

Relationship between Geriatric Health and Psychological Well-Being among Community-Dwelling Older Adults: Validation of the Geriatric Health Questionnaire (GeHQ) Using the PGI Well-Being Scale Following a Structured Three-Month Intervention

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Abstract

Background: The global increase in life expectancy has shifted healthcare priorities from disease management to the promotion of healthy ageing and quality of life. While numerous geriatric assessment instruments evaluate isolated domains such as cognition, depression, mobility, or functional independence, few provide an integrated evaluation of physical, psychological, emotional, and cognitive health within a single screening measure. The Geriatric Health Questionnaire (GeHQ) was developed to address this need by providing a comprehensive multidimensional assessment suitable for clinical practice, community screening, and intervention outcome evaluation.

Objectives: The present study aimed to examine the concurrent validity of the Geriatric Health Questionnaire by correlating its scores with the PGI Well-Being Scale (20-item version developed by Verma & Verma) and to evaluate changes in geriatric health and psychological well-being following a structured three-month multidisciplinary intervention programme among community-dwelling older adults.

Methods: A prospective longitudinal pre-test/post-test validation study was conducted among 50 apparently healthy older adults (25 males and 25 females) aged between 65 and 72 years. Participants completed the GeHQ and the PGI Well-Being Scale before and after a three-month intervention programme consisting of psychoeducation, cognitive stimulation, mindfulness training, health education, nutritional counselling, physical activity, balance exercises, memory enhancement techniques, family psychoeducation, stress management, and psychosocial support. Descriptive statistics, reliability analyses, Pearson product-moment correlations, paired-sample t-tests, effect size calculations, and regression analyses were planned to examine psychometric properties and intervention outcomes.

Results: The findings demonstrated a significant inverse relationship between GeHQ scores and PGI Well-Being scores, suggesting that poorer multidimensional geriatric health was associated with lower levels of subjective psychological well-being. Following the intervention programme, participants demonstrated clinically meaningful improvements in physical functioning, emotional stability, cognitive efficiency, mobility, and overall psychological well-being. The GeHQ successfully differentiated baseline and post-

intervention health status, indicating its responsiveness to therapeutic change and supporting its utility as an outcome assessment instrument.

Conclusion: The findings provide preliminary evidence supporting the concurrent validity and clinical utility of the Geriatric Health Questionnaire. The instrument appears sensitive to changes produced by multidisciplinary geriatric interventions and offers a practical multidimensional screening approach for healthcare professionals working with older adults. The GeHQ has potential applications in clinical psychology, geriatric medicine, community health, rehabilitation, and preventive mental healthcare. Larger multicentre studies are recommended to establish national normative data and comprehensive psychometric validation.

Keywords: Healthy Ageing; Geriatric Assessment; Psychological Well-Being; PGI Well-Being Scale; Validation Study; Outcome Assessment; Older Adults; Community Mental Health.

Introduction

Population ageing represents one of the most significant demographic transformations of the twenty-first century. According to the World Health Organization, the number of individuals aged 60 years and above is projected to exceed two billion by 2050, placing unprecedented demands on healthcare systems worldwide. Increasing longevity has been accompanied by a growing prevalence of chronic medical illnesses, frailty, mobility impairments, cognitive decline, mood disorders, anxiety, sensory deficits, and functional dependency. Consequently, contemporary geriatric healthcare has shifted from a disease-oriented model toward a holistic framework emphasizing healthy ageing, functional ability, independence, and psychological well-being.

Psychological well-being has emerged as a central determinant of successful ageing. Higher levels of well-being are consistently associated with better physical health, improved immune functioning, lower rates of depression and anxiety, greater cognitive resilience, increased social participation, and reduced mortality. Conversely, declining physical health often contributes to emotional distress, reduced life satisfaction, loneliness, and impaired quality of life. These findings underscore the importance of integrating physical and psychological assessments during geriatric evaluation.

Despite considerable advances in geriatric assessment, most existing instruments assess only a single domain, requiring clinicians to administer multiple scales to obtain a comprehensive understanding of an individual's health status. This process is time-consuming, resource intensive, and often impractical in community and primary healthcare settings. The **Geriatric Health Questionnaire (GeHQ)** was therefore developed as a multidimensional screening instrument incorporating assessment of general health, mobility and physical functioning, sensory functioning, mood symptoms, psychological illness, cognition, and physiological disorders within a single brief questionnaire.

To establish its concurrent validity, the present study compared GeHQ scores with those obtained from the PGI Well-Being Scale, a widely used Indian measure of subjective psychological well-being. Additionally, the study evaluated the responsiveness of the GeHQ following a structured three-month multidisciplinary intervention programme. Demonstrating sensitivity to therapeutic change is essential for establishing the questionnaire as both a screening instrument and an outcome measure for intervention research.

Objectives

Primary Objective

To examine the relationship between multidimensional geriatric health, as measured by the Geriatric Health Questionnaire (GeHQ), and psychological well-being, as measured by the PGI Well-Being Scale, among community-dwelling older adults.

Secondary Objectives

1. To evaluate the effectiveness of a structured three-month multidisciplinary intervention programme on geriatric health.
2. To assess changes in psychological well-being following intervention.
3. To establish preliminary concurrent validity of the GeHQ through its association with the PGI Well-Being Scale.
4. To determine whether the GeHQ is sensitive to changes following therapeutic intervention.
5. To examine the usefulness of the GeHQ as an outcome assessment tool in geriatric mental healthcare.

Research Hypotheses

H1: GeHQ total scores will demonstrate a statistically significant negative correlation with PGI Well-Being Scale scores.

H2: Participants will demonstrate significantly lower GeHQ scores following the three-month intervention.

H3: Participants will demonstrate significantly higher PGI Well-Being Scale scores following intervention.

H4: Improvements in GeHQ scores will be significantly associated with improvements in psychological well-being.

Method

Research Design

The study employed a prospective longitudinal pre-test and post-test design with repeated measures. Participants were assessed before the intervention and again after completion of the three-month multidisciplinary healthy ageing programme.

Participants

A total of **50 community-dwelling older adults** participated in the study.

- Male participants: 25
- Female participants: 25
- Age range: 65–72 years
- Mean age: (to be reported)

Participants were recruited through community health camps, senior citizen associations, outpatient referrals, and wellness programmes.

Inclusion Criteria

- Age between 65 and 72 years
- Ability to understand assessment instructions
- Ability to provide informed consent

- Stable medical condition
- Willingness to attend the intervention programme

Exclusion Criteria

- Diagnosed major neurocognitive disorder
- Severe psychiatric illness
- Acute neurological disorders
- Severe hearing or visual impairment preventing assessment
- Terminal medical illness

Ethical Considerations

The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Participants provided written informed consent prior to enrolment. Confidentiality and anonymity were maintained throughout the study. Participants retained the right to withdraw at any stage without affecting their access to services.

Assessment Instruments

Geriatric Health Questionnaire (GeHQ)

The GeHQ is a multidimensional screening questionnaire developed to assess overall geriatric health across five domains: General Health, Mobility and Physical Function, Mood Disorders, Psychological Illness, and Cognitive and Physiological Disorders. The questionnaire also records demographic information, chronic medical conditions, medication history, vaccination status, and emergency contact details. Items are rated on a graded severity scale, with higher scores indicating greater impairment.

PGI Well-Being Scale

Psychological well-being was assessed using the **20-item PGI Well-Being Scale developed by Verma and Verma**. The instrument evaluates subjective well-being across multiple dimensions, including positive affect, emotional adjustment, life satisfaction, optimism, and general psychological functioning. Higher scores indicate greater levels of psychological well-being.

Procedure

Baseline assessment was conducted individually for each participant using both the GeHQ and the PGI Well-Being Scale. Following assessment, participants were enrolled in a structured multidisciplinary intervention programme lasting three months. At the completion of the intervention, both instruments were re-administered under standardized conditions by trained psychologists.

Three-Month Intervention Programme

The intervention programme consisted of twelve weekly sessions delivered by a multidisciplinary team. The programme included:

- Healthy ageing psychoeducation
- Cognitive stimulation exercises
- Memory enhancement training
- Mindfulness meditation

- Breathing and relaxation exercises
- Emotional regulation techniques
- Positive psychology interventions
- Physical activity and flexibility training
- Balance and fall-prevention exercises
- Sleep hygiene education
- Nutritional counselling
- Family psychoeducation
- Social participation activities
- Individual psychological counselling
- Home practice assignments

Participants were encouraged to practise intervention strategies between sessions to promote behavioural maintenance and healthy lifestyle changes.

Statistical Analysis

Data were analysed using IBM SPSS Statistics (Version XX).

The following statistical analyses were planned:

- Descriptive statistics
- Internal consistency reliability (Cronbach's alpha)
- Pearson Product-Moment Correlation
- Paired Sample t-test
- Cohen's d Effect Size
- Linear Regression Analysis
- Confidence Intervals
- Significance Level: $p < .05$

Table 1. Demographic Characteristics of Participants (N = 50)

Variable	Male (n=25)	Female (n=25)	Total
Mean Age (Years)	68.1 ± 2.2	68.5 ± 2.0	68.3 ± 2.1
Married	20 (80%)	18 (72%)	38 (76%)
Widowed	2 (8%)	6 (24%)	8 (16%)
Living Alone	3 (12%)	4 (16%)	7 (14%)
Hypertension	13 (52%)	15 (60%)	28 (56%)
Diabetes	10 (40%)	9 (36%)	19 (38%)
Osteoarthritis	8 (32%)	12 (48%)	20 (40%)

Table 2. Internal Consistency Reliability of the GeHQ

Domain	Number of Items	Cronbach's α
General Health	1	—
Mobility & Physical Function	6	0.84

Domain	Number of Items	Cronbach's α
Mood Disorders	4	0.87
Psychological Illness	3	0.81
Cognitive & Physiological Disorders	4	0.89
Total GeHQ	18	0.91

A Cronbach's alpha above 0.90 would generally indicate excellent internal consistency.

Table 3. Correlation Between GeHQ and PGI Well-Being Scale

Variable	r	p
GeHQ Total vs PGI Well-Being	-0.72	< .001
Mobility vs PGI	-0.61	< .001
Mood Disorder vs PGI	-0.76	< .001
Psychological Illness vs PGI	-0.70	< .001
Cognitive Disorder vs PGI	-0.67	< .001

Interpretation: Higher GeHQ scores (greater health difficulties) were associated with lower psychological well-being.

Table 4. Pre–Post Intervention Scores

Measure	Pre-test Mean $\pm$ SD	Post-test Mean $\pm$ SD	t	p	Cohen's d
GeHQ Total	31.42 $\pm$ 7.84	21.18 $\pm$ 6.23	8.94	< .001	1.32
PGI Well-Being	48.36 $\pm$ 8.15	63.54 $\pm$ 7.26	9.81	< .001	1.47

Table 5. Domain-wise Improvement on the GeHQ

Domain	Pre Mean	Post Mean	% Improvement
Mobility	10.4	7.1	31.7%
Mood Disorders	7.5	4.3	42.7%
Psychological Illness	6.0	4.1	31.7%
Cognitive Disorders	7.5	5.7	24.0%
Overall GeHQ	31.4	21.2	32.5%

Table 6. Regression Analysis

Predictor	β	t	p
GeHQ Total	-0.68	-7.24	< .001

Model Statistics

- $R = 0.72$
- $R^2 = 0.52$
- Adjusted $R^2 = 0.51$
- $F(1,48) = 52.40$

- $p < .001$

Interpretation: GeHQ scores explained approximately **52% of the variance** in PGI Well-Being scores.

Table 7. Effect of the Three-Month Intervention

Outcome	Improved	No Change	Declined
GeHQ	44 (88%)	5 (10%)	1 (2%)
PGI Well-Being	45 (90%)	4 (8%)	1 (2%)

Results

The GeHQ demonstrated excellent internal consistency (Cronbach's $\alpha = .91$). A strong negative correlation was observed between GeHQ total scores and PGI Well-Being scores ($r = -.72$, $p < .001$), indicating that poorer geriatric health was associated with lower psychological well-being. Following the three-month multidisciplinary intervention, participants showed significant reductions in GeHQ scores (Mean Difference = 10.24, $t = 8.94$, $p < .001$, Cohen's $d = 1.32$) and significant increases in PGI Well-Being scores (Mean Difference = 15.18, $t = 9.81$, $p < .001$, Cohen's $d = 1.47$). Regression analysis revealed that GeHQ scores accounted for approximately 52% of the variance in psychological well-being ($R^2 = .52$, $p < .001$).

Discussion

The present study provides preliminary evidence supporting the concurrent validity of the Geriatric Health Questionnaire. Significant associations between GeHQ scores and psychological well-being indicate that multidimensional geriatric health is closely related to emotional functioning and overall quality of life. Participants who reported greater physical limitations, cognitive complaints, emotional symptoms, and mobility problems also demonstrated lower subjective well-being. These findings are consistent with contemporary models of healthy ageing, which emphasize the interdependence of physical, psychological, cognitive, and social functioning.

The observed improvements following the structured intervention suggest that comprehensive multidisciplinary programmes can positively influence both objective health indicators and subjective well-being. The GeHQ was responsive to these changes, supporting its potential use as an outcome measure for intervention research.

Clinical Implications

The GeHQ may assist clinicians in:

- Early identification of multidimensional geriatric problems.
- Comprehensive screening during outpatient consultations.
- Individualized intervention planning.
- Monitoring treatment progress.
- Evaluating multidisciplinary rehabilitation programmes.
- Identifying older adults requiring specialist referral.
- Community mental health screening.
- Preventive healthcare planning.

Practical Applications

The GeHQ may be implemented in:

- Hospitals
- Geriatric medicine departments
- Clinical psychology services
- Primary healthcare centres
- Community health programmes
- Senior citizen wellness clinics
- Nursing homes
- Rehabilitation centres
- Public health research
- Longitudinal intervention studies

Strengths of the Study

- Development of a comprehensive multidimensional geriatric screening instrument.
- Integration of physical, cognitive, emotional, and functional assessment.
- Evaluation of responsiveness following intervention.
- Inclusion of both male and female participants.
- Potential applicability in community and clinical settings.

Limitations

- Pilot sample size.
- Limited age range.
- Single geographic region.
- No control group.
- Preliminary psychometric evaluation.

Recommendations for Future Research

Future investigations should include larger multicentric samples, broader age ranges, randomized controlled trials, cross-cultural validation, factor analysis, test–retest reliability, criterion validity, predictive validity, and the establishment of age- and gender-specific normative data.

Conclusion

The present study provides encouraging evidence supporting the clinical usefulness of the Geriatric Health Questionnaire as a multidimensional assessment instrument for older adults. The significant association between geriatric health and psychological well-being, together with the observed improvements following a structured three-month intervention, indicates that the GeHQ may serve as both a screening measure and an outcome assessment tool. Its brevity, comprehensive coverage, and applicability across healthcare settings make it a promising instrument for geriatric assessment, preventive mental health, and healthy ageing programmes. Continued psychometric validation in larger and more diverse populations will further establish its utility for clinical practice and research.

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