



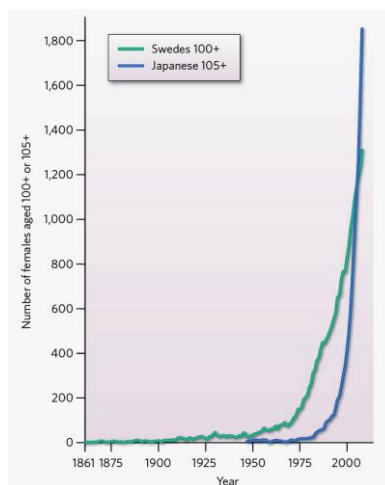
# Methodological Challenges in International Centenarian Research

**Daniela S. Jopp**

*Talk Prepared for  
FORS – SSP Methods and research meetings*

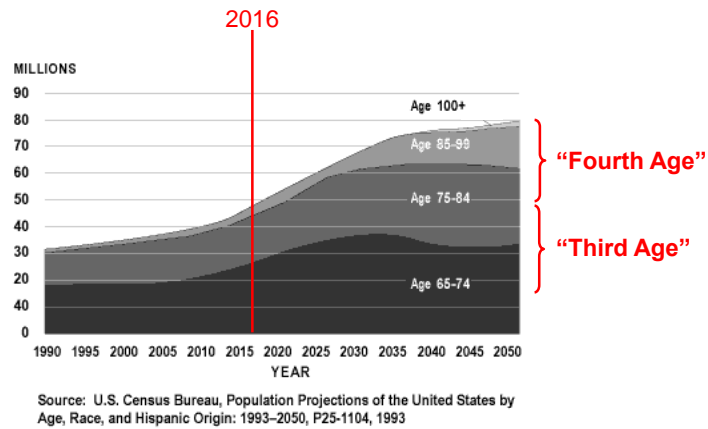
*Unil*  
UNIL | Université de Lausanne

## The Emergence of the Very Old



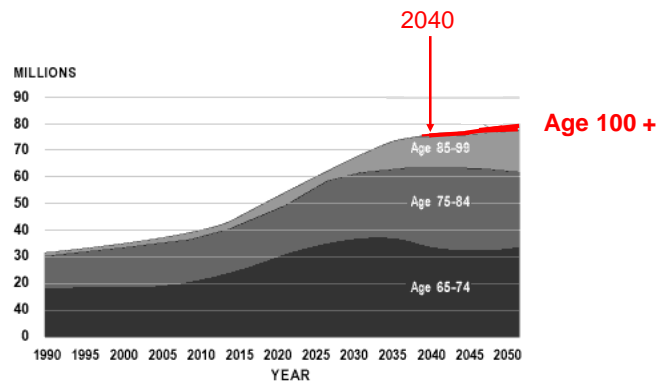
Vaupel, 2010

## U.S. Population Aging 65 Years and Older: 1990 to 2050



3

## U.S. Population Aging Projections: Up to a Million Centenarians in 2040



4

## Centenarian Research So Far

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- Despite rising numbers worldwide, relatively little research.
- Due to small sample sizes, mostly descriptive analysis in the past.
- Studies focus on demographic development, medical aspects and what may responsible for extreme longevity.
- Only few research groups investigate other (e.g., psychological) aspects in centenarians.

5

## Why Study Centenarians?

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- **Unique character of very old age**
  - What are the specific profiles of characteristics?
  - Particular health issues? Cognitive functioning? Social networks?
  - What service needs to they have?
  - *Important questions to plan for future of our society*
- **Centenarians are survivors**
  - What has contributed to longevity?
  - *More difficult – how to compare centenarians with people who did not live so long (i.e., are dead)...*

6

## **Problems With Centenarian Research**

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- Research questions/Theoretical models
- Recruitment
- Participation levels
- Assessment
- Analysis

7

## **Research questions/Theoretical models (1)**

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- No theoretical models for oldest-old/centenarian population
  - Default: they are the same as younger groups
- Use of same criteria or different criteria?
  - E.g., successful aging, frailty
- “Just” replication of work done with younger groups boring, may not be appropriate
  - Models may not work

8

## Research questions/Theoretical models (2)

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- Step-wise procedure maybe useful
  - Explorative studies to build up knowledge base
  - Comparison with younger groups
  - Development and testing of models specific for oldest-old age group
- Identification of research questions where oldest-old population has added value
  - Investigation of interplay of personal resources and psychological strengths of particular interest, as centenarians provide “testing-the-limits” situation for capacity to adapt.

9

## Recruiting Centenarians

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- Key issue: Sampling bias
  - Many studies: convenience sample
  - Recruitment via organizations (e.g., churches)
  - Ideally: cohort studies (e.g., Demark)
  - Second best choice: recruitment from registration list
    - Address lists (e.g., Germany: city registry list; USA: voter registry list)
    - Comparison for representativeness with CENSUS data
- Recruitment difficulties
  - Participants cannot be identified
  - Families cannot be convinced
  - Centenarian is not willing or too sick (or has died)

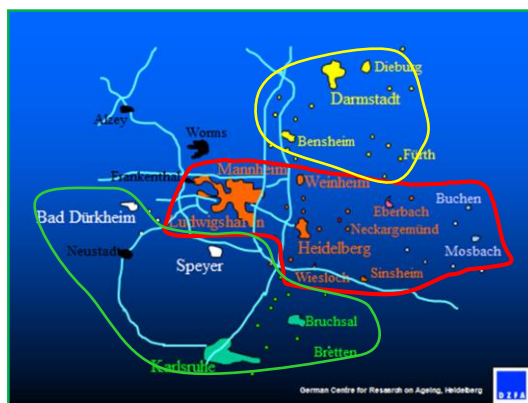
10

## Example: Heidelberg Centenarian Studies (HD100-I, HD100-II)



11

## Recruitment HD-100 Studies: Radius of 50 km Around Heidelberg



DA, DA-Land	
HD100	HD100-II
46	13
Communalities	

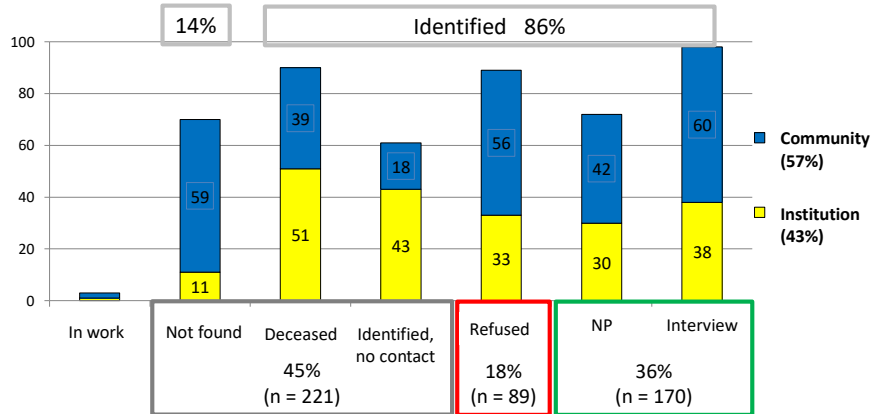
HD, MA, LU, RNK, NOK	
HD100	HD100-II
84	21
Communalities	

KA, KA-L, Speyer, BD	
HD100	HD100-II
57	20
Communalities	

HD100	
HD100-II	Persons
189	40
204	415

## Recruitment Overview: HD100-II

Addresses of 592 individuals;  $n = 483$  received study invitation  
(i.e., all individuals who were between 100.1 and 100.11 old until 30.11.2012 )



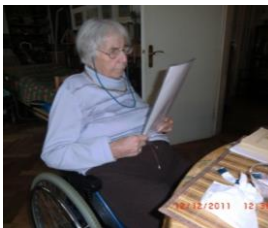
## Close Monitoring of Participation vs Refusal Important: Experiences from HD100-II



Pbn 375, 100.9 years (with son), MMSE: 0

12% of centenarians with dementia refuse participation.

→ Family members show interest in study and participate.



Pbn 104, 100.3 years, MMSE: 16

45% of cognitively able centenarians refuse participation.

→ Centenarians decide by themselves (*This is of no interest to me*) and refuse participation.

(Consequence: change in recruitment material)

## Recruitment Monitoring: Participation Levels

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- Level T0:
  - Identified (i.e., contact with proxy), but no participation
- Level T1:
  - Identified, and proxy provided basic information via telephone
- Level T2:
  - Participation in face-to-face interview (centenarian, proxy)
- Level T3:
  - Centenarian (with cognitive restrictions) provides partial data
- Level T4:
  - Centenarian provides full data

15

## Population to T0

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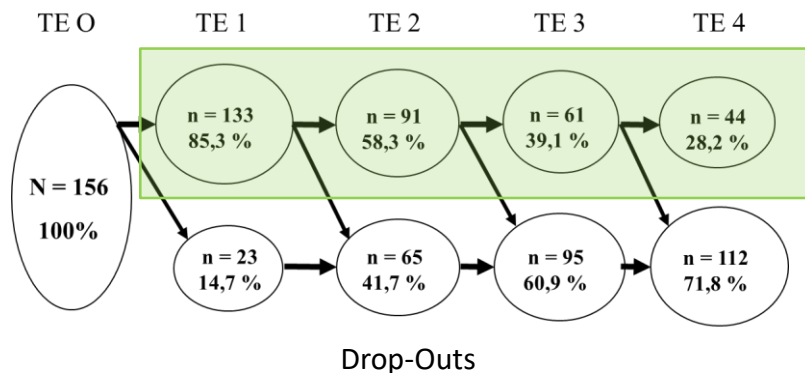
- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• <u>Population</u><br/><b>HD100-I: N = 281</b></li> </ul>  | <ul style="list-style-type: none"> <li>• <u>Population</u><br/><b>HD100-II: N = 585</b></li> </ul>  |
| <ul style="list-style-type: none"> <li>• <u>Verification</u> <ul style="list-style-type: none"> <li>– 22 individuals not found</li> <li>– 93 individuals deceased before contact</li> <li>– 10 with wrong age</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <u>Verification</u> <ul style="list-style-type: none"> <li>– 100 individuals not found</li> <li>– 114 individuals deceased before contact</li> <li>– 0 with wrong age</li> </ul> </li> </ul> |
| <ul style="list-style-type: none"> <li>• <u>Participation level T0:</u><br/><b>HD100-I: n = 156 (55,5%)</b> <ul style="list-style-type: none"> <li>– 23 men &amp; 133 women</li> </ul> </li> </ul>                                   | <ul style="list-style-type: none"> <li>• <u>Participation level T0:</u><br/><b>HD100-II: n = 371 (63,4%)</b> <ul style="list-style-type: none"> <li>– 43 men &amp; 328 women</li> </ul> </li> </ul>                                   |



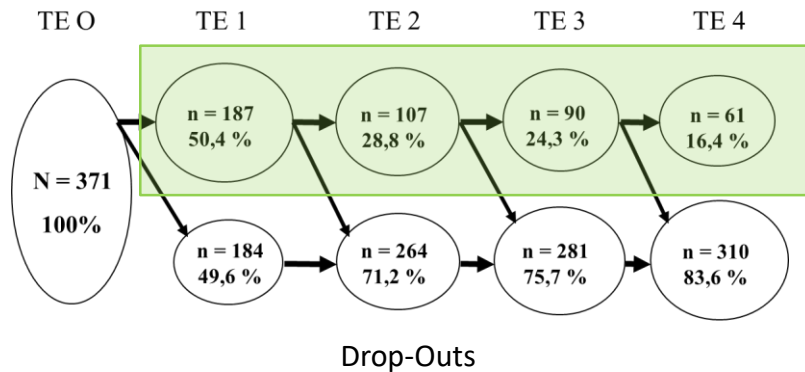
## Participation Levels T0 to T2

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• <u>Participation level T0:</u><br/> <b>HD100-I: <math>n = 156</math> (100%)</b> <ul style="list-style-type: none"> <li>- No interest <math>n = 14</math></li> <li>- Health <math>n = 16</math></li> <li>- Dementia <math>n = 16</math></li> <li>- Too much effort <math>n = 11</math></li> <li>- Other reasons <math>n = 8</math></li> <li>- No information <math>n = 2</math></li> </ul> </li> <li>• Basic information of <math>n = 42</math> via telephone (T1).</li> <li>• <u>Interview T2:</u><br/> <b>HD100-I: <math>N = 91</math></b> <ul style="list-style-type: none"> <li>– 10 men &amp; 81 women</li> <li>– 85 proxy interviews</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <u>Studienteilnahme TE 0:</u><br/> <b>HD100-II: <math>n = 371</math> (100%)</b> <ul style="list-style-type: none"> <li>- No interest <math>n = 12</math></li> <li>- Health <math>n = 7</math></li> <li>- Dementia <math>n = 32</math></li> <li>- Too much effort <math>n = 21</math></li> <li>- Other reasons <math>n = 3</math></li> <li>- No information <math>n = 189</math>.</li> </ul> </li> <li>• Basic information of <math>n = 80</math> via telephone (T1).</li> <li>• <u>Interview T2:</u><br/> <b>HD100-II: <math>N = 107</math></b> <ul style="list-style-type: none"> <li>– 12 men &amp; 95 women</li> <li>– 98 proxy interviews</li> </ul> </li> </ul> |
|---|---|

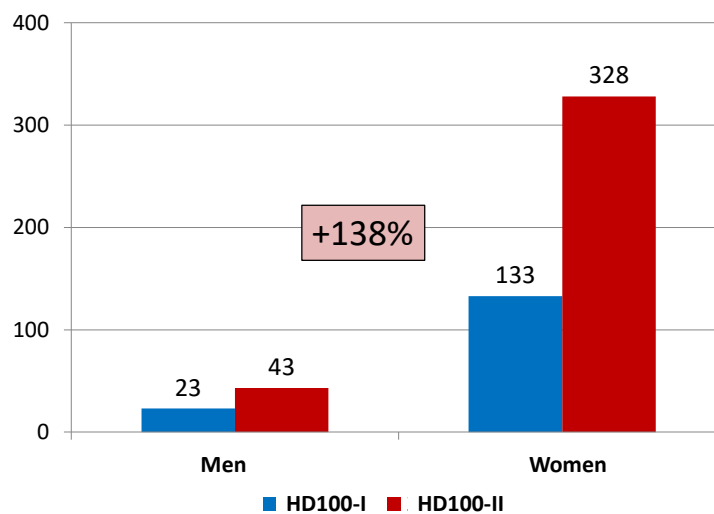
## All Participant Levels: HD100-I



## All Participant Levels: HD100-II



## Example on Usefulness of T0 Information: Number of Identified/Verified Centenarians



## Assessment: Information Sources (1)

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- **Centenarian**
  - Able to provide reliable information and self-report
- **Close other (proxy participant)**
  - Mostly child involved in care, sometimes also legal representative
  - Complements information provided by centenarian
  - Useful to double-check
  - Some centenarians have no proxy
  - Centenarian can deny involvement of proxy
  - “Usefulness” of info depends on measure and level of insight (factual vs evaluation such as well-being, personality)

21

## Information Sources (2)

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- **Observer rating**
  - Provided by interviewer
- **Ideal**
  - Obtain information of all sources, but...
  - What to do with discrepant information – try to clarify? (addl step... ; what about confidentiality? Need to consider potential implications)
  - What to do with sensitive information on potential ongoing issue (e.g., dementia, depression?)

22

## Issues with Assessment

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- **Very old: impairment wide-spread**
  - sensory (vision, hearing, mobility)
  - cognitive impairment
- **Mobility issues: Visits at home necessary**
  - How to standardize assessment at home?
  - How to get rid of family member in the testing situation??!
  - Instead of self-administered questionnaire, interview situation

23

## How to modify/adjust questionnaires

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- **Visual and auditory restrictions:**
  - Answering scale in large print to support
  - Amplifying device for auditory problems
- **Cognitive capacity: Reduce cognitive load**
  - Simple wording needed
  - No double negation
  - Reduction in numbers of answering format

24

## Example: Interview version of questionnaires

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### Satisfaction with Life Scale (Pavot & Diener, 1993)

- **Original item:**
  - I am satisfied with my life.
  - Answering format: 1 = strongly disagree, to 7 = strongly agree
- **Adjusted item:**
  - Are you satisfied with your life?
  - Answering format: 1 = not at all, to 5 = very much

25

## Example: Reduction of cognitive load via visual rating scale

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“In general, how would you rate your overall health?”

5 ——— 4 ——— 3 ——— 2 ——— 1  
 excellent    very    good    fair    poor  
                   good

26

## Clear Introduction to Set Stage

[sign consent and video consent] **MAINTAIN EYE CONTACT**

Mr/Ms. \_\_\_\_\_, I wanted to thank you for meeting me for this interview today and for taking the time to answer our questions. The interview should last about an hour and a half. During this time I'll be asking you some questions about your background, health, social contacts and more. We will also be doing a few brief questions on basic facts and maybe some mild physical movements too. At any time during the interview, if you don't want to answer a specific question, that's ok, just let me know. We will do a short break at about half of the interview, but if you wish additional breaks, please let me know. OK, do you have any questions for now?

A. **BACKGROUND.** Alright... so there will be different types of questions during this interview. Much later in the interview, I'll be asking you some open-ended questions during which you can elaborate and I am looking forward to hearing your answers in that part, but for right now, this first part is going to be pretty structured. There will be some simple short-answer questions and also multiple-choice questions. To answer the multiple-choice questions, I will show you an answer key, like this one [Show *PRACTICE KEY*], and I will ask you to provide me with the **SINGLE** answer that best fits your answer (there are no right/wrong answers). Let's do a practice one, okay? If I said, "How are you feeling today?" you would look at these choices and say?

Excellent  
Very Good  
Good  
Fair  
Poor

Great, that's the idea. OK. Let's get started with a few simple short-answer questions about your background...

1. Mr./Mrs. [NAME], how old are you?: \_\_\_\_\_

[age reported]

27

## Answering Keys: Visual Support

### PRACTICE KEY

5	4	3	2	1
excellent	very good	good	fair	poor

## Depending on Cognitive Capacity: Different Questionnaires

- **shortMMSE less than 5: no in-person participation**
  - If participant has mentioned areas of interest (health, social), do some more questions from those sections. Then ask How to become a centenarian & life motto (Part 2, last question) to conclude
- **MMSE 5-10: limited in-person participation**
  - E.g., Health and well-being is priority (marked Yellow & Bold); For questions marked Yellow try, if you feel it works.
- **MMSE 11-14: reduced (possibly full) participation**
  - try full interview, if participant has trouble to understand the items, use those marked in yellow.
- **MMSE 15+: full interview**

29

Fordham Centenarian Study Questionnaire DSJ/YM 5.18.2011

MMSE less than 5: If participant has mentioned areas of interest (health, social), do some more questions from those sections. Then ask How to become a centenarian & life motto (Part 2, last question) to conclude

MMSE 5-10: Yellow & Bold (•) is priority; Just Yellow (•) also, if you feel it works

MMSE 11-14: try full interview; if participant has trouble understanding the items, use those marked in yellow (•)

MMSE 15+: full interview

Part 1:

Sociodemographic information (pp. 6-12):

- Race, ethnicity
- Marital status, income
- Children, grandchildren
- Type of residence, number of people in household
- Life achievements: education, profession, still working, financial resources

Cognition (pp. 13-14):

- Short MMSE: Orientation, Repetition/short term mem., Attention/Calculation, Memory

Health restrictions:

- Subjective health: general, 5 years ago (p. 15, # 1, 2)
- Diseases (current)
- Classification: Survivors, Delayers, Escapers
- Pain (p. 17, #7; p. 18 # 7a); Health restrictions (if 8)
- Fatigue (p. 18)
- Depression (Yes/No; 20 items – HD100 plus additional; p. 19)
- Accommodations needed (walking, vision, hearing; p. 20)
- Subjective health: subj vision, subj hearing; p. 20, # 11a, b
- Grip strength (p. 21)
- ADL/IADL (pp. 22-25)

Social support:

- Helper in daily activities (p. 26)
- Relationship to child that is most involved in care (pp. 26-32)
- Relationship quality (p. 32-33)
- Family integrity (p. 34)

Attitude, Well-being:

- Experience of aging (p. 35)
- Aging satisfaction (Lawton; p. 35-36)
- Life satisfaction (Briener), and NEO items (p. 36)

Part 2:

Well-being, Personality, Strengths:

- Personality: Short version BFI (John) additional items (p. 4)
- Control beliefs, basic need satisfaction: autonomy, competence, relatedness, proxy control (pp. 5-6)
- Social contacts (# visits, spent time, # talked to, # confident, # ~~social~~contact, seen as often as wanted; pp. 7-8)
- Loneliness (p. 10)
- Coping I (p. 11)
- SPBB walking task (p. 12)
- Activities, volunteering (pp. 13-21)
- VOL (p. 22)
- Goals (Lawton, Little; p. 23)
- Life-management strategies (SOC revised; pp. 24-25)
- Life events – 3 most important/critical life events (pp. 26-29)

Fordham, Centenarios, questionnaire\_Part\_1\_Final\_2.2012.docx (Compatibility Mode) - Word

FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW ACROBAT

Clipboard Font Paragraph Styles Editing

E. HEALTH. Okay, that's it for the short-answer questions. Do you remember the multiple-choice practice we did in the beginning? So, for this part of the interview, we are going to continue to use the answer keys. We have a lot of questions to get through today so the more efficient we are, the sooner we will finish with this part, okay? Now I would like to ask you a few questions about your HEALTH.

1. In general, how would you rate your overall health: (show KEY 4) (subhealth)

5. -[ ] excellent  
4. -[ ] very good  
3. -[ ] good  
2. -[ ] fair  
1. -[ ] poor  
8. -[ ] D/k

2. Compared to 5 years ago, how would you rate your health in general now: (show KEY 5) (subhealthago)

5. -[ ] much better  
4. -[ ] somewhat better  
3. -[ ] about the same  
2. -[ ] somewhat worse now  
1. -[ ] much worse  
8. -[ ] D/k

3. Do you CURRENTLY suffer from any of the following illnesses? I will read a list to you, please just answer with YES or NO:  
Check yes/no based on participant's perception, do not infer e.g., from glasses to vision problems

	Yes (1)	No (0)	
1. High Blood Pressure			[Highbp]
2. Heart condition (if needed: heart disease, heart attack, chest pain due to your heart, congestive heart failure, angina, MI)			[Heart]
3. Diabetes			[Diabet]
4. Chronic lung disease (e.g., chronic bronchitis or emphysema; asthma)			[Lung]

PAGE 15 OF 44 251 OF 8416 WORDS ENGLISH (UNITED STATES)

## Benefit of Mix-Methods Approach

- Quantitative approach:
  - Allows comparison with other groups or other studies
- Qualitative approach (open questions, subsequent coding):
  - Works well even with people who have limited cognitive capacities.



## Additional Aspects to Consider

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- “Choreography” : sequence of measures
  - E.g., mix between questionnaire and open question, types of tasks (e.g., grip strength, walking speed)
  - Mixture between open and structured (questionnaire parts) to maintain involvement
- Breaks (scheduled-enforced; adapted ones)
  - Old individuals often forget to drink with negative consequences for their cognitive functioning
  - They do not want to go to restroom as it takes them so long which they find embarrassing
  - Think they are able to “finish” things, but then the “end” drags...
  - Important that interviewer takes the lead

33

## Additional Aspects to Consider

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- Training of interviewer, considering their sensitivities
  - End of life questions: “This should not be asked to centenarian”...
- Meaningfulness of constructs at particular age
  - End of life questions: “Finally, I can talk to someone about this...”
- Extended pilot testing very useful

34

## Analysis: To Get Started

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- Which participant level?
- How did composition of samples change?
  - E.g., if we are looking at self-report, those with substantial cognitive limitations may not have been able to provide data...

35

## Approaches to Determine Selectivity

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1. Testing differences between "drop-outs" and "full participants" (individuals providing information about aspect of interest), Chi<sup>2</sup> and t-test.
2. Determination of difference in composition of sample, from "parent sample" to "present sample" (Lindenberger et al., 2002):
  - Sample at participation level T1 is a subsample of sample of previous participation level T1-1.
  - Experimental selectivity:
 
$$(M_{\text{present sample}} - M_{\text{parent sample}}) / SD_{\text{parent sample}}$$
  - Power of selectivity effect:  $d$
  - 0.20, 0.50 and 0.80 represent small, moderate and strong effects.

## Example: Experimental Selectivity (HD100-I)

Variable	Face-To-Face Interview (N = 91)		Drop-out (n = 35)		Present Study (n = 56)		Effect Size <sup>b</sup>
	%	M (SD)	%	M (SD)	%	M (SD)	d
Women	89		97		84		-0.16
Men	11		3		16		0.16
Widowed	80		77		82		0.05
Married	4		6		4		0.00
Never married	12		9		14		0.06
Divorced	3		9		0		-0.17
Institutionalized	48		66		37		-0.22
Elementary school	71		89		59		-0.26
Intermediate school	26		11		35		0.20
High school <sup>a</sup>	3		0		6		0.17
ADL		7.02 (4.44)		3.63 (3.50)		9.18(3.55)	0.50
GDS		3.97 (2.09)		5.65 (1.70)		2.95 (1.59)	-0.48
SMMSE		10.01 (7.32)		3.74 (5.96)		13.82 (5.12)	0.52

Notes: Sample composition is transitive. The sample "present study" is a subsample of the sample "face-to-face".

<sup>a</sup> includes high school (German Abitur), and studies at higher education institutions such as university.

<sup>b</sup> d > 0.20: small effect, d > 0.50: medium effect, d > 0.80: large effect.

Jopp & Rott, 2006

## Centenarians Are Unique...?

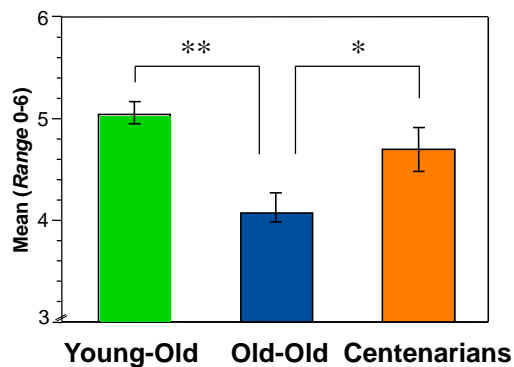
- **Comparison with younger age groups**
  - May give some first insights about differences.
- **Comparison with deceased individuals of same cohort**
  - What characterizes those who survived?
- **Comparison with centenarians from earlier cohorts**
  - Is there any change in terms of functioning?
- **Comparison with centenarians from other cultures**
  - What seems global issue (e.g., multimorbidity), what is culture specific (e.g., living situation; activity level)?

## Example: Comparison Younger Age Groups vs Centenarians

- **Sample from South Germany** ( $N = 449$ ;  $M_{Age} = 80.32$  years)
  - Young Old:  $n = 230$ ,  $M_{Age} = 49.61$ , 65–79 years
  - Old Old:  $n = 160$ ,  $M_{Age} = 49.61$ , 80–95 years
  - Centenarians:  $n = 57$ ,  $M_{Age} = 49.61$ , 99–103 years
- **Measures**
  - **Self-efficacy**
    - 3 items from Lawton's (1999) PosVOL scale
    - Changed from statements into questions
    - Items:
      - Can you think of many ways to get out of the jam?
      - Can you think of many ways to get the things in life that are most important to me?
      - Even when others get discouraged, do you know that you can find a way to solve the problem?
    - Answering format: yes, in between, no.
    - Reliability: total: .77, yo: .74, oo: .81, c: .60

39

## Self-Efficacy: Drop in Old-Old No Difference btw Young-Old and Centenarians



Overall:  $F(2, 448) = 16.31, p < .001$   
 Post-Hoc: Y-O vs O-O: .99,  $p < .001$   
 O-O vs Cent: .63,  $p < .05$

40

## Resources: Centenarians Worse Off

- Sociodemographic:
  - Education: YO, OO > C ←
  - Income: YO > OO > C ←
  - Job: no difference
- Social:
  - Phone contacts: YO > OO > C ←
  - Confident: no difference
- Health:
  - Subjective health: YO > C > OO
  - Subjective vision: YO > OO > C ←
  - Activity restriction: YO < OO, C ←
- Psychological:
  - Loneliness: YO < C < OO

41

## Zero-Order Correlations

	Total	Young-Old	Old-Old	Centenarians
Education	.13**	.06	.23**	-.13
Job	.12*	.03	.20*	.04
Income	.14**	.05	.18*	.04
Phone Contact	.19**	.18**	.29**	.04
Confident	.05	.14*	-.01	-.03
Subj. Health	.34**	.30**	.40**	.17
Subj. Vision	.28**	.32**	.31**	-.03
Activity Restriction	-.27**	-.28**	-.23**	-.06
Loneliness	-.33**	-.28**	-.30**	-.30*
Life Satisfaction	.35**	.37**	.39**	-.25†

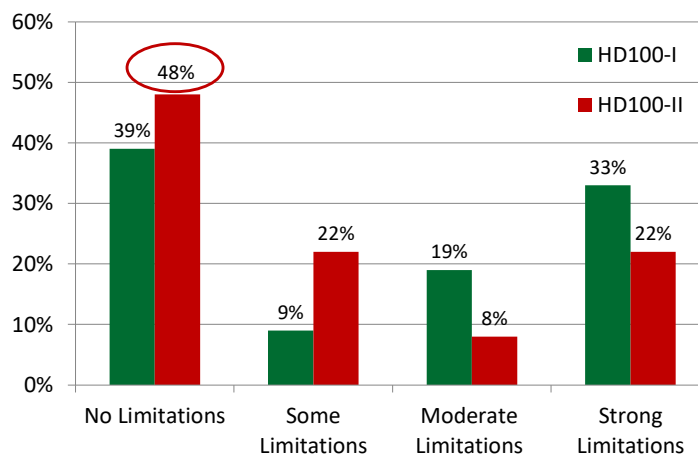
Note. Pearson correlations. †  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . 42

## Comparison Btw Centenarian and Cohort Members at Different Age

Sorry, nothing available here so far 😊

43

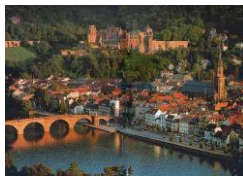
## Comparison Btw Two Centenarian Cohorts: More Recent Centenarians Live With Fewer Cognitive Limitations



Jopp et al. (2013) 44

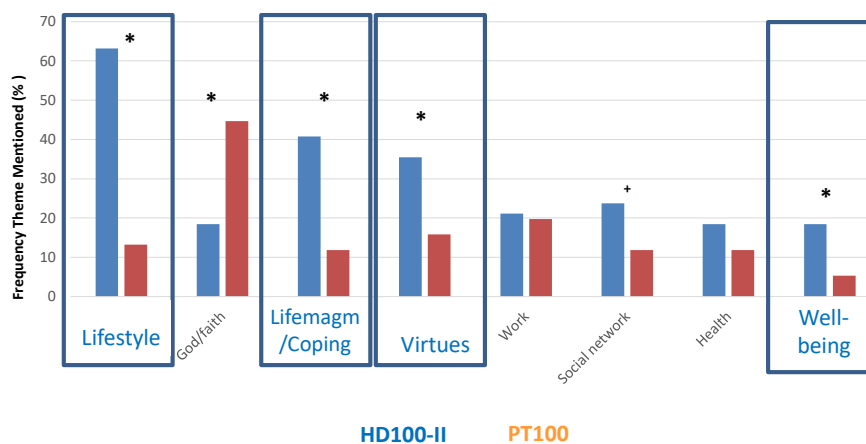
## Comparison Btw Centenarians of Different Cultures: Centenarian Network

- **Second Heidelberg Centenarian Study (HD100-II; Jopp, Rott, Boerner & Kruse)**
- **Fordham Centenarian Study** (Fordham Centenarian Study; Jopp)
- **Oporto Centenarian Study** (Ribeiro, Paul et al.)



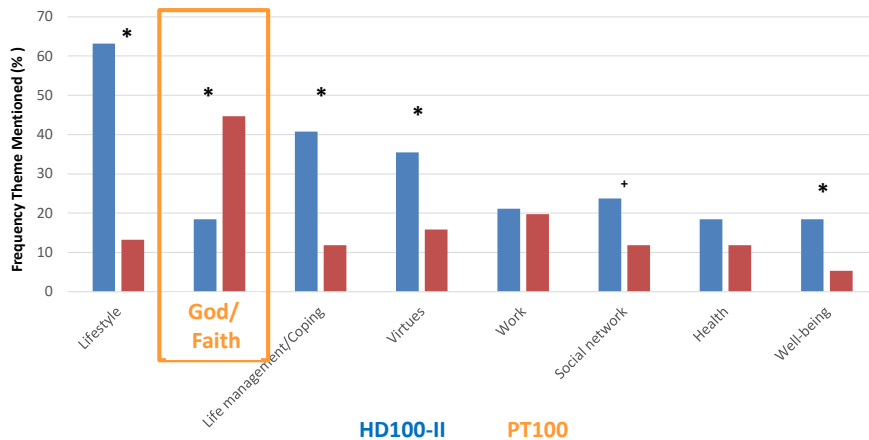
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## HD100-II vs PT100: Life-Style/Coping vs Faith



46

## HD100-II vs PT100: Life-Style/Coping vs Faith



47

## Analysis Approaches

- Characteristics of centenarian samples
  - Small...
  - Skewed...
- Requirements of many analysis types violated
- (Transformation of data?)
- Replacement of missing and check for outliers
- Choice of robust procedures; double-check with non-parametric approaches

48

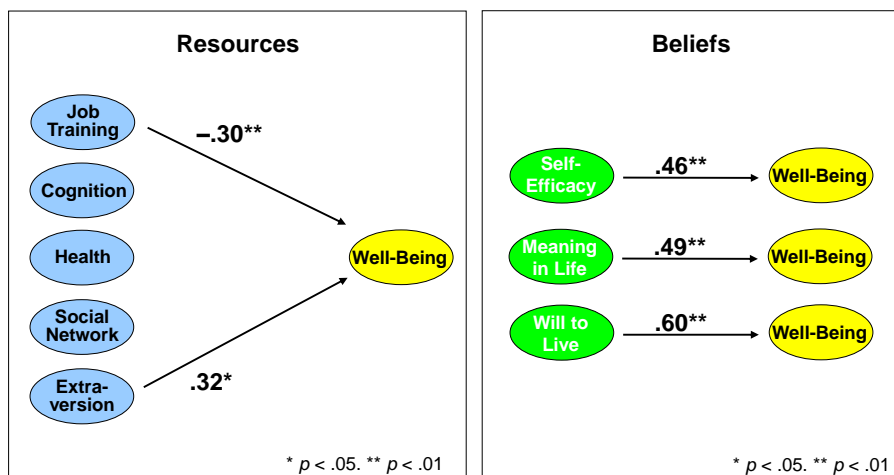


## Small Samples, Skewed Data: PLS Analysis

- **Partial Least Squares (PLS) path analyses technique (Falk & Miller, 1992; Sellin, 1986)**
  - Provides the optimal least square prediction of LVs
  - Makes no assumptions about distribution
  - Applicable to small samples
  - Program: PLSPATH by Sellin (1989)
- **Evaluation of a PLS model**
  - Manifest variables loadings must be above .55, at least above .30 if theoretically and empirically homogenous (Keeves & Sellin, 1994)
  - Full model must explain at least 10% of the variance in criterion (Falk & Miller, 1992)
  - Direct paths are evaluate with Jackknife estimates of standard error
    - standardized path coefficients must 1.67 times (i.e., t-value at  $p = .05$ ,  $df = 55$ ) be larger than JSE
  - Indirect paths must be larger than at least .10 (Keeves & Sellin, 1994)

49

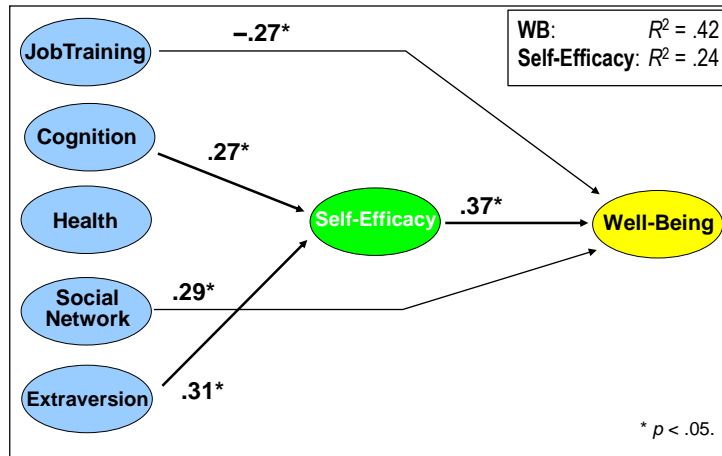
## Resources: Only Few Direct Effects In Centenarians Beliefs: Strong Effect



Note. Partial Least Square (PLS) Models.

Jopp & Rott (2006) 50

## Self-Efficacy is Effective in Centenarians

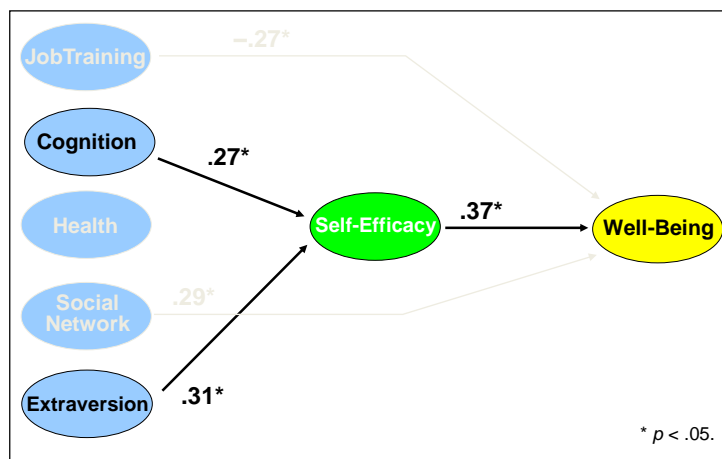


Note. Partial Least Square (PLS) Models.

51

Jopp & Rott (2006)

## Self-Efficacy is Effective in Centenarians



Note. Partial Least Square (PLS) Models.

52

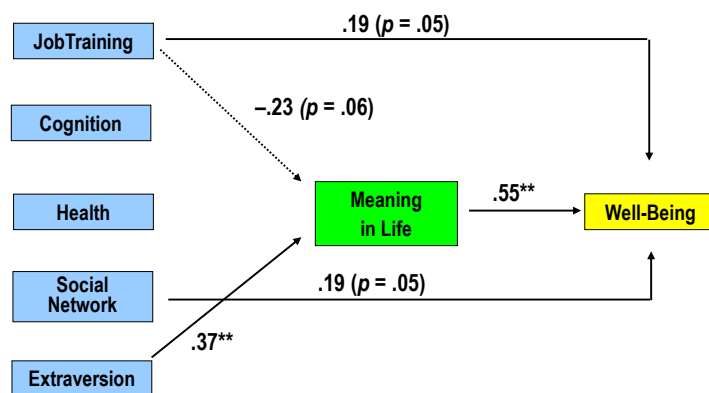
Jopp & Rott (2006)

## Path Model

- Possible to run path models with small samples
- Parceling allows creation of fewer indicators
  - Better properties than item indicators
  - Less skewed etc

53

## Meaning in Life Mediates Effect of Extraversion



+  $p < .10$  \*  $p < .05$ . \*\*  $p < .01$ .

Jopp, Liu, Wozniak, & Rott (2011)

Note. Path Model;  $\chi^2 = 11.38$ ,  $df = 10$ ,  $p = .33$ ; RMSEA = .05 (00-.16), GFI = .95, IFI = .97, CFI = .97

## Final Thoughts: Attitude Toward Participant

- Share time that is very limited for them...
- Participations are vulnerable
- Enhanced responsibility for study responsible and interviewers
- Should be a good experience for participants
- Allow time for open interaction
- Researchers: should try to give back!
  - Study info, newsletter, event

55

## FORDHAM UNIVERSITY

### FORDHAM CENTENARIAN STUDY NEWSLETTER

VOLUME 4 SUMMER 2013

Dear Centenarian,



Dr. Daniela Jopp  
Principal Investigator  
Centenarian Study

Welcome to the fourth Newsletter of the Fordham Centenarian Study! We are very happy to announce that we completed the data collection and are now analyzing the data. In this newsletter we will share initial study findings with you. Some of them will be presented at this year's scientific meeting of the Gerontological Society of America. More news: Erin will relocate to California, Min-Kyung successfully completed her PhD and Katherine will have a baby! I would like to take this opportunity to thank them for all their work and to wish them the best of luck! But we will move on: I received funding from Fordham University to continue the Children of Centenarian Study – so you may hear from us! Thank you so much again for all your help! Together with my team, I wish you and your family a wonderful summer.



FORDHAM CENTENARIAN  
STUDY NEWSLETTER

IN THIS ISSUE, YOU WILL  
FIND INFORMATION  
ABOUT FINDINGS OF THE  
FORDHAM CENTENARIAN  
STUDY, CURRENT PRO-  
JECTS AND TEAM NEWS!



Dr. Jopp and the team of the  
Fordham Adult Development  
and Aging Lab

#### INSIDE THIS ISSUE:

OUR FINDINGS	2-4
EVENTS ACTIVITIES GOALS CENTENARIAN RECIPE??	
WHAT IS NEXT?	5
CHILDREN OF CENTENARIAN STUDY UPDATE PHOTO- DOCUMENTARY	
OUR STAFF	6
CONTACT US	6

56

## Fordham Centenarian Study Reception (13.11.2012)



**Thank you!**