

EFFECTS OF PHYSICAL EDUCATION PROGRAMME ON THE HEALTH OF DIPLOMA TEACHER TRAINEES IN KENYA

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ABSTRACT

Physical education has been compulsory and examinable in Kenya's teacher Education colleges at diploma level since 1980. The aims of the programme among others are to maintain and improve the bodily health and fitness of the learners. This study, therefore, aimed at establishing the health-related fitness levels of the teacher trainees before and after the eight-week Physical Education Programme. The sample comprised 40 first-year, 40 second-year and 40 third-year teacher trainees split equally between men and women. The variables monitored were body composition, flexibility, muscular endurance and cardiorespiratory endurance. Preliminary findings showed some general improvements in the health status of the learners. It is recommended that Physical Education be encouraged in all educational institutions for purposes of enhancing the learners' health status.

Key words: *Physical education programme, teacher trainees, body composition, flexibility, muscular endurance, cardiorespiratory endurance.*

INTRODUCTION

Physical Education (P.E.) has been accepted as a major area within the endeavour for broad Education for all (WCEFA, 1990). The United Nations Charter of Physical Education and sports has recognised that Physical Education can develop an all round individual who is healthy (UNESCO, 1980). There is a close link between exercise, physical activities and health (Vouri, 1987; Njororai, 1994, 1995, 1996 a, b, 1977). The world health organization has defined health as a "state of complete physical, mental and social well-being and not merely the absence of disease" (Hawas and Scotcher, 1993). It is in this wider concept of health that physical activity and exercise have become important (Havas, 1987; Alderslade, 1990; Bunnet et al., 1990; Folawiyo, 1994; Lore, 1997 a, b; Njororai, 1994, 1995, 1996 a, 1997). In Kenya, the Presidential decree of 1980 made Physical Education compulsory in all educational institutions (Republic of Kenya, 1984; Mahlman et. al., 1993). In diploma teachers' colleges, Physical Education is compulsory and examinable. One of the objectives of the P.E. diploma programme includes improving and maintaining bodily health and fitness (Republic of Kenya, 1992). The diploma teachers periodically evaluate students on skill performance, knowledge,

attitudes and effort. However, the diploma syllabus is silent on the evaluation of the health of students. Studies on physical fitness testing in Kenya have been done in primary (Nalletamby, 1997), secondary (Esmail, 1983; Wasonga, 1989) and University levels (Njororai, et al., 1997) leaving a gap at diploma teachers colleges level. Therefore, this study evaluated the effectiveness of the Physical Education programme in improving the health-related fitness levels of the teacher trainees. The dependent variables included cardiorespiratory and muscular endurance, body composition and flexibility.

METHODS

The sample comprised 40 first-year, 40 second-year and 40- third year Kenya Science Teachers College (KSTC). The teacher trainees were split equally between men and women. An *ex-post facto* research design was used in this study. The investigation period took eight weeks and data were collected for both the pre-test and post-test results. The subjects were tested in:

- i) Cardiorespiratory endurance
 - ii) Resting heart rate, which was beats per minute (b.p.m.)
 - iii) Distance covered in the Cooper's 12-minute run-walk test.
- ii) Abdominal muscular strength/endurance, which was the correctly executed number of modified sit-ups in 60 seconds.
- iii) Low-back and hamstring flexion, which was the average of three trials in centimeters, (cm) and,
- iv) Sum of skinfolds fat, which was the sum of the average of three trials for both the triceps and subscapular measurements in millimeters (mm).

Demographic data (age, height and weight) were recorded at both pre-test and post-test measurements. The data were analysed using descriptive statistics, i.e. means and percentages (%). A dependent t-test technique was used and tested at $P < 0.05$.

RESULTS

Demographic data indicated that second years were the youngest (21.58 yrs), followed by first years (21.90 yrs), while third years were the oldest (22.05 yrs). Second years were the shortest (162.95 cm) followed by first years (163.68 cm), while third years were the tallest (164.20cm). During pre-test, first years were the lightest (58.33 kg), followed by third years (60.50 kg), while second years were the heaviest (62.08 kg). During post-test first year students were the lightest (57.13 kg), followed by third years (59.00 kg) while second years were the heaviest (60.40 kg). Results indicated a decrease in weight in all groups. These results were significant at $P < 0.05$.

Table 1: Subjects' fitness data

Dependent variable	No. Of Subjects	PRE-TEST X	POST-TEST X	DIFFERENCE	MAGNITUDE OF IMPROVEMENT
*RHR (b.p.m.)	120	79.13	74.4	4.73	6%
Dis. in 12 min. (m)	120	2058.88	2751.52	679.64	33.99%
sit-ups (60 Sec)	120	22.79	31.28	8.47	37.17%
sit-and-reach (cm)	120	36.99	38.99	2.58	7.10%
Skinfolds (mm)	120	27.53	25.29	2.24	8.14%

*RHR = Resting heart rate.

Table 1 shows the overall fitness status of the subjects. The resting heart rate was 79.13 b.p.m. during pre-test and this decreased to 74.4 b.p.m. during the post-test. This indicated a mean difference of 4.73 b.p.m. and a magnitude of improvement of 6%. Distance covered in the 12 minutes run-walk test was 2058.88m during pre-test and increased to 2751.52m during the post-test. This indicated a mean difference of 33.99%. Performance in sit-ups was 22.79 in the pre-test and this increased to 31.28 during the post-test. This indicated a mean difference of 8.47 and magnitude of improvement of 37.17%. In sit-and-reach test, the performance was 36.99cm during pre-test, but this increased to 38.99cm during the post-test. This indicated a mean difference of 2.58cm and a magnitude of improvement of 7.10%. In skinfold fat measurement, the performance was 27.53mm during the pre-test but decreased to 25.29mm during the post-test. This indicated a mean difference of 2.24mm and a magnitude of improvement of 8.14%. Findings in this study indicate that the teacher trainees improved in fitness during the eight weeks period. The results were significant at $P < 0.05$ level.

DISCUSSION

During the eight weeks period, first years were exposed to soccer (12 hrs) and swimming (12 hrs). The second years were exposed to volleyball (12 hrs) and netball (12 hrs). The third years were exposed to subject methods (36 hrs). The subjects also participated in recreational games outside normal P.E. lessons. Findings in this study indicate that the subjects improved in fitness through the Physical Education programme. Results in the improvement of the cardiorespiratory endurance support those by Esmail (1983), Njororai, et al. (1997), Vogel (1986) and Wasonga (1989). Based on the findings in this study, it is recommended that, the P.E programmes be improved to include physical activities, which can enhance students' health at all levels of Kenyan education system.

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