



NANYANG
TECHNOLOGICAL
UNIVERSITY
SINGAPORE

CC0007 Science and Technology for Humanity

Psychological Perspectives On Brain and Cognitive Ageing

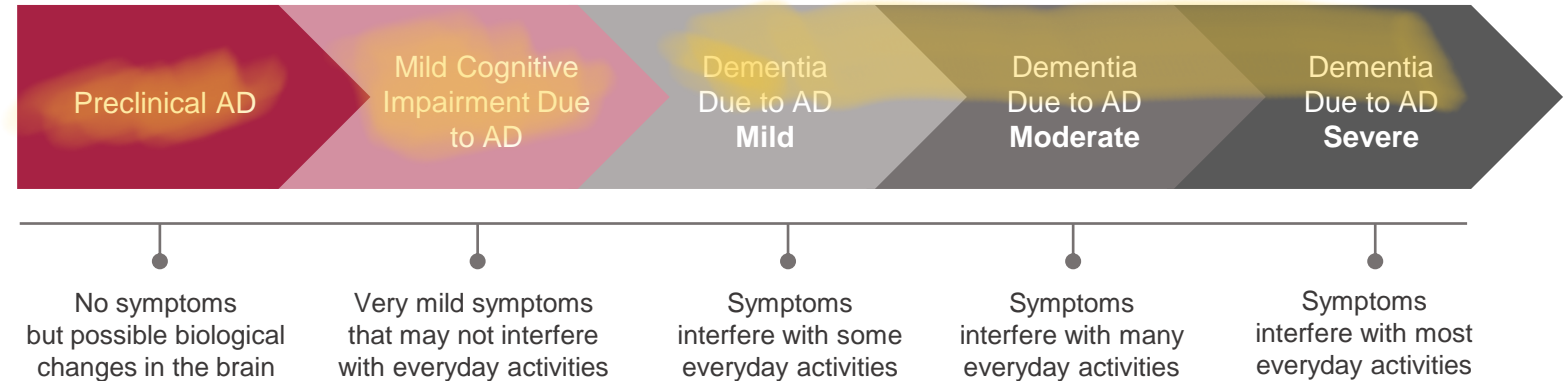
Asst Prof Tan Chin Hong, NTU



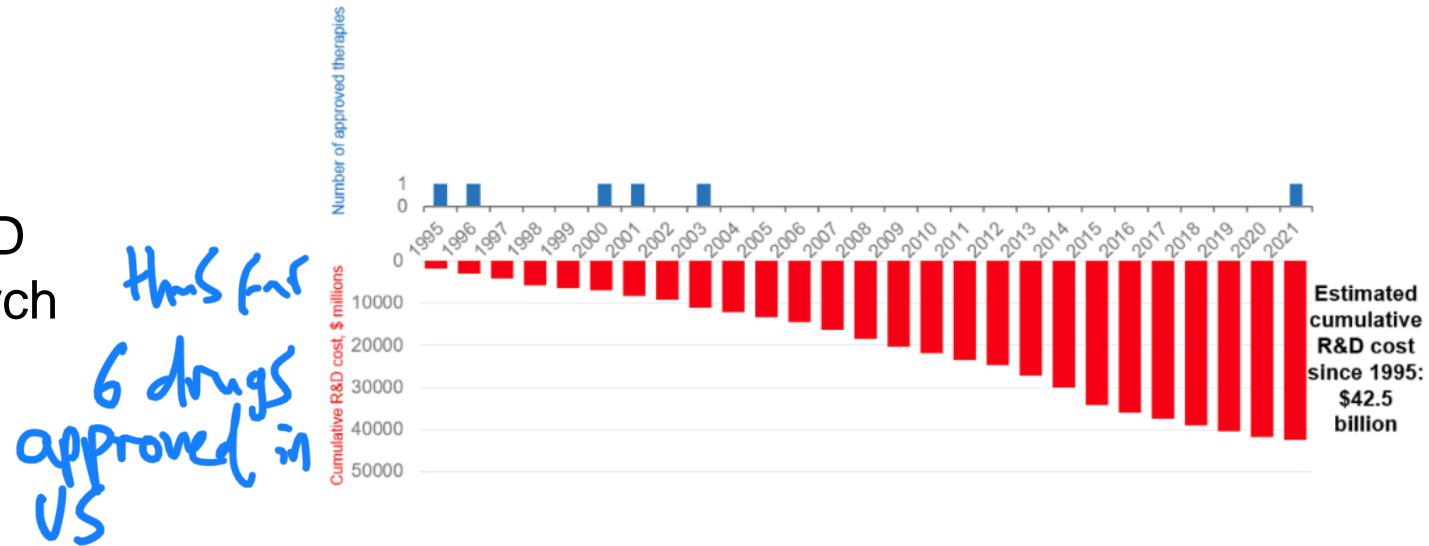
Introduction to Alzheimer's Disease

Alzheimer's Disease (AD) Continuum*

*Although these Arrows are of Equal Size, the Components of the AD Continuum are not Equal in Duration.



- The Alzheimer's disease or AD continuum can be classified broadly into three phases.
- From 1995 to 2021, an estimated 42.5 billion USD has been spent on research and development of a biological therapeutic for Alzheimer's disease.



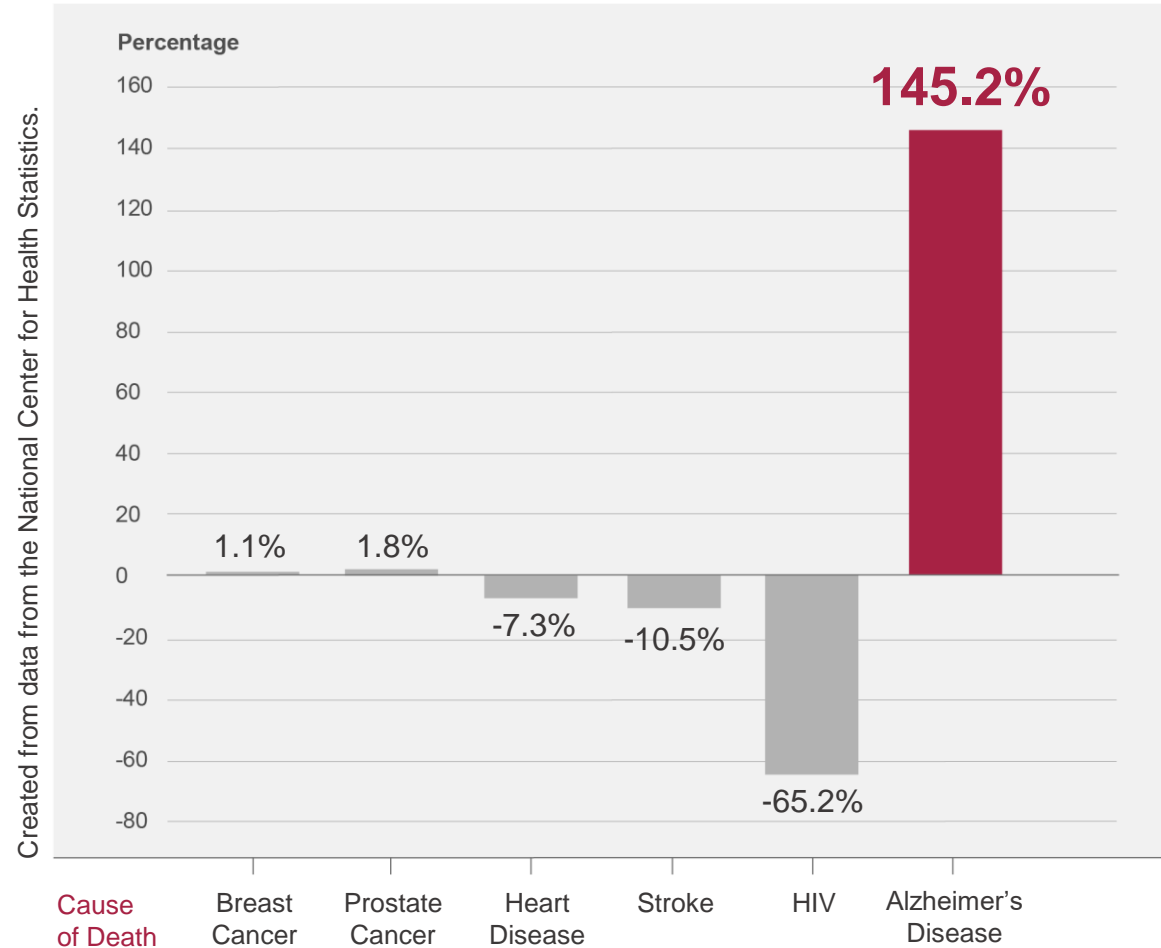
Top: Alzheimer's Association. (2022). 2022 Alzheimer's disease facts and figures. *Alzheimer's & Dementia*, 18(4), 700–789. <https://doi.org/10.1002/alz.12638>

Bottom: Cummings, J. L., Goldman, D. P., Simmons-Stern, N. R. & Ponton, E. (2022). The costs of developing treatments for Alzheimer's disease: A retrospective exploration. *Alzheimer's & Dementia*, 18(3), 469–477. <https://doi.org/10.1002/alz.12450>. CC BY-NC-ND 4.0.

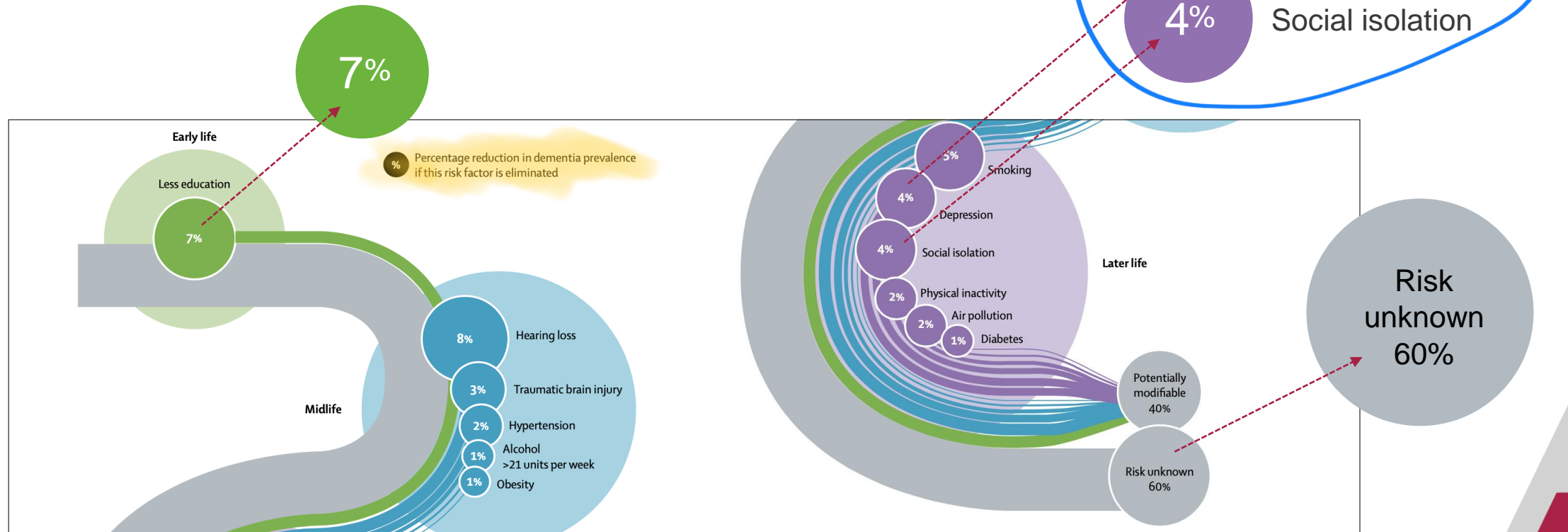
Limited Success in Stemming the Tide of AD-Related Mortality

- Especially in comparison with other diseases such as heart disease, stroke and especially HIV

Percentage Changes in Selected Causes of Death
(All Ages) Between 2000 and 2019

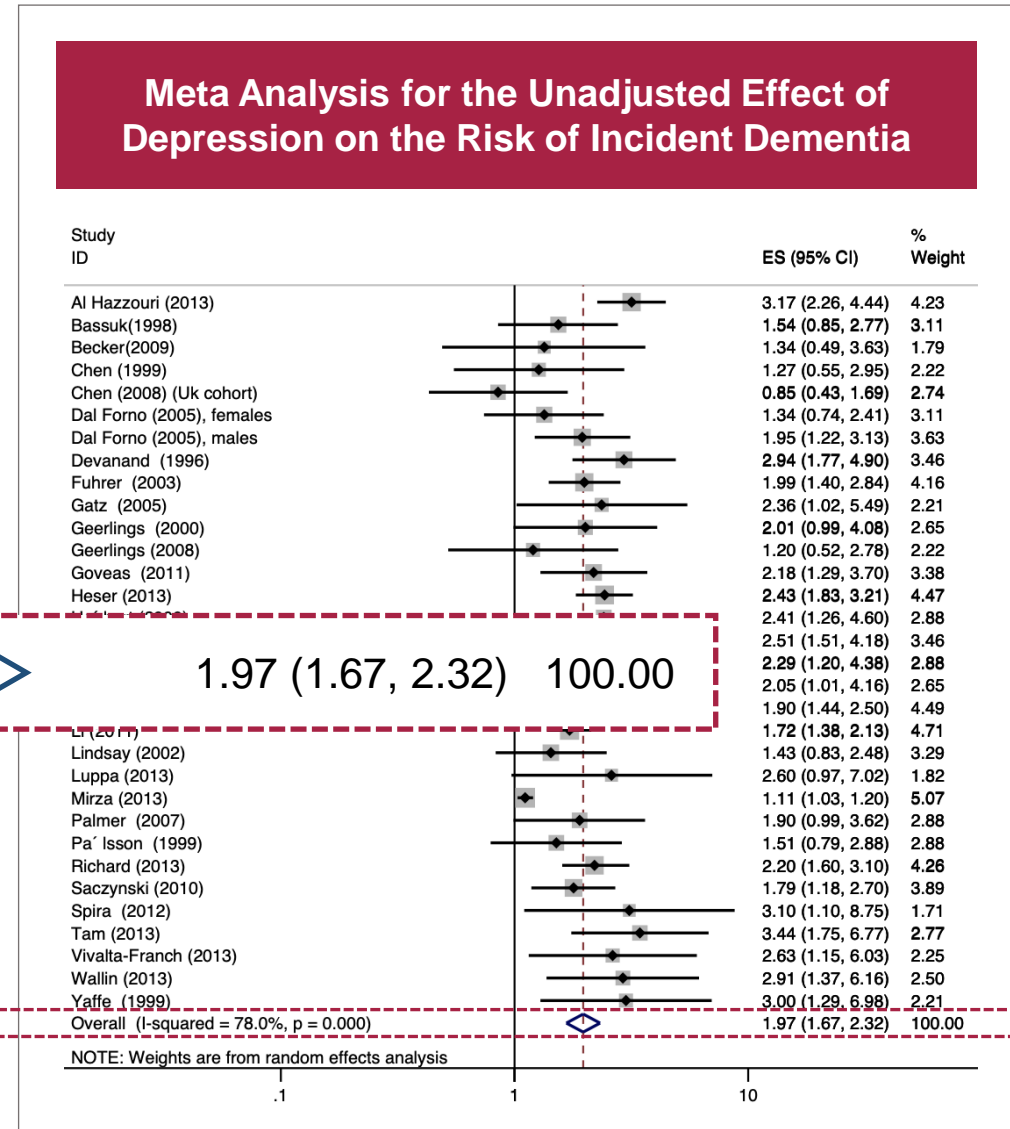


Broad Overview of Known Risk Factors for Dementia



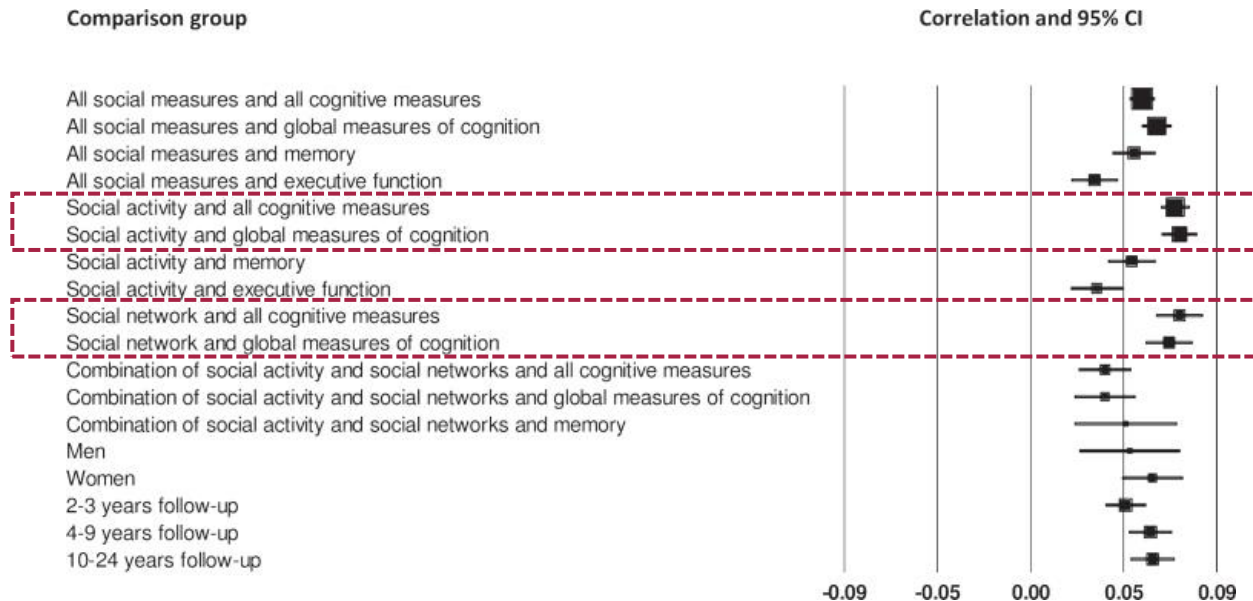
Livingston, G., Huntley, J., Sommerlad, A., Ames, D., Ballard, C.G., Banerjee, S., Brayne, C., Burns, A., Cohen-Mansfield, J., Cooper, C., Costafreda, S.G., Dias, A., Fox, N.C., Gitlin, L.N., Howard, R., Kales, H.C., Kivimäki, M., Larson, E.B., Ogunniyi, A., Orgeta, V., Ritchie, K., Rockwood, K., Sampson, E.L., Samus, Q.M., Schneider, L.S., Selbæk, G., Teri, L., & Mukadam, N. (2020). Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. *The Lancet*, 396(10248), 413–446. [https://doi.org/10.1016/S0140-6736\(20\)30367-6](https://doi.org/10.1016/S0140-6736(20)30367-6)

Relationship Between Depression and Dementia Incidence

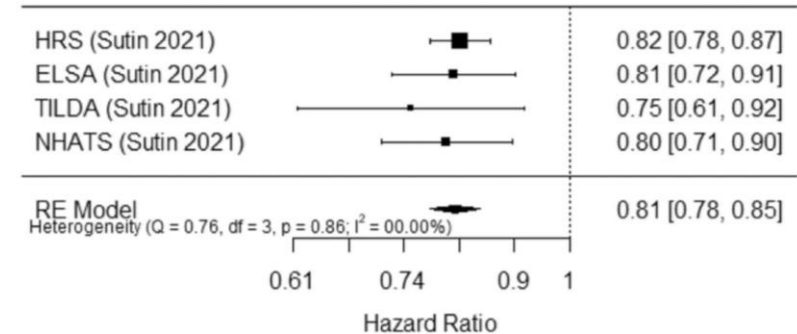


Overall (I-squared = 78.0%, p = 0.000)

Social Isolation and Meaning in Life



D) Purpose/Meaning in Life and Dementia Incidence



Left: Evans, I., Martyn, A., Collins, R., Brayne, C. & Clare, L. (2019). Social isolation and cognitive function in later life: A systematic review and meta-analysis. *Journal of Alzheimer's Disease*, 70(s1), S119–S144.

https://doi.org/10.3233/JAD-180501; Right: Bell, G., Singham, T., Saunders, R., John, A. & Stott, J. (2022). Positive psychological constructs and association with reduced risk of mild cognitive impairment and dementia in older adults: A systematic review and meta-analysis. *Ageing Research Reviews*, 77. https://doi.org/10.1016/j.arr.2022.101594

No part of this video shall be filmed, recorded, downloaded, reproduced, distributed, republished or transmitted in any form or by any means without written approval from the University.