutch, A., McPherson, L., Ware, R., Lennox, N., & Van Dooren, K. (2015). We can talk while we're walking": Seeking the views of adults with intellectual disability to inform a walking and social-support program. *Adapted Physical Activity Quarterly*, 32, 34–48.
- Buntinx, W. H. E., & Schalock, R. L. (2010). Models of Disability, Quality of Life, and Individualized Supports: Implications for Professional Practice in Intellectual Disability. *Journal of Policy and Practice in Intellectual Disabilities*, 7, 283–294.
- Cane, J., O'Connor, D., & Michie, S. (2012). Validation of the theoretical domains framework for use in behavior change and implementation research. *Implementation Science*, 7, 1–17.
- Carmeli, E., Barak, S., Morad, M., & Kodesh, E. (2009). Physical exercises can reduce anxiety and improve quality of life among adults with intellectual disability. *International SportMed Journal*, 10, 77–85.
- Carmeli, E., Kessel, S., Coleman, R., & Ayalon, M. (2002). Effects of a treadmill walking program on muscle strength and balance in elderly people with down syndrome. *Journal of Gerontology: Medical sciences*, 57, 106–110.
- Carmeli, E., Merrick, J., & Berner, Y. N. (2004). Effect of training on health and functional status in older adults with intellectual disability. *International Journal of Therapy and Rehabilitation*, 11, 481–485.
- Carmeli, E., Zinger-Vaknin, T., Morad, M., & Merrick, J. (2005). Can physical training have an effect on well-being in adults with mild intellectual disability? *Mechanisms of Ageing and Development*, 126, 299–304.
- Carraro, A., & Gobbi, E. (2012). Effects of an exercise programme on anxiety in adults with intellectual disabilities. *Research in Developmental Disabilities*, 33, 1221–1226.
- Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical Activity, Exercise, and Physical Fitness: Definitions and Distinctions for Health-Related Research. *Public Health Reports*, 100, 126–30.
- Caton, S., Chadwick, D., Chapman, M., Turnbull, S., Mitchell, D., & Stansfield, J. (2012). Healthy lifestyles for adults with intellectual disability: knowledge, barriers, and facilitators. *Journal of Intellectual & Developmental Disability*, 37, 248–259.
- Chalmers, R. P. (2012). mirt: A Multidimensional Item Response Theory Package. *Journal of Statistical Software*, 48, 1–29.
- Chalmers, R. P. et al. (2018). *Mirt: Multidimensional Item Response Theory. R package version 1.27.1*. Retrieved from: <https://cran.r-project.org/web/packages/mirt/mirt.pdf>.
- Choirat, C. et al. (2018). *Zelig: Everyone's Statistical Software. R package version 5.1.6*. Retrieved from: <https://cran.r-project.org/web/packages/Zelig/Zelig.pdf>.
- Cluphf, D., O'Connor, J., & Vanin, S. (2001). Effects of aerobic dance on the cardiovascular endurance of adults with intellectual disabilities. *Adapted Physical Activity Quarterly*, 18, 60–71.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological*

- Measurement*, 20, 37–46.
- Dairo, Y. M., Collett, J., Dawes, H., & Oskrochi, G. R. (2016). Physical activity levels in adults with intellectual disabilities: A systematic review. *Preventive Medicine Reports*, 4, 209–219.
- De Mars, C. (2010). *Item Response Theory*. New York: Oxford University Press, Inc..
- Dempsey, I., & Balandin, S. (2012). Reporting the magnitude of study findings. *Journal of Intellectual & Developmental Disability*, 37, 87–88.
- Diamont, A. (2000). Close interrelation of motor development and cognitive development and of the cerebellum and prefrontal cortex. *Child Development*, 71, 44–56.
- Dixon-Ibarra, A., Driver, S., Van der Bom, K., & Humphries, K. (2017). Understanding physical activity in the group home setting: a qualitative inquiry. *Disability And Rehabilitation*, 39, 653–662.
- Downs, S. J., Boddy, L. M., Knowles, Z. R., Fairclough, S. J., & Stratton, G. (2013). Exploring opportunities available and perceived barriers to physical activity engagement in children and young people with Down syndrome. *European Journal of Special Needs Education*, 28, 270–287.
- Downs, S. J., Knowles, Z. R., Fairclough, S. J., Heffernan, N., Whitehead, S., Halliwell, S., & Boddy, L. M. (2014). Exploring teachers' perceptions on physical activity engagement for children and young people with intellectual disabilities. *European Journal of Special Needs Education*, 29, 402–414.
- Draheim, C. C., Williams, D. P., & McCubbin, J. A. (2002). Prevalence of physical inactivity and recommended physical activity in community-based adults with mental retardation. *Mental Retardation*, 40, 436–444.
- Dunst, C. J., & Hamby, D. W. (2012). Guide for calculating and interpreting effect sizes and confidence intervals in intellectual and developmental disability research studies. *Journal of Intellectual & Developmental Disability*, 37, 89–99.
- Dyson, J., Lawton, R., Jackson, C., & Cheater, F. (2011). Does the use of a theoretical approach tell us more about hand hygiene behaviour? The barriers and levers to hand hygiene. *Journal of Infection Prevention*, 12, 17–24.
- Emerson, E. (2005). Underweight, obesity and exercise among adults with intellectual disabilities in supported accommodation in Northern England. *Journal of Intellectual Disability Research*, 49, 134–43.
- Felce, D., Lowe, K., & Jones, E. (2002). Staff activity in supported housing services. *Journal of Applied Research in Intellectual Disabilities*, 15, 388–403.
- Fisser, F., Gibbons, C., Coste, J., Valderas, J. M., Rose, M., & Lepège, A. (2018). Measurement invariance and general population reference values of the PROMIS Profile 29 in the UK, France, and Germany. *Quality of Life*, 27, 999–1014.
- Finlayson, J., Jackson, A., Cooper, S., Morrison, J., Melville, C., Smiley, E., & Mantray, D. (2009). Understanding predictors of low physical activity in adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 22, 236–247.
- Fox, J. et al. (2018). *Car: Companion to Applied Regression. R package version 3.0-0*. Retrieved from: <https://cran.r-project.org/web/packages/car/car.pdf>.
- Fraser, M. W., Richman, J. M., Galinsky, M. J., & Day, S. H. (2009). *Intervention research: Developing social programs*. New York: Oxford University Press.
- Frey, G. C., Buchanan, A. M., & Rosser Sandt, D. D. (2005). "I'd Rather Watch TV": An Examination of Physical Activity in Adults With Mental Retardation. *Mental Retardation*, 43, 241–254.
- Green, B. F., Bock, R. D., Humphreys, L. G., Linn, R. L., & Reckase, D. (1984). Technical Guidelines for Assessing Computerized Adaptive Tests Source. *Journal of Educational Measurement*, 21, 347–360.

- Grossman, J. & Mackenzie, F. J. (2002). The Randomized Controlled Trial: gold standard, or merely standard? *Perspectives in Biology and Medicine*, 48, 516-534.
- Guest, G., & Johnson, L. (2006). How Many Interviews Are Enough? An Experiment with Data Saturation and Variability. *Field methods*, 18, 59-82.
- Hakim, R. M., Ross, M. D., Runco, W., & Kane, M. T. (2017). A community-based aquatic exercise program to improve endurance and mobility in adults with mild to moderate intellectual disability. *Journal of Exercise Rehabilitation*, 13, 89-94.
- Hammer, D., & Berland, L. K. (2014). Confusing claims for data: A critique of common practices for presenting qualitative research on learning. *Journal of Learning Sciences*, 23, 37-46.
- Hawkins, A., & Look, R. (2006). Levels of engagement and barriers to physical activity in a population of adults with learning disabilities. *British Journal of Learning Disabilities*, 34, 220-226.
- Heller, T., Hsieh, K., & Rimmer, J. (2003). Barriers and Supports for Exercise Participation Among Adults with Down Syndrome. *Journal of Gerontological Social Work*, 38, 161-178.
- Heller, T., Hsieh, K., & Rimmer, J. H. (2004). Attitudinal and psychosocial outcomes of a fitness Down syndrome. *American Journal of Mental Retardation*, 109, 175-185.
- Heller, T., McCubbin, J. A., Drum, C., & Peterson, J. (2011). Physical activity and nutrition health promotion interventions: what is working for people with intellectual disabilities? *Intellectual and Developmental Disabilities*, 49, 26-36.
- Hilgenkamp, T. I. M., Reis, D., van Wijck, R., & Evenhuis, H. M. (2012). Physical activity levels in older adults with intellectual disabilities are extremely low. *Research in Developmental Disabilities*, 33, 477-483.
- Houwen, S., van der Putten, A. A. J., & Vlaskamp, C. (2014). A systematic review of the effects of motor interventions to improve motor, cognitive, and/or social functioning in people with severe or profound intellectual disabilities. *Research in Developmental Disabilities*, 35, 2093-2116.
- Hsieh, K., Heller, T., Bershady, J., & Taub, S. (2015). Impact of adulthood stage and social-environmental context on body mass index and physical activity of individuals With intellectual disability. *Intellectual and Developmental Disabilities*, 53, 100-113.
- Hylkema, T., Petitiaux, W., & Vlaskamp, C. (2011). Utility of staff training on correcting sleep problems in people with intellectual disabilities living in residential settings. *Journal of Policy and Practice in Intellectual Disabilities*, 8, 85-91.
- Jacobson, B. H., Smith, D., Fronterhouse, J., Kline, C., Boolani, A. (2012). Assessment of the benefit of powered exercises for muscular endurance and functional capacity in elderly participants. *Journal of Physical Activity and Health*, 9, 1030-1035.
- Jones, E. et al. (1999). Opportunity and the promotion of activity among adults with severe intellectual disability living in community residences: the impact of training staff in active support. *Journal of Intellectual Disability Research*, 43, 164-178.
- Jones, E. et al. (2001). Evaluation of the Dissemination of Active Support Training in Staffed Community Residences. *American Journal on Mental Retardation*, 106, 344-358.
- Jones, M. L. (2005). Role development and effective practice in specialist and advanced practice roles in acute hospital settings: systematic review and meta-synthesis. *Journal of Advanced Nursing*, 49, 191-209.
- Jones, M. C., & Walley, R. M., Leech, A., Paterson, M., Common, S., & Metcalf, C. (2006). Using goal attainment scaling to evaluate a needs-led exercise programme for people with severe and profound intellectual disabilities. *Journal of Intellectual Disabilities*, 10, 317-335.
- Jones, M. C., Walley, R. M., Leech, A., Paterson, M., Common, S., & Metcalf, C. (2007).

- Behavioral and psychosocial outcomes of a 16-week rebound therapy-based exercise program for people with profound intellectual disabilities. *Journal of Policy and Practice in Intellectual Disabilities*, 4, 111–119.
- Kline, T. J. B. (2005). *Psychological testing. A practical approach to design and evaluation*. Thousand Oaks, CA, US: Sage Publication, Inc.
- Kuijken, N. M. J., Naaldenberg, J., Nijhuis-Van der Sanden, M. W. N., & Van Schrojenstein-Lantman de Valk, H. M. J. (2016). Healthy living according to adults with intellectual disabilities: towards tailoring health promotion initiatives, *Journal of Intellectual Disability Research*, 60, 228–241.
- Lahtinen, U., Rintala, P., & Malin, A. (2007). Physical performance of individuals with intellectual disability: A 30-Year Follow-Up. *Adapted Physical Activity Quarterly*, 24, 125–143.
- Lancioni, G. E., Singh, N. N., O'Reilly, M. F., Oliva, D., Scalini, L., Vigo, C. M., & Groeneweg, J. (2004). Microswitch clusters to support responding and appropriate posture of students with multiple disabilities: three case evaluations. *Disability and Rehabilitation*, 26, 501–5.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 159–174.
- Law, M., Stewart, D., Pollock, N., Letts, L., Bosch, J., & Westmorland, M. (1998). *Critical Review Form – Quantitative Studies*. Retrieved from: https://www.unisa.edu.au/Global/Health/Sansom/Documents/iCAHE/CATs/McMasters_Quantitative_review.pdf
- Letts, L., Wilkins, S., Law, M., Stewart, D., Bosch, J., & Westmorland, M. (2007). *Critical Review Form - Qualitative Studies (Version 2.0)*. Retrieved from <https://www.canchild.ca/system/tenon/assets/attachments/000/000/360/original/qualguide.pdf>
- Little, R. J. A. (1998). A test of missing completely at random for generalised estimating equations with missing data. *Journal of American Statistical Association*, 83, 1198–1202.
- Leon, A. C., Davis, L. L., & Kraemer, H. C., (2011). The role and interpretation of pilot studies in clinical research. *Journal of Psychiatric Research*, 45, 626–629.
- Levy, R., & Mislevy, R. J. (2016). *Bayesian psychometric modelling*. Boca Raton, FL, US: CRC Press
- Maes, B., Lambrechts, G., Hostyn, I., & Petry, K. (2007). Quality-enhancing interventions for people with profound intellectual and multiple disabilities: a review of the empirical research literature. *Journal of Intellectual & Developmental Disability*, 32, 163–178.
- Mahy, J., Shields, N., Taylor, N. F., & Dodd, K. J. (2010). Identifying facilitators and barriers to physical activity for adults with Down syndrome. *Journal of Intellectual Disability Research*, 54, 795–805.
- Mansell, J., Beadle-Brown, J., Whelton, B., Beckett, C., & Hutchinson, A. (2008). Effect of service structure and organisation on staff care practices in small community homes for people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 21, 398–413.
- Mansell, J., Beadle-Brown, J., Macdonald, S., & Ashman, B. (2003). Resident involvement in activity in small community homes. *Journal of Applied Research in Intellectual Disabilities*, 16, 63–74.
- Marks, B., Sisirak, J., Heller, T., & Wagner, M. (2010). Evaluation of community-based health promotion programs for Special Olympics athletes. *Journal of Policy and Practice in Intellectual Disabilities*, 7, 119–129.
- Martin, E., McKenzie, K., Newman, E., Bowden, K., & Morris, P. G. (2011). Care staff intentions to support adults with an intellectual disability to engage in physical activity: An application of the Theory of Planned Behaviour. *Research in Developmental Disabilities*,

32, 2535–2541.

- Maulik, P. K., Mascarenhas, M. N., Mathers, C. D., Dua, T., & Saxena, S. (2011). Prevalence of intellectual disability: a meta-analysis of population-based studies. *Research in Developmental Disabilities, 32*, 419–436.
- Maxwell, J. A. (2010). Using Numbers in Qualitative Research. *Qualitative Inquiry, 16*, 475–82.
- McEwen, I. R. (1992). Assistive positioning as a control parameter of social-communicative interactions between students with profound multiple disabilities and classroom staff. *Physical Therapy, 72*, 634–644.
- Melville, C. A., Hamilton, S., Miller, S., Boyle, S., Robinson, N., Pert, C., & Hankey, C. R. (2009). Carer knowledge and perceptions of healthy lifestyles for adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 22*, 298–306.
- Meneer, K. (2007). Parents' perceptions of health and physical activity needs of children with Down syndrome. *Down Syndrome Research and Practice, 12*, 60–68.
- Messent, P. R., Cooke, C. B., & Long, J. (1998). Physical activity, exercise and health of adults with mild and moderate learning disabilities. *British Journal of Learning Disabilities, 26*, 17–22.
- Messent, P. R., Cooke, C. B., & Long, J. (1999). Primary and secondary barriers to physically active healthy lifestyles for adults with learning disabilities. *Disability & Rehabilitation, 21*, 409–419.
- Messent, P. R., Cooke, C. B., & Long, J. (2000). Secondary barriers to physical activity for adults with mild and moderate learning disabilities. *Journal of Learning Disabilities, 4*, 247–263.
- Mellenbergh, G. J. (2011). *A conceptual introduction to psychometrics: Development, analysis, and application of psychological and educational tests*. The Hague, NL: Eleven International Publishing.
- Michie, S., Johnson, M., Abraham, C., Lawton, R., Parker, D., Walker, A., et al. (2005). Making psychological theory useful for implementing evidence based practice: a consensus approach. *Quality & Safety in Health Care, 14*, 26–33.
- Michie, S., Johnston, M., Francis, J., Hardeman, W., & Eccles, M. (2008). From Theory to Intervention: Mapping Theoretically Derived Behavioural Determinants to Behaviour Change Techniques. *Applied Psychology: An International Review, 57*, 660–80.
- Michie, S., Van Stralen, M. M., & West, R. (2011). The behavior change wheel: A new method for characterising and designing behavior change interventions. *Implementation Science, 6*, 1–11.
- Munde, V., Vlaskamp, C., Post, W. J., Ruijsnaars, A. J. J. M., Maes, B., & Nakken, H. (2012). Observing and Influencing Alertness in Individuals With Profound Intellectual and Multiple Disabilities in Multisensory Environments. *Journal of Cognitive Education and Psychology, 11*, 5–19
- Muraki, E. (1990). Fitting a polytomous item response model to Likert-type data. *Applied Psychological Measurement, 14*, 59–71.
- Nakken, H., & Vlaskamp, C. (2007). A need for a taxonomy for profound intellectual and multiple disabilities. *Journal of Policy and Practice in Intellectual Disabilities, 4*, 83–87.
- Nguyen, T. H., Han, H. R., Kim, M. T., & Chan, K. S. (2014). An Introduction to Item Response Theory for Patient-Reported Outcome Measurement. *Patient, 7*, 23–35.
- Ogg-Groenendaal, M., Hermans, H., & Claessens, B. (2014). A systematic review on the effect of exercise interventions on challenging behavior for people with intellectual disabilities. *Research in Developmental Disabilities, 35*, 1507–1517.
- O'Leary, L., Taggart, L., & Cousins, W. (2018). Healthy lifestyle behaviours for people with intellectual disabilities: An exploration of organizational barriers and enablers. *Journal*

- of *Applied Research in Intellectual Disabilities*, 31, 122–135.
- Oviedo, G. R., Guerra-Balic, M., Baynard, T., & Javierre, C. (2014). Effects of aerobics, resistance and balance training in adults with intellectual disabilities. *Research in Developmental Disabilities*, 35, 2624–2634.
- Pérez-Cruzado, D., & Cuesta-Vargas, I. A. (2016). Changes on quality of life, self-efficacy and social support for activities and physical fitness in people with intellectual disabilities through multimodal intervention. *European Journal of Special Needs education*, 31, 553–564.
- Palisano, R.J., Hanna, S. E., Rosenbaum, P. L., Russel, D. J., Waleter, S. D., Wood, E. P., et al. (2000). Validation of a Model of Gross Motor Function for Children With Cerebral Palsy. *Journal of the American Physical Therapy Association*, 80, 974–985.
- Peterson, J. J., Janz, K. F., & Lowe, J. B. (2008). Physical activity among adults with intellectual disabilities living in community settings. *Preventive Medicine*, 47, 101–6.
- Peterson, J. J., Lowe, J. B., Peterson, N. A., Nothwehr, F. K., Janz, K. F., & Lobas, J. G. (2008). Paths to Leisure Physical Activity Among Adults With Intellectual Disabilities: Self-Efficacy and Social Support. *American Journal of Health Promotion*, 23, 35–43.
- Petry, K., Maes, B., & Vlaskamp, C. (2009). Psychometric evaluation of a questionnaire to measure the quality of life of people with profound multiple disabilities (QOL-PMD). *Research in Developmental Disabilities*, 30, 1326–1336.
- Phillips, C. J., Marshall, A. P., Chaves, N. J., Jankelowitz, S. K., Lin, I. B., Loy, C. T., et al. (2015). Experiences of using the Theoretical Domains Framework across diverse clinical environments: a qualitative study. *Journal of Multidisciplinary Healthcare*, 8, 139–146.
- Pitchford, E. A., Dixon-Ibarra, A., & Hauck, J. L. (2018). Physical activity research in intellectual disability: A scoping review using the behavioral epidemiological framework. *American Journal on Intellectual Developmental Disabilities*, 123, 140–163.
- Podgorski, C. A., Kessler, K., Cacia, B., Peterson, D. R., & Henderson, C. M. (2004). Physical activity intervention for older adults with intellectual disability: Report on a pilot project. *Mental Retardation*, 42, 272–283.
- Poppes, P., van der Putten, A. A. J., & Vlaskamp, C. (2010). Frequency and severity of challenging behavior in people with profound intellectual and multiple disabilities. *Research in Developmental Disabilities*, 31, 1269–1275.
- Qian, X., Tichá, R., Larson, S. A., Stancillfe, R. J., & Wuorio, A. (2015). The impact of individual and organisational factors on engagement of individuals with intellectual disability living in community group homes: a multilevel model. *Journal of Intellectual Disability Research*, 59, 493–505.
- R Development Core Team (2017). *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing.
- Reimer, A., & Siemonsma-Boom, M. (2013). Motoriek en visuele beperkingen. [Motoric and visual impairments.] In R. van Empelen, R. Nijhuis-van der Sanden, & A. Hartman (Eds.), *Kinderfysiotherapie [children's physiotherapy]* (pp 639–659). Amsterdam, NL: Reed Business Education.
- Rimmer, J. H., Heller, T., Wang, E., & Valerio, I. (2004). Improvements in physical fitness in adults with Down syndrome. *American Journal of Mental Retardation*, 109, 165–174.
- Robertson, J., Emerson, E., Gregory, N., Hatton, C., Turner, S., & Kessissoglou, S. (2000). Lifestyle related risk factors for poor health in residential settings for people with intellectual disabilities. *Research in Developmental Disabilities*, 21, 469–486.
- Samejima, F. (1969) Estimation of latent ability using a response pattern of graded scores. *Psychometrika Monograph Supplement*, 34, 100.
- Schalock, R. L., Borthwick-Duffy, S. A., Bradley, V. J., Buntinx, W.H. E., Coulter, D. L., Craig,

- E.M., et al. (2010). *Intellectual Disability: Definition, Classification, and Systems of Support (11th Edition)*. Washington, DC, US: American Association on Intellectual and Developmental Disabilities (AAIDD).
- Schellingerhout, R., Smitsman, A. W., & Cox, R. F. A. (2005). Evolving patterns of haptic exploration in visually impaired infants. *Infant Behavior and Development, 28*, 360–388.
- Snijders, T. A. B., & Bosker, R. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling. 2nd Edition*. London, UK: Sage.
- Snijders, T. A. B. (2001). Hypothesis testing: Methodology and limitations. In: Smelser NJ, Baltes PB (Eds) *International encyclopedia of the social & behavioral sciences*. Amsterdam, NL: Elsevier.
- Stancliffe, R. J., & Anderson, L. L. (2017). Factors associated with meeting physical activity guidelines by adults with intellectual and developmental disabilities. *Research in Developmental Disabilities, 62*, 1–14.
- Steenbergen, H. A., Van der Schans, C. P., Van Wijck, R., De Jong, J., & Waninge, A. (2017). Lifestyle Approaches for People With Intellectual Disabilities: A Systematic Multiple Case Analysis. *Journal of the American Medical Directors Association, 18*, 930–987.
- Strath, S. J., Kaminsky, L. A., Ainsworth, B. E., Ekelund, U., Freedson, P. S., Gary, R. A., et al. (2013). Guide to the assessment of physical activity: clinical and research applications: a scientific statement from the American Heart Association. *Circulation, 128*, 2259–79.
- Sundblom, E., Bergström, H., & Ellinder, L. S. (2015). Understanding the Implementation Process of a Multi-Component Health Promotion Intervention for Adults with Intellectual Disabilities in Sweden. *Journal of Applied Research in Intellectual Disabilities, 28*, 296–306.
- Suri, H. (2011). Purposeful Sampling in Qualitative Research Synthesis. *Qualitative Research Journal, 11*, 63–75.
- Temple, V. A., & Walkley, J. W. (2003). Physical activity of adults with intellectual disability. *Journal of Intellectual & Developmental Disability, 28*, 342–352.
- Temple, V. A., Frey, G. C., & Stanish, H. I. (2006). Physical activity of adults with mental retardation: Review and research needs. *American Journal of Health Promotion, 21*, 2–12.
- Temple, V. A. (2007). Barriers, enjoyment, and preference for physical activity among adults with intellectual disability. *International Journal of Rehabilitation Research, 30*, 281–287.
- Temple, V. A., & Stanish, H. (2011). The feasibility of using a peer-guided model to enhance participation in community-based physical activity for youth with intellectual disability. *Journal of Intellectual Disabilities, 15*, 209–217.
- Temple, V. A., & Walkley, J. (2007). Perspectives of constraining and enabling factors for health-promoting physical activity by adults with intellectual disability. *Journal of Intellectual & Developmental Disability, 32*, 28–38.
- Toland, M. D. (2014). Practical Guide to Conducting an Item Response Theory Analysis. *Journal of Early Adolescence, 34*, 150–151.
- Tsai, E. H. L., & Fung, L. (2009). Parents experiences and decisions on inclusive sport participation of their children with intellectual disabilities. *Adapted Physical Activity Quarterly, 26*, 151–171.
- Van Adrichem, E. J., Van de Zande, S. C., Dekker, R., Verschuuren, E. A. M., Dijkstra, P. U., & Van der Schans, C. P. (2016). Perceived barriers to and facilitators of physical activity in recipients of solid organ transplantation, a qualitative study. *PLoS ONE, 11*, 1–15.
- Van Alphen, H. J. M., Waninge, A., Minnaert, A. E. M. G., & Van der Putten, A. A. J. Content and quality of motor initiatives in the support of people with profound intellectual and

- multiple disabilities. *Manuscript under revision*.
- Van der Putten, A. A. J., Vlaskamp, C., Reynders, K., & Nakken, H. (2005). Children with profound intellectual and multiple disabilities: the effects of functional movement activities. *Clinical Rehabilitation*, *19*, 613–620.
- Van der Putten, A. A. J., Vlaskamp, C., & Poppes, P. (2009). The content of support of persons with profound intellectual and multiple disabilities : An analysis of the number and content of goals in the educational programs. *Journal of Intellectual & Developmental Disability*, *22*, 391–394.
- Van der Putten, A. A. J. (2010). Ondersteuning in beweging: motorische activering. [Support in motion: motor activation] In B. Maes, C. Vlaskamp, A. Penne (Eds.), *Ondersteuning van mensen met ernstige meervoudige beperkingen: handvatten voor een kwaliteitsvol leven* [Support of people with profound multiple disabilities: ways to improve quality of life] (pp. 199–213). Leuven, Belgium: Acco.
- Van der Putten, A. A. J., & Vlaskamp, C. (2011). Day services for people with profound intellectual and multiple disabilities: An analysis of thematically organized activities. *Journal of Policy and Practice in Intellectual Disabilities*, *8*, 10–17.
- Van der Putten, A. A. J., Bossink, L. W. M., Frans, N., Houwen, S., & Vlaskamp, C. (2017). Motor activation in people with profound intellectual and multiple disabilities in daily practice. *Journal of Intellectual & Developmental Disability*, *42*, 1–11.
- Van Schijndel-Speet, M., Evenhuis, H. M., Van Wijck, R., Van Empelen, P., & Echteid, M. A. (2014). Facilitators and barriers to physical activity as perceived by older adults with intellectual disability. *Intellectual and Developmental Disabilities*, *52*, 175–186.
- Van Sonderen, E., Sanderman, R., & Coyne, J. C. (2013). Ineffectiveness of Reverse Wording of Questionnaire Items: Let's Learn from Cows in the Rain. *PLoS ONE*, *8*, 1–7.
- Van Timmeren, E. A., Van der Putten, A. A. J., Lantman-de Valk, H. M. J. V. S., Van der Schans, C. P., & Waninge, A. (2016). Prevalence of reported physical health problems in people with severe or profound intellectual and motor disabilities: a cross-sectional study of medical records and care plans. *Journal of Intellectual Disability Research*, *60*, 1109–1118.
- Verheijen, J. A. T., & Brussee, F. H. P. (2009). *Motor activation: a study into the motor activation of persons with profound intellectual and multiple disabilities*. Master's thesis, University of Groningen, the Netherlands.
- Vlaskamp, C., Van der Meulen, B. F., & Zijlstra, H. P. (2002). De instrumentele realisering van het Gedrags Taxatie Instrument. *Tijdschrift voor Orthopedagogiek*, *41*, 22–31.
- Vlaskamp, C., Hiemstra, S.J., Wiersma, L. A., & Zijlstra, B. J. H. (2007). Extent, duration, and content of day services' activities for persons with profound intellectual and multiple disabilities. *Journal of Policy and Practice in Intellectual Disabilities*, *4*, 152–159.
- Vlaskamp, C., & Nakken, H. (2008). Therapeutic interventions in the Netherlands and Belgium in support of people with profound intellectual and multiple disabilities. *Education and Training in Developmental Disabilities*, *43*, 334–341.
- Vlaskamp, C., & Van der Putten, A. A. J. (2009). Focus on interaction: The use of an Individualized Support Program for persons with profound intellectual and multiple disabilities. *Research in Developmental Disabilities*, *30*, 873–883.
- Vlaskamp, C., Fontaine, H., Tadema, A. C., & Munde, V. (2010). *Handleiding bij de lijst 'alertheid van mensen met een zeer ernstige verstandelijke en meervoudige beperkingen* [Manual for the 'Alertness in people with profound intellectual and multiple disabilities checklist']. Groningen, NL: University of Groningen.
- Waninge, A., Van der Weide, W., Evenhuis, I. J., Van Wijck, R., & Van der Schans, C. P. (2009). Feasibility and reliability of body composition measurements in adults with severe intellectual and sensory disabilities. *Journal of Intellectual Disability Research*, *53*, 377–388.

- Waninge, A., Rook, R. A., Dijkhuizen, A., et al. (2011). Feasibility, test-retest reliability, and interrater reliability of the Modified Ashworth Scale and Modified Tardieu Scale in persons with profound intellectual and multiple disabilities. *Research in Developmental Disabilities, 32*, 613–620.
- Waninge, A., Van der Putten, A. A. J., Stewart, R. E., Steenbergen, B., van Wijck, R., & van der Schans, C. P. (2013). Heart rate and physical activity patterns in persons with profound intellectual and multiple disabilities. *Journal of Strength and Conditioning Research, 27*, 3150–3158.
- Whinnery, S. B., & Whinnery, K. W., (2011). Effects of functional mobility skills training for adults with severe multiple disabilities. *Education and Training in Autism and Developmental Disabilities, 46*, 436–453.
- Wiersma, L. A., Beumer, H. M., Koedoot, P., & Vlaskamp, C. (2002). Dagactiviteiten voor mensen met zeer ernstige verstandelijke beperkingen. Resultaten Trimbos-onderzoek nader bekeken. [Day activities for people with severe intellectual disabilities. Further results of the Trimbos research.] *Nederlands Tijdschrift voor de Zorg aan verstandelijk gehandicapten [Dutch journal for support in intellectual disabilities], 3*, 156–170.
- Wilkinson, L. (1999). Inference T force on statistical. *Statistical methods in psychology journals: guidelines and explanations, 54*, 594–604.
- World Health Organization. (2001). The International Classification of Functioning, Disability and Health (ICF). Geneva: WHO.
- Zijlstra, H. P., & Vlaskamp, C. (2005). Leisure provision for persons with profound intellectual and multiple disabilities: quality time or killing time? *Journal of Intellectual Disability Research, 49*, 434–448.