

Effects of Utilizing Traditional Igbo Art and Cultural Activities as Informal Education Curricula for Decelerating Sarcopenia and Dynapenia among Old People in Eastern Nigeria

Nkem Fortyunes **Alu**¹, Nnaemeka Chibuike **Egwuibe**¹, Samuel Ogba **Echem**²,
Jovita Charles **Ogu**³, Chukwunonso Okechukwu **Uzoagba**¹

¹Department of Fine and Applied Arts, Faculty of Arts, University of Nigeria, Nsukka, Enugu State. Nigeria.

²Department of Fine and Applied Arts, Faculty of Humanities, Alex Ekwueme Federal University, Ndufu-Alike, Ebonyi State, Nigeria.

³ Department of Fine and Applied Arts, School of Vocational and Technical Education, Alvan Ikoku Federal College of Education, Owerri, Imo State, Nigeria.

Corresponding Author:

Dr. Nkem Fortyunes Alu nkem.alu@unn.edu.ng

Abstract

Sarcopenia is the age-related loss of flesh or muscle mass in the body while dynapenia is the loss of muscle strength. With Igbo art and cultural activities as a baseline for interventions, the specific objectives of this study were to (i) find out the degree to which Traditional Igbo Art and Cultural Activities can help to improve muscle strength among the participants, (ii) ascertain the types of Traditional Igbo Art and Cultural Activities that old people prefer, and (iii) assess the level to which Traditional Igbo Art and Cultural Activities can improve old people's cognitive well-being. The 2-week quasi-experiment was conducted in Arochukwu, Oboro, and Ohafia in Abia State, Umuchu in Anambra State, and Ehime-Mbano in Imo State. From the initial 100 (N=100), (n=50) retirees were selected for the exercise. The study tool was the Traditional Igbo Art and

Cultural Activities Treatment Syllabus (TIACA-TS), with the subjects: (i) Basketry/rope weaving, (ii) Mud wall plastering/design, (iii) Hairstyling/haircutting, (d) Makeup/body adornment, (iv) Thatch weaving, (v) Clay moulding, (vi) Cloth weaving/embroidery, and (vii) Wood carving/joinery. The secondary instrument was the Traditional Igbo Art and Cultural Activities Response Score Card (TIACA-RSC). Scores between 7-10 were rated High, 4-6, average, and 1-3, low. The cumulative scores per subject were converted to percentage equivalents and discussed. The findings showed that art forms that encouraged weaving, embroidery, and painting were preferred by the old people. While dynapenia was significantly treated, sarcopenia was minimally handled.

Keywords: *Sarcopenia, dynapenia, cognitive well-being, age-related, embroidery*

Introduction

Sarcopenia and Dynapenia in a Nutsh

Sarcopenia is a medical term for the loss of flesh or muscle mass in the body. It is mostly related to ageing. Patel et al. (2016) posit that sarcopenia is a core component of physical frailty that together affects negatively an individual's capability to live independently. Also, as Cruz-Jentoft and Sayer (2019) put it, sarcopenia is a progressive and generalised skeletal muscle disorder involving the accelerated loss of muscle mass and function that is associated with increased adverse outcomes including falls, functional decline, frailty, and mortality. It occurs commonly as an age-related process in older people, influenced not only by contemporaneous risk factors but also by genetic and lifestyle factors operating across the life

course. It can also occur in mid-life in association with a range of conditions.

Much like the underlying causes of ageing, the biology of sarcopenia remains elusive. Two key observations associated with sarcopenia include a loss of skeletal muscle fibre number (Lexell et al., 1988) and a change in the cross-sectional area (CSA) of the remaining fibres (Aniansson et al., 1986).

There is a close link between sarcopenia and dynapenia, the slight difference being that while sarcopenia defines the slack in flesh or muscle mass, dynapenia translates to age-related loss of strength. It is essential to mark this difference because the loss of flesh mass does not always translate to loss of strength. But in some cases, an old person can have the two at the same time, resulting in obvious frailty. Clark and Manini (2012)

buttress that dynapenia (pronounced *dahy-nuh-pē-nē-a*, Greek translation for the poverty of strength, power, or force) is the age-associated loss of muscle strength that is not caused by neurologic or muscular diseases. Dynapenia predisposes older adults to an increased risk of functional limitations and mortality.

On future directions for research on dynapenia, Clark and Manini (2012) suggest that the obvious long-term goal of scientific investigations within this area is to develop effective interventions to prevent and treat dynapenia, which ultimately should lower the rates of physical limitations in elderly adults. However, to achieve this goal, we believe that several critical issues need to be urgently addressed. First, an objective definition of dynapenia that is agreed on by a consensus panel is needed.

Physical Exercise for Sarcopenia and Dynapenia

The major treatment for sarcopenia and dynapenia is an exercise aimed at strengthening the muscles or limbs. This form of exercise must be gradual, systematic, and well-controlled, because of the frail nature of the persons involved. This paper argues that while sarcopenic and dynapenic persons, in

response to weak muscles have reduced or dropped physical exercises, they are likely, also, to have been discouraged from the cognitive accompaniments of those exercises. This is not too good for senile brain health.

Physical Exercise Programmes directed to improve muscle mass and its function may be key to reducing sarcopenia consequences (De Mello et al., 2019). Exercise training is associated with improved quality of life, reduced hospitalizations and health problems, and prolonged lifespan, suggesting that exercise should be considered a milestone in the treatment of skeletal muscle wasting (Belardinelli et al., 2012)

In the words of Guissepe (2017), one of the most efficient methods to counteract age-related alterations in muscle tissue is represented by physical exercise. An alternative intervention to improve muscle structure and performance is electrical or mechanical stimulation. The present scientific contribution would like to emphasize, for the scientific community, the positive effects of adapted physical activity in the elderly as a possible non-pharmacologic treatment to prevent or treat muscle atrophy. The scientific postulations of physical exercise, as having a decelerating impact

on sarcopenia and dynapenia, are in this discourse being buttressed with artistic and Igbo cultural exercises as having extra physio-psycho-therapeutic impressions.

Igbo Art and Culture as a Fulcrum of Physical Exercise for Sarcopenia and Dynapenia

Art, either by creating it or viewing the ones made by others, is used to help people explore emotions, develop self-awareness, cope with stress, boost self-esteem, and work on social skills (Cherry, 2020). Art and culture are often interwoven because the majority of a people's culture is embedded in their art. Logically speaking, the art of a society embodies its culture. Creativity is one of the most viable bedrocks upon which intangible and tangible cultures are handed from one generation to another. In doing so, the commercial, therapeutic, and anthropological imports of art practice also transcend generations. So, in managing old people, a greater percentage of the methods applied are artistic in nature, especially in the tropics. The fact that targeted lessons must be learnt and relative objectives attained in using art for social interventions makes it educational. So, in presenting art as physical exercise for frail persons, the cognitive, affective, and psychomotor

arms of the venture must be systematically stretched out if the targeted aims must be achieved. In other words, art is the curriculum content while psychotherapy is the aim. In the context of this study, art for sarcopenic and dynapenic conditions is presented as informal kinesthetic education whose aim is to attain therapeutic results.

Educational expressions are as calibrated as they are critically confrontational, at least judging by pedagogical and research methodological instances. From the day of the early philosophers like Socrates, Aristotle, and Plato, learning and its quests challenged something within humanity which, interestingly, only humans can decipher. Within the spheres of informal, formal, and non-formal education, very many sorts of research take place every day, and they all pivot on the human interrogation about self, environment, and the quest to know more. Man, is, therefore, a serial searcher (Alu et al., 2022).

In the Nigerian situation, it is sufficient to say that the illustrative and aesthetic bearings that art and cultural activities offer could suffice for a balance between its kinaesthetic and cognitive well-being aspects. Overly, the kind of activities an individual is exposed to in their younger

days may determine to a great extent what their muscles and skeletons will be like, in terms of health and function, when they get old. Art and cultural activities are perceived to go beyond engaging the limbs to engaging the brain. Most of the adults in Nigerian cities are civil servants, private sector workers, traders or artisans. Alu et al. (2018) posited that there is therapy in the array of idealist and theoretic provenances of art, both in the long run and otherwise.

It is only an insignificant number of Nigerian urban dwellers that do art- and culture-related jobs such as studio art practice, music, art teaching, dance, and choreography, events management, make-up art, hairstyling, fashion design, pottery, sculpture, mural and general painting, carnival shows, welding, and embroidery. Incidentally too, they are mostly in the private sector. The implication is that most civil servants and traders live out their entire active years having mastered the civil service or trade only. So, when old age sets in or when they retire, they easily become susceptible to muscle conditions such as sarcopenia and dynapenia, especially the latter which spells loss of strength. It has been observed that those who are in traditional Igbo art and cultural practices last deep into old age, almost throughout

their lifetimes. This is constant with the proverbial statement that old habits never die. Given the popular direction that physical exercise is good for treating sarcopenic and dynapenic persons, we hereby re-examine traditional Igbo art and cultural activities in deepening the prescription.

Therefore, the 'health' of skeletal muscle in an older person is a function of the peak levels attained in early life and the extrinsic and intrinsic changes operating through the middle years into old age, for example, physical activity, nutrition, disease and disuse, and hormonal changes (Patel et al, 2017).

In summing up the Igbo cultural art education patterns, Okafor and Emeka (1998) stated that the Igbo pass on their culture, i.e. educate their young, through their traditional education system, which comprises child-rearing practices, age-grade organizations, apprenticeship systems, various initiation ceremonies, and a body of festivals and ceremonies which order man's relationship with the supernatural and with fellow humans. Among the afore-referred traditional art and cultural educators are grandparents and great-grandparents who are still very strong and ardent in their Igbo artistic vocations. In traversing a reasonable

proportion of the Igbo art and cultural map, Okafor and Emeka (1998) vividly posited that iron works, wood carving, pottery, weaving, and mud sculpture constitute the main Igbo crafts. Carvers produce utensils like pestle and mortar, ritual bowls and objects, musical instruments, canoes, doors and posts, staff of office, and masks. In the words of Alu et al. (2018), book illustrations, public advertising, audio-visuals, animation pictures, cartoon art, instructional media, and motion picture graphics are a few of the many avenues in which visual arts have become communication agents. From the above assertions, while Okafor and Emeka arrayed the art of the Igbo people from a traditional sphere, Alu et al. pictured it from a modern angle. Ancient or modern, there is always a form of art practice available for the young or aged Igbo person.

Awka and Nkwere people in south-east Nigeria are acknowledged masters in blacksmithery. The Annangs in Akwa-Ibom State are noted for producing an amazing variety of cane and raffia crafts, while in Kano, Sokoto, and Borno States, high-quality leather goods are produced (Okpoko & Okpoko, 2002)

Okafor and Emeka (1998) further expressed that the people of Lejja, Awka,

Abriba, Agulu-Umana, Nkwere (Nkwele Opi Egbe), and Aguleri are skilled workers in iron, and some have foundries dating back several centuries. Their blacksmiths produce farming implements, hunting spears, weapons of offence and defences such as guns, knives, and various sizes of ogene (clapperless bell). A clever survey of the Igbo culture readily brings out the lifestyles of the old people and how they grapple with the challenges of sustaining tradition in the face of modernity. It is also worthy of commendation that Igbo rural dwellers, chief among whom are the old ones, have sustained art with cultural practice, as well as sustained culture with art. Cutting across fashion, architecture, agriculture, make-up, murals, hairstyling, tattooing, weaving, crocheting, carving, and many more, Igbo intangible cultures have been sustained by the tangible over the centuries. In some communities, and regarding certain art practices, gender restrictions may apply; in other places, age factors may apply, whereas in most places the issue of social hierarchy, as is observable in the differences between the royal families and the commoners, may apply. In effect, the reasons for the diversities of styles and cultural relativities are as diverse as the

multifarious nature of traditional art itself.

Buttressing this, Okafor and Emeka (1998) stated that the people of Akwette, parts of Ngwa, the Northern parts of Igbo land, and Western Niger Igbo are good weavers of cotton and produce a variety of highly-priced cloths. Pottery is women's occupation but sculpture is not. Sculptors produce mud and woodenstools for kings and titled men, ritual mud effigies representing deities in shrines, and the highly ethnographic Mbari statues of the areas around Naze in Owerri. These crafts are highly practised mainly in Inyi, Ekulu, Abakaliki, Aba, Okigwe, Oha, Anam, Olu Mban'asaa, Nsugbe, Afikpo, and parts of Nsukka where much of Igboland gets her household vessels and ritual bowls.

Regrettably, heritage management in Nigeria is at a low ebb such that it cannot support flourishing heritage tourism, despite the existence of numerous heritage resources and heritage management institutions such as the National Commission for Museums and Management (NCMM) and legal procedures for heritage preservation (Okpoko et al., 2021).

While the culture of preserving most artefacts and heritage sites is not at its best, it should be noted that only the old men and women in the rural areas so far sustain our traditional art practices, and there is a looming danger of skills extinction as they die off over the years. This is because most of the younger ones have gone in search of white-collar jobs in the cities, and, therefore, never knew, or lost touch with the traditional art skills of their motherland. Also, most of the ageing parents and grandparents in the contemporary era are in their children's houses in the cities receiving medical attention for sarcopenic and dynapenic conditions which involvement in art practices in the villages could have taken care of psychotherapeutically. It is not a quick process for starters but it usually pays off afterwards. The therapeutic import of art in traditional culture is good for old retired civil servants who lived almost all their lives in the cities, and most likely do not have the skills of their people's crafts. For those that already have the skills, it is easier to adapt. In the latter class are those who lived their lives in the rural areas trading and doing traditional crafts.

The kinesthetic tendencies in cultural practices readily prescribe art and culture as a worthwhile exercise for sarcopenic and dynapenic persons. More appropriately put, since Igbo art and cultural practices engage the cognitive as well as psychomotor skills of people with senile issues, it is, therefore, highly recommended. The muscle and tissue weakening possibilities attendant to staying too idle during old age is readily discouraged by allowing the old persons to get involved in certain art activities that align with Igbo culture. There are obvious psychotherapeutic and physiotherapeutic imports associated with helping old persons to flex their muscles and engage their brains with artistic indulgences. And because such indulgences are attuned to the immediate culture of the people, the old persons will not find them too cumbersome to adapt.

Common Aspects of Igbo Art and Culture

Nigeria has three major ethnic groups: Hausa, Igbo, and Yoruba (in alphabetical order). The Igbo people constitute the current Abia, Anambra, Ebonyi, Enugu, and Imo States in the South-Eastern Geopolitical zone. There are also Igbo settlements in Delta and Rivers States in the South-South. Although there are variegated accents and sub-dialects from one enclave to another, Igbo is the

central language of the Igbo people. The traditional organogram of the Igbo people, irrespective of the heterogeneous and sometimes ascetic cultural administrations are purposefully similar (Onuora et al., 2020)

Art and culture are interwoven in all climes. The artistic proficiency of the Igbo people is naturally attached to their ethnographical and vocational philosophies. In other words, it is the nature of an Igbo man to be artistic, and culturally so. The trade, apprenticeship, leisure, and even traditional administrations of diverse Igbo communities have their anchorages on art in most ways. In a traditional Igbo setting, art produces farming, hunting, trading, leisure, warfare, fashion, adornment, administrative tools, and more. There is hardly any aspect of the everyday life of the Igbo people that is not accentuated by some kind of art practices, cutting across the obvious areas of sculpture, painting, textiles, ceramics, and graphics. In most cases, even beyond the Igbo lands, the commonest trades and vocations that a people are known for are art-propelled.

Even with the advent of western education, art still announces the people that practise it and further classifies

them. Traditional art practice in its ramifications has become the subject of intervention and research in contemporary education. Whether old or young, the art practitioner is always cognitively and kinesthetically alert and able to practice art. Nwaoha (2021) asserted that western education brings the Igbo man to the limelight of productivity and human resourcefulness to enhance human capital development.

Art facilitates the commonest Igbo cultures by providing the tools, garbs or pedestals for the events or cultural activities to take place. Art as an entrepreneurial discipline or vocation, even in cultural settings, involuntarily defines the quantum of regard peculiar cultures garner from one Igbo community to another. The moment the visual appearance of the persons involved in

certain cultures begins to wane aesthetically, such cultures are then classified as losing their known values. An instance is the royal outing of the Igwe (King) called *Ofa/a*; if the royal regalia, staffs of office, body adornments, and body makeup that garnish the ceremony, from the Igwe (King), Lolo (Queen), Onowu (Traditional Prime minister), ndiichie (council of chiefs) to the different blocks of celebrants, begin to lose their visual arts grandeur, the celebration also loses cultural regard. In other words, the functionalities of Igbo culture are art-accentuated. But it must be understood that art in this instance is one of the major vocations of the Igbo people. The following chart encapsulates some examples of Igbo cultural activities and how art facilitates them:

Fig 1: Some Aspects of Igbo Culture and the Art Practices that Facilitate them

	IGBO CULTURE	TRANSLATION	ASPECT OF ART FACILITATING
1	Igbamgba	Wrestling	Textiles/fashion, makeup, head and arm gears, pendants
2	IwaAkwa	Fabrics tying (wrapper) age-grade ceremonies	Textiles/fashion, makeup, hair styling
3	Ikpankata	Basket weaving	Embroidery, weaving, latching
4	Ikpaute	Mat weaving	Embroidery, weaving, latching
5	Ike	Hair braiding or plaiting	Weaving, embroidery, carving, latching

	isi/ikpaisi		
6	Igunwa aha	Traditional child naming	Chalk and powder makeup, costuming
7	Ikpaakwa	Fabric weaving	Embroidery, latching, crocheting, dying, weaving
8	Ichu nta	Hunting	Iron weapon smithing, wood carving
9	Ipiosisi	Wood sculpture	Wood carving and joinery
10	Inu Agha	Warfare and conquests	Textiles/fashion, bracelet and bead making, weapon smithing
11	Ite/Ikpanzu	White chalk body marking or adornment	Body painting and make up
12	Iru ulo ajaoto	Traditional mud architecture	Brick making, wattling, thatch weaving, mural painting
13	Ikpuihe	Moulding/sculpting	Clay and wax sculpture
14	Ide uriaja	Mural painting, other inscriptions	Mural painting and motif making
15	Ikpuite	Pottery	Ceramics pottery, firing and glazing
16	Ikwaozu	Burial and its rites	Textiles, body adornments, makeup, artefacts
17	Iteuri	Makeup art	Makeup and body decoration
18	Iti mmonwu	Masquerading	Wood carving, panting, textiles/fashion, adornment
19	Irumgbede	Fattening room/bridal outings	Makeup, costuming, body adornments
20	Iteegwu	Dance	Textiles/fashion, makeup, body adornments
21	Igbotomma	Traditional retirement	Textiles/fashion, makeup, body adornment
22	Ikpuuzu	Black/metal smithing	Iron smelting, carving, etching, engraving
23	Igbaofala	King's royal outing	Textiles/fashion, makeup, wood carving, iron smithing
24	Ichiechichi	Coronation or title taking	Textiles/fashion, makeup, wood carving, iron smithing

25	Igbuazu	Fishing	Tentmaking, iron smithing, boat and paddle carving
26	Iteuriaja	Wall plastering	Plastering, mural painting, architectural motif making
27	Ilu nwanyi	Marriage	Textiles, makeup, basketry, ceramics

The Problem

Lifetime artists are usually those who practise in the villages where art still greatly interweaves with culture. Here, age is not a barrier, as most of them even get more proficient with age. So, the big question is, old as most of them are, why are those Igbo traditional artists and cultural apologists not easily affected by sarcopenia and dynapenia? Or do they have some resistance to muscle frailty and senile weakness? Retirement from civil service (in both private and public sectors) should not mean retiring from limb-moving exercises. Observations have shown that most old people who are civil service or business retirees soon become numb in the limb muscles, thereby losing strength because they do not have other things engaging their brain and limbs except occasional travels to their children's stations, on brief holidays or medical check-ups. In agreement with the scientific prescription of physical exercises, this paper allays the strain associated with the exercises by

postulating art and culture as more profitable physical activities for preventing, managing or treating sarcopenia and dynapenia. This is chiefly because most of the ordinary exercises for old people are either machine-aided or environmentally unfriendly with certain ranges of senility. But old persons can engage in art and cultural exercises without necessarily being conscious of its encumbrances. It is like leisure time exercise in which the aesthetic components of indulgence enliven the brain while the kinesthetic components strengthen the limbs.

Methods and Measures

Research Design

The quasi-experimental research was adopted for this study, more specifically, the non-equivalent group quasi-experimental research design. According to Thomas (2020), in a non-equivalent group design, the researcher chooses existing groups that appear similar, but where only one of the groups experiences

the treatment. In a true experiment with random assignment, the control and treatment groups are considered equivalent in every way other than the treatment. But in a quasi-experiment where the groups are not random, they may differ in other ways – they are *non-equivalent groups*.

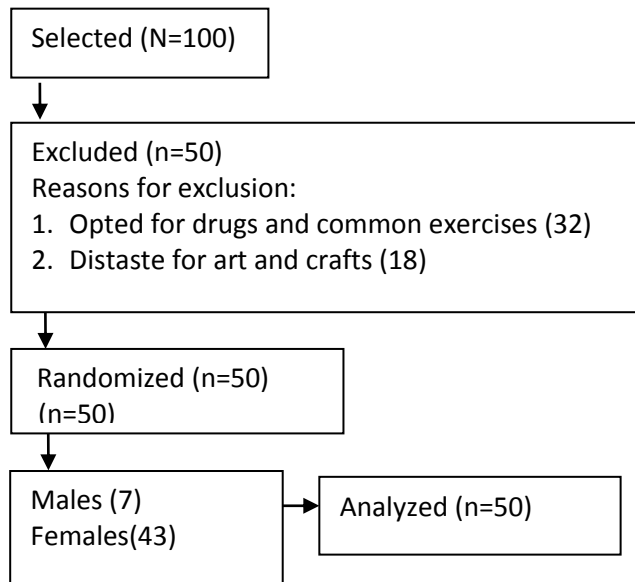
Participants

There were 50 participants in the exercise; 10 were from the home communities of each of the 5 researchers. Each of them was mandated to experiment in their community using the selected Traditional Igbo Art and Cultural Activities (TRIACA), with 20 old men and women in a non-equivalent group

situation each, where 10 are treated to the art and culture activities and the other 10 not treated. The implication was that each of the 5 researchers personally treated 10 old persons who hitherto had muscle frailty and loss of strength to TRIACA, leaving out the other 10 at treatment with drugs and other approaches they were already taking. Only participants from or greater than 65 years of age (>65 years) were selected to participate. The intervention lasted for 2 weeks (Mondays–Thursdays per week; 3 hours per day) in each community. Participant inclusion distribution and criteria are as shown in figs. 2 and 3 below

Fig. 2: Participant Inclusion Distribution

	Researcher	Community	State	Participants		
1	Nkem F. Alu	Arochukwu	Abia	10	Males - 4	Females - 6
2	Nnaemeka C. Egwuibe	Oboro	Abia	10	Males - 1	Females - 9
3	Samuel O. Echem	Ohafia	Abia	10	Males - 0	Females- 10
4	Jovita C. Ogu	Ehime-Mbano	Imo	10	Males - 0	Females- 10
5	Chukwunonso O.Uzoagba	Umuchu	Anambra	10	Males - 2	Females - 8

Fig 3: Participant Inclusion Criteria

Research Objectives

The main objective of this study was to find out how suitable Traditional Igbo Art and Cultural Activities are for ameliorating the conditions of sarcopenic and dynapenic old people in Abia, Anambra, and Imo States of Nigeria. The specific objectives were:

1. To find out the degree to which Traditional Igbo Art and Cultural Activities can help to improve muscle strength among the participants.
2. To ascertain the types of Traditional Igbo Art and Cultural Activities that old people prefer to indulge in.

3. To assess the level to which Traditional Igbo Art and Cultural Activities can improve the cognitive well-being of old people.

Research Questions

In tandem with the objectives, the study was guided by the following research questions:

1. To what degree can Traditional Igbo Art and Cultural Activities help to improve muscle strength among the participants?
2. What are the types of Traditional Igbo Art and Cultural Activities

that old people prefer to indulge in?

3. To what level can Traditional Igbo Art and Cultural Activities improve the cognitive well-being of old people?

Scope

The study was confined to 50 old persons, randomly selected from an initial population of 100, mainly civil service and business retirees from the hometowns of the researchers. The South Eastern towns involved were: Arochukwu, Oboro, and Ohafia in Abia State; Ehime-Mbano in Imo State, and Umuchu in Anambra State.

Ethical Considerations

The researchers got the consent of the old participants and their families before indulging in the intervention. Community heads in the concerned communities were also informed and their consents obtained. The academic institutions where the researchers work were also duly informed as well as the owners of the venues of intervention.

Intervention Tools

Sequel to letters of invitation to participate (see appendix 1), the first instrument employed was the Traditional Igbo Art and Cultural Activities Treatment

Syllabus (TIACA-TS) bearing 8 subjects of intervention: (i) Basketry/rope weaving, (ii) Mud wall plastering/design, (iii) Hairstyling/haircutting, (iv) Makeup/body adornment, (v) Thatch weaving, (vi) Clay moulding, (vii) Cloth weaving/embroidery, and (viii) Wood carving/joinery. The subjects were separated into four, per week, spread from Monday to Thursday of each week. Three hours were allotted to each subject. The individual rating was done on a scale of 1 maximum point accrued to the 10 rating indices each: (i) Attention, (ii) Concentration, (iii) Distractions, (iv) Energy, (v) Relapse, (vi) Interaction, (vii) Morbidity, (viii) Creativity, (ix) Mobility and (x) Stationary. See appendix 2. The second instrument was the Traditional Igbo Art and Cultural Activities Response Scorecard (TIACA-RSC), predicated upon the TIACA-TS and designed by the researchers for recording categorized responses. Observation and interrogation were used to elicit ratings. Cumulative ratings were done based on the collated responses from the five communities in Abia, Imo and Anambra States: (i) Arochukwu (Abia State), (ii) Oboro (Abia State), (iii) Ohafia (Abia State), (iii) Ehime-Mbano (Imo State), and (v) Umuchu (Anambra State). Cumulative response scores were clustered into three:

Low, 1–3 points; Average, 4–6 points; High; 7–10 points. See appendix 3.

Validation of Instruments

The instruments were pilot tested and validated by 5 experts:3 from the Department of Fine and Applied Arts, University of Nigeria, Nsukka, 1 from the Department of Educational Foundations, University of Nigeria Nsukka, and 1 from the Department of Fine and Applied Arts, Alex Ekwueme Federal University, Ndufu Alike.

Procedure for Data Analysis

After the cumulative individual scores were gathered from the Igbo Art and Cultural Activities Treatment Syllabus (TIACA-TS) with 10 maximum points accruable to each of the scoring indices—attention, concentration, distractions, energy, relapse, interaction, morbidity,

creativity, mobility and stationary— a mean score was arrived at for each participant, prior to transfer to the Traditional Igbo Art and Cultural Activities Response Scorecard (TIACA-RSC). On the TIACA-RSC, scores are rated thus: Low, 1–3 points; Average, 4–6 points; High, 7–10. Then the number of participants who scored within each of the three ranges is placed in columns pertaining to the intervention subjects and in rows pertaining to the communities. At the end of each column is a three-piece sum of score categories, under which each percentage equivalent is also scored. The TIACA with the highest percentage score on the 'high' rating was considered the most accepted, responded to or relevant in answering each research question while those with the highest percentage rating on the 'low' category were the most rejected.

Results

The results of the intervention are hereby presented in sequence with the objectives:

Table 1

Data distribution on the degree to which Traditional Igbo Art and Cultural Activities can help to improve muscle strength among the participants (n=50)

	Wk 1: Mon			Wk 1: Tue			Wk 1: Wed			Wk 1: Thur			Wk 2: Mon			Wk 2: Tue			Wk 2: Wed			Wk 2: Thur		
	Basketry/rope weaving			Mud wall design			Hairstyling/ barbing			Makeup/Body adornment			Thatch weaving			Clay moulding			Cloth weaving /Embroidery			Wood carving		
	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	L	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	L	H	Av	L

									o												o	i		o
Aro	7	2	1	8	2	0	6	3	1	7	3	0	8	1	1	5	2	3	8	2	0	3	4	3
Mba	6	4	0	7	3	0	10	0	0	7	0	3	5	5	0	0	5	5	8	2	0	2	7	1
Oha	8	2	0	7	2	1	6	2	2	5	5	0	7	3	0	5	3	2	7	3	0	6	2	2
Obo	7	3	0	4	4	2	8	2	0	10	0	0	5	5	0	3	6	1	10	0	0	0	6	4
Umu	7	3	0	6	2	2	3	5	2	3	6	1	7	3	0	5	5	0	6	4	0	5	3	2
	35	14	1	32	13	5	33	12	5	32	14	3	32	17	1	18	21	11	39	11	0	1	22	1
	70%	28%	2%	64%	26%	10%	66%	24%	10%	64%	28%	6%	64%	34%	2%	36%	42%	22%	78%	22%	0%	32%	44%	24%

Based on the data in Table 1 above, 35 participants made between 7–10 points during the basketry and rope weaving exercises in all five communities, translating to 70% of the entire population, whereas 14 (28%) scored between 4–6 points, meaning average rating; only 1 participant (2%) scored between 1–3, low rating. This means that basketry and rope weaving improved muscle strength among old people to a high degree. Mud wall design also polled a highly rated response with 32 (64%), 13 (26%) average, and only 5 (10%) on the low. Hairstyling and haircutting were also observed to have improved their strength

with 33 (64%) on the high, 12 (24%) on the average, and only 5 (10%) on the low rating. Make-up/body adornment got 32 (64%) scoring high, 14 (28%) on average, and 3 (6%) on a low rating. In the second week, 32 (64%) participants responded highly to thatch weaving, 17 (54%) on average, and only 1 (2%) scored low. Clay modelling was poorly responded to, with 18 (36%) scoring high, 21 (42%) average, and 11 (22%) scoring low. Cloth weaving and embroidery had a massive 39 (78%) scoring high, 11 (22%) average, and none on the low score, whereas wood carving got a paltry 16 (32%) on the high, 22 (44%) average, and 12 (24%) on the low.

Table 2 Data frequency on the types of Traditional Igbo Art and Cultural Activities

	Wk 1: Mon			Wk 1: Tue			Wk 1: Wed			Wk 1: Thur			Wk 2: Mon			Wk 2 Tue			Wk 2: Wed			Wk 2: Thur		
	Basketry/rope weaving			Mud wall design			Hairstyling/ barbing			Makeup/Body adornment			Thatch weaving			Clay moulding			Cloth weaving /Embroidery			Wood carving		
	Hi	A	L	Hi	A	L	Hi	A	L	H	A	L	Hi	A	L	Hi	A	L	Hi	A	L	Hi	A	L
Ar o	9	1	0	4	4	2	8	2	0	6	4	0	5	1	4	2	2	6	5	5	0	3	4	3
M ba	8	2	0	9	0	1	9	1	0	7	2	1	9	1	0	3	5	2	8	1	1	4	4	2
O ha	7	3	0	7	2	1	9	1	0	8	1	1	6	3	1	2	7	1	8	2	0	4	3	3
O bo	8	2	0	6	2	2	8	2	0	8	2	0	7	3	0	4	4	2	7	3	0	5	5	0
U mu	7	2	1	7	0	3	8	1	1	9	1	0	8	2	0	4	5	1	9	1	0	3	6	1
	3	1	1	3	8	9	4	7	1	3	1	2	3	1	5	1	2	1	3	1	1	1	2	9
	78%	20%	2%	66%	16%	18%	84%	14%	2%	76%	20%	4%	70%	20%	10%	30%	46%	24%	74%	24%	2%	38%	44%	18%

Data in Table 2 reveal that 39(78%) participants scored (high) between 7–10 points under the basketry and rope weaving exercises, 10 (20%) scored average, while only 1 (2%) scored low. Mud wall design had 33 (66%) on the high rating, 8 (16%) on the average, and 9 (18%) on the low. Hair styling/hair cutting got 42 (84%) high cores, 7 (14%) average, and only 1 (2%) low. Makeup/body adornment polled 38 (76%) high results, 10 (20%) average, and 2 (4%) low. With 35 participants (70%) on the high,10(20%) on the average and 5

(10%) on the low, Thatch weaving was also positively responded to. Clay modeling did an almost equidistant sharing, with 15 (30%) of the participants with high scores, 23 (46%) on the mid-range, and12 (24%) on the 'low' rated scores. But cloth weaving/embroidery had 37 (74%), scoring high, 12 (24%) on average, and only 1 (2%) on the low, whereas wood carving polled 19 (38%) on the high, 22 (44%) on the average, and 9 (18%) on the low rating.

Table 3

Data frequency on the level to which Traditional Igbo Art and Cultural Activities can improve the cognitive well-being of old people (n=50)

	Wk 1: Mon			Wk 1: Tue			Wk 1: Wed			Wk 1: Thur			Wk 2: Mon			Wk 2: Tue			Wk 2: Wed			Wk 2: Thur		
	Basketry/rope weaving			Mud wall design			Hairstyling/ barbing			Makeup/Body adornment			Thatch weaving			Clay moulding			Cloth weaving /Embroidery			Wood carving		
	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo
Aro	8	1	1	3	4	3	8	2	0	7	3	0	7	2	1	4	5	1	8	1	1	3	5	2
Mba	7	3	0	5	3	2	8	1	1	9	1	0	7	2	1	4	4	2	10	0	0	4	6	0
Oha	8	2	0	4	5	1	10	0	0	7	2	1	9	0	1	5	3	2	9	1	0	2	6	2
Obo	6	4	0	5	5	0	4	5	1	10	0	0	8	2	0	3	3	4	10	0	0	6	2	2
Umu	9	1	0	4	3	3	10	0	0	9	1	0	7	2	1	5	2	3	10	0	0	5	1	4
	38	11	1	21	20	9	40	8	2	42	7	1	38	8	4	21	17	12	47	2	1	20	20	10
	76%	22%	2%	42%	40%	18%	80%	16%	4%	84%	14%	2%	76%	16%	8%	42%	34%	24%	94%	4%	2%	40%	40%	20%

On cognitive well-being, Basketry/rope weaving polled 38 (76%) participants on the high score range, 11 (22%) on the average, and 1 (2%) on the low. Mud wall design was not appreciably responded to, with 21 (42%) having scored high, 20 (40%) on the average, and 9 (18%) on the low range. Hairstyling/barbing was well responded to, with 40 (80%) on the high, 8 (16%) in the middle, and only 2 (4%) on the low ebb. Makeup/body adornment was also good, with 42 (84%) on the high score sheet, 7 (14%) in the midrange, and only 1 (2%) on the low.

Thatch weaving, with 38 (76%) on the high, 8 (16%) in the middle and 4 (8%) on the low, was also well accepted. Clay moulding was moderately accepted with only 21 (42%) scoring high, 17 (34%) scoring average, and 12 (24%) scoring low. But cloth weaving/embroidery polled 47 (94%) participants with high scores, only 2 (4%) on average, and 1 (2%) on low. Wood carving had 20 (40%) on the high and average rating apiece while 10 (20%) scored low.

Discussion

The interpretation is that cloth weaving/embroidery, with a whopping 78% of the population scoring 'high' came first in response to strengthening the muscles of the participants, thereby reducing dynapenia. Basketry/rope weaving with 70% of the population rated 'high' was next in rating. Hairstyling/haircutting, with 66% on the high score was next. Then mud wall designs, thatch weaving, and make-up/body adornment came next with 64% high scores. Clay moulding and wood carving, with 36% and 16% on the high, signified obvious rejection.

Also, hairstyling/haircutting, with 84% of the population having scored 'high' was the most preferred Traditional Igbo Art and Cultural activity by the participants. Basketry/rope weaving came next with 78% on the high score. Makeup/body adornment was next, with 76% on the high score, followed by cloth weaving/embroidery, with 74% on the high score. Thatch weaving with 70% was next while mud wall design, with 66% came next. Clay modelling with only 30% and wood carving with 38% of the participants, having scored 'high' respectively, was the most non-preferred of the sampled subjects.

Data also show that cloth weaving/embroidery, with 94% of the participants was the subject that polled the highest level of observable cognitive well-being. Makeup/body adornment came next with 84%, then hairstyling/haircutting with 80%. Basketry/rope weaving and thatch weaving, with 76% of the population scoring high, apiece came next. But whereas wood carving (40%), clay modelling (42%), and mud wall design (42%) did not improve the cognitive well-being of the participants to a very high level, they were all the same, not rated out of line since they scaled below 50% and above 40%.

Conclusion

Though the study was primarily aimed at using Traditional Igbo Art and Cultural Activities to strengthen the muscles of old people, it was discovered that not all forms of art were suitable. Clay modelling, wood carving, and mud wall design were typical examples. This could be so due to the energy dissipation required in additive and subtractive sculpture. Though the old people did not fail outrightly in those areas, they simply under performed. It was also discovered that art forms that encouraged weaving, embroidery, and assemblage augured well with them. In other words, while art

activities are good physical and mental exercise sources for old people, care must be taken to select those aspects of art that would not encumber the old people all the more, but rather, those that enliven them without much dissipation of energy and mobility should be encouraged.

Conflict of interest

There were no conflicts of interest among the researchers.

.

Author Contributions

All the authors contributed to the study: concept, design of instruments, pilot study, and field work. Adjustments were also agreed upon by all.

Funding

There was no external funding for this study

APPENDICES

Appendix 1

Traditional Igbo Art and Cultural Activities Treatment Syllabus (TIACA-TS)

Name of Participant.....								
Community.....								
Time:	Wk 1: Mon	Wk 1: Tue	Wk 1: Wed	Wk 1: Thur	Wk 2: Mon	Wk 2 Tue	Wk 2: Wed	Wk 2: Thur
Intervention Subjects:	Basketry/ rope weaving	Mud wall plastering/ Design	Hairstyling/ barbing	Makeup/ Body adornment	Thatch weaving	Clay moulding	Cloth weaving/ Embroidery	Wood carving/ joinery
Rating indices: 10 pts max each								
Attention								
Concentration								
Distractions								
Energy								
Relapse								
Interaction								
Morbidity								
Creativity								
Mobility								
Stationary								
Cumulative: 100/10								

Appendix 2

Traditional Igbo Art and Cultural Activities Response Score Card (TIACA-RSC)

	Wk 1: Mon			Wk 1: Tue			Wk 1: Wed			Wk 1: Thur			Wk 2: Mon			Wk 2 Tue			Wk 2: Wed			Wk 2: Thur			
	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	Hi	Av	Lo	
Arochukwu																									
Oboro																									
Ohafia																									
Mbano																									

- Belardinelli, R., Georgiou, D., Cianci, G. & Purcaro, A. (2012). 10-year exercise training in chronic heart failure: A randomized controlled trial. *J. Am. Coll. Cardiol.* 60, 1521–1528.
<https://www.sciencedirect.com/science/article/pii/S0735109712028112?via%3Dihub>
- Cherry, K. (2020). Morin A. (Rev.) How Art therapy is used to help people heal. Verywell Mind.<https://www.verywellmind.com/what-is-art-therapy-2795755>
- Clark, C. C. & Manini, T. M. (2012). What is dynapenia? National Center for Biotechnology Information NCBI- NIH. Nutrition. Author manuscript; available in PMC 2013 May 1. Published in final edited form as: Nutrition, 2012 May, 28(5), 495–503. doi: 10.1016/j.nut.2011.12.002 PMID: PMC3571692
[.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3571692/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3571692/)
- Cruz-Jentoft & Sayer, A. A. (2019). Sarcopenia. *The Lancet.* 393 (10191)
[https://www.thelancet.com/article/S0140-6736\(19\)31138-9/fulltext](https://www.thelancet.com/article/S0140-6736(19)31138-9/fulltext)
- De Mello, R. G. B., Corte, R. R. D., Gioscia, J. & Moriguchi, E. H. (2019). Effects of physical exercise programs on sarcopenia management, dynapenia, and physical performance in the elderly: A systematic review of randomized clinical trials. *Journal of Aging Research.* 2019 |Article ID 1959486 |.
<https://www.hindawi.com/journals/jar/2019/1959486/>
- Lexell, J., Taylor, C.C., Sjöström, M. (1988). What is the cause of the ageing atrophy? Total number, size and proportion of different fibre types studied in whole vastus lateralis muscle from 15- to 83-year-old men. *J Neurol Sci.* 84, 275–294.
Marcell, T. J. (2003), Sarcopenia: Causes, consequences, and preventions. *The Journals of Gerontology: Series A*, 58 (10), M911–M916.
<https://academic.oup.com/biomedgerontology/article/58/10/M911/534906>
- Musumeci, G. (2017). Sarcopenia and exercise; 'the state of the art'. *J. Funct. Morphol. Kinesiol.* 2(40) doi:10.3390/jfmk2040040.
file:///C:/Users/HP/AppData/Local/Temp/jfmk-02-00040.pdf
- Nwaoha, O. D.S.R (2021). Abolition of osu, ume, ohu, and diala castes system in Igbo community: approach through fundamental cultural liberalism. *Ikenga Int'l J. Inst. of Afr. Stud.* 22 (1).<https://www.ikengajournal.com.ng>

- Okafor, R. C. & Emeka, L. N. (Eds.). (1998). *Nigerian peoples and culture*. New Generation Books.
- Okpoko, A. I. & Okpoko, P. U. (2002). *Tourism in Nigeria*. Afro-Orbis Publications Limited.
- Okpoko, P.U., Emeafor, O. F., Onyeka, A. O. & Ukaegbu, M. O. (2021). Propelling enduring heritage tourism in Nigeria; lessons from Rome. *Ikenga Int'l J. Inst. of Afr.Stud.* 22 (1).<https://www.ikengajournal.com.ng>
- Onuora, C. N., Alu, N. F., Echem, S. O., Ezike, S. E., & Ogu, J. C. (2020). Illustrations in totemism and mythology as panacea for enhancing cultural studies among igbo secondary school students in Nigeria. *Advances in Social Sciences Research Journal*, 7(7), 238-260. <https://doi.org/10.14738/assrj.77.8543>
- Patel, H. P., Clift, E., Lewis, L., and Cooper, C. (2017). Epidemiology of sarcopenia and frailty. IntechOpen Limited. Open Access Peer-reviewed chapter. <https://www.intechopen.com/books/frailty-and-sarcopenia-onset-development-and-clinical-challenges/epidemiology-of-sarcopenia-and-frailty>
- Thomas, L. (2020). An introduction to quasi-experimental designs. Scribbr. <https://www.scribbr.com/methodology/quasi-experimental-design/>