Kuching, Sarawak, Malaysia 28 Sep-02 Oct. 2026
Design & Health
15TH WORLD CONGRESS & EXHIBITION

UNIMAS
UNIVERSITI MALAYSIA SARAWAK
Faculty of Medicine and Health Sciences, UNIMAS

The Salutogenic Determinants Influencing the Older Adults' Mental Well-being in Sarawak

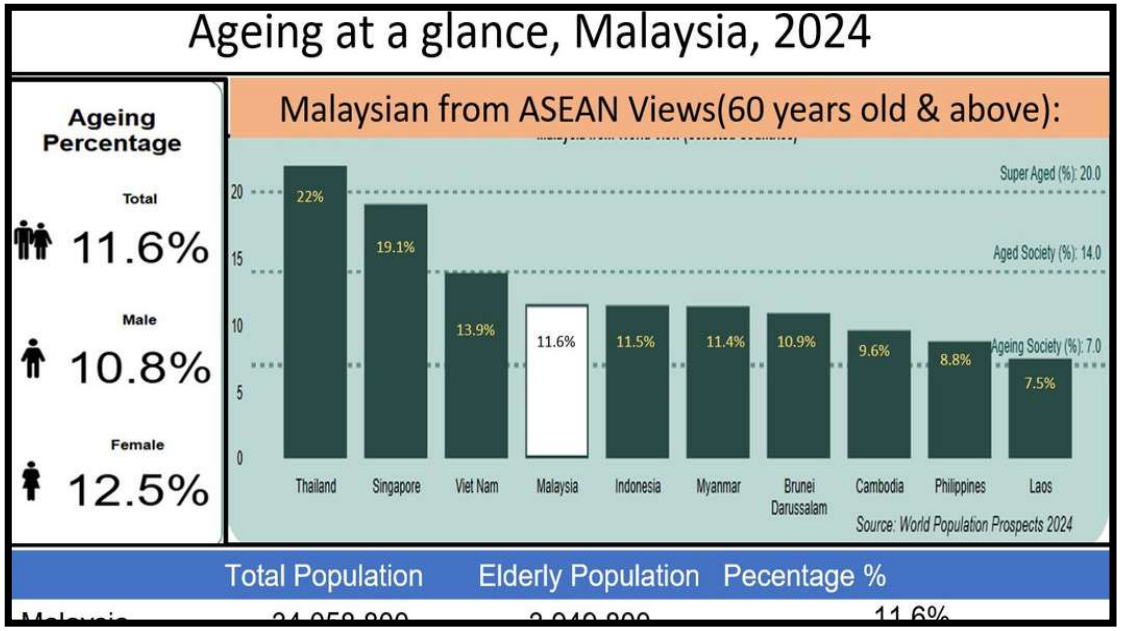


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Why this matters?



THE DUAL CHALLENGE OF SARAWAK'S DEMOGRAPHIC REALITY

- Accelerated Rural-to-Urban Youth Migration: Creates widespread 'empty nest' households in rural and suburban Sarawak, isolating vulnerable older adults.
- Disease Burden vs. Care Infrastructure: Increasing chronic disease multimorbidity (dementia, depression, hypertension) strains healthcare infrastructure.
- Need for Environmental Action: Requires shifting healthcare from institutional hospital care to community-based salutogenic built environments.

13.4%

Sarawak Older Adults

First anticipated Aged State in Malaysia, surpassing national 11.6% average

15.0%

2030 Aged Society

Malaysia threshold for Aged Society (>15% aged 60+ by 2030)

22.0%

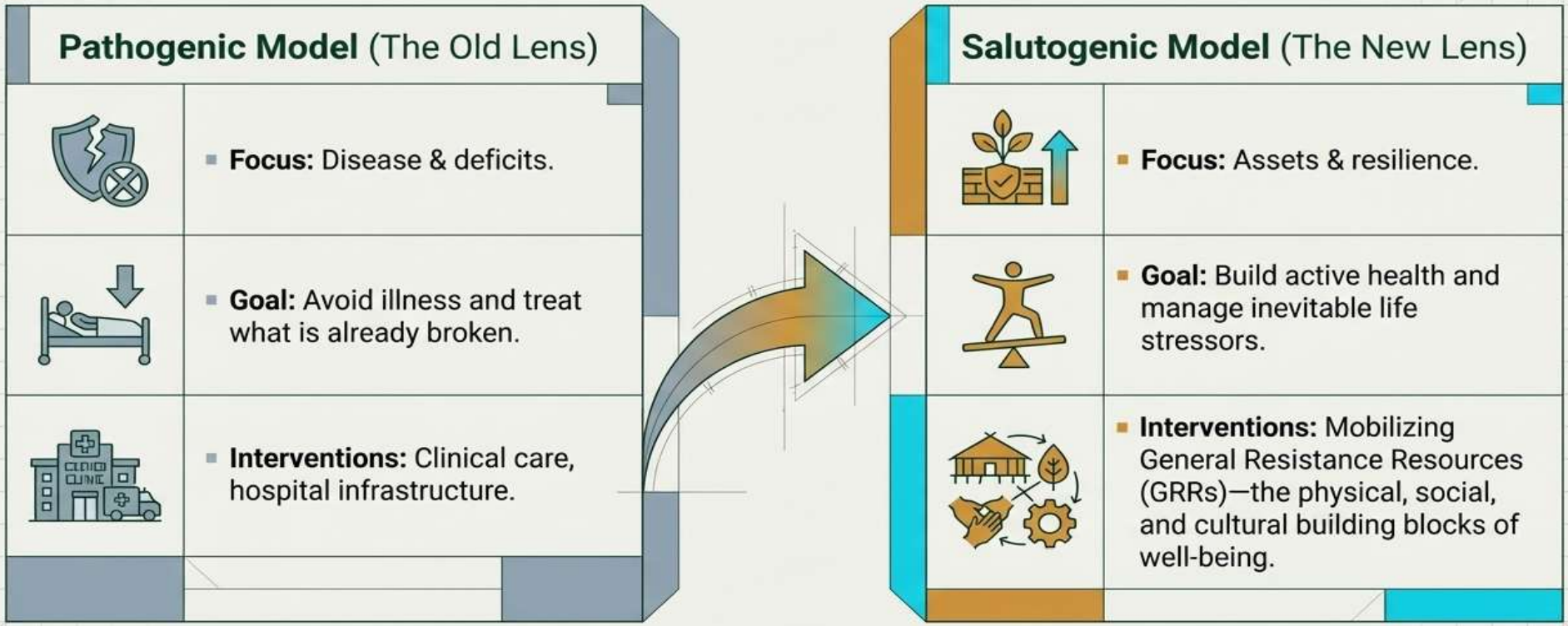
Global 2050 Projection

Global 60+ population doubling from 12% to 22% (WHO projection)

Source: Adapted from Norsiah (2025), USIM 10th National Health Seminar keynote presentation

From Salutogenesis to Design

A New Lens for Public Health



The Research Question and Objectives

1. The Well-Being Paradox

How older adults maintain positive mental well-being despite high physical multimorbidity and functional decline in Sarawak.

2. The Contextual Gap

Salutogenic theory was established in Western individualistic settings; empirical validation in collectivist Bornean/Asian contexts is scarce.

3. The Methodological Gap

Standard studies use isolated regression; this thesis applies Structural Equation Modelling (CB-SEM) to capture complex mediating pathways.

RESEARCH FRAMEWORK & OBJECTIVES

- Examine GRRs: Psychosocial (Community Belonging, Religiosity, Social Provision) & Material assets (Phone, Housing, Age).
- Assess SoC Mediation: Test whether Sense of Coherence mediates the relationship between external GRRs and Mental Well-being.
- Translate to Policy: Convert statistical path coefficients into actionable urban design, housing, and public health guidelines.

Methodology

Methodology Component	Description
Study Design	Cross-sectional
Study Population	Older adults population (Aged 60 years)
Inclusion criteria	Malaysian citizens aged 60 years or older
Exclusion criteria	Unable to communicate in Malay or English Unable to provide consent to participate in the study Mentally impaired with an Abbreviated Mental Test (AMT-4) score of less than 4 Living in nursing homes or old folks' homes or Bed-bound older adults
Sample Size	479
Sampling Method	Multistage stratified sampling (Division, Municipality, Neighbourhood)
Data Collection Procedure	Face-to-face interviews



Bringing Research Into the Community









Health Profile: Functional Status Amid High Multimorbidity

71.8 yrs

Mean Participant Age

SD = 8.5 years (Range: 60 to 92 years)

48.9%

Multimorbidity Rate

Mean 3.61 chronic conditions per individual

5.03 / 6.0

Katz ADL Independence

High functional independence in daily tasks

19.33 / 35

Mental Well-being Score

Favourable SWEMWBS baseline mental well-being

ETHNIC & GENDER COMPOSITION

- Gender: 55.9% Female, 44.1% Male
- Ethnicity: 50.5% Indigenous Native (Iban, Bidayuh, Melanau), 31.3% Malay, 18.2% Chinese/Others
- Age Groups: Young-old (60-64): 25.5%, Middle-old (65-74): 39.7%, Old-old (>74): 34.9%

EDUCATION & LIVING CONDITIONS

- Education: No formal education (32.6%), Primary (26.3%), Secondary (27.1%), Tertiary (14.0%)
- Phone Ownership: 73.3% own a phone
- Transport Availability: 78.9% have access to transport
- Living Arrangement: 76.3% live with others, 23.7% live alone

Material Assets: Digital Connectivity & Co-Living Advantages

DIGITAL CONNECTIVITY (PHONE OWNERSHIP)

• Statistically Significant Well-being Gap:
 - Phone Owners MWB: 19.31 vs. Non-Owners: 18.75 ($p = .023$)
 - Phone Owners SoC: Higher Sense of Coherence ($p = .035$)

• Architectural & Urban Implication:
 Phones function as artifactual/material GRRs that overcome Sarawak's vast geographic barriers, maintaining active family networks and telehealth connectivity across remote divisions.

HOUSING & LIVING ARRANGEMENTS

• Statistically Significant Co-Living Advantage:
 - Living with Others MWB: 19.66 vs. Living Alone: 18.39 ($p = .004$, Cohen's $d = 0.34$)
 - Living alone poses severe depression and isolation risks.

• Architectural & Urban Implication:
 Single-occupancy urban apartments isolate seniors. Built environment policies must encourage multi-generational housing layouts, co-living senior developments, and communal courtyard designs.

Psychosocial Assets: Community Belonging, Religiosity & Support

Sense of Community Belonging

Mean Score: 3.47 / 5.0

Exceeds global urban norms (2.80 - 3.20).
Reflects deep-rooted Bornean collectivist social capital, longhouse community cohesion, and neighborhood solidarity.

Religiosity & Spirituality

Mean Score: 2.91 / 4.0

Acts as a primary psychological coping mechanism.
Provides daily routine, existential meaning, and emotional buffering against physical health decline and aging stress.

Perceived Social Provision

Mean Score: 2.92 / 4.0

Confirms robust informal family and local safety nets.
Delivers emotional reassurance, guidance, and practical assistance in times of health vulnerability.

Structural Equation Model (CB-SEM) & Path Results (R^2 = 0.46)

CB-SEM MODEL FIT INDICES

- CMIN/DF = 1.43 — Ideal fit (< 3.0)
- CFI = 0.932 — Good Comparative Fit Index (> 0.90)
- GFI = 0.928 — Good Goodness of Fit Index (> 0.90)
- RMSEA = 0.030 — Excellent Root Mean Square Error (< 0.05)
- R^2 (SoC) = 21% — Variance in Sense of Coherence explained
- R^2 (MWB) = 46% — Substantial variance in Well-being explained

KEY STRUCTURAL PATH COEFFICIENTS

- Community Belonging → MWB [β = 0.371, p < .001]: Strongest direct predictor of mental well-being across the entire model.
- Religiosity → SoC [β = 0.458, p < .001]: Religiosity is the single largest predictor of Sense of Coherence.
- Religiosity → MWB (Direct) [β = 0.220, p = .049]: Direct positive effect on mental well-being.
- Religiosity → SoC → MWB [Indirect β = 0.10, p < .01]: Significant partial mediation through Sense of Coherence.
- Sense of Coherence → MWB [β = 0.220, p < .01]: SoC acts as an essential psychological buffer sustaining MWB.

Sense of Coherence as a Buffer & The Aging Vulnerability Threshold

SoC AS A PSYCHOLOGICAL MEDIATOR

• Baseline SoC Score: Mean 41.87 / 70 (Moderate-to-low relative to global norms of 45-60, but higher than Singapore care settings).

• Partial Mediation Mechanism:
SoC internalizes external cultural and spiritual GRRs into psychological resilience, enabling seniors to navigate health stressors.

THE VULNERABILITY WINDOW (>74 YRS & >3 DISEASES)

• Steep Age Decline (>74 Years):
- Social Provision drops to 2.68 ($p < .001$)
- Religiosity drops to 2.66 ($p < .001$)
- Community Belonging drops to 3.18 ($p < .001$)

• Cumulative Comorbidity Threshold (>3 Conditions):
Participants with >3 chronic conditions show a sharp drop in SoC ($p = .003$).
Built environments must intervene before health reaches this cliff.

Architectural Applications: Kampung & Longhouse Spatial Typologies

1. Preserve Kampung & Longhouse Spatial Typologies

Incorporate shared verandas, central open courtyards, and communal gathering spaces into modern urban housing to preserve Bornean social capital.

2. Design for Low Cognitive Load & Comprehensibility

Intuitive wayfinding, biophilic visual cues, legible streetscapes, and therapeutic indoor-outdoor spaces to support older adults experiencing mild cognitive impairment.

3. Flexible Intergenerational Housing Units

Modular residential spaces enabling family co-living arrangements while maintaining personal privacy, directly combating the mental health risks of living alone.

Urban Infrastructure: Scaling Senior Activity Centres (PAWE) & Digital Access

Expand Senior Activity Centres (PAWE)

Scale Pusat Aktiviti Warga Emas (PAWE) across Kuching, Sibu, and Miri as essential salutogenic social infrastructure embedded within residential neighborhoods.

Age-Friendly Public Realm & Walkability

Continuous shaded walkways, resting benches every 100m, barrier-free pavements, and accessible public parks to encourage active mobility and reduce fall risks.

Digital Infrastructure & Telehealth Access

High-speed broadband expansion in suburban/rural Sarawak as a public health imperative, providing older adults with digital connections to family and care services.

Policy Actions: Clinical Asset-Mapping & WHO ICOPE Integration

1. Primary Care 'Asset-Mapping' (Borang Penilaian Warga Emas)

Transition routine clinical assessments from documenting disease deficits to mapping personal, spatial, and social GRRs (living arrangement, community participation, phone access).

2. Operationalize WHO ICOPE & Age-Friendly Cities

Integrate World Health Organization Integrated Care for Older People (ICOPE) guidelines into Sarawak's municipal council urban planning and housing masterplans.

3. Intersectoral Co-Design Governance

Establish formal working partnerships between the Ministry of Health, Ministry of Public Health, Housing and Local Government Sarawak, UNIMAS, and municipal councils.

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Acknowlegement

- Deepest gratitude to my Main Supervisor, Dr. Rosalia Saimon, and Co-Supervisor, Professor Dr. Jeffery anak Stephen, for their invaluable guidance

- Universiti Malaysia Sarawak (UNIMAS) – Faculty of Medicine and Health Sciences and the Centre for Graduate Studies

- Special thanks to the local community leaders (*Ketua Kaum, Tuai Rumah)* and the 479 resilient older adults across Kuching, Sibu, and Miri who graciously shared their time

- Batchmates Cohort 13

