

**DEVELOPMENT AND VALIDATION OF COVENANT GERONTOLOGY SCALE:  
SCREENING TOOL FOR COUNSELLING PURPOSE**

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**Abstract**

*As it applies in the medical world, professional psychological counselling is hardly complete without adequate assessment with relevant standardized psychological instruments. The objective of this study, therefore, was to develop and validate a Gerontology Scale that could empirically measure the psychological and physical wellbeing of elderly people. The emphasis of this preliminary study was on internal consistency reliability, content validity and construct validity. Seventy-two people with age ranging from 40 to 80 years served as study sample. Their responses were subjected to descriptive statistics [frequency count, percentages and charts] and parametric statistics [t-test and regression]. The core findings were: the CGS has acceptable internal consistency reliability ( $r = 0.84$ ); the CGS further furnished evidence of discriminant validity in being able to differentiate the health status of middle aged and elderly respondents. It was therefore recommended that Counselling Psychologists, Gerontologists and related professionals should regularly administer a standardized gerontology scale of this nature to allow for timely preventive interventions that would facilitate the health and overall wellbeing of the aged in our communities.*

**Keywords:** Psychological Testing; Validity; Reliability; Gerontology; Ageing; Wellbeing; Health

**Introduction**

There are some genetically programmed changes within the physiological system that human-beings have little or no control over. One of such is ageing. However, a good understanding of the process of ageing is apt to enhance knowledge of how to more effectively manage it for enhanced wellbeing at old age. Ageing is the subject of *Gerontology*. Gerontology is the study of the social, cultural, psychological, cognitive, and biological aspects of ageing (Confluence, 2016). The terminology was originally coined by Ilyich Mechnikov in 1903. *Geriatrics* is a field of medicine that focuses on health care of elderly people. Geriatrics specialists work to promote health among the elderly by preventing and treating diseases/disabilities.

**What is Ageing?**

According to Lopez-Otin et al. (2013), ageing is a progressive functional decline and gradual deterioration of physiological function with age. A number of pathologies increase with age, such as: type 2 diabetes, heart disease, cancer, arthritis, and kidney disease. However, the incidence of some pathologies, like sinusitis, remains relatively constant with age, while the incidence of other ailments, like asthma, strangely decline (Partridge & Mangel, 1999).

Although the immune system deteriorates with age, a major hallmark of ageing is an increase in inflammation levels, precipitated by higher levels of circulating *pro-inflammatory cytokines*. This is what often serves as precursor to several age-related disorders such as Alzheimer's disease, atherosclerosis and arthritis (Franceschi et al., 2000; Brunsgard et al., 2001).

Lavretsky (2015) reiterated that incorporating spiritual practice into people's healthcare plan has the potential of facilitating personalized medical care for older adults and improve health outcomes. In another study, Zimmer, Jagger, Chiu, Ofstedal, Rojo & Saito, (2016) also found that religiosity and spirituality are among the modifiable factors that can improve health in old age. This point constitutes one

of the hypotheses slated for testing in the the quest to ascertain the construct validity of the CGA. It is expected that data obtained via this instrument should clearly discriminate between respondents that are highly and less spiritual, in terms of their health condition.

The World Health Organization (2015) noted that in low-income countries, many adults need paid employment throughout their lives because there is hardly social welfare package to fall on, hence they cannot afford to retire. Staudinger, Finkelstein, Calvo, Sivaramakrishnan (2016) further reiterated this assertion. This is not the case with wealthier countries (OECD, 2013). This trend has a lot of implication on the health and overall wellbeing of aged people. This study therefore also sought to test the hypothesis that financial capacity is a significant predictor of people's health as they age, as a means of establishing the construct validity of the CGS.

### **Theories of Ageing**

#### *Activity theory.*

Cavan, Havighurst & Albrecht (2007) posited that social interactions and activities amongst older adults make up for some key roles and relationships they have lost, such as jobs and spouses. Some ageing persons cannot maintain a middle-aged lifestyle, due to functional limitations, lack of income, or lack of desire. Some older adults lack the resources to maintain active roles in society. The core point of this theory is that activity is preferable to inactivity because it facilitates well-being on multiple levels.

#### *Disengagement theory.*

Cumming and Henry (2007) observed that older adults and society tend to mutually disengage from each other. An example of mutual disengagement is retirement from the workforce. A key assumption of this theory is that older adults lose "ego-energy" and become increasingly self-absorbed. This tend to further alienate the older adults from the society. Cumming and Henry therefore proposed that *gradual withdrawal* from society and relationships would preserve social equilibrium and promote self-reflection for elders who are freed from societal roles. This would allow for the much needed orderly transition that allows for transfer of knowledge, capital, and power from the older generation to the newer generations. The disengagement theory apparently explains the poor financial status of many aged people in developing economies.

#### *Cumulative advantage/disadvantage theory*

The theory submits that inequalities have a tendency to become more pronounced throughout the ageing process. The popular adage that "*the rich get richer and the poor get poorer*" succinctly captures the essence of this theory. Dannefer (2003) pointed out that the financial advantages and disadvantages in early life stages tend to have a profound effect throughout the life span.

#### *The Free Radical Theory*

The free radical theory of aging (FRTA) submits that people age predominantly because cells accumulate free radical damage over time (Hekimi, Lapointe & Wen, 2011). A free radical is any atom or molecule that has a single unpaired electron in an outer shell. The free radical theory of ageing predicts that the healthy life span can be increased in old age by minimizing harmful free radical reactions while not significantly interfering with those essential to the economy of the cells and tissues. One way this can be done is by keeping body weight down, while taking diets which contain minimal amounts of substances that are likely to enhance free radical reactions, such as copper and poly-unsaturated lipids. On the other hand, the aged can increase intake of amounts of substances capable of decreasing free radical reaction damage, such as a-tocopherol, ascorbic acid, selenium and synthetic antioxidants. The question is, how many people in developing nations have access to this knowledge and the financial capacity to acquire these drugs on a regular basis? This partly explains the state of health of many aged people in these settings.

Since psychology is a scientific study, it is imperative that psychological instruments delineated for screening purposes in counselling settings be professionally standardized, hence this study. While *reliability* assures consistency, *validity* assures accuracy and truthfulness of measurement in measuring what they purport to measure. Construct validity is often established via hypothetical testing. The common practice is to test for difference between two groups that have been theoretically established to be divergent on the basis of the construct being measured, for instance comparing gifted and mental retardants on intelligence construct. The ability of the psychological instrument to furnish data that could significantly distinguish such divergent groups is accepted as evidence of *divergent construct validity*. The process of establishing reliability and validity is clearly empirical.

### **Objectives**

1. Ascertain the prevalence of psychological, physical, social and financial challenges amongst the aged.
2. Find out the internal consistency reliability of the CGA?
3. Establish if there is significant difference in the ageing ailments experienced by middle aged and elderly respondents. [as indicator of construct validity]
4. Establish if there is significant difference difference in the ageing ailments of financially buoyant aged and poor aged [as indicator of construct validity]
5. Establish if there is significant difference in the ageing ailments experienced by highly and less spiritual respondents [as indicator of construct validity]

### **Research Questions/Hypotheses**

1. What is the prevalence of psychological, physical, social and financial challenges amongst the Aged?
2. What is the internal consistency reliability of the CGA?
3. There is no significant difference in the ageing ailments experienced by middle aged and elderly respondents.
4. There is no significant difference in the ageing ailments of financially buoyant aged and poor aged respondents.
5. There is no significant difference in the ageing ailments experienced by highly and less spiritual respondents.

### **Method**

#### *Design & Participants*

The survey research design was adopted for this study. Though seventy-one [71] persons participated in this study, three persons did not indicate their gender. There were 37 males and 31 females. Their age ranged from 40 to 80. There were 16 persons between the age of 40 and 49, 25 between 50 and 59, 20 between 60 and 69, and 7 above 70. Out of the sample, 24 had secondary school certificate and below, 24 either had B.Sc. or HND while 11 had post-graduate certificate. Fifteen [15] out of the sample had worked for 15 years, while 25 had worked within the range of 15 to 25 years. Eighteen [18] had worked within the range of 26 to 35 years while 7 had worked above 35 years. Sixty-five [65] were Christians, 3 were Muslims while 1 was neither a Christian nor a Muslim. The purposive random sampling method was adopted for this study.

#### *Instruments*

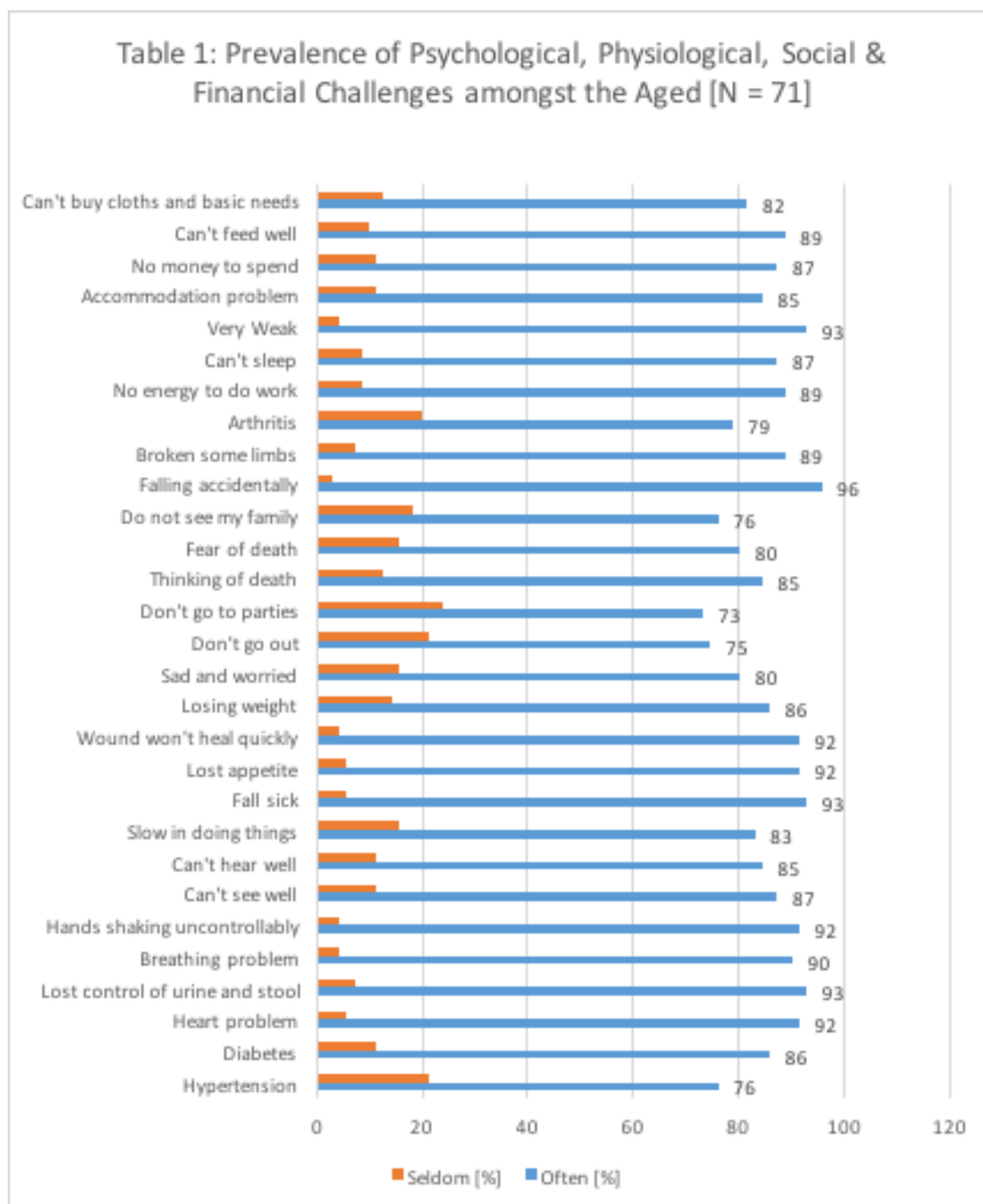
The Covenant Gerontology Scale [CGS], the sole instrument was developed after conducting literature review on the subject of ageing and wellbeing. The primary goal of the review was to harvest the current acceptable theories and indicators of ageing, particularly as it relates to the wellbeing of people as they grow old. This is the subject of *Gerontology*, the caption used for the scale. So were the items listed in the CGS derived. Thereafter, the items were subjected to extensive face and content validity. The latter involved critical assessments by Psychology experts who had good understanding of the concept of Gerontology. Subsequently, the instrument was taken to the field for trial testing. The CGS has 36 items [with 4 Likert scale responses of Always, Often, Sometimes and Never] and one open ended question. The 36 items were split into four sections: Medical, Psychological, Physical and Financial.

#### *Data Analyses*

Data was analyzed with simple descriptive statistics of frequency count, percentages, and bar chart, as well as with parametric statistics of independent t-test and simple linear regression.

### **Results & Discussion**

*What is the prevalence the psychological, physiological, social and financial challenges among elderly people?*



The result in Table 1 shows that the **least** prevalent challenges of the aged were *social* - not attending parties (73%) and not going out (75%), though they were still high; while the **most** prevalent were heart problem (92%), hands shaking uncontrollably (92%), lost appetite (92%), wounds won't heal quickly (92%), lost control of urinating and stooling (93%), feeling very weak (93%), feeling sick (93%), and falling accidentally (96%). The latter category of ailments were physiological/medical. The psychological challenges closely followed the medical challenges. Intertwining these challenges were the financial challenges such as not having money to spend (87%) and not being able to feed well (89%). These findings tend to support the theory that aged people suffer more physiological, psychological and social challenges; and that in developing countries like Nigeria, poverty was also an issue of concern (Cavan, Havighurst & Albrecht, 2007).

***What is the internal consistency reliability of the CGA?***

<b>Table 2a : Cronbach Alpha Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.849	0.84	28

<b>Table 2b</b>	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
B1	37.4912	97.147	0.257	0.849
B2	37.807	95.016	0.345	0.846
B3	37.9825	97.196	0.392	0.844
B4	38	95.286	0.599	0.84
B5	38.0351	96.463	0.577	0.841
B6	38.0877	96.939	0.443	0.843
B7	38.2632	102.59	0.116	0.85
B8	37.6491	97.589	0.323	0.846
B9	37.8246	92.933	0.524	0.839
B10	37.6842	91.541	0.627	0.836
B11	37.6667	95.333	0.541	0.841
B12	38.0351	95.392	0.605	0.84
B13	38.1228	98.395	0.479	0.844
B14	37.7193	93.456	0.569	0.839
C1	37.4386	92.429	0.558	0.838
C2	37.2281	94.858	0.187	0.861
C3	37.3333	94.619	0.42	0.843
C5	37.5263	97.968	0.215	0.851
C6	37.6667	97.19	0.277	0.848
C7	37.5263	96.897	0.123	0.864
D1	38.0702	98.709	0.445	0.845
D2	37.9298	95.781	0.421	0.843
D3	37.5965	89.709	0.63	0.835
D4	37.7193	94.848	0.549	0.84
D5	37.7018	94.642	0.507	0.841
D7	37.9123	96.01	0.514	0.842

Results in Table 2a show that Covenant Gerontology Scale [CGS] has acceptable internal consistency reliability (0.84). Table 2b further shows that all the items within the CGS meaningfully contributed to the internal consistency, which is an indication that they were working in the same direction, that is, they were homogenous. Only items C2, C5, C7 gave r values slightly above 0.84, the highest being 0.86.

***There is no significant difference in the ageing ailments experienced by middle aged and elderly respondents.***

AGE	N	Mean	df	t	p
40-49	15	6.4	15.728	-2.9	0.012
70 AND ABOVE	7	4.2857			

Table 3 shows that the gerontology scale could differentiate between middle age and elderly persons ( $t = -2.9$ ,  $p = 0.012$ )

***There is no significant difference in the ageing ailments experienced by highly and less spiritual respondents.***

SPIRITUALITY	N	Mean	df	t	p
DAILY PRAYER, BIBLE STUDY & TONGUE	39	36.7436	50	-2.932	0.005
PRAYING SOMETIMES	13	45.1538			

Table 4 shows that the gerontology scale could also differentiate between respondents who were spiritual and those who were less spiritual ( $t = -2.932$ ,  $p = 0.005$ ). This finding is corroborates the submissions of Lavretsky (2015) and Zimmer, Jagger et. al. (2016). They reiterated, among others, that spiritual practices have the potential of improving health condition of people in old age.

***There is no significant difference in the ageing ailments of financially buoyant aged and poor aged respondents.***

AGE	N	Mean	df	t	p
40-49	15	6.4	15.73	2.84	0.01
70 AND ABOVE	7	4.2857			

Table 5 shows that there was significant difference in the financial capacity of the elderly and the middle aged respondents ( $t = 2.84$ ,  $p = 0.01$ ). The middle aged respondents were more financially buoyant than the elderly one who were above 70 years.

	Unstandardized Coefficients		Standardized Coefficients			Regression Coefficient		
	B	Std. Error	Beta	t	Sig.	R	R Square	Adjusted R Square
(Constant)	13.38	1.657		8.076	0	.471a	0.222	0.208
Financial_Cap	1.066	0.264	0.47	4.033	0			

a Dependent Variable: Medical\_Health\_Condition

The regression result in Table 6 shows that the the financial capacity of a person is a significant predictor of their health condition ( $R^2 = 0.222$ ;  $R = .471$ ,  $t = 4.033$ ,  $p = 0.00$ ). The results in Tables 5 and 6 tend to find support in the theory of cumulative advantage and disadvantage presented earlier (Dannefer, 2003). This finding lend support to the construct validity of the CGS.

### **Conclusion & Recommendations**

The study set out to investigate the reliability and validity of the Covenant Gerontology Scale [CGS]. Experts review established the content validity of the CGS before it was taken to the field for trial testing. Analyses of the responses provided ample evidences of internal consistency reliability and construct validity of the CGS. Qualitative inspection of the CGS further necessitated minor editing of the CGS to make it more suitable for the intended purpose – *screening and monitoring tool in the course of helping the aged in counselling settings*. From this empirical results, it is apparent the CGS [Version 1.0] is safe for use in counselling setting. The simplicity of administration, scoring, and interpretation of the results from the CGS make it quite relevant to fledgling Counsellors worldwide. The professionalism of counselling is in application of standardized relevant psychological instruments of this nature. Counselling without

professional assessment with relevant standardized psychological instrument is a mere 'advisory' exercise, which any lay person could do, of-course with its attendant debilitating consequences. We need more culture-fair standardized psychological instruments for effective counselling. However, as it applies in all scientific studies, coupled with the sporadic changes all over the world, it is imperative that more studies be conducted with the CGS to further establish its reliability and validity. This is a preliminary work.

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**Ethical approval:** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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## Appendix

### GERONTOLOGICAL SCALE [Version 1.0 © 2018]

by

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*The scale is describing conditions that affect elderly people. As people grow old, they tend to experience one or more of these conditions. This questionnaire is strictly for research purposes. Information provided will*

*be treated with utmost confidentiality. You are required to respond to the items as it applies to you. Only a sincere response will help you and future generations. Thank you.*

**SECTION A**

**Gender:** Male [  ] Female [  ]  
**Age:** 40-50 [  ] 50-60 [  ] 60-70 [  ] 70 and above [  ]  
**Level of Education:** WAEC or below [  ] BSc/HND [  ] PG and above [  ]  
**Duration of Work Life:** 10 -15yrs [  ] 15-25yrs [  ] 25-35yrs [  ] 35 and above [  ]  
**Religion.** Christian [  ] Muslim [  ] Others [  ]  
**Spirituality:** Daily Prayer/Bible Study/Tongues [  ] Praying sometimes [  ] Hardly praying [  ]

**SECTION B**

*Please tick the word that best describe you: ALWAYS, OFTEN, SOMETIMES, NEVER.*

S/N	ITEMS	ALWAYS	OFTEN	SOMETIMES	NEVER
1	I am treated for hypertension				
2	I am treated for diabetes				
3	I am experiencing heart problems				
4	I am not in control of my urine and stool				
5	I experience breathing problem				
6	My hands shake without control				
7	I have been diagnosed of cancer				
8	I cannot see properly				
9	I do not hear well				
10	I am slow in doing things				
11	I fall sick				
12	I have lost taste for food these days				
13	My wounds do not heal quickly				
14	I am losing weight				

**SECTION C**

S/N	ITEMS	ALWAYS	OFTEN	SOMETIMES	NEVER
1	I am sad and worried.				
2	I do not go out these days.				
3	I do not go to parties				
4	I enjoy going to parties				
5	I think of death.				
6	I have fear of death.				
7	I do not see my family.				

**SECTION D**

S/N	ITEMS	ALWAYS	OFTEN	SOMETIMES	NEVER
1	I have been falling accidentally.				
2	I have broken one or two bones.				
3	I have arthritis.				
4	I have no strength to do much				
5	I cannot sleep.				
6	I am very weak				

**SECTION E**

S/N	ITEMS	ALWAYS	OFTEN	SOMETIMES	NEVER
1	I have accommodation problem.				
2	I have no money to spend.				
3	I cannot feed as I want.				



4	I can buy my drugs				
5	I cannot buy clothes				

**SECTION F**

List other challenges you experience due to ageing: -----

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**Note:** Please ensure you cite the author every time you use this scale:

Odukoya, J. A. and Eserewrune, E.E. (2018). Development and validation of covenant gerontology scale: screening tool for counselling purpose. *Global Journal of Applied Management And Social Sciencs Vol \_ ( )*