Compliance to Standard Equipment Requirements by Exercise Therapy/Fitness Outfits in The South-South Geopolitical Zone of Nigeria

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Abstract - *The purpose of this study was to assess the compliance of exercise therapy/fitness outfits in the south-south geopolitical zone of Nigeria to standard equipment requirements. Descriptive survey design was adopted for the conduct of the study using a sample size of 51centres/managers purposively selected from a population of 102 managers of fitness outfits in the six states of the south-south geopolitical zone of Nigeria. A self- developed structured questionnaire and a facility checklist were used to collect the data. Data collected were analysed using frequency counts and percentages. The study revealed in this analysis that only treadmills (66.7%), bicycle ergometers (66.7%), dumbbells (84.3%) and weight racks (57.0%) met the benchmark minimum in more than 50% of the exercise therapy/fitness outfits surveyed in six states of the south-south geopolitical zone of Nigeria. Most of the equipment surveyed were functional with the highest non-functionality occurring in treadmill machines in 9.8% of the surveyed centres followed by sit-up benches (5.9%) and bicycle ergometers (3.9%). In conclusion, it could be deduced from the results that there's gross inadequacy of equipment and low level of compliance to established standard in the exercise therapy/fitness outfits evaluated in the south-south geopolitical zone of Nigeria.*

Keywords: *Compliance, Equipment, Exercise therapy, Fitness outfits*

INTRODUCTION

Engaging in physical activity is one of the most important steps people of all ages can take to improve their health and fitness level. Health is a state of being associated with freedom from disease and illness that also includes a positive component (wellness) that is associated with a quality of life and positive well-being [1]. Wellness means engaging in behaviours that enhance the quality of life, reduce the incidence of disease, and maximize personal potential [2]. Physical activity is one of such behaviours that can bring about wellness. Physical activity refers to any movement of the body that involves effort and thus requires energy above that needed at rest. Physical activity was defined by Marchie and Uzonicha [3] as any body movement produced by skeletal muscles that results in energy expenditure above basal level. Physical fitness is a set of attributes that people have or achieve relating to their ability to perform physical activity [4]. Olubayo-Fatiregun, Ayodele and Olorunisola [5] defined physical activity in terms of regularity and intensity of exercise to which they recommended at least 30 minutes' duration per session per week. Regular physical activity has been shown to reduce morbidity and mortality and virtually all individuals can benefit from regular physical activity, either by participating in vigorous or moderate exercises in achieving sound health, fitness and wellness [5]. Hypokinetic diseases are conditions related to inactivity or low levels of habitual activity. It can be used to describe many of the diseases and conditions associated with inactivity and poor fitness [4].

In order to achieve optimal fitness, it has become the trend in recent times for fitness conscious

individuals to engage in exercise in structured environments such as exercise therapy/fitness outfits. While this is a laudable move, its benefit can only be gained if such an outfit is able to provide a safe, easily accessible environment for exercise with state of the art functional equipment.

There are several reasons why exercise therapy/fitness out fits are established by operators but a common goal to all outfits is to provide an environment where their clients/patients can achieve healthful living and improve their physical fitness levels. Despite several exercise therapy/fitness outfits springing up in most cities in south-south geopolitical zone of Nigeria, there is need for standardization and all outfits should conform to established operational standards especially with regards to equipment. The standards set by the Medical Rehabilitation Therapists Board (MRTB) of Nigeria and American College of Sports Medicine (ACSM) serve as a guide for exercise therapy/fitness outfits in order to ensure that these centres are not established only for financial gain but they render quality services using adequate, conventional and functional equipment in a safe environment.

However, it is not adequate just to provide the equipment; they must also be well maintained in order to keep them functional. In 2007, American College of Sports Medicine [6] stated that a good facility should provide a sufficient quantity and quality of equipment so that the facility is able to fulfill its mission, purpose and intended function for its targeted members and users. Previous studies relating to standards carried out in Nigeria to the best knowledge of the researchers were limited in terms of states and levels of fitness outfits covered. This necessitated the need to investigate the compliance level of exercise therapy/ fitness outfits in the south-south geopolitical zone of Nigeria to standard equipment requirements.

OBJECTIVES

The general objective of this study was to assess the compliance of existing exercise therapy/fitness outfits to established standard for equipment. Specifically, this study was aimed at achieving the following objectives: to assess if exercise therapy/fitness outfits in south-south geopolitical zone of Nigeria have adequate equipment for operations in compliance with established benchmark; to assess the quality of the equipment being used by exercise therapy/fitness outfits in the south-south geopolitical zone of Nigeria; and to assess if exercise therapy/fitness outfits in south-south geopolitical zone of Nigeria have functional equipment for operations

MATERIALS AND METHODS

The research design for this study was the descriptive survey design. The population of the study consisted of all the exercise therapy/fitness outfits in Edo, Bayelsa, Cross Rivers, Delta, Rivers and Akwa Ibom States of the South-South geopolitical zone of Nigeria. A total of 102 exercise therapy/fitness outfits purposively drawn from the exercise therapy/fitness outfits in the state capitals of those states as determined by convenience sampling technique in the south-south geopolitical zone of Nigeria served as the sample size. A random sampling process was employed in the selection of 50% of the total outfits that made up the population resulting in 51 exercise therapy/fitness outfits. The sampling process involved selection of exercise therapy/fitness outfits in these states that suited the purpose of this study. The researcher drew up a list of all identified exercise therapy/fitness centres in the six state capitals and randomly selected fifty percent (50%) of the outfits that made up the population from the list in each state capital. This resulted in a total of 51exercise therapy/fitness outfits. The officer in charge of each outfit was the respondent for the study.

The research instruments that were used for this study included a self-developed, four-sectioned structured questionnaire and a two-sectioned facility checklist which is a combination of the MRTB and ACSM outlined standards. The instruments were assessed for content and face validity by experts and their corrections and recommendation were incorporated into the final copy of the instruments. The equivalent method of reliability was employed in estimating the reliability of the questionnaire which resulted in a correlation coefficient of 0.87. The corrected final version of the questionnaire included items on the location of the facility, state, number of personnel, types of services rendered and ACSM classification of the level of fitness facilities.

The questionnaire forms were administered directly to the respondents by the researchers at the selected exercise therapy/fitness outfits. The completed questionnaire forms were retrieved immediately. The checklist was completed by the researcher by checking the facility/equipment physically observed in the selected exercise

therapy/fitness centres. Data generated from the questionnaire and the checklists were converted to frequency counts and percentages for analysis using descriptive statistics. This was done using the Statistical Package for Social Sciences (SPSS).

RESULTS AND DISCUSSION

Table 1: Adequacy of Equipment and Compliance to the Minimum Benchmark

Equipment	Benchmark (minimum/ clinic)	Benchmark achieved Frequency (%)	Quantity available (frequency %)	Not available Frequency (%)	Total Frequency (%)
Treadmill	2	34(66.7)	43(84.3)	8(15.7)	51(100)
Bicycle Ergometer	2	34(66.7)	48(94.1)	3(5.9)	51(100)
Body composition scale	1	8(15.7)	43(84.3)	8(15.7)	51(100)
Sit up Bench	2	6(11.8)	13(25.5)	38(74.5)	51(100)
Rowing Machines	2	3(5.9)	12(23.5)	39(76.5)	51(100)
Medicine Balls	5	3(5.9)	21(41.2)	30(58.8)	51(100)
Hand Exercisers	1	16(31.4)	16(31.4)	35(68.6)	51(100)
Wobble Boards	1	6(11.8)	6(11.8)	45(88.2)	51(100)
Shoulder Wheel	1	7(13.7)	7(13.7)	44(86.3)	51(100)
Shoulder Ladder	1	6(11.8)	6(11.8)	45(88.2)	51(100)
Frenkel Mat	1	5(9.8)	5(9.8)	46(90.2)	51(100)
Walking Frames /Crutches	1	10(19.6)	11(21.6)	40(78.4)	51(100)
Parallel Bar	2	7(13.7)	7(13.7)	44(86.3)	51(100)
Wrist Exercisers	1	10(19.6)	10(19.6)	41(80.4)	51(100)
Multi Gym	1	36(70.6)	36(70.6)	15(29.4)	51(100)
Upper Limb Exerciser	1	17(33.3)	17(33.3)	34(66.7)	51(100)
Lower Limb Exerciser	1	20(39.2)	20(39.2)	31(60.8)	51(100)
Neck Exerciser	1	3(5.9)	3(5.9)	48(94.1)	51(100)
Wheel Chairs	2	4(7.8)	9(17.6)	42(82.4)	51(100)
Isokinetic Machine	1	1(2.0)	1(2.0)	50(98)	51(100)
Exercise mat	10	17(33.3)	37(72.5)	14(27.5)	51(100)
Goniometer	1	5(9.8)	5(9.8)	46(90.2)	51(100)
Sphygmomanometer	1	13(25.5)	13(25.5)	38(74.5)	51(100)
Stethoscope	1	10(19.6)	10(19.6)	41(80.4)	51(100)
Skin fold caliper	1	4(7.8)	4(7.8)	47(92.2)	51(100)
Stop watch	2	10(19.6)	15(29.4)	36(70.6)	51(100)
Alarm clock	2	5(9.8)	8(15.7)	43(84.3)	51(100)
Metronome	1	1(2.0)	1(2.0)	50(98.0)	51(100)
Heart rate monitor	2	2(4.0)	6(11.8)	45(88.2)	51(100)
Ankle weight	10	2(4.0)	10(19.6)	41(80.4)	51(100)
Barbell	2	25(49.0)	32(63.7)	19(37.3)	51(100)
Weighing scale	1	13(25.5)	13(25.5)	38(74.5)	51(100)
Chin -Up / Pull-up Bar	1	13(25.5)	13(25.5)	38(74.5)	51(100)
Cuff Weight	2	2(4.0)	3(5.9)	48(94.1)	51(100)
Dumbbell	2	43(84.3)	44(86.3)	7(13.7)	51(100)
Elliptical Machine	2	10(19.6)	20(39.2)	31(60.8)	51(100)
Exercise Ball	5	11(21.7)	24(47.1)	27(52.9)	51(100)
Grip Dynamometer	2	4(7.8)	4(7.8)	47(92.2)	51(100)
Jump Ropes	5	10(19.6)	20(39.2)	31(60.8)	51(100)
Pedometers	4	4(7.8)	4(7.8)	47(92.2)	51(100)
Push up bars	4	1(2.0)	7(13.7)	44(86.3)	51(100)
Recumbent bikes	2	8(15.7)	14(27.5)	37(72.5)	51(100)
Exercise/resistance bands	2	3(5.9)	6(11.8)	45(88.2)	51(100)
Steppers	2	18(35.3)	33(64.7)	18(35.3)	51(100)
Swimming pool	1	23(45.1)	23(45.1)	28(54.9)	51(100)
Weight benches	2	22(43.1)	38(74.5)	13(25.5)	51(100)
Weight lifting straps	2	8(15.7)	14(27.5)	37(72.7)	51(100)
Weight racks	1	26(51.0)	26(51.0)	25(49.0)	51(100)

Table 1 shows that the exercise therapy/fitness outfits in the south-south geopolitical zone of Nigeria were generally equipped with low quantities of most of the required equipment. Isokinetic machine and metronome were the lowest in availability in only 2.5% of the 51 outfits surveyed. This low quantity is followed by neck exerciser and cuff weight that were only available in 5.9% of the outfits surveyed.

However, equipment such as bicycle ergometers were readily available in 94.1% of the outfits while dumbbells, treadmills, body composition scale, exercise mats and barbells were available in 86.3%, 84.3%, 72.5% and 63.7% of the outfits surveyed respectively.

It was also revealed in this analysis that only treadmills (66.7%), bicycle ergometers (66.7%), dumbbells (84.3%) and weight racks (57.0%) met the benchmark minimum in more than 50% of the exercise therapy/fitness outfits surveyed in six states of the south-south geopolitical zone of Nigeria.

Table 2: Quality of Equipment

Equipment	Conventional Frequency (%)	Improvised Frequency (%)	Total (Outfit) Frequency (%)
Treadmill	43(84.3)	-	51(100)
Bicycle Ergometer	48 (94.1)	-	51(100)
Body composition scale	8 (15.7)	-	51(100)
Sit up Bench	10 (19.6)	3 (5.9)	51(100)
Rowing Machines	12 (23.5)	-	51(100)
Medicine Balls	21 (41.2)	-	51(100)
Hand Exercisers	16 (31.4)	-	51(100)
Wobble Boards	6 (11.8)	-	51(100)
Shoulder Wheel	7 (13.7)	-	51(100)
Shoulder Ladder	6 (11.8)	1 (2.0)	51(100)
Frenkel Mat	5 (9.8)	-	51(100)
Walking Frames /Crutches	11 (21.6)	-	51(100)
Parallel Bar	7 (13.7)	-	51(100)
Wrist Exercisers	10 (19.6)	-	51(100)
Multi Gym	36(70.6)	-	51(100)
Upper Limb Exerciser	16 (31.4)	1(2.0)	51(100)
Lower Limb Exerciser	18 (35.3)	2(3.9)	51(100)
Neck Exerciser	2 (3.9)	1(2.0)	51(100)
Wheel Chairs	9 (17 .6)	-	51(100)
Isokinetic Machine	1 (2.0)	-	51(100)
Exercise mat	32 (62.7)	5(9.8)	51(100)
Goniometer	5 (98)	-	51(100)
Sphygmomanometer	13 (25.5)	-	51(100)
Stethoscope	10 (19.6)	-	51(100)
Skin fold caliper	4 (7.8)	-	51(100)
Stop watch	15 (29.4)	1(2.0)	51(100)
Alarm clock	8 (15.7)		51(100)
Metronome	1 (2.0)	-	51(100)
Heart rate monitor	6 (118)	-	51(100)
Ankle weight	10 (19.6)	-	51(100)
Barbell	29 (56.9)	-	51(100)
Weighing scale	13 (25.5)	3(5.9)	51(100)
Chin -Up / Pull-up Bar	13 (25.5)	-	51(100)
Cuff Weight	3(5.9)	-	51(100)
Dumbbell	42(82.4)	-	51(100)
Elliptical Machine	20(39.2)	2(3.9)	51(100)
Exercise Ball	24(47.1)	-	51(100)
Grip Dynamometer	4(7.8)	-	51(100)
Jump Ropes	20(39.2)	-	51(100)
Pedometers	4(7.8)	-	51(100)
Push up bars	7(13.7)	-	51(100)
Recumbent bikes	14(27.5)	-	51(100)
Exercise/resistance bands	6(11.8)	-	51(100)
Steppers	32(62.7)	1(2.0)	51(100)
Swimming pool	23(45.1)	-	51(100)
Weight benches	32(62.7)	6(11.8)	51(100)
Weight lifting straps	11(21.6)	3(5.9)	51(100)
Weight racks	24(47.1)	2(3.9)	51(100)

The analysis of quality of equipment surveyed as shown in Table 2 revealed that most of the equipment were conventional. Equipment such as weight benches (11.8%), exercise mat (9.8%), weight lifting straps (5.9%), barbells (5.9%) and sit-up benches (5.9%) were mostly the improvised equipment.

Table 3: Functionality of the Equipment

Equipment	Functional frequency (%)	Non-functional frequency (%)	Total (outfits) frequency (%)
Treadmill	37(72.5)	6(9.8)	51(100)
Bicycle Ergometer	46(90.2)	2(3.9)	51(100)
Body composition scale	8(15.7)	-	51(100)
Sit up Bench	10(19.6)	3(5.9)	51(100)
Rowing Machines	11(21.6)	1(2.0)	51(100)
Medicine Balls	20(39.2)	1(2.0)	51(100)
Hand Exercisers	15(29.4)	1(2.0)	51(100)
Wobble Boards	6(11.8)	-	51(100)
Shoulder Wheel	7(13.7)	-	51(100)
Shoulder Ladder	6(11.8)	1(2.0)	51(100)
Frenkel Mat	5(9.8)	-	51(100)
Walking Frames /Crutches	11(21.6)	-	51(100)
Parallel Bar	7(13.7)	-	51(100)
Wrist Exercisers	9(17.6)	1(2.0)	51(100)
Multi Gym	35(68.6)	1(2.0)	51(100)
Upper Limb Exerciser	16(31.4)	1(2.0)	51(100)
Lower Limb Exerciser	19(37.3)	1(2.0)	51(100)
Neck Exerciser	2(3.9)	1(2.0)	51(100)
Wheel Chairs	9(17.6)	-	51(100)
Isokinetic Machine	1(2.0)	-	51(100)
Exercise mat	37(72.5)	-	51(100)
Goniometer	5(9.8)	-	51(100)
Sphygmomanometer	13(25.5)	-	51(100)
Stethoscope	10(19.6)	-	51(100)
Skin fold caliper	4(7.8)	-	51(100)
Stop watch	15(29.4)	-	51(100)
Alarm clock	7(13.7)	1(2.0)	51(100)
Metronome	1(2.0)	-	51(100)
Heart rate monitor	6(11.8)	-	51(100)
Ankle weight	10(19.6)	-	51(100)
Barbell	31(60.8)	1(2.0)	51(100)
Weighing scale	13(25.5)	-	51(100)
Chin -Up / Pull-up Bar	13(25.5)	-	51(100)
Cuff Weight	3(5.9)	-	51(100)
Dumbbell	43(84.3)	1(2.0)	51(100)
Elliptical Machine	19(37.3)	1(2.0)	51(100)
Exercise Ball	24(47.1)	-	51(100)
Grip Dynamometer	4(7.8)	-	51(100)
Jump Ropes	20(39.2)	-	51(100)
Pedometers	4(7.8)	-	51(100)
Push up bars	7(13.7)	-	51(100)
Recumbent bikes	14(27.5)	-	51(100)
Exercise/resistance bands	6(11.8)	-	51(100)
Steppers	32(62.7)	1(2.0)	51(100)
Swimming pool	23(45.1)	-	51(100)
Weight benches	38(74.5)	-	51(100)
Weight lifting straps	14(27.5)	-	51(100)
Weight racks	26(51.0)	-	51(100)

Table 3 shows the analysis of the functionality of the equipment surveyed. It is apparent that most of the equipment surveyed were functional with the highest non-functionality occurring in treadmill machines in 9.8% of the surveyed centres followed by sit-up benches (5.9%) and bicycle ergometers (3.9%).

Adequacy and Level of Compliance of Equipment to Standard

On the adequacy and level of compliance of equipment in these exercise therapy/fitness outfits to the standard set by ACSM and MRTB [6, 7], this study revealed that while some equipment such as treadmills, bicycle ergometers, body composition scales, exercise mats, dumbbells and barbells were readily available, others such as skin fold calipers, sphygmomanometers, stethoscopes, heart rate monitors, pedometers, metronomes were scarcely available. This can be traced to the fact that majority of the staff in these outfits were not trained fitness experts and as such might not appreciate the value and importance of some of these apparently small equipment to the health, fitness and well-being of their clients/patients. Moreover, they may not know how to operate and interpret the derived results. The trend of requiring "big" equipment like treadmill, multigyms, bicycle ergometers and the like could be linked to the need to impress prospective clients/patients by the operations of the exercise therapy/fitness outfits. Only four equipment namely, the treadmill, bicycle ergometer, dumbbells and weight racks met the benchmark minimum with at least 50% status. It is however worthy of note that although a benchmark was set for the purpose of estimating compliance, it is a recommended but not required minimum since each outfit is meant to be equipped based on the number of clients/patients that it serves per time. Thus, an outfit with a low client- base is not expected to have the same number of equipment as one with a large client-base. According to ACSM [6], the quality of equipment will depend on the number of members and users, usage pattern and the purpose for which the facility was established.

Quality of the Equipment

The quality of the equipment in the outfits surveyed was revealed to be mostly conventional. The mostly improvised equipment were weight benches, sit up benches, bar bells, weight-lifting strap and exercise mats. These kinds of equipment seem easy to fabricate, hence their improvisation in many outfits. Agwubike and Ogbouma [7] also found out in their study in Edo and Delta states that most of the available equipment were obsolete and in need of maintenance and repairs.

Functionality of the Equipment

It was shown from the data analysis that not all of the already inadequate equipment were functional. This is in agreement with the study carried out by Agwubike and Ogbouma [7] which revealed that while there was gross inadequacy of equipment in the fitness centres in Edo and Delta States, the few available equipment were not all functional. This is especially with regards to treadmills, bicycle ergometers and sit-up benches. This is probably because operators of the outfits need to impress their first-time clients with the presence of such equipment, even when they are not functional. However, this is a hazardous practice and it also occupies space that can be used for other purposes.

CONCLUSION AND RECOMMENDATION

Consequent upon the findings of this study, it could be deduced that there's gross inadequacy of equipment as well as low level of compliance to established standard in the exercise therapy/fitness outfits evaluated in the south-south geopolitical zone of Nigeria. In addition to this inadequacy, there was obvious poor maintenance culture as a lot of the available equipment were not functional. The combination of this inadequacy and non-functional status of the equipment in most of the exercise therapy/fitness outfits surveyed contribute to inefficiency and ineffectiveness of such outfits. Thus, these outfits are perhaps not rendering adequate services to their patients/clients.

It is recommended that there is a need for the setting up of a regulatory body whose duty will include; registration of all exercise therapy/fitness outfits, defining standard guidelines and baseline requirements for equipment for the establishment and operations of all exercise therapy/fitness outfits in the zone. This will streamline the operations of these outfits and enhance service delivery to their clients/patients. The researchers found it extremely difficult to obtain a list of all the exercise therapy/ fitness outfits in the region studied. It would therefore be appropriate for a database of all exercise therapy/fitness outfits in the country to be established.

This will pave the way for further research in this area.

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