


The French Quebec adaptation of the *Melbourne Low Vision ADL index, weighted version: preliminary results of its reliability*

Josée Duquette, M. Sc.
Marie-Chantal Wanet-Defalque, Ph. D.
CRIR - Institut Nazareth et Louis-Braille

 Centre intégré
de santé et de
services sociaux de
la Montérégie-Centre
Québec

Envision Conference 2016, Denver (CO), Sept. 2016

The Institut Nazareth et Louis-Braille

- The only rehabilitation center with a unique specialization in visual impairment, in the province of Quebec (Canada)
- Services provided in French
- 2013 - 2014: > 6 300 active VR service users



The MIDVAQ

The MIDVAQ


- **Mesure de l'Impact de la Déficience Visuelle dans les Activités Quotidiennes** ¹
- **French-Quebec translation and adaptation of the Melbourne Low Vision ADL Index – Weighted version** ²

1. Duquette J, Boisvert I, Boutet M, Normand M & MC Wanet-Defalque (novembre 2011), *Mesure de l'impact de la déficience visuelle dans les activités quotidiennes*. Longueuil : Institut Nazareth et Louis-Braille, 81 pages.

2. Haymes, S., Johnston, A., & Heyes, A. (2001). A Weighted version of the Melbourne Low-Vision ADL Index: a measure of disability impact. *Optometry and vision science*, 78(8), 565-579.


The MIDVAQ

- **Ecological adaptation;**
to be used in / with the persons...
 - ◆ own environment
 - ◆ own strategies
 - ◆ own visual & non visual aids



Objective of the MIDVAQ

- To measure the **personal impact of disability** caused by the visual impairment (VI) in **instrumental activities of daily living (IADL's)**, considering :
 - ◆ the **ability** to perform the task
 - ◆ the **personal importance** of the activity



Part A – Observed performance, 16 items

- **Writing** a check
- **Telling time**: wrist watch, digital display, wall clock
- **Reading** newspaper print, headlines
- **Finding information**: medicine label, account, letter of typed print, packet labels, telephone number
- Recognizing celebrity **faces**
- Identifying **coins**
- Using a **telephone**
- **Threading** a sewing needle
- **Pouring** water

Parallel versions of printed material

Standardized components

Item 5 Étiquette de médicament

5.1 Matériel
 Cette vitem 5s.

5.2 Procédure
 Instructions: Remettez le carton à la personne.
 Dites: « Voici une étiquette de bouteille de médicament. Si possible, j'aimerais que vous le lisez et que vous me donniez le nom du médicament, combien il faut en prendre et quand il faut le prendre. »
 Questions:
 « À quel point cette activité est-elle importante pour vous? Est-elle sans importance, un peu importante, assez importante, très importante ou essentielle? »

5.3 Calcul des résultats
 Durée maximale: 1 minute
 Réponses: T1: Nom du médicament - Amoxicil.
 Posologie: 1, comprimé 2 fois par jour (au déjeuner et au souper). Toutes ces réponses doivent être correctes.
 T2: Nom du médicament - Amoxicil.
 Posologie: 2, comprimé 2 fois par jour (au déjeuner et au souper). Toutes ces réponses doivent être correctes.

Évaluation de la réponse:
 0= Très satisfaisant: la personne a été capable de compléter la tâche totalement (1 à 20), d'affichage et sans erreur.
 1= Satisfaisant: la personne a complété la tâche plutôt correctement (21 à 40) ou avec quelques erreurs ou une compréhension des idées.
 2= Limite: la personne a complété la tâche très lentement (41 à 60) ou avec plusieurs erreurs ou une compréhension des idées.
 3= Insatisfaisant: la personne a essayé de réaliser la tâche, mais a été incapable de la compléter de façon adéquate.
 4= Très insatisfaisant: la personne n'a pas essayé de réaliser la tâche et a été incapable de la compléter.

Part B – Questionnaire, 9 items

- Shopping
- Preparing meals
- Housework
- Managing medicine
- Eating
- Dressing
- Grooming
- Mobility
- Bathing

Ability scale

	Part A Observed performance	Part B Questionnaire
0	Very satisfactory	Ø help, quickly & efficiently
1	Satisfactory	Ø help, a little slowly
2	Borderline	With some help
3	Unsatisfactory	With great deal of help
4	Very unsatisfactory	Completely unable

Considering the time and accuracy of performance *Recoding if disability is caused partially or totally by another factor than vision*

Importance scale

0	Totally unimportant
1	Slightly important
2	Moderately important
3	Very important
4	Essential

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Disability impact composite score

Disability impact = Ability x Importance

Maximal impact (16) =
 Very unsatisfactory Ability (4)
 AND
 Essential task (4)

No impact (0) =
 Very satisfactory Ability (0)
 OR
 Totally unimportant task (0)

Partial and total scores

13

	Ability	Importance	Disability impact
Part A	/ 64	/ 64	/ 256
Part B	/ 36	/ 36	/ 144
Total	/ 100	100	/ 400


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- ### Clinical & Research usefulness
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- To guide the planning of the LVR interventions
 - To evaluate the LVR outcomes
 - To evaluate the VI progression
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The research project

- ### Research objectives
- 16
- **Test-retest reliability**
 - **Interjudge reliability**
 - Reliability of Part A parallel versions
 - Construct validity
 - Internal consistency
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- ### Subjects recruitment
- 17
- Inclusion criteria
 - ◆ Aged ≥ 18 yrs
 - ◆ No active rehabilitation services episode
 - ◆ Recent LV exam (≅ 3 - 4 months ago)
 - ◆ Moderate to profound LV
 - ◆ Stable visual condition during the experimental phase
 - Exclusion criteria
 - ◆ Cognitive impairment
 - ◆ Regular and significant assistance in IADL's
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- ### Method
- 18
- MIDVAQ administration
 - ◆ By 3 senior or retired LVRS (27-38 yrs of experience)
 - ◆ At home, with the person's visual and non visual aids
 - ◆ Twice, at 2 weeks interval (test – retest, T1 – T2)
 - T1 administration details noted, to be reproduced at T2
 - T1: parallel rating by a 2nd examiner (interjudge)
 - Part A material
 - ◆ Half the sample evaluated with V1 at T1; V2 at T2
 - ◆ Reversed order for the other half
- 
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Sociodemographics

- N = 36
- 15 F, 21 M
- 69 ± 14 yrs old (range 36 - 90)
- Living in a house or apartment (n = 32)
 - ◆ ... with someone (n = 29)
- Education ≥ high school (n = 30)

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Visual status

Profound LV
Severe LV
Moderate LV

Last visual examination
4,5 ± 0,5 months

Main visual diagnostic

ARMD or central vision loss	13
Degenerative myopia	5
Congenital cataracts	4
Glaucoma	4
Optical nerve atrophy	3
Diabetic retinopathy	2
Peripheral visual field loss	2
Others	3

Interjudge reliability

3 pairs of experimenters
11-12 subjects / pair

ICC

part A part B Global

Ability Importance Disability impact

Test-retest reliability

ICC

part A part B Global

Ability Importance Disability impact

P < 0,001

Test-retest reliability, Part A

Kappa_{cc} or PABAK

Alarm clock Pouring water (Wall) Clock Watch Journal article Cheque Journal titles Face recogn. Needle

Ability Importance

P < 0,05

Test-retest reliability, Part A (cont'd)

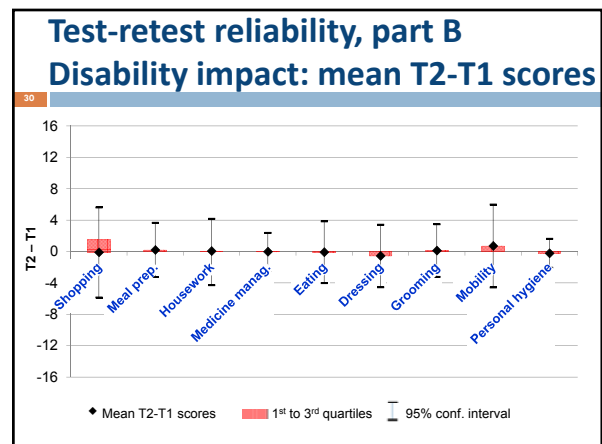
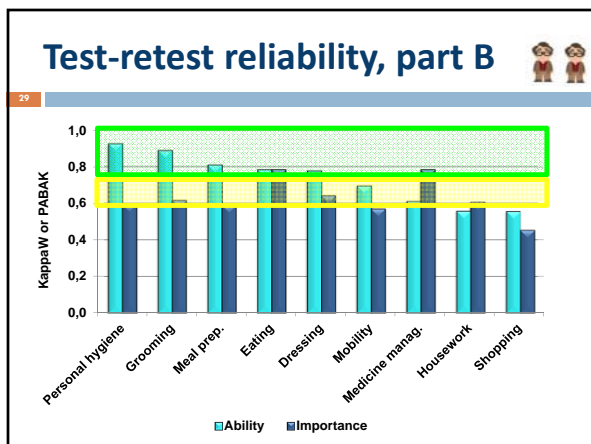
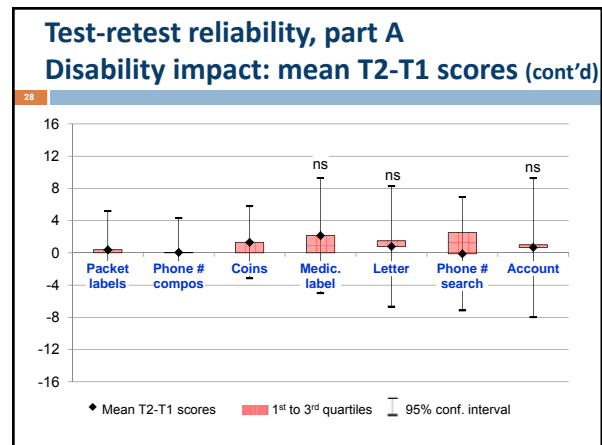
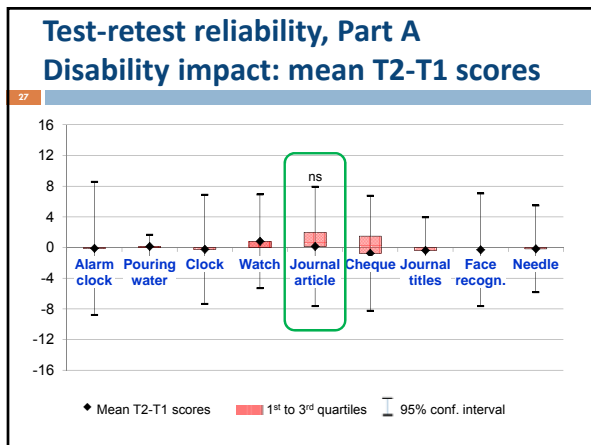
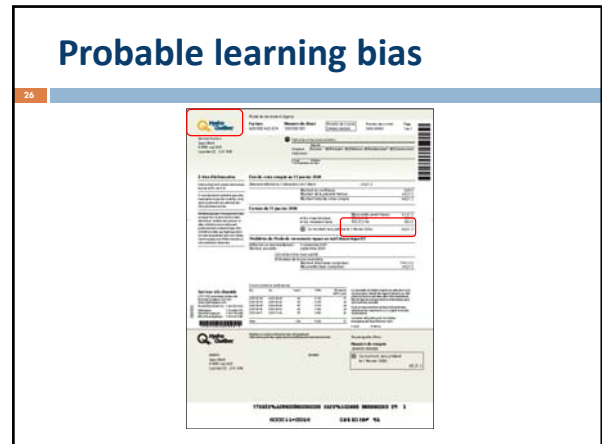
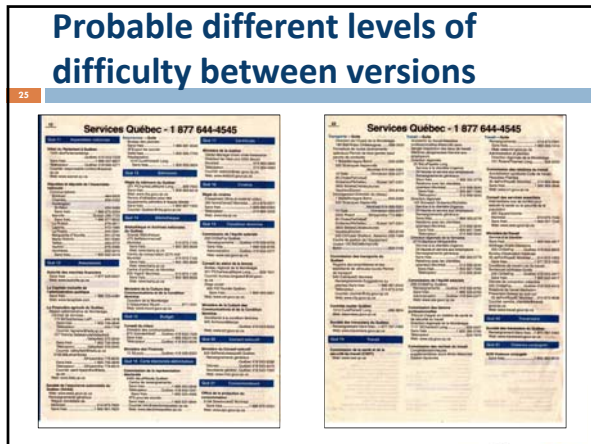
Kappa_{cc} or PABAK

Packet labels Tel # compos. Coins Medic. label Letter Tel # search Account

Ability Importance


ns ns ns

P < 0,05



Research limits

- Small sample size
- Interjudge reliability tested by simultaneous rating
 - ◆ Experimenter 1 administers and rates the items while Experimenter 2 simultaneously observes and rates.
 - ◆ Results may have been different if the test was administered independently by both Experimenters.



Conclusion

- Global and partial scores of the MIDVAQ show excellent to perfect interjudge and test-retest reliability, which are essential qualities for any assessment tool.
- Some items show lower test-retest reliability. Final results analysis will provide a better understanding of the underlying probable explanatory factors, to orient their revision and modification for improvement.


Future plans

Short term plan

- Final sample of N = 100
- Reliability analysis
 - Test-retest
 - Part A parallel versions of printed material
- Construct validity
- Revision of the MIDVAQ

Long term plan

- Reliability of the modified items
- Sensitivity to change



Acknowledgements

Financial support	<ul style="list-style-type: none"> • Institut Nazareth et Louis-Braille • Center for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR)
Field experimenters (LVRS)	<ul style="list-style-type: none"> • Jocelyn Loisele • Claire Fréchette • Lise Déry
INLB collaborators	<ul style="list-style-type: none"> • Martine Vincent, Low Vision Service Manager • Marie-Josée Senécal, O.D., M.Sc. • Carole Gagnon, Administrative Officer • Catherine Houtekier & Sylvie Cantin, Research Officers
Research assistants	<ul style="list-style-type: none"> • Kassandre Montisci • Wanseo Kim • Fanie Chaïne



Josée Duquette, M.Sc.
 CISSS de la Montérégie-Centre
 Installation - Institut Nazareth et Louis-Braille
 CRIR- INLB Research center
 1111, rue St-Charles ouest
 Longueuil (QC) Canada J4K 5G4

☎ 1 (450) 463-1710, ext 392
 ✉ josee.duquette.inlb@ssss.gouv.qc.ca

