Translation and Validation of 10/66 Dementia Diagnostic Battery in Urdu in Karachi, Pakistan

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Disclosures

- No pharmaceutical affiliations
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Turkmenistan
Uzbekistan
Tajikistan
China
Afghanistan
Iran
Pakistan
Nepal
India
Karachi
Oman
worldatlas

- LMIC
- Situated in South East Asia
- Population: over 193 million (2016)- World's sixth most populous country
- Literacy rate: 57 %
- Population over 60 years: 6 % (11.6 million)
- Population of Karachi: over 16 million

First study in Pakistan using 10/66 protocol

METHODS

Sample size calculation: First 10/66 pilot study as a reference (Prince M, Acosta D, Chiu H, Scazufca M, Varghese M. Dementia diagnosis in developing countries: a cross-cultural validation study. Lancet 2003;361:909–17) (200 persons, equally divided between participants with normal cognition and dementia) by using estimation of a proportion of 92%—midway between the sensitivity of 94% and specificity of 90% to achieve a maximal error of ±5%

Translation

Back translation

Consensus

BATTERY

- CSI- D (Community Screening Instrument for Dementia) - 32 items

Knuckle is replaced by “Punch/Fist” (Mukka/Mutthi)

Repetition: No ifs, and or buts is replaced by “abni nahi tou kabhi nahi”

Name of the Mayor/Village head is replaced by Chief Minister of Sindh

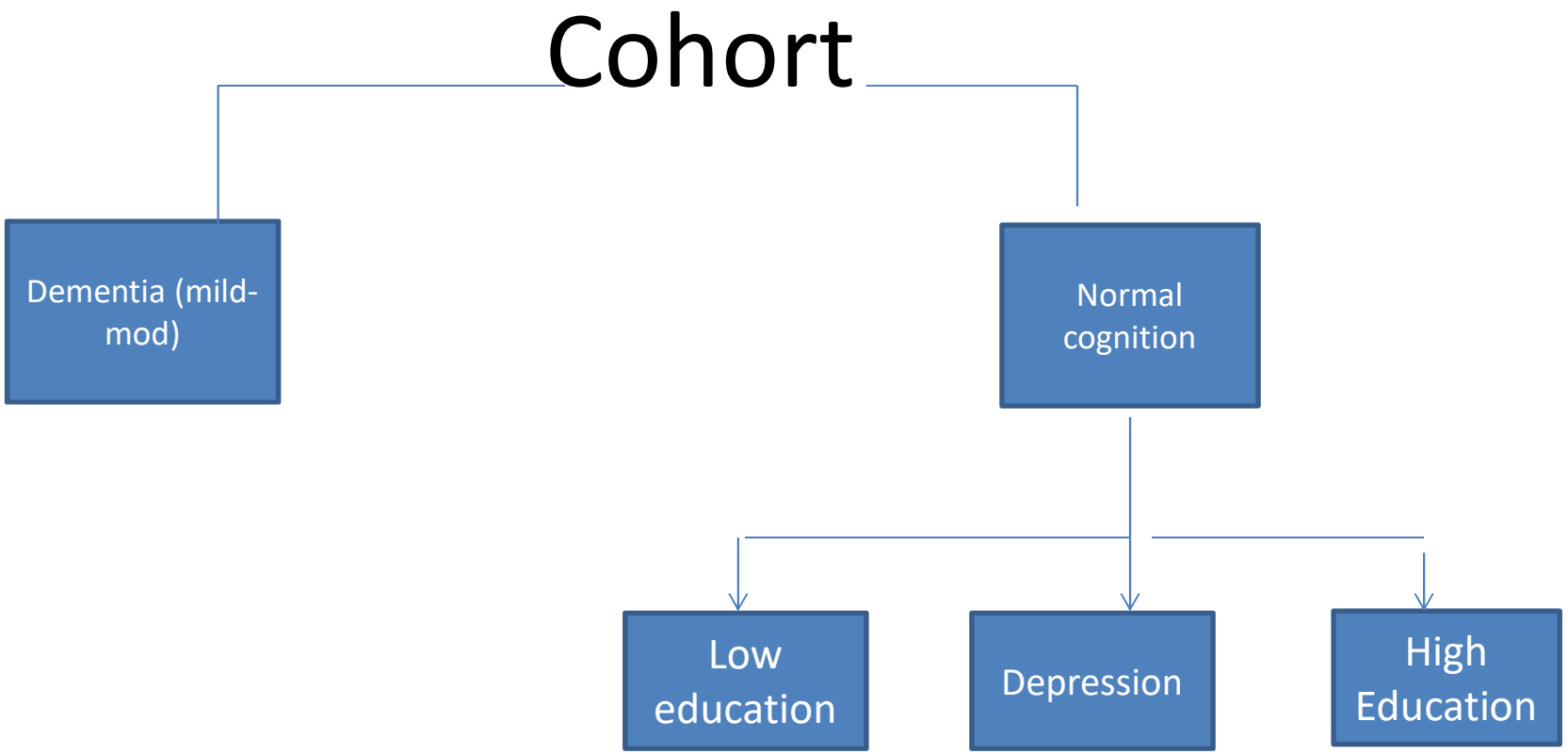
Long term memory: “What is the name of the Pakistani Prime Minister who was executed in 1979?”

- CSI-D Informant interview- 25 items
- Animal naming
- CERAD 10 word list (“corner” is replaced by “maghrib”)
- GMS version B3

- Training- 2 data collectors- MBBS physician, Mphil psychologist
- Blinded
- Pilot testing
- Consent
- IRB/ERC approval
- Funded by AKU URC Grant

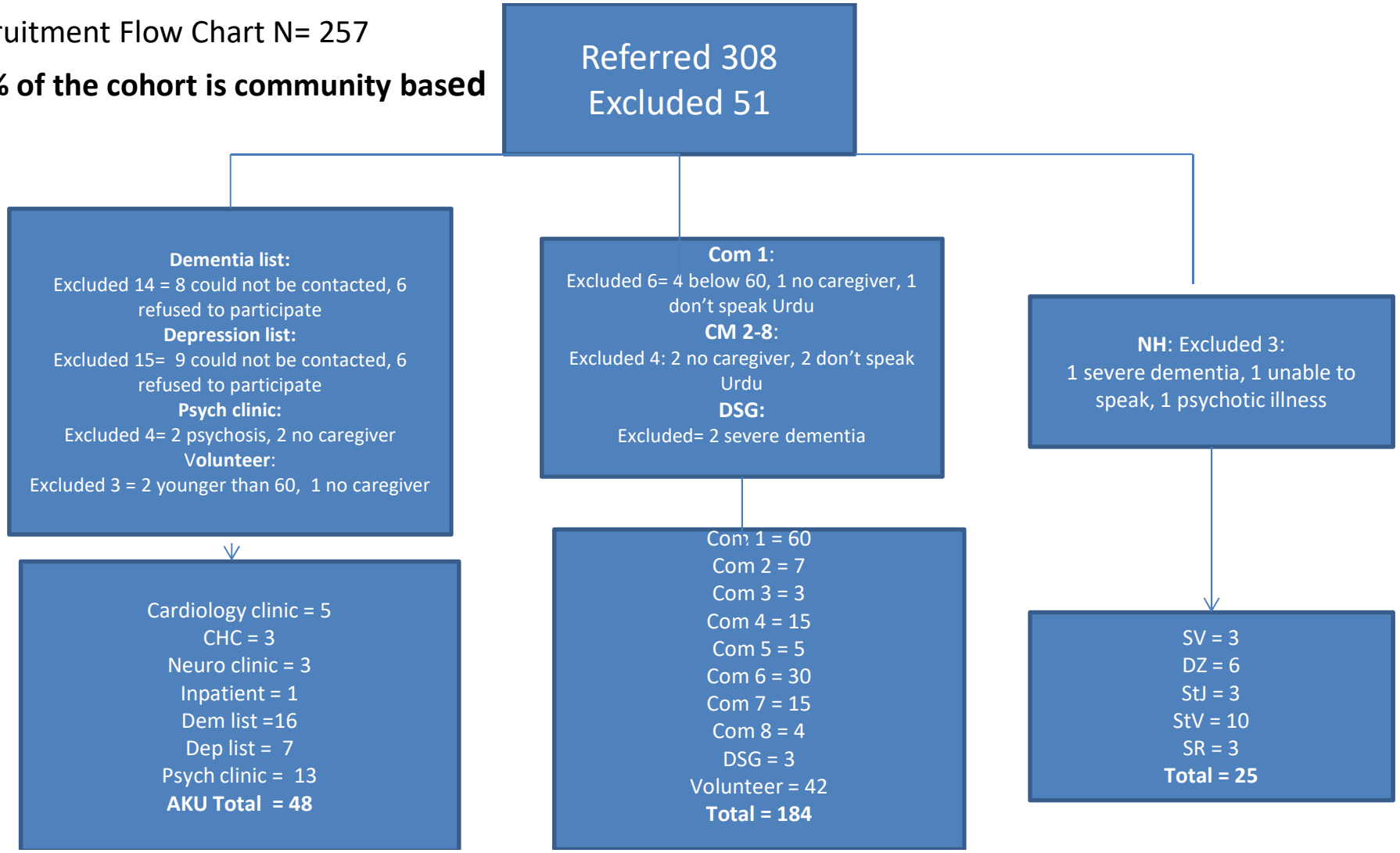
- GMS Stage I out put (AGECAT) is used for diagnosing depression
- DSM IV is used as gold standard for diagnosing dementia
- Low education: Primary and below
- High education: Secondary and above

Age cut off= 60



Recruitment Flow Chart N= 257

72 % of the cohort is community based



DEMOGRAPHICS

Variable	Cases (n=128)	Controls (n=129)
Age		
60 – 70 years	64 (50.0%)	89 (69.0%)
71 – 80 years	41 (32.0)	39 (30.2)
81 & above	23 (18.0)	01 (00.8)
Gender		
Male	63 (49.2%)	74 (57.4%)
Female	65 (50.8)	55 (42.6)
Marital Status		
Never married	07 (5.5%)	07 (5.4%)
Married	69 (54.3)	88 (68.2)
Separated or divorced	01 (0.8)	03 (2.3)
Widowed	**50 (39.4**)	31 (24)

Variable	Cases (n=128)	Controls (n=129)
Education		
None	**26 (20.3%)**	12 (9.3%)
Minimal	20 (15.6)	15 (11.6)
Completed primary	30 (23.4)	28 (21.7)
Completed secondary (metric)	22 (17.2)	22 (17.1)
Completed tertiary (college & further)	30 (23.4)	**52 (40.3)**
Education		
Low education (≤ 8 yrs)	76 (59.4%)	52 (40.3%)
High education(> 8 yrs)	52 (40.6)	77 (59.7)

RESULTS

	Sensitivity	Specificity	PPV %	AUCROC	Depression FPR	Low education FPR	High education FPR
10/66 DRG assessment	**97.14 %**	73.75 %	36.95 %	0.85 (0.81-0.89)	31 %	32 %	19.81 %

	Sensitivity	Specificity	AUROC
CSI-D Cogscore	2.8 %	66 %	0.15 (0.09-0.21)
CSI-D DFScore	**84.68 %**	**97.14 %**	**0.96** (0.94-0.98)
CERAD 10 word del recall	34 %	21 %	0.19 (0.12-0.25)
GMS	61.26 %	85.17 %	0.79 (0.72-0.86)

CONCLUSION

- Preliminary results
- CSI-D COGSCORE and RELSCORE both do much better than MMSE (as judged by AUROC), and DFSCORE (combining COGSCORE and RELSCORE) is better than either alone
- The 10/66 system certainly did much better. Specificity was similar to that recorded in other 10/66 diagnostic pilot studies, but sensitivity a little lower. However quite a high proportion of ‘cases’ are questionable dementia (0.5) on CDR. If these are omitted, leaving just the mild and moderate cases in the case group, then sensitivity is similar to that which we have found previously.
- The MMSE total score seems to discriminate very poorly between cases and controls
- We suggest that 10/66 diagnostic assessment has good discriminatory ability to diagnose dementia in Urdu-speaking older population with a high prevalence of illiteracy and may serve as a valid diagnostic assessment for a subsequent population-based study about dementia prevalence, incidence, and risk factors in Pakistan

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QUESTIONS