WAT-T: The Workload Assessment Tool for Therapists

Establishment of reliability and validity in a points-based caseload measure for paediatric rehabilitation therapists

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Research Summary

Submitted to the Office of the Provincial Paediatric Therapy Recruitment and Retention Coordinator

History of the Project

The Workload Assessment Tool for Therapists (WAT-T) project began in 2008, with agency support from the Office of the Provincial Paediatric Therapy Recruitment and Retention Coordinator (PPTRRC), as a Master of Rehabilitation Science research study completed by Kathy Davidson, Paediatric Physiotherapist. Phase 1 was a pilot project designed to develop and test a points based caseload measure with early intervention, community based paediatric Occupational and Physiotherapists in British Columbia. The research question guiding the overall project was the determination of the size of a manageable caseload for these therapists.

For those therapists working in an early intervention, community based context, most often caseload sizes are determined by the number of children on a caseload. This research examined that measure of manageability. It is intuitive that not all children and families create the same workload for a therapist. Many factors contribute to workload – the complexity of the child, the complexity of the family, the size of the team surrounding that child, the experience of the therapist, the equipment needs of the child, the number of visits to see the child, client maturity (ie how long the child has been on a therapist's caseload), the time spent travelling to see the child, etc. However intuitive this might be, there was no research found to support using a different measure of caseload in this context in the literature. Thus the WAT-T project was initiated, with its underlying assumption that the same child may be more or less complex to a therapist with different experience and expertise, and that the workload that each child creates for a therapist is subjective. The WAT-T is a tool that assists therapists in assigning points to each child on their caseload, in order to determine the total number of points on their caseload, rather than the total number of children. This Tool is still in development, but received positive results in Phase 1. The results of Phase 2, the determination of reliability in the Tool, are reported in this document; Phase 2 was undertaken with financial support from the PPTRRC. The research project will continue with Phase 3, with the ultimate goal of determining ideal point-based caseload guidelines for OTs, PTs and SLPs in early intervention in British Columbia. It is expected that the principles of this Tool will be transferable to school aged therapists, although further research would be necessary in order to establish appropriate points guidelines for that context.

Details about Phase 1 research design and results are described in Davidson & Bressler (2010). For a useable version of the Tool, with the understanding that its development is still in progress, please see

http://www.therapybc.ca/pdf/WAT-T%20The%20Workload%20Assessment%20Tool%20for%20Therapists%20LOCKED.xls

Purpose of the Current Study

As described above, this study is the second phase of a three phase research project. A pilot project (Phase 1) investigated the feasibility and support for a points-based caseload measure for paediatric OTs and PTs working in community based practice in British Columbia. Phase 2, the current study, investigated the intra-rater reliability of the measure, and of the workload manageability scale, and began the process of supporting validity hypotheses. Phase 3, in future development, will repeat the pilot project on a provincial scale, using the reliable and valid caseload measure, with the goal of establishing statistically supported points-based guidelines.

Justification

Currently there are few guidelines available to inform manageable caseload size in paediatric early intervention occupational therapy and physiotherapy either nationally or within British Columbia. The results of a pilot project (Phase 1 of this three phase project) suggest support for the principles of a points-based workload measure among the participant therapists. Some suggestions were made to improve ease of completion, and several uses were proposed for the measure. Determination of the ideal, manageable point-based caseload size for early intervention, community based paediatric occupational therapists, physiotherapists, and speech language pathologists requires further research with a larger sample in order to facilitate statistical analysis. Determination of reliability and validity in the measure was necessary prior to this larger sampling. The current project (Phase 2) was designed to investigate these psychometric properties.

Objectives

Primary research objectives:

- To determine the intra-rater reliability of the caseload measure (total score) for early intervention therapists (occupational therapists, physiotherapists and speech language pathologists)
- To determine the intra-rater reliability of the workload manageability scale

Secondary research objectives:

- To explore the relationship between Total, Complexity, Frequency and Maturity scores
- To determine the intra-rater reliability of Complexity, Frequency and Maturity scores for each child (single case scores)

Research with this caseload measure is designed with the ultimate goal of determining points-based guidelines that can be promoted as a provincial workloads resource for community based, early intervention occupational therapists, physiotherapists and speech language pathologists in British Columbia.

Method

Procedure:

Participants were paediatric OTs, PTs and SLPs working in early intervention community based practice in British Columbia. Recruitment targeted participants with a range of demographics, including years of experience and practice location (rural/urban). A third party contact used a previously generated email list of paediatric OTs, PTs and SLPs in the province to invite participants and included the contact information of the researcher. Potential participants contacted the researcher, who provided them with the consent form including details about the study. Once the participants completed the consent form and returned it to the researcher, they were provided with the instructions and link to an online survey.

Participants used the online Tool and the instructions to assign points to each client on their caseload (client names were not used), and to rate the manageability of their workload on a Likert scale. This information was entered online, and once completed the online database locked the submission in order to prevent participants from referring to previous answers. Two weeks later, participants again used the questionnaire and the instructions to repeat the process with each client on their caseload, and again enter these points into the online survey, together with an identifier to allow the researcher to compare the first and second point totals. Participants were unable to access the information in their first questionnaire when completing the second.

Data Analysis:

Data was analyzed with support from the Clinical Research Support Unit at the Child and Family Research Institute (CFRI). Reliability was determined using Spearman r, and the Intraclass Correlation Coefficient (ICC).

Confidentiality:

The online survey was accessed via a link provided to participants following receipt of their consent form. The data was collected and kept on a server located in Vancouver BC, hosted by NetNation (database server ldb14.van.siteprotect.com)

Each participant was assigned an identifier code in order to pair the first completion with the second. Only the researcher knew the true identify of each participant, through use of a master list, and this was not used in data analysis.

The data collected during the project was exported to an excel spreadsheet, and removed from the server within two weeks of the final participant completing the online survey. These and all other digital data files (on CD/DVD) and paper files will be kept in a secured location for 5 years, following which time, electronic files will be erased from computer hard drives and CDs/DVDs, and all paper copies shredded.

Results

60 Early Intervention therapists contacted the researcher and requested consent forms. Of those, 47 returned consent forms and were provided with an identifier code and the online link. 40 participants (12 Speech Language Pathologists, 15 Physiotherapists, 13 Occupational Therapists) completed both questionnaires online. Data was collected between April 30th and July 30th, 2010.

Table 1 reports the Intra Class Correlations (ICC) calculated between Total Score A and Total Score B for each participant. Correlations ranged from 0.872 and 0.932. ICC values were considered to be in the excellent range (≥ 0.75) for all four calculations (Andresen, 2000).

Table 1

Intra-Rater Reliability – Total Score

N	ICC
40 (all participants)	0.919
12 (SLPs)	0.932
15 (PTs)	0.901
13 (OTs)	0.872

Table 2 reports the correlations calculated between Manageability A and Manageability B for each participant, using Spearman's rho. Correlations ranged from 0.490 to 0.708, with the physiotherapy subgroup showing the highest correlation.

Table 2

Intra-Rater Reliability - Manageability

N	Spearman's rho
40 (all participants)	0.591
12 (SLPs)	0.490
15 (PTs)	0.708
13 (OTs)	0.516

Table 3 reports the ICCs between Complexity A/Complexity B, Frequency A/Frequency B, Maturity A/Maturity B and Total A/Total B for each client (N=1417). Correlations ranged from 0.786 to 0.879.

Table 3

Intra-Rater Reliability - Individual Clients

N	Component Scores	ICC
1417	Complexity	0.786
1417	Frequency	0.879
1417	Maturity	0.811
1417	Total	0.858

Table 4 shows a correlation matrix to explore the patterns of correlations between the total scores and component scores. A consistently positive correlation between component scores (complexity, frequency, maturity) and the total score indicates that each component score is contributing to the total.

Table 4

Correlations

		Manageability A	Manageability B	Complexity A	Frequency A	Maturity A	Total A	Complexity B	Frequency B	Maturity B	Total B
Manageability A	Pearson Correlation	1	.545**	.094**	0.012	-.113**	0.033	.101**	0.014	-.101**	0.038
	N	1592	1521	1553	1553	1553	1553	1456	1456	1456	1456
Manageability B	Pearson Correlation	.545**	1	.082**	-0.004	0.029	.070**	.075**	-0.01	0.051	.052*
	N	1521	1521	1482	1482	1482	1482	1456	1456	1456	1456
Complexity A	Pearson Correlation	.094**	.082**	1	.289**	0.008	.669**	.648**	.251**	0.017	.498**
	N	1553	1482	1553	1553	1553	1553	1417	1417	1417	1417
Frequency A	Pearson Correlation	0.012	-0.004	.289**	1	0.029	.846**	.258**	.786**	-0.014	.666**
	N	1553	1482	1553	1553	1553	1553	1417	1417	1417	1417
Maturity A	Pearson Correlation	-.113**	0.029	0.008	0.029	1	.290**	0.031	0.023	.685**	.200**
	N	1553	1482	1553	1553	1553	1553	1417	1417	1417	1417
Total A	Pearson Correlation	0.033	.070**	.669**	.846**	.290**	1	.491**	.665**	.184**	.752**
	N	1553	1482	1553	1553	1553	1553	1417	1417	1417	1417
Complexity B	Pearson Correlation	.101**	.075**	.648**	.258**	0.031	.491**	1	.303**	0.029	.710**
	N	1456	1456	1417	1417	1417	1417	1456	1456	1456	1456
Frequency B	Pearson Correlation	0.014	-0.01	.251**	.786**	0.023	.665**	.303**	1	0.042	.838**
	N	1456	1456	1417	1417	1417	1417	1456	1456	1456	1456
Maturity B	Pearson Correlation	-.101**	0.051	0.017	-0.014	.685**	.184**	0.029	0.042	1	.291**
	N	1456	1456	1417	1417	1417	1417	1456	1456	1456	1456
Total B	Pearson Correlation	0.038	.052*	.498**	.666**	.200**	.752**	.710**	.838**	.291**	1
	N	1456	1456	1417	1417	1417	1417	1456	1456	1456	1456

**. Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed)

Discussion

This Workload Assessment Tool for Therapists is a points-based caseload measure for early intervention paediatric therapists, and has been supported in a pilot study with Occupational Therapists and Physiotherapists (Davidson & Bressler, 2010). In order to pursue further development and standardization of the measure, it was important to establish reliability and validity. The results of this study suggest that this points based caseload measure is reliable when used by the same therapist with the same caseload (intra-rater reliability). The results also suggest adequate intra-rater reliability of the Workload Manageability scale.

It is also clear from the results that not only is there a significant correlation between total caseload scores for each participant (therapist), there is also significant correlation between the scores of individual clients (component scores and total scores). This indicates that an individual client's point score did not change between administrations of the measure, as would be expected in the context of early intervention paediatric therapy, where clients are on caseloads for a longer period of time than in many other settings.

The WAT-T is designed to be a somewhat subjective measure, with therapists using clinical reflection coupled with their experience to assign complexity points to each client. The same client may be more or less complex to a therapist with different experience and expertise. Exploring inter-rater reliability in this measure would not be useful, and therefore has not been pursued.

Manageability is also subjective, likely with external personal factors playing a role in a therapist's perception of manageability. However, this study suggests that with the same caseload and within a limited period of time, manageability as perceived by each therapist remains somewhat constant. This is an important result as future development with this measure will involve correlating manageability with total points to develop guidelines for caseload point sizes.

Throughout Phase 2, a limited version of the measure which excluded a therapist's FTE, or the time spent in travel to clients, or a therapist's experience (which may influence complexity) was used in order to isolate the aspects of the measure that would influence intra-rater reliability. In Phase 3 of this study, these additional factors will be incorporated into the measure with broader sampling in order to determine the effect they have on a therapist's total caseload points.

Conclusion

In this reliability study, Phase 2 of a three phase research project, test-retest and intra-rater reliability for the WAT-T previously developed were found to be at the adequate to excellent rating level in all targeted correlations. Additional positive correlation relationships were seen between the component scores and the total scores, supporting the inclusion of each component score in the development of the measure. With these encouraging results, the measure can continue to be used in further research. Phase 3 research will set the goal of establishing statistically supported points-based guidelines, taking into account a number of factors influencing the manageability of caseloads in the early intervention paediatric therapy context in British Columbia.

References

Andresen, E.M. (2000). Criteria for assessing the tools of disability outcomes research. *Archives of Physical Medicine and Rehabilitation*, 81, S15-S20.

Davidson, K. F., & Bressler, S. I. (2010). Piloting a points-based caseload measure for community based paediatric occupational and physiotherapists. *Canadian Journal of Occupational Therapy*, 77, 174-180. doi: 10.2182/cjot.2010.01.00