

The reliability and validity of global questions on disability:

results from a cross-survey comparison of disability estimates in Great Britain



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Aims of the Research

Two broad aims:

- Existing surveys: why did estimates differ (prevalence and absolute numbers)
- Consultation (disability organisations, experts): sources used, gaps and improving/tailoring dissemination

Three types of estimates based on global questions evaluated

- Limiting long-standing illness or disability
(all ages 16+)
- Work-limiting disability
(to state pensionable age or SPA)
- DDA (Disability Discrimination Act) defined disabled
(all ages 16+)

Limiting **long-standing** illness (LLSI) : harmonised version

- Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time or is likely to affect you over a period of time?

If yes,

- Does this illness or disability (do any of these illnesses or disabilities) limit your activities in any way? Yes/No

Census 1991 and 2001: limiting **long-term** illness (LLTI)

Census 1991

- Do you have any long-term illness, health problem or **handicap** which limits your daily activities or the work you can do?

Include problems which are due to old age

Yes/No

Census 2001

- Do you have any long-term illness, health problem or **disability** which limits your daily activities or the work you can do?
- Include problems which are due to old age.

Yes/No

Work Limiting Disability

- **LFS** (1 filter + 2 questions)
 - long-term health problem or disability that you expect will last more than a year (*if yes*)
 - restricted in the kind and/or amount of paid work you **might do**
- **FRS** (1 question, 3 responses)
 - restricted in amount and/or type of work **can do** because of an injury, illness or disability (unable, restricted, not restricted) (FRS-1)
 - As above + long-term health problem filter (derived FRS-2)

DDA Definition (LFS version)

- Do you have any health problems or disabilities that you would expect to last for more than a year? *(If yes)*
- Do these health problems or disabilities, when taken singly or together, substantially limit your ability to carry out normal day-to-day activities?
If you are receiving treatment, please consider what the situation would be without medication or treatment
 - plus progressive conditions (e.g. cancer)
 - plus people with a DDA disability in the past

Methods: Reliability and Validity

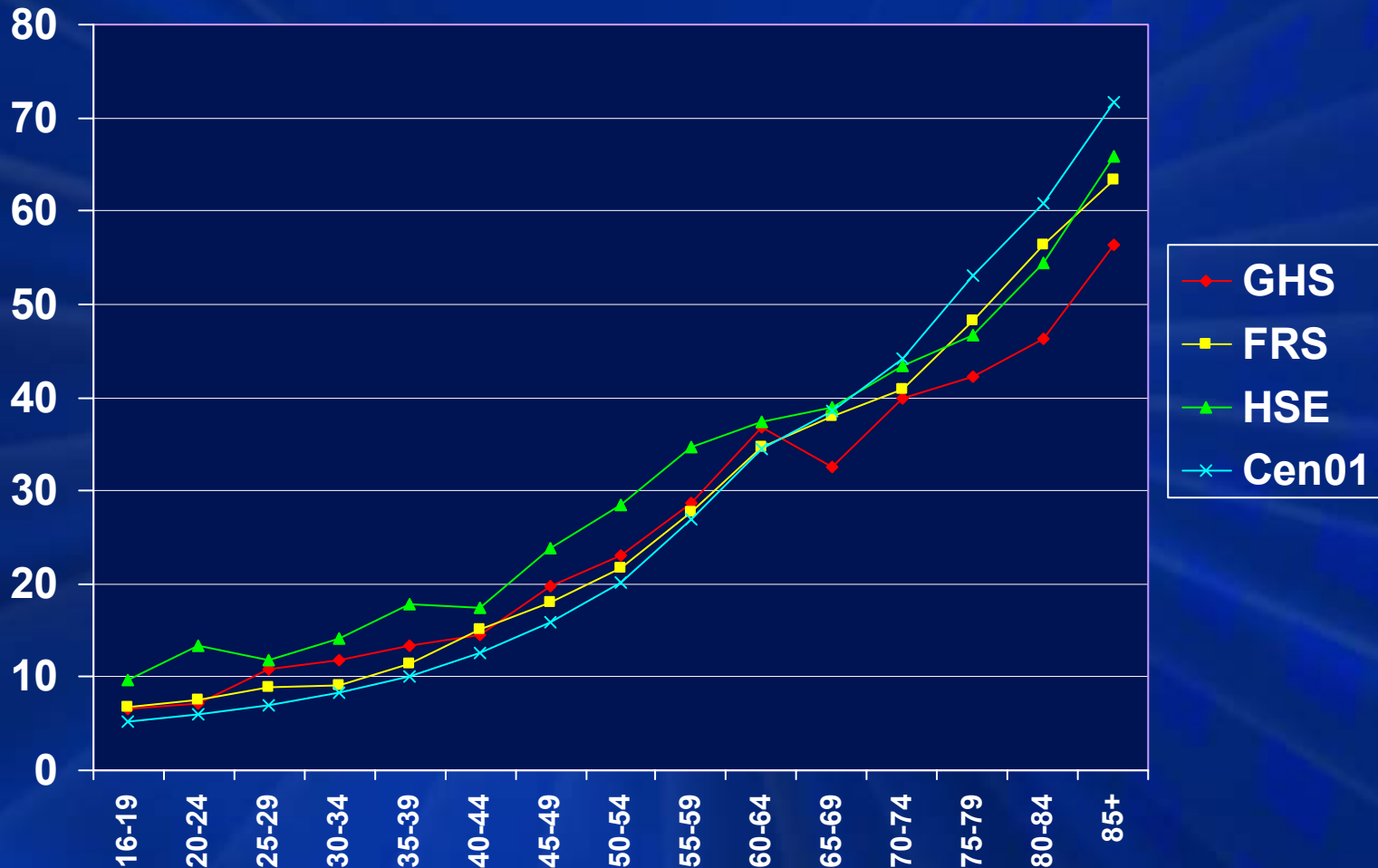
- Reliability: consistent results from same subjects over time (test-retest), by different interviewers (inter-rater), in different contexts (portability)
- Validity:
 - **Criterion**: no 'gold' standard measure
 - **Construct**: association between indicator and conceptually related measure
 - **Content**: (or face) validity
- Secondary analysis of existing data places severe limits on reliability/validity testing

Empirical Comparisons – Q1 (a)

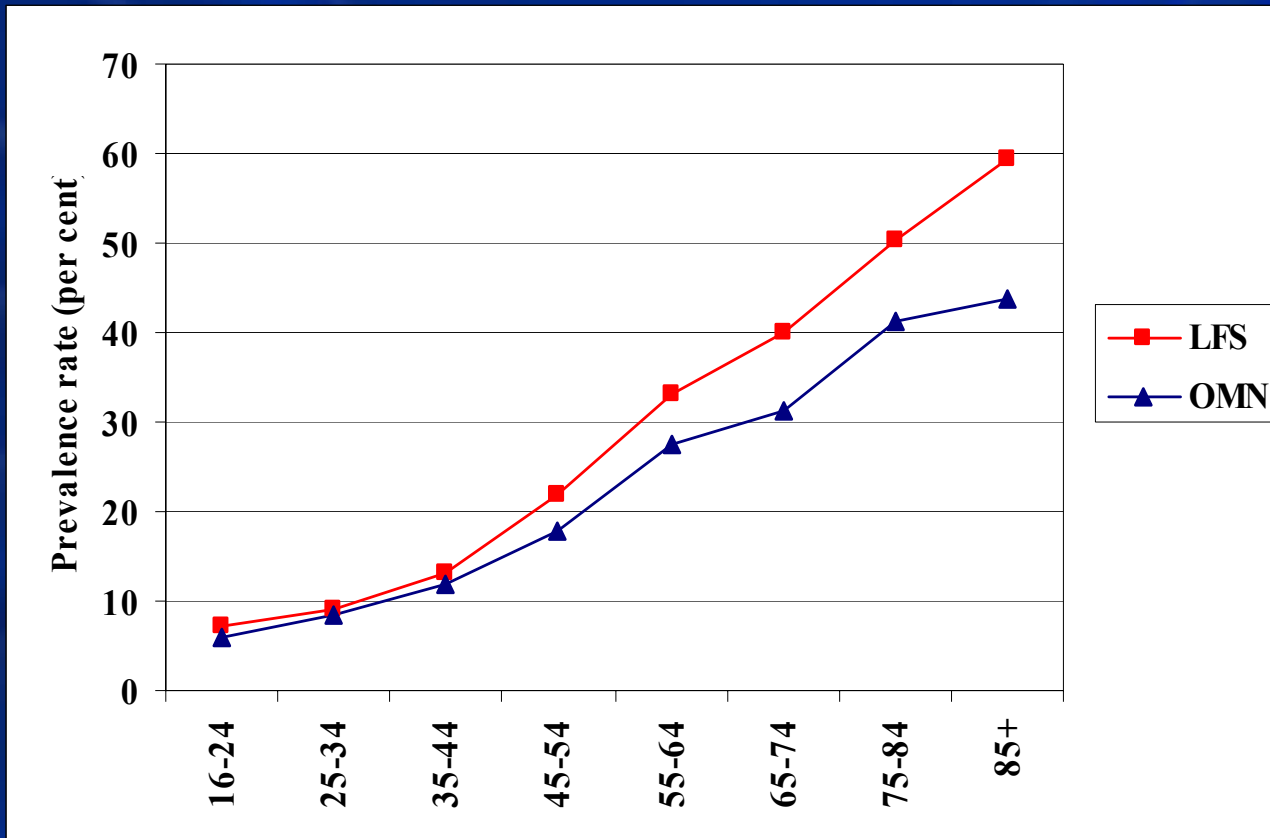
- Do estimates based on the **same question**, covering the **same population** and for the **same time period** differ between surveys? (**reliability/portability**)
 - overall and age/sex specific rates
 - survey context, mode, question order, proxy responses
- **Analysis approach:**
 - data-sets for 2001, or closest year
 - cross-sectional (e.g. LFS first wave only), adults 16+
 - except for selection probability weights, no grossing, non-response weights
 - age-standardised rate (especially when comparing with earlier/later estimates)

LLSI 2001, by age (FRS, GHS, HSE, Cen01)

Percent



DDAc, by age, 2001, (LFS vs Omnibus)



Summary: Same question, same year, same population, different surveys – Q1 (b)

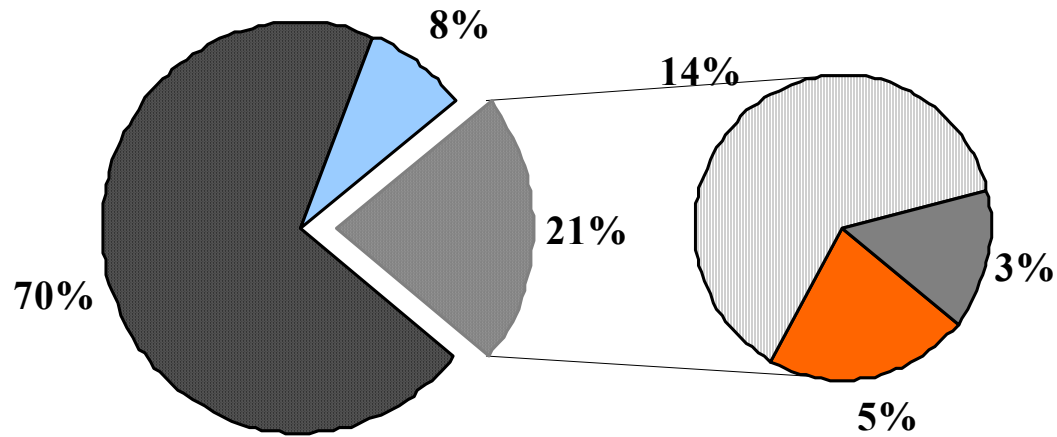
- **LLSI** (GHS, FRS, Omnibus, HSE, Cen01)
 - range 23% - 24%, (21% Cen01, 26% HSE)
 - more similar pre-retirement (<65)
 - sensitive to q wording (handicap vs disability – 5 pp higher in Cen01 v Cen91)
 - HSE - context effect, higher rates of reporting
- **DDAc** (LFS, OMN)
 - Question order effects (LFS higher: 6 pp@ 25%)
- **WLD** (LFS, FRS-2)
 - significant difference (LFS higher: 3 pp @18%)
 - why? Different question, context effects

Empirical Comparisons – Q2 (a)

- Are questions measuring similar underlying concepts associated? (**convergent validity**)
 - Examine patterns of overlap between responses by the **same individual** to **different questions** which essentially tap into the same underlying construct (eg. DDAc vs WLD) in the **same survey**
- Analysis approach:
 - Cross-tabulations (% overlaps)
 - measures of association (kappa)

Overlaps: same person, different measure

LFS - WLD & DDAc to SPA



Overlaps: same person, different measure (convergent validity - summary) – Q2 (b)

- Overall % agreement, kappa (association)

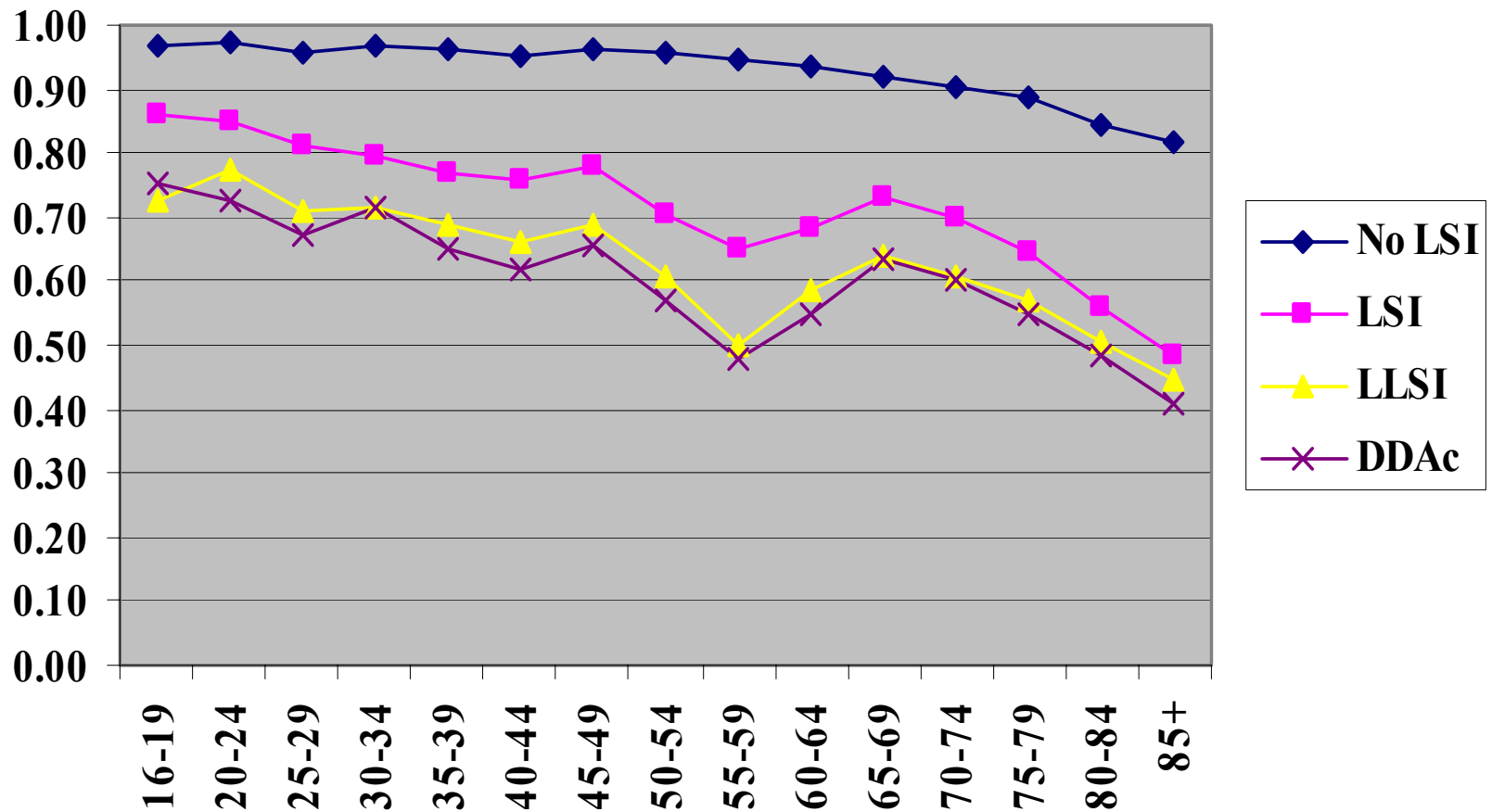
	all	K	inconsistent
LLSI v DDA (all)	90%	0.7	3/26=12%
LLSI v WLD (SPA)	95%	0.8	1/18=1%
DDA v WLD (SPA)	93%	0.7	5/21=24%

- good overall agreement / overlap
- some response variation (eg. people say yes to WLD, but 'no' to DDA (5% of 21%), comprehension issues, labour market?

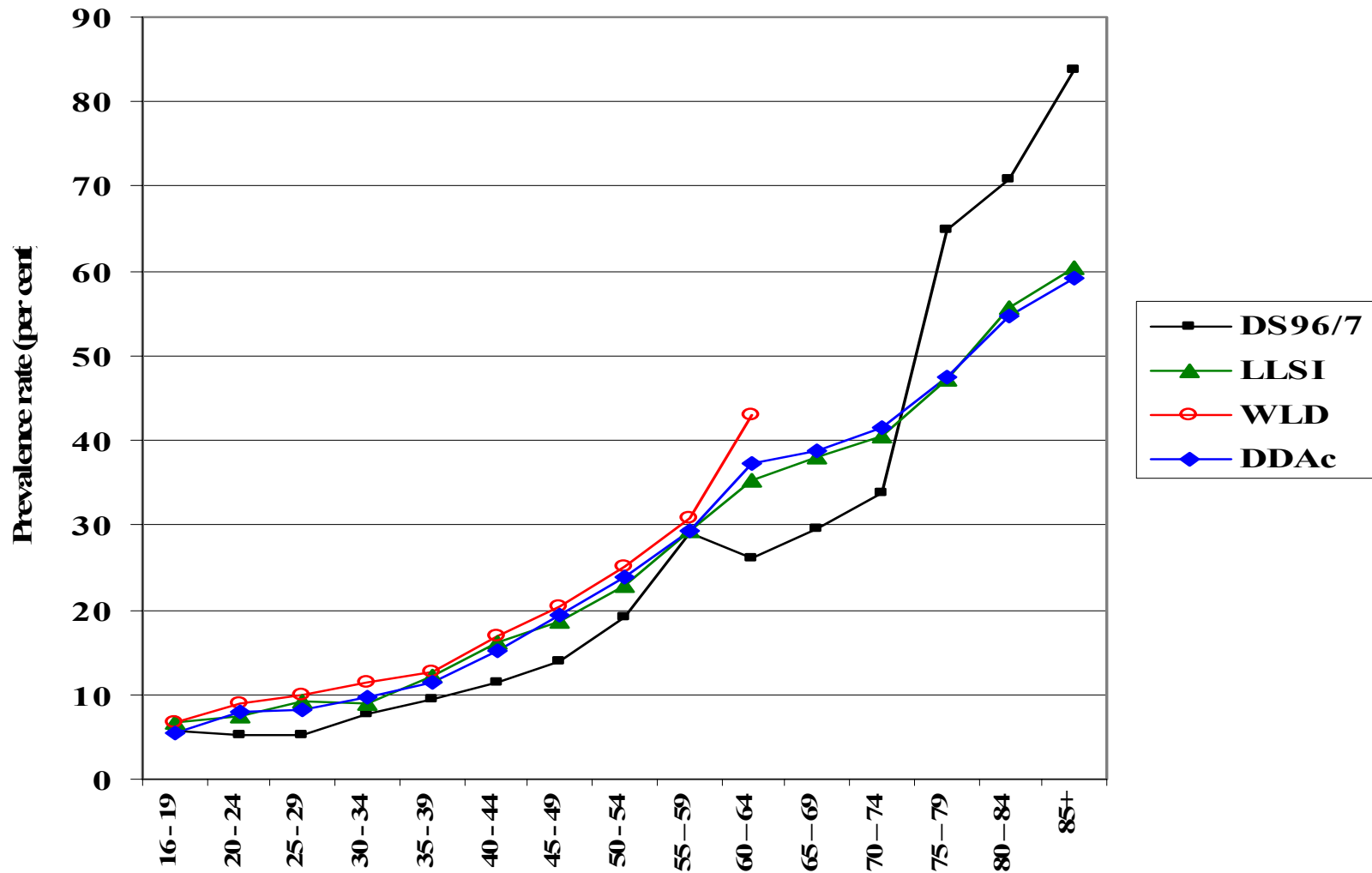
Empirical Comparisons – Q3 (a)

- Do single-item questions discriminate by level of disability? (**discriminant validity**)
 - Limited data due to lack of severity indicator, therefore check if implicit gradient in disability severity holds (e.g. DDA>LLSI>LSI>not disabled)
- Analysis approach: compare mean EQ5D scores by age and sex of not disabled, LSI only, LLSI only, DDA current disabled.

Mean EQ5D scores by degree of (implied) severity – Q3 (b)



Different estimates, by age group



Sources of variation between estimates -1

- **Who is included?** Population coverage
 - non-coverage (age group, communal estb, hard to reach, geography)
 - estimates relating to specific age groups (all, adults, SPA)
- **What is being measured?** Definitions
 - global estimates similar to SPA, by age & overall (e.g. LLSI=15.7%, DDAc=15.4%), but not older
 - global estimates higher than disability survey estimates (e.g. DS96/7: 12.4% to SPA)

Sources of variation between estimates -2

How it is being measured?

- Differences because of
 - question wording (~ 33% Cen01 v Cen91)
 - question order (~33% LFS v Omnibus)
 - filters/screen (false negatives, ~30% HSE01)
 - self-reports (false positives, ~33% LFS)
 - proxies (more proxy, lower estimates, ratio 3:1 LFS, FRS, GHS)
 - context/survey sponsorship effects (~6% HSE v FRS)
 - interview mode (self-completion v tel v f-to-f)

Technical review - suggestions for future (1)

- **Primary collection**

- distinguish clearly between ill-health and impairment/disability (**no filter on health**)
- incl indicator of severity in global question
- q testing, harmonisation of global q's
- specialist survey at regular intervals, with global question/s to cross-walk, validate, calibrate
- if 'can do' measure then info on use of devices (affects long-term trends)
- longitudinal panel to understand underlying processes (incidence, recovery, mortality), causes & risk factors

Publication and Contact details

- ***“Review of disability estimates and definitions”***
DWP In-house report 128 (2004)
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