

REVES 2010, Havana, 15-17 May 2010

Creating a harmonised disability measure across British national surveys from the hierarchy of activities of daily living

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Outline

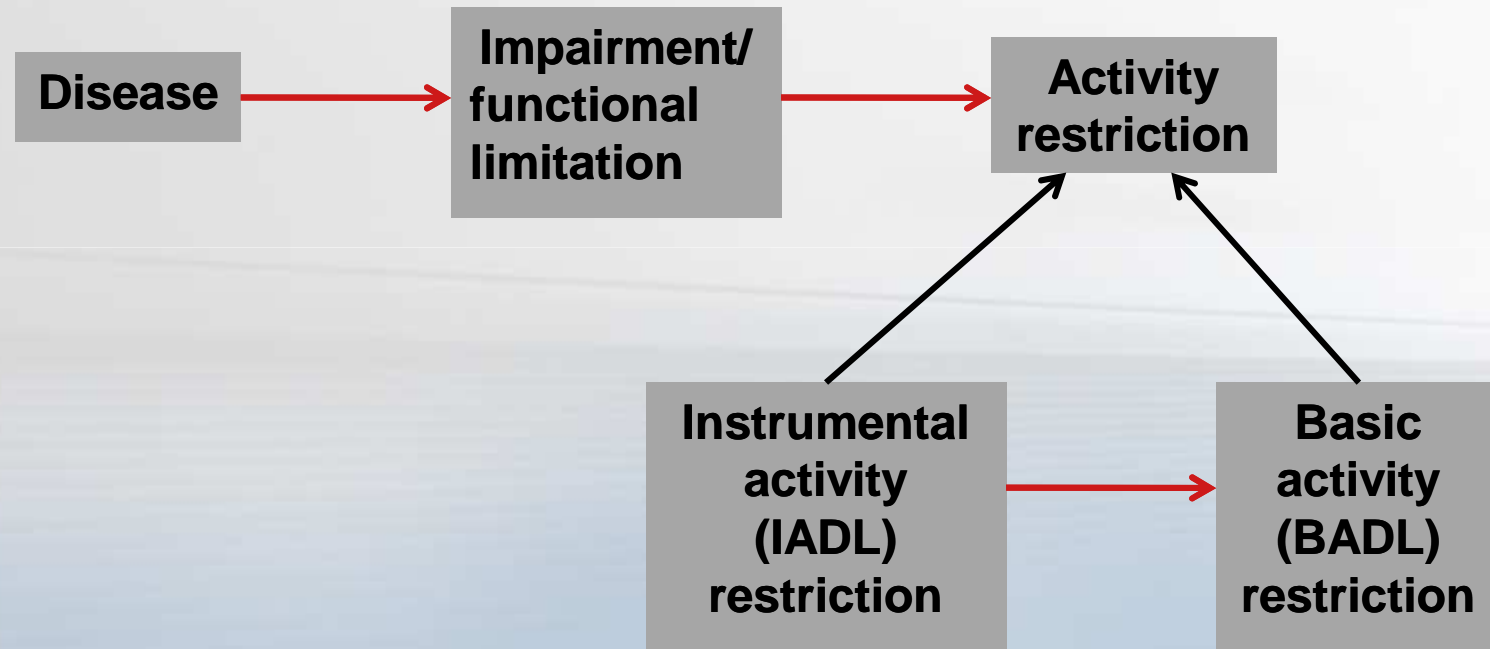
- Why? – rationale
- How?
 - Conceptual framework
 - Hierarchy of IADL/ADL items
 - Data sources
 - Statistical methods
- What we found
- What this study adds

Why?

- Multiple British studies with IADL/ADL measures
- All use different but overlapping items
- Comparison using 1+ ADL as measure of disability problematic if different items
- Need to produce comparable measure
 - For MAP2030
 - For Department of Work and Pensions
 - Methods useful for other countries with similar data

How? – conceptual framework

- Activity restriction in the Disablement Process



How? – hierarchy of IADL/BADL

Hierarchy of IADLs and BADLs well documented

- Cross-sectionally (Katz, 1963)
 - IADL and ADL (Kempen, 1995; Spector, 1996)
 - Mobility items (Weiss, 2007)
 - Cross-nationally (Ferrucci, 1998; Pluijm, 2005)
- Longitudinally (Dunlop, 1997; Barberger-Gateau, 2000; Jagger, 2001)

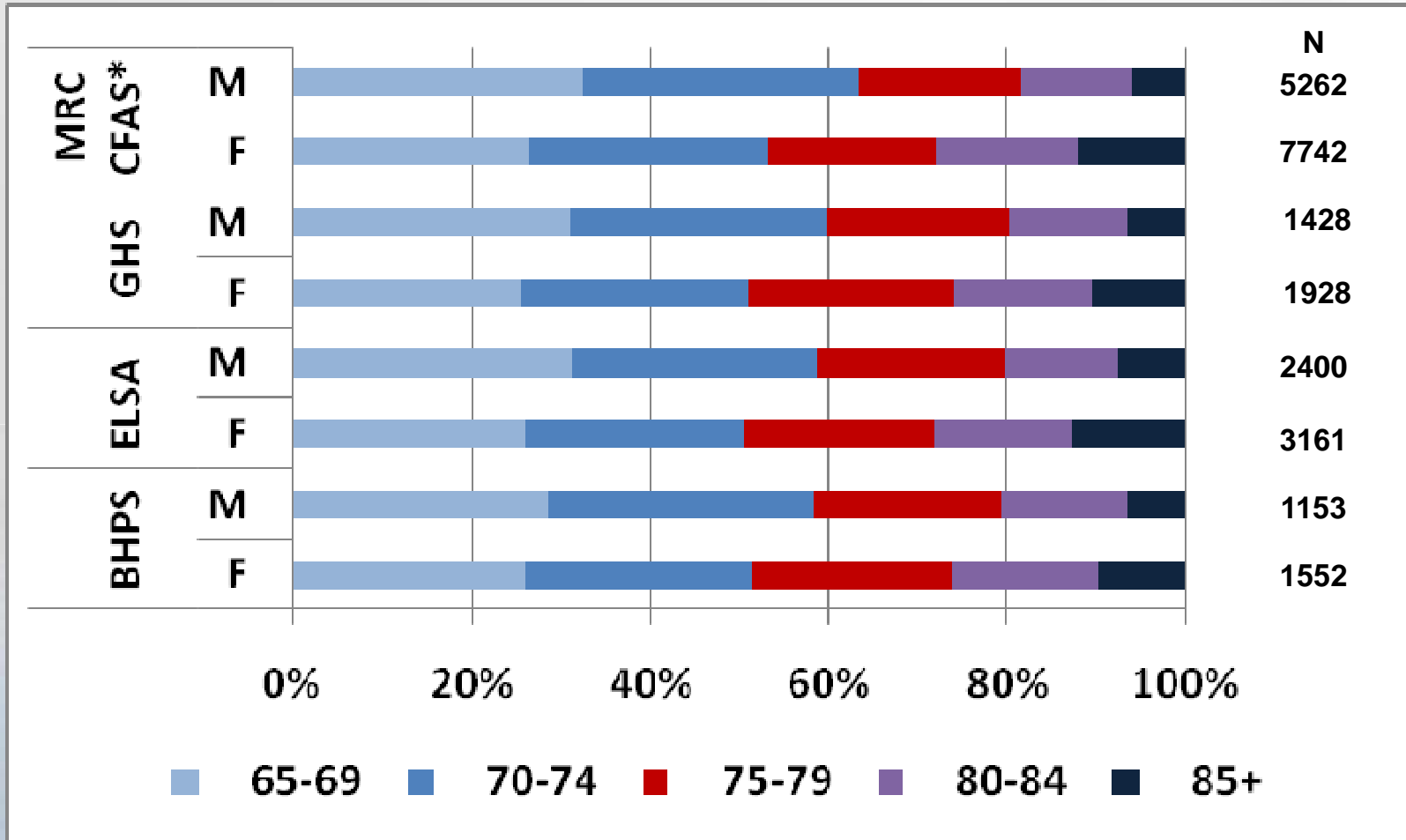
Data sources - 1

- Four nationally representative studies covering 65+ population at similar time point (2002) and containing IADL and BADL items
 - British Household Panel Study (BHPS)
 - English Longitudinal Study of Ageing (ELSA)
 - General Household Survey GHS)
 - Medical Research Council Cognitive Function and Ageing Study (MRC CFAS)
- MRC CFAS baseline was 1991 and wave 10 2001. Ideally use wave 10 but then only 75+

Data sources - 2

	BHPS	ELSA	GHS	MRC CFAS*
Year				1991/2001
Age range	No age limits	50+	65+	65+
Geographic area	GB	England	GB	E&W representative
Inclusion of institutionalised	Not initially but followed into	Not initially but followed into	No	Yes
Interview method	Interviewer administered	Interviewer administered	Interviewer administered	Interviewer administered
Use of proxies	No	No	No	Yes (n=111, 0.85%)

Data sources - 3



Data sources - 4

Activity	BHPS	ELSA*	GHS (2001/2)	MRC CFAS
BADLs				
Bathing	Y	Y	Y	Y
Toilet		Y	Y*	Y
In and out of bed	Y	Y	Y*	
Dressing		Y**	Y*	
Shoes and socks		Y**		Y
Feeding		Y	Y*	
Cutting toenails	Y		Y	Y
Medicines		Y	Y	

- Preceded by filter question
- ** dressing including shoes and socks

Data sources - 5

Activity	BHPS*	ELSA*	GHS (2001/2)*	MRC CFAS*
IADLs				
Heavy housework				Y
Shopping		Y	Y	Y
Cooking		Y	Y	Y
Snacks			Y	
Cup of tea			Y	
Personal affairs		Y	Y	
Light housework	Y*			Y
Dishes			Y	
Windows			Y	
Vacuum			Y	
Laundry			Y	
Work around house or garden		Y		
Map reading		Y		
Telephone		Y		

* Housework
only

Data sources - 6

Activity	BHPS	ELSA	GHS (2001/2)	MRC CFAS
Mobility questions				
Stairs	Y	Y	Y	Y
Indoor walking	Y		Y	
Outdoor walking	Y		Y	
Walking		Y		
Public transport			Y	Y

Used 2 cutpoints

- No difficulty/difficulty or help
- No help/ help

Data

- Substantial variation in which activities were covered in each study
- Only two activities (bathing and stairs) were covered in all four studies
- At least five activities were present in three of the studies
- GHS employed a filter question prior to four of the ADL questions (toilet, in and out of bed, dressing and feeding) - these ADLs were excluded

Methods

- Qualitative assessment of items
- Comparison of age and sex standardised prevalence of restriction for each item and each cutpoint
- Principal Component Analysis for each study to establish single underlying dimension
- Mokken analysis to determine hierarchy for each cutpoint separately and by gender and living alone/not
- Comparison of hierarchies produced for each study

Results - 1

- Internal comparison for MRC CFAS on
 - 75+ at baseline and 10 years
 - Total population v community dwelling only
- Internal comparisons showed CFAS baseline and contemporaneous 10 yr follow-up same hierarchy for 75+ so could use baseline (65+)

Results - 2

- Study-specific PCA confirmed a single underlying dimension
 - only one eigenvalue > 1 for each study
 - eigenvalues explaining 61% (BHPS), 43% (ELSA), 45% (GHS), and 76% (MRC CFAS) of the variance
 - Cronbach's alpha was between 0.72(GHS) and 0.92 (MRC CFAS), showing good internal consistency in all scales.

Using the difficulty definition

- Loevinger Scalability Coefficient (H) 0.55 (ELSA) to 0.74 (GHS) - items form a strong hierarchical scale for all studies
- Separate analysis by gender was generally confirmatory, with the exception of differences in ranking for
 - hot meal and shopping in MRC CFAS
 - dressing in ELSA.

Results - 4

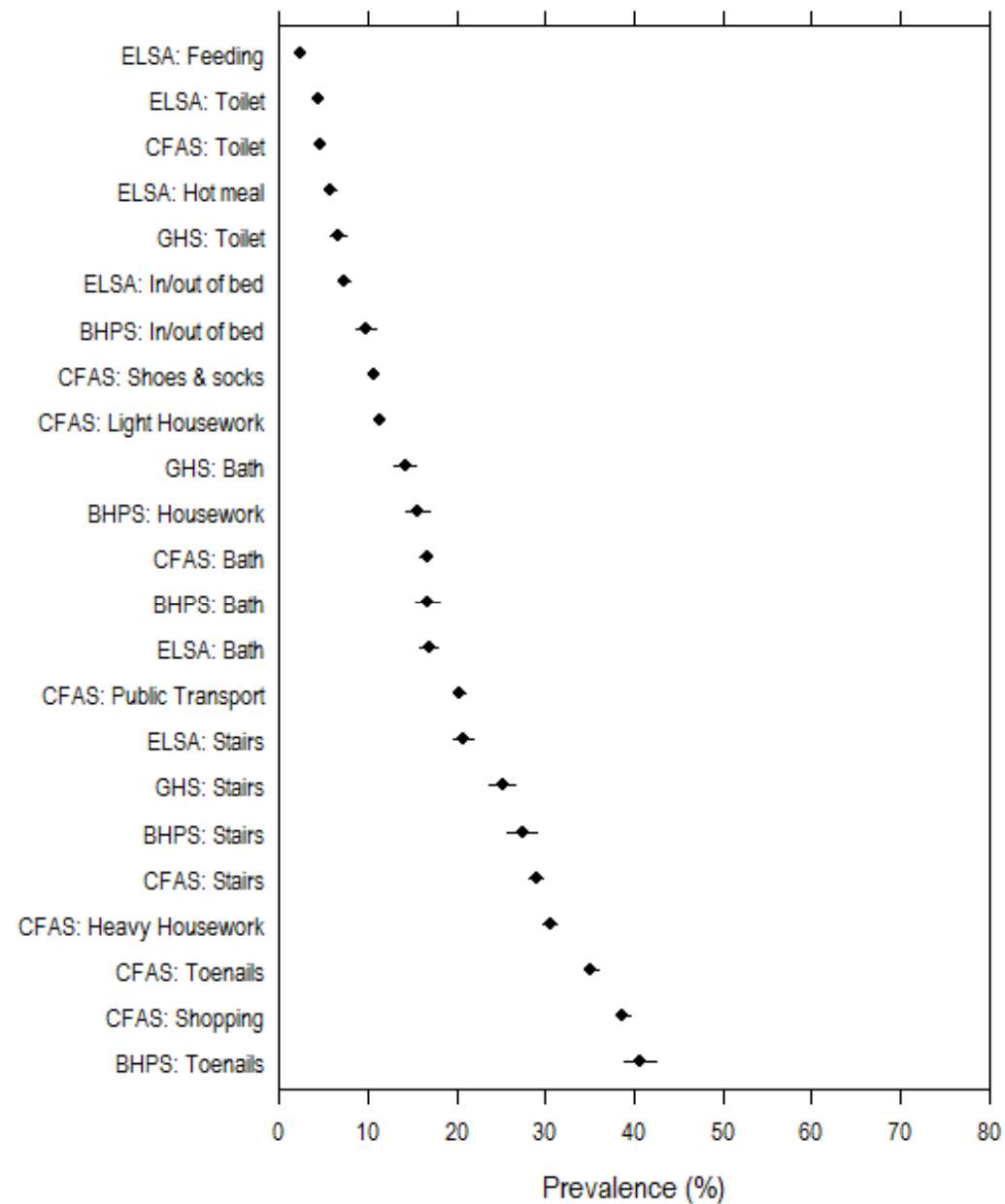
Using the needs help definition (not ELSA)

- Loevinger Scalability Coefficient (H) 0.62 (GHS) to 0.73 (BHPS) - items form a strong hierarchical scale
- Separate analysis by gender generally confirmed previous results but
 - for MRC CFAS hot meal and light housework
 - and in the GHS hot meal were ranked further up the hierarchy for men than women
 - suggests men needed help with this task at a lower level of dependency than women.

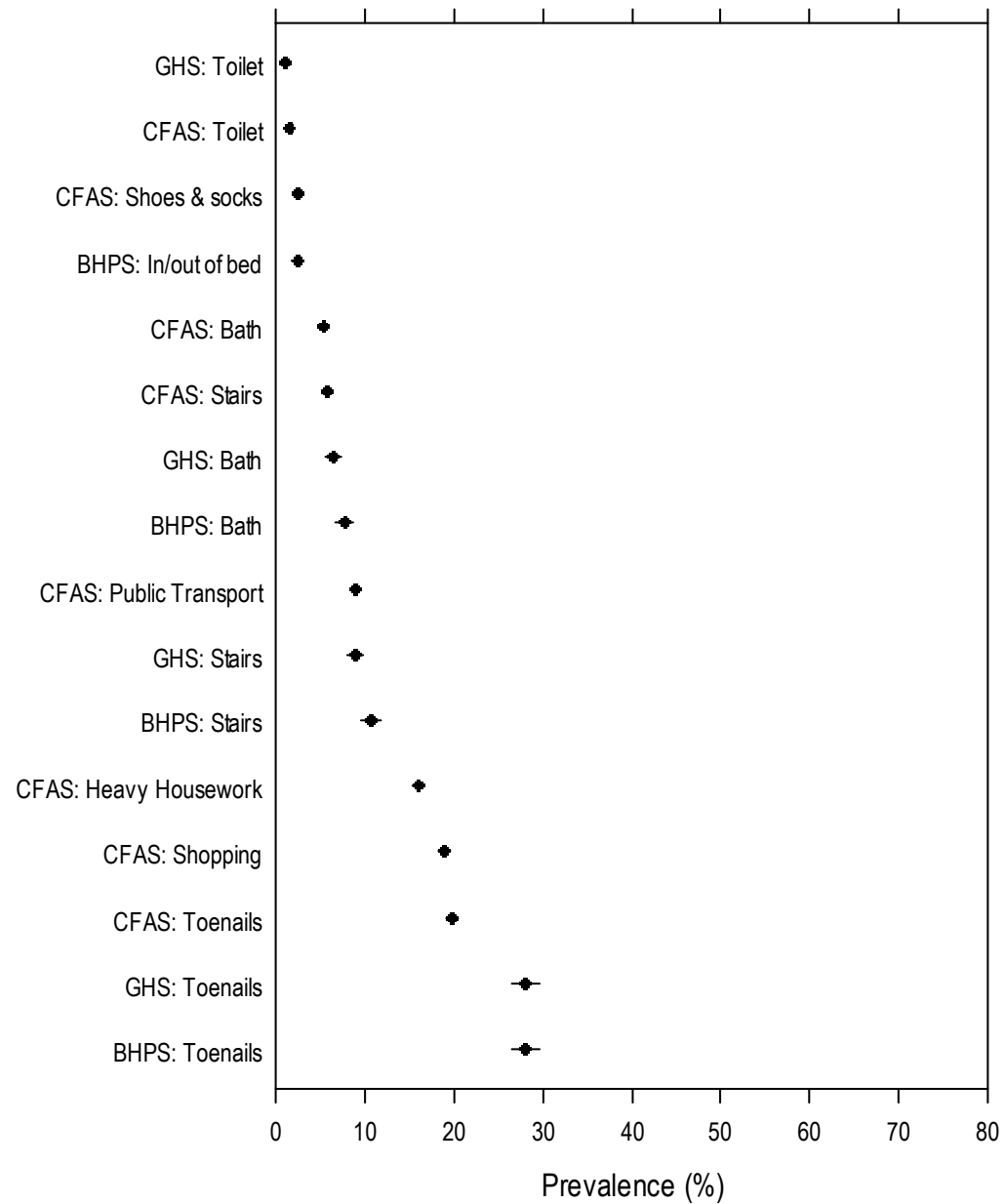
Results - 5

- Repeating analysis of MRC CFAS including those in institutions made no difference
- Separate analysis of those living alone/living with others, for both definitions, revealed a few differences
- Given variation in ranking by gender and living alone we excluded from final scale
 - (I)ADLs: hot meal (MRC CFAS and GHS)
 - light housework (needs help cutpoint only MRC CFAS)
 - dressing (ELSA).

All studies: Prevalence of 'difficulty' with ADL's people age 65+



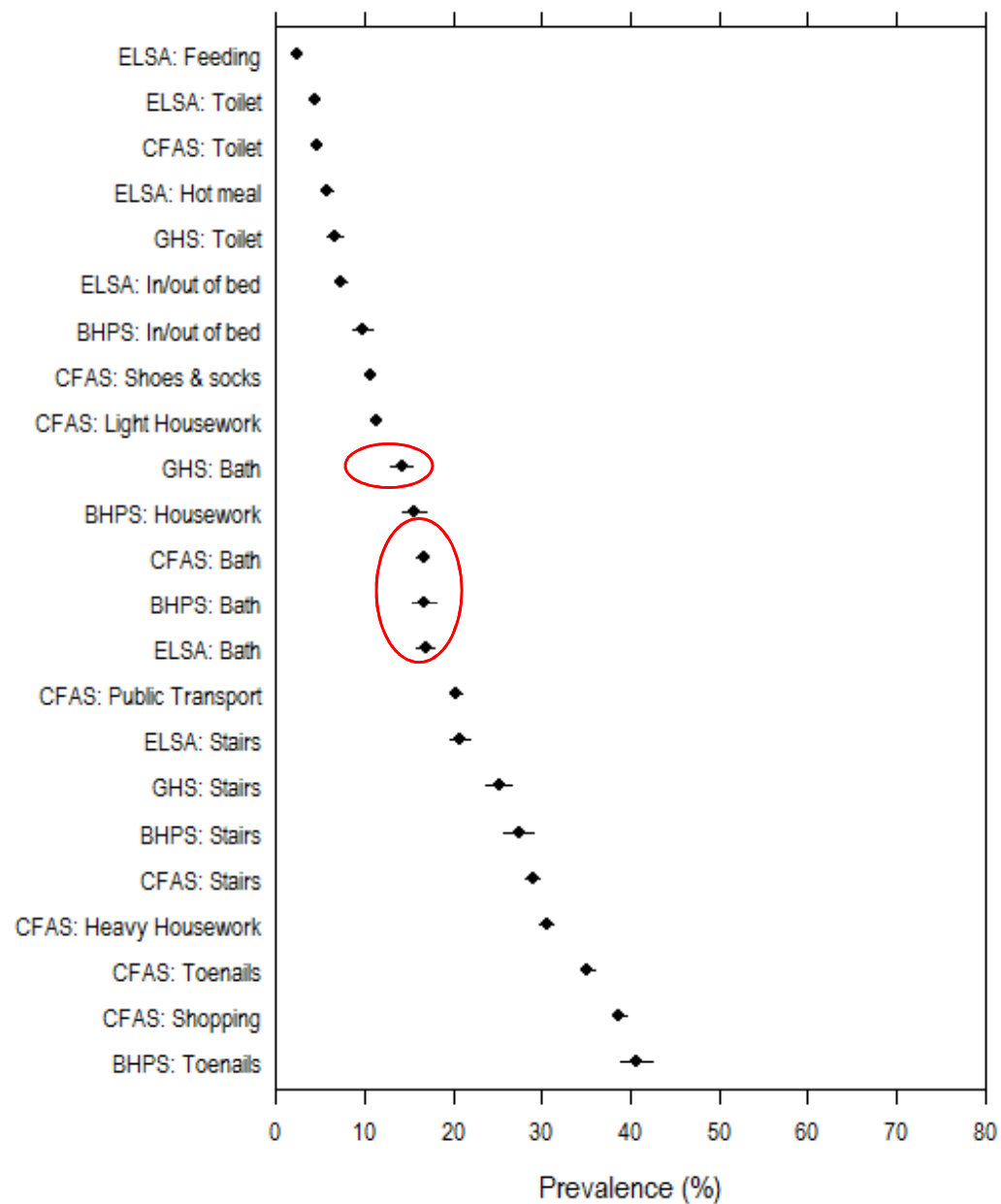
All studies: Prevalence of 'needs help' with ADL's people age 65+



Conclusions

- Hierarchies very similar
- Use hierarchy to get similar levels across studies
 - Bathing

All studies: Prevalence of 'difficulty' with ADL's people age 65+



Conclusions

- Hierarchies very similar
- Use hierarchy to get similar levels across studies
 - Bathing
- Limitations
 - Ignores differences in question wording
 - How should final level be used (difficulty with bathing v difficulty with bathing and all items below)
- Strengths
 - More systematic method of harmonising data
 - Gives suggestion of where in spectrum of disability items are missing

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MAP2030
(www.lse.ac.uk/collections/MAP2030/)

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Data sources - 4

Activity	BHPS*	ELSA*	GHS (2001/2)*	MRC CFAS*
BADLs				
Bathing	Do you usually manage to bath, shower or wash all over ?	Bathing or showering	Do you usually manage to bath, shower or wash all over ?	Are you able to wash all over or bathe ?
Toilet		Using the toilet, including getting up or down	Do you usually manage to get to the toilet?***	Are you able to get to or use the toilet?
In and out of bed	Do you usually manage to get in and out of bed ?	Getting in or out of bed	Do you usually manage to get in and out of bed?***	
Dressing		<i>Dressing, including putting on shoes and socks</i>	do you usually manage to dress and undress yourself**	
Shoes and socks		<i>Dressing, including putting on shoes and socks</i>		Are you able to put on your shoes and socks or stockings
Feeding		Eating, such as cutting up food	do you usually manage to feed yourself**	
Cutting toenails	Do you usually manage to cut your toenails		do you usually manage to cut your toenails yourself or does someone else do it for you	Are you able to cut your own toe nails
Medicines		Taking medications	do you need medical care such as taking medicines or pills, having injections or changes of dressing	

Data sources - 5

Activity	BHPS*	ELSA*	GHS (2001/2)*	MRC CFAS*
IADLs				
Heavy housework				Are you able to do heavy housework (for example washing floors)
Shopping		Shopping for groceries	Do you do the household shopping yourself	Are you able to shop and carry heavy bags
Cooking		Preparing a hot meal	Do you prepare hot meals for yourself	Are you able to prepare and cook a hot meal (if you had to)
Snacks			Do you prepare snacks for yourself	
Cup of tea			Do you make cups of tea	
Personal affairs		Managing money such as paying bills and keeping track of expenses	Do you deal with personal affairs – for example, paying bills, writing letters – by yourself	
Light housework	Housework***			Are you able to do the light housework
Dishes			Do you wash up and dry dishes	
Windows			Do you clean windows inside yourself	
Vacuum			Do you use a vacuum cleaner	
Laundry			Do you wash small amounts of clothing by hand	
Work around house or garden		Work around house or garden		
Map reading		Using a map to figure out how to get around in a strange place		
Telephone		Making telephone calls		

Data sources - 6

Activity	BHPS*	ELSA*	GHS (2001/2)*	MRC CFAS*
Mobility questions				
Stairs	Do you usually manage to get up and down stairs or steps	Climbing several flights of stairs without resting And Climbing one flight of stairs without resting	Do you usually manage to get up and down stairs or steps	Are you able to go up and down stairs
Indoor walking	Do you usually manage to get around the house (except for any stairs)		Do you usually manage to get around the house (except for any stairs)	
Outdoor walking	Do you usually manage to go out of doors and walk down the road		Do you usually manage to go out of doors and walk down the road	
Walking		Walking 100 yards		
Public transport			Do you use public transport nowadays	Are you able to get on a bus

Used 2 cutpoints

- No difficulty/difficulty or help
- No help/ help