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Understanding Physical Exercises and Aging as Factors in Adult Learning

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Abstract

This paper examined the erroneous belief that learning in adulthood would add little or no value to the society; suggesting that, adults' learning is perceived from the vantage point of approximately how much time is left to live. The advancement in health technology and nutrition, human survival and most especially as growth in age is increasing; promoting learning in adulthood could not be seen as a wasted effort. Various studies and

researches have established the usefulness of regular exercise as an avenue to reduce fatigue and loss of memory as well as how aging affect adulthood, but none has been tested on its effectiveness on adult learning. The population of the study involves of all the adults learners estimated to be one thousand, four hundred and seventy-nine (1,479) from the three Zones in Niger State out of which a sample size of two hundred and twenty-five randomly was picked for the study. The instruments used for the study were empirical facts through literature review, observations, interviews (for learners) and questionnaires (for facilitators). The ten (10) items questionnaire was tagged "Physical Exercises and Aging as Factors of Adult Learning (PEAFAL)". It was a 4 point rating scale questionnaire with a reliability value of 0.89 obtained through the Pearson Moment Product Coefficient method after test re-tests of the instrument. Data collected were collated and analysed using descriptive and inferential statistical methods respectively while the hypotheses were tested at 0.05 alpha level of significance. The study showed that physical exercises can adequately influence active participation of learners in learning if use appropriately through positive impact in the following order: backyard gardening ($\beta = 0.41$; $p < 0.05$), running ($\beta = 0.34$; $p < 0.05$), dancing ($\beta = 0.30$; $p < 0.05$), farming ($\beta = 0.27$; $p < 0.05$), walking ($\beta = 0.25$; $p < 0.05$), swimming ($\beta = 0.21$; $p < 0.05$). The study also revealed that there was significant difference in the interest and participation of old and young adults (Cal-t = 2.820, Crit-t = 1.96, df = 1308, P < .05 level of significance. The paper therefore emphatically established the relevant of exercise and aging and their roles in promoting adult learning. It concludes that regular exercises can improve stiffness in adult and enhance memory as adult ages. The paper therefore recommended that physical and health issues be emphasised in non-formal education curriculum and adult facilitators should imbibe the culture of regular exercises among learners especially among those of age.

Keywords: Adult Learning, Aging, Physical Exercise, Understanding

Introduction

The belief of some people is that educating an adult is a waste of time because with time, the adult will 'wither' away. An English proverb also goes along with this, '*You cannot teach an old dog a new trick*' (Crawford, 2004). While it is not possible to rely on the fact that old dog could not be taught new tricks, its application cannot be applied to human being. Also, because of high mortality rate and the fact that people were dying young, it was believed that learning beyond age of fifty would add little or no value to the society, thus, suggesting that older adults perceive learning from the vantage point of approximately how much time is left to live (Lowy and

O'Connor, 1986). All these assertions are wrong in adult education. The aging of the world population, economic changes and advances in medical sciences are all contributing to a renewed discussion about older adults and their role in modern societies.

With the advancement in health technology and nutrition, human survival and most especially growth in age are increasing. It is projected that if fertility rates stabilize at current levels, it is estimated that by 2050 the median age of the world population will be 36.5 years, rising to 42.9 years in 2150. Among the elderly, the older sub-set (those 80 years and older) will increase more rapidly. Between 1995 and 2050, their numbers are expected to grow from 61 million to 320 million, reaching 1,055 million by 2150 (United Nations, 1998).

The increase in age range demand for skilled workforce; roles as caretakers of children (mostly by women) and traditional roles of helping younger generations to grow culturally and improve rural/villages development to global markets are all indications of the need for adult to expand in educational development (Help Age International, 2000). However, educating the adults has been faced with a series of challenges such as loss or reduction of memory associated with increase in age, inappropriate motivation, social and economic commitment.

As one ages chronologically, not only are physical changes taking with associated reduced vision and hearing ability, but other age-related factors can impact cognitive function. Factors such as impaired blood circulation, decreased neurotransmitters, depression, stress, and chronic illness can all have effect on the ability of the individual to learn (Merriam, 2001). Jurich (2000) reported a research conducted by the Cognitive Neuroscience Laboratory, University of Southampton, England, that there is a decline in the ability of man to maintain visual mental images as a result of aging but no changes in the ability to compose and scan these images. Also, adults may not be able to attend a class or an event due to geography or transportation issues.

An even more apparent demand for adult education is supported by research that suggests a twenty-year-old today can expect to make six to seven job changes over the course of a working career (Aslanian and Brickell, 1980). Often, these vocational changes lead to additional adult learning out of necessity.

As adult ages, the interest of stakeholders in adult education therefore shifts to those things that would facilitate effective learning activities. One of those things is exercise. One may wonder the implication of exercise to adult learning? Yes, moderate exercise helps the brain to get ready to learn as well as making retain of information in learning activities more easier not only among the children but applicable in adults too. Researches have also shown

the effectiveness of exercise to positive influence on memory, concentration and classroom behaviour (Berlie, nd). Thus, exposing learners to moderated exercise with a span of time that their age could accommodate would not only promote physical fitness but also negative consequences of stress because it can ward off the ill effects of chronic stress and actually reverse them. Godman (2014) asserts also that there are plenty of good reasons for adults to engage in exercise regularly. Adults need to look healthier by lowering their blood pressure, prevent depression and brain fog that comes with age; exercise could change the brain in ways that protect memory and therefore skills in learning.

One may conclude therefore that it might not be easy to teach new tricks to old dogs, since human beings are a different kind of animal, and continuous learning appears to be part of human being makeup, it is then essential that we x-ray the roles aging and exercise have on the ability of adults to learn and develop in this modern society. All these references discussed above encourage the need to study aging and exercise as they affect adult learning. To have a clearer picture, this study examined how both the variables affect adult learning.

Statement of the Problem

Registration of adult learners always attracts a large turn-out of participants at the initial stage but the number decline to almost zero within a short time. This has always been a recurrent event in adult education programme and many approaches and researches have been carried out to unravel this problem and proffer solutions with no effect. However, observation and investigation have revealed that many learners stop coming to class because of low cognitive boosting and some other related factors that make learning impossible, hence, the need for the learners to opt out. While many researchers have been focusing on motivation of both learners and their instructors, there is a dearth of researches on the psychological study of how exercises and aging can boost adult learning to the extent of them staying till the end of programme and probably continue to further studies.

In the formal education sector, children have period where they partake in physical activities that help both cognitive functioning and wellbeing, this is not so in adult education, against the backdrop of the fact that adults also experience stress, loss of interest and inability to concentrate just like children in formal education and probably because of aging factor. Researches have also shown that there is likelihood of increase of dementia worldwide, the use of regular exercises has been recommended to tackle this challenge. The question now is how to relate this to adulthood? The question now is how to relate this to adulthood. Since physical exercises affect brain plasticity, influence cognition and wellbeing of human being, in what way

can researchers help the adult learners using exercises and aging as determinants for adult learning? This study helps to find out how and why?

Research Questions

1. Can regular physical exercises improve adult learning?
2. In what way(s) does aging affect adult learning?

Hypotheses

Ho^1: There is no significant relationship between physical exercise and adult learning.

Ho^2: There is no significant difference between old and young adult learners and their participation in learning activities.

Literature rwview

Adult Education and its Clients

Practically, everybody alive is a client in adult education, because we are all students of lifelong learning process, we learn new things day in day out of our lives. The reason is simple: adult education fills the gap that inability to have access of formal education creates and there is no age barrier and requirements. There is free entry and exist which make it easy for anybody to come and leave depending on the circumstances for the earlier failure to be literate in the first instance. A nomadic boy wandering with his herds of cattle is a client in adult education, same goes for a 70 years old man who later realises the need for education and enrolls in the programme. For the benefit of novice in the area of understanding what adult education entails, we shall use Malcolm Knowles (1980) definition of adult education through six principles:

(1) Adults are internally motivated;
(2) Self-directed;
(3) Adults bring life experiences;
(4) Knowledge to learning experiences;
(5) Adults are goal oriented and
(6) Adults are relevancy oriented; adults are practical; and adult learners like to be respected.

Adult education means that adults are actively engaged in a learning activity -- the activity may not take place within a classroom, and the activity may not be strictly "educational." Even though the education is not scholarly, it is still a group of people learning a new skill -- which makes it adult education. It is a form of non-formal educational programme designed to cater for all categories of clients.

In adult education class, there are set of people who have never attended any classes. In fact this group of learners is pure none-literate who are coming to the modern world of literacy for the first time. This is the essence of the word "illiterate" being not appropriate because, it is true they cannot read or write, they could communicate through the skills they acquired in their occupation. For instance, a drummer who can neither read nor write can use his drum to communicate and send information. Such task is known as "literacies". Another set of customers in adult education class are those that have had an initial education but never completed it. This group is known as "drop out". Since, there is free entry and exist in non-formal education, such people are allowed to complete their education and probably use this as step for further education.

With the development in technology, some workforce need to improve their skills and hence, enrolled in an adult education programme because they are required by an employer or social agency. Also, group like almajiris and nomadic whose style of living needs a specialised programme. It should be pointed out that adult education does not have age limit, hence it is possible to find clients who are above 70 or 80 years of age in a learning environment with teenagers.

Aging Concept

There is a lot of controversy as to what constitutes '*aging*' and at what level could one be described as been 'aged' or adult. Aging is defined as a decline or loss (a "de-tuning") of adaptation with increasing age, caused by a time-progressive decline of Hamilton's forces of natural selection. Rose (1991), for example, in his seminal book on the evolution of aging defines aging as a persistent decline in the age-specific fitness components of an organism due to internal physiological degeneration. At level of the individual, the intrinsic physiological state at a specific age determines, among other things, whether an individual is dead or alive and how much it reproduces.

The Philips Center for Health and Well-being (2011) considered defining aging in three perspectives:

1) Chronological Age
2) Change in Social Role
3) Change in Capabilities

Chronological Age

Chronological age is often and most commonly used to define 'old age', however the specific age chosen very much depends on societal and environmental factors.

- In most developed world countries 60 or 65 is the accepted retirement age however a more appropriate definition in some developing countries could be 50+.
- Vast health inequalities persist, as is clear from differences in life expectancy at birth. For example, while Japan has the highest life expectancy in the world at 82.2 years, in several countries in Africa the figure is as much as 40 years lower. Even within countries, health inequalities are also significant.
- The common use of a calendar age to mark the threshold of old age assumes equivalence with biological age, yet at the same time, it is generally accepted that these two are not necessarily synonymous.

For those reasons and more, one may agree that utilizing chronological age as part of a definition to determine aging is generally inappropriate.

Change in Social Roles

Changes in social roles and specifically the point in life where active contribution is no longer possible have been used for a long time to determine aging. Retirement from work, the adult status of children, the arrival of grandchildren or the onset of the menopause in women have all been used to define aging in the past. In some cases, it is the loss of roles accompanying physical decline which is significant. However, the Think Tank believes that aging cannot be determined using changes in social roles alone as there are often many and varied alternative reasons for these changes.

Change in Capabilities

The aging process is of course a biological reality which has its own dynamic. A change in health status at any age can be due to genetics and/ or human behaviors. There is no doubt that long life can be a sign of good health. Some suggest the presence of ill health or a diminished health status as the start of aging but there are many chronic illnesses that would contradict this thesis. In fact simple changes in capabilities that aren't linked to health can have a profound effect i.e. being unable to open a jam jar or complete housework.

The World Health Organisation (WHO) defines Active Aging as "the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age. It applies to both individuals and population groups. Active aging allows people to realize their potential for physical, social, and mental well-being throughout the life course and to participate in society, while providing them with adequate protection, security and care when they need. The word "active" refers to continuing

participation in social, economic, cultural, spiritual and civic affairs, not just the ability to be physically active or to participate in the labor force. Older people who retire from work, ill or live with disabilities can remain active contributors to their families, peers, communities and nations.

Active aging aims to extend healthy life expectancy and quality of life for all people as they age. "Health" refers to physical, mental and social well-being as expressed in the WHO definition of health. Maintaining autonomy and independence for the older people is a key goal in the policy framework for active aging. Aging takes place within the context of friends, work associates, neighbors and family members. This is why interdependence as well as inter-generational solidarity are important tenets of active aging. "

It is clear that changes in social circumstances, health and the individual's capabilities are often more important in aging than chronological age. The individual's ability to make choices, public policy and environmental factors all play a critical role.

Ultimately the Think Tank determined that it was not possible to define aging, as the process was singularly individual and an individual's reactions to many of life's milestones or transitions determines when and if they could be considered an older person.

In a survey conducted in the United States for the American Association of Retired Persons (AARP), 2,032 adults were asked what image comes to their mind when they think of a person as "old". The respondents listed physical or mental limitations (35%), appearance (19%) and attitude (18%). The images related to a person "young" were active or busy life (36%), positive attitude (31%) and youthful appearance (12%). In other words, an active life is a major factor in the social acceptance of older adults. Aging is a complex process composed of several features such as:

1) An exponential increase in mortality with age;
2) Physiological changes that typically lead to a functional decline with age;
3) Increased susceptibility to certain diseases with age.

So, aging is a progressive deterioration of physiological function, an intrinsic age-related process of loss of viability and increase in vulnerability.

Aging as a factor in Adult Learning

It is possible that a novice asks why the need for studying aging in adult education. The reason is as simple as when one considers that admission into any formal education is determined by the age of the candidates. For primary education in Nigeria, a child is expected to have reached six years of age (in some cases, a child may be admitted a year lower than that). Admission to secondary schools and higher institution is also

determined by age, then why not in non-formal and adult education? That notwithstanding, the strictness in the formal education is not followed in the non-formal education. Peculiarities associated to adults in contrast to youth or child learning makes it inevitable for consideration in adult education. As man grows, his commitment domestically also grows.

Growing older and managing the four major life transitions which affect the majority of older people from work to retirement; from independence to dependence; from having a partner to being alone; and from caring for children to caring for another older dependent person give rise to learning needs. These include enabling people to make a useful contribution to society, to work for longer, maintain their independence, their health and well-being. Learning can ameliorate some of the down-sides of transitions that can be damaging to people's welfare and which incur costs both to the individual and society. For example, bereavement and divorce can often lead to less social interaction and poorer mental well-being as well as the need to acquire new skills for new tasks, such as cooking or money management.

Physical Exercise as a factor of Adult Learning

With improved diet, physical fitness, public health, and health care, more adults are reaching age 65 in better physical and mental healths than in the past. Past study has shown that the prevalence of chronic disability among older people is declining: from 1982 to 1994, the prevalence of chronic disability diminished significantly, from 24.9 to 21.3 percent of the older population (Manton et al., 1997). While some disability is the result of more general losses of physiological functions with aging (i.e., normal aging), extreme disability in older persons, including that which stems from mental disorders, is not an inevitable part of aging (Cohen, 1988; Rowe & Kahn, 1997).

Normal aging is a gradual process that ushers in some physical decline, such as decreased sensory abilities (e.g., vision and hearing) and decreased pulmonary and immune function (Miller, 1996; Carman, 1997). With aging come certain changes in mental functioning, but very few of these changes match commonly held negative stereotypes about aging (Cohen, 1988; Rowe & Kahn, 1997). In normal aging, important aspects of mental health include stable intellectual functioning, capacity for change, and productive engagement with life.

Metholodology

Design

The study was a quasi-experimental research in that there was manipulation of the independent variable carried out within six (6) months duration. A quasi-experiment is an empirical interventional study used to

estimate the causal impact of an intervention on target population without random assignment.

Population of the Study

The population of the study involves all the adult learners in Niger State that have link with the State Agency for Mass Education (SAME) in Minna and Non-Governmental Organisations (NGOs) registered with SAME. The study was an investigative one, hence attracted a large population which comprised of one thousand, four hundred and seventy-nine (1,479) learners from the three Zones in Niger State. In Zone A, Bida, Agaie and Lapai Local Government Areas were chosen. In Zone B, Chanchaga, Bosso and Gbaiko were picked. From Zone C, Wushishi, Rafi, and Kotangora LGAs were picked. These LGAs were picked because of their closeness and accessibility for monitoring and easy evaluation of the study.

Sample for the Study

In order to achieve a thorough and unbiased research, simple size was based on Krejeie & Morgan table of samples selection, 306 respondents were selected with equal number irrespective of LGA population size. As earlier reported, the samples were randomly selected for the population; however with the 9 facilitators purposely selected the samples used was three hundred and fifteen (315). The facilitators, also as guides to the researchers were used to facilitate the respondents response for the study.

Instruments for Data Collection

The instruments used for the study were observations, interviews (for learners) and questionnaires (for facilitators). The questionnaire was tagged "Physical Exercises and Aging as Factors of Adult Learning (PEAFAL)". It was a 4 point rating scale questionnaire of ten (10 question items) with a reliability value of 0.89 obtained through the Pearson Moment Product Coefficient method after test re-tests of the instrument. The interview guides were provided and moderated by personnel of the Agency for Mass Education and experts of Adult Education and Counseling from Ibrahim Badamasi Babangida University, Lapai, Niger State.

Procedure for Data Collection

The learners were subjected to various physical exercises through their facilitators who helped in recording the outcome of the learners' behaviours. After their exposure to the physical exercise, the researcher with the help of trained research assistants collated the responses. Nine copies of questionnaire were administered on the facilitators and retrieved the same day.

Methods of Data Analysis

Data collected were collated and analysed using descriptive and inferential statistical methods respectively while the hypotheses were tested on 0.05 alpha level of significance.

Findings and Discussions

Research Question 1: Can regular physical exercises improve adult learning?

Table 1. Responses of facilitators on whether physical exercises can improve adult learning

SN	Items	SA	A	D	SD
1	Adult learners need exercise to improve their alertness in the learning activities.	3 (33.3%)	3 (33.3%)	2 (22.2%)	1 (11.1%)
2	Introducing exercise as a means of mental alertness cannot effectively improve learners learning.	0 (0.0%)	2 (22.2%)	5 (55.6%)	2 (22.2%)
3	The time slated for lessons can easily accommodate period of exercise for learners.	0 (0.0%)	2 (22.2%)	4 (44.4%)	3 (33.3%)
4	Introducing exercises into learning curriculum may discourage learners' further participation.	1 (11.1%)	2 (22.2%)	3 (33.3%)	3 (33.3%)
5	The location of the centres and its environment may discourage learners' involvement in physical exercise.	2 (22.2%)	3 (33.3%)	2 (22.2%)	2 (22.2%)

Table 1 above shows the opinion of the facilitators on if regular physical exercises can improve adult learning. Interview conducted revealed that all the facilitators agreed that majority of the learners had been involved in various activities that could be termed as exercises. This was done through their involvement in farming, trekking to learning centres and backyard farming as experienced mostly especially by women. Majority of the facilitators (6 out of 9 representing 66.7%) through their responses to questionnaire items agreed that the adult learners need exercise to improve alertness in their learning activities; they also agreed that introduction of exercise as a means of mental alertness can improve learning (7 of 9 representing 77.8% disagreed that it cannot). On the possibility of involving the learners in physical activities during learning periods in their centres, the facilitators disagreed on this as only 2 of the 9 agreed that learning duration of two hours (2 hours) per contact day is enough to incorporate physical exercises into the learning activities of the learners. Their disagreement relied on the fact that the curriculum being in use does not create that possibility, same goes to irregular attendance by learners. Observation however shows that there was high spirit exhibited by young learners when

they were engaged in running and dancing through local music been played by the researchers. It was also observed that there was improved concentration and participation in class activities by them after been exposed to these physical exercises. On the possibility of introducing physical exercises into learning curriculum, if it could discourage learners' further participation, majority of the facilitators disagreed on this as 6 out of the 9 facilitators (66.6%) were of the contrary opinion. On whether the location of the centres and its environment may discourage learners' involvement in physical exercise, there was a dicey response here as their responses could not be fully ascertain (halve agreed and the other halve did not agree).

Research Question 2: In what way(s) does aging affect adult learning?

Table 2. Responses of facilitators on way(s) at which aging affect adult learning

SN	Items	SA	A	D	SD
1	Age of learners will determine their acceptance in learning activities.	2 (22.2%)	3 (33.3%)	2 (22.2%)	2 (22.2%)
2	Adults will not like to be involved in outside activities apart from learning in the classroom environment.	1 (11.1%)	3 (33.3%)	4 (44.4%)	1 (13.3%)
3	The current curriculum that did not include exercise and aging inclusion into learning activities is accepted by me.	1 (11.1%)	1 (11.1%)	2 (22.2%)	5 (55.6%)
4	Old adult learners will not welcome any new ideas that do not go with their needs.	1 (11.1%)	2 (22.2%)	2 (22.2%)	4 (44.4%)
5	Facilitators will welcome the idea of introducing exercise and determining aging as a reflection of adult involvement in learning activities.	4 (33.3%)	1 (11.1%)	2 (22.2%)	2 (22.2%)

Table 2 shows the facilitators response on various way(s) by which the learners' age affect their learning. As indicated above, 5 (55.5%) of the 9 facilitators were of the opinion that age of the learners will determine their acceptance of learning activities while the remaining 4 (44.4%) had contrary opinion. This reflects a kind of 50-50 responses. The same equal tie was recorded on the responses of the facilitators if adults would like to be involved in outside activities apart from learning in the classroom environment. There was a clear difference on the facilitators response if they agree that the current curriculum that has not included exercise and aging into learning activities would be accepted by them as 7 (77.8% disagreed while only 2 (22.2%) agreed. The same response was recorded among the learners where group between age 18 to 40 and 41 years to 60 years were understudy and the young learners showed more active and interested in

learning more than those who were between 41 years and above, thus justifying the responses of the facilitators. The interview result also showed that the younger once were quick in picking up learning with the intention of furthering their education against the elderly one who their participation is restricted because of age. Majority of the facilitators 6 of 9 (66.6%) however disagreed that old adult learner will not welcome any new ideas that do not go with their needs. Conclusively, 5 (44.4%) of the 9 facilitators agreed that facilitators will welcome the idea of introducing exercise and determining aging as a reflection of adult involvement in learning activities. This is a clear indication that if well organized and compressed into non-formal education, the facilitators who are responsible to implement the policy would be ready to support government move on the idea of introducing physical exercises as a means of encouraging adult learners participate in adult learning.

Ho[1]: There is no significant difference between young and old adult learners participation in learning activities.

Table 3. Distribution showing difference between old and young adults in learning activities in terms of their age differences

Learning	N	Mean	Std. Dev	Crit-t	Cal-t	DF	P
Old Adults (41-63 years)	94	51.3333	5.5273	1.96	2.820	306	0.005
Young Adults (18-40 years)	212	2.2722	6.3244				

There was a mean difference of 0.9389 between the old and young adult respondents. The young adults' mean with the highest number of respondents is 52.2722 while those that are old adults had 51.3333. However, 90.9% of the respondents were of the opinion that physical exercises improved their fitness and well-being. This finding therefore show the significantly differences between the old and young adults in terms of their perception and involvement in physical exercises and the effect of their age differences in learning.

The above table showed that there was significant difference in the interest and participation of old and young adults (Cal-t = 2.820, Crit-t = 1.96, df = 1308, P < .05 level of significance. The null hypothesis is therefore rejected. As indicated in the result of the findings, there was a significant difference in the participation of both groups. There was a mean difference of 0.9389. Young adults' mean with the highest number of respondents is 52.2722 while old adults had 51.3333. This study established the fact that if there is enough sensitization and awareness on the usefulness of exercises and probably inclusion in the curriculum into non-formal

education programme, there is likelihood of increase number of participation and reduction in withdrawal from classes. Also, age differences clearly demarcate the old from the young and the strength at which all would want to participate. The negative aspect of the exposure was that some learners failed to attend the classes after being exposed to the practical but later continue after being persuaded that it was just meant for research alone.

Hypothesis 2: There is no significant relationship between physical exercises and adult learning

Table 4. Physical Exercises as predictor of active participation in adult learning

Variables	F-Ratio	Sig. of P	R	R-Square	Adj. R-Square	β	T	P
(Constant)							1.000	.318
Dancing						0.30	25.989	.000
Farming						0.27	7.514	.004
Walking	7.461	.000	.182	.033	.029	0.25	22.045	.000
Swimming						0.21	1.476	.000
Backyard Gardening						0.41	2.882	.000
Running						0.34	6.192	.000

Table 1 above showed that there were significant influences of physical exercises on adult participation and learning. The table reflected positive impact in the following order: backyard gardening ($\beta = 0.41$; $p < 0.05$), running ($\beta = 0.34$; $p < 0.05$), dancing ($\beta = 0.30$; $p < 0.05$), farming ($\beta = 0.27$; $p < 0.05$), walking ($\beta = 0.25$; $p < 0.05$), swimming ($\beta = 0.21$; $p < 0.05$).

Discussions of the Findings

The study showed that physical exercises can adequately influence active participation of learners in learning if use appropriately. As shown above, majority of the learners are involved in backyard farming. The interview conducted also reflected that most women were involved in backyard farming unlike their husbands that were involved in large scale (mechanized) farming. This reflected that farming is the major occupation of the people in Niger State. The table showed that swimming is the least source of physical exercises by the participants. Exposing the learners to outside activities, all were interested in running activities. Those that were old and weak were excluded, same with those that were pregnant among the women. With full enthusiasms, the learners participated and those that came 1st, 2nd and 3rd in that order were encouraged through a token by the researcher.

The learners claimed that it has been a while that they were involved in such exercise. The outcome of this activity was noticed in the learners'

active participation in class activities. This finding confirmed Mandolesi (2018) study that physical exercise boost wellbeing. There was improved attention and positive results in the class work. Women among the participants said ordinarily they were always encouraged in walking especially whenever they were pregnant; hence, walking is not new to them. The finding goes in agreement with Godman (2014) submission on the indirect effect of exercise on mood, sleep, stress and anxiety. It also encourages social cohesion among the participants. A study carried out at University of British Columbia as reported in Godman (2014) also emphasise that regular aerobic exercise the kind that gets heart and sweat glands pumping boost the size of hippocampus, the brain area involved in vertical memory, however, this study did not examine the extent of exercise in adult performance in learning as a determining effect on memory.

Conclusion and Recommendations

An English proverb, '*You cannot teach an old dog a new trick*' has been the major reason why some people believed that adults do not need education. While it is not possible to rely on the fact that old dog could not be taught new tricks, its application cannot be applied to human being because the aging of the world population, economic changes and advances in medical sciences are all contributing to a renewed discussion about adults and their role in modern societies, hence, they also need education. Also, the increase in age range demand for skilled workforce; roles as caretakers of children and traditional roles of helping younger generations to grow culturally and improve rural/villages development to global markets are all indications of the need for adult to expand in educational development. Various literatures have shown that as adult ages, the interest of stakeholders in adult education is shifting to those things that would facilitate effective learning activities. One of those things is physical exercise. Moderate exercise helps the brain to get ready to learn as well as making retain of information in learning activities more easier not only among the children but applicable to adults too. Researches have also shown the effectiveness of exercise to positive influence on memory, concentration, well-being and classroom behaviour. Aging has also been discovered to be associated to reduce vision and hearing ability as well as other age-related factors can impact cognitive function. The findings in this study have established the above claims as physical exercises and aging have roles in promoting adult learning. The study concludes that regular exercises can improve stiffness in adult and enhance memory as adult ages. The facilitators used for the study are divided on the inclusions of physical exercises in adult learning claiming that since most of adult learners' daily activities are already exercises in nature. There are also different opinions exhibited between young and old

adults in terms of their involvement in physical exercises. The study therefore emphatically established the relevant of exercise and aging and their roles in promoting adult learning. It also concludes that regular exercises can reduce stiffness in adult and enhance memory as adult ages. The study therefore recommended that physical and health issues be emphasised in non-formal education curriculum and adult facilitators should imbibe the culture of regular exercises among learners especially among young adults. Based on the above conclusions, the study recommended that physical and health issues be emphasised in non-formal education curriculum and adult facilitators should imbibe the culture of organizing and encouraging regular exercises among learners especially among young adults.

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