

Jiggers Detrimental To Pupils' Outdoor Play Activities

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Abstract

This study intended to investigate the relationship between jigger infestation and participation at school by pre-primary and lower primary school children. The study was carried out in Gatundu South sub-county, which is one of the highly jigger infested zones in Kiambu County, Kenya. The specific objective of this study was to find out the level of participation in outdoor activity by pupils who were infested with jiggers. The Ecological systems theory was utilized and the descriptive survey design was employed. The population of the study comprised of pre-primary, lower primary school children and their class teachers from all the public schools in Gatundu South Sub-County. The sample size was eleven schools. Purposive sampling technique was applied to sample 44 jigger infested children in these schools. Forty-four pupils who were not infested were randomly sampled to be compared with those who were infested. The teachers handling pre-primary school and lower primary classes were also purposively sampled. Data was collected through the use of questionnaires for teachers, observations and document analysis. Qualitative and quantitative methods of data analysis were applied. The Statistical Package for Social Sciences (SPSS) was used to prepare and organize data for analysis. Pearson's correlation coefficient test was used to compute the relationship between the variables. Frequency distribution tables, percentages, and descriptions were utilized for data presentations. The study concluded that jiggers were a health hazard to the realization of pupils' outdoor activities. The Pearson correlation coefficient indicated that jiggers significantly affected children's play in outdoor activities at $r = 0.306$ $p = 0.043$, $n = 44$. The study recommended that school managers liaise with health officials to treat those infested, carry out routine checkups on pupils and sensitize communities on the causes, dangers and preventive measures of the jigger parasite in order to help all children realize their full educational potential in life and especially in play because it enhances mental stimulation in children.

Key words: Jigger infestation, participation, outdoor activity, pre-primary, health hazard, routine checkups.

INTRODUCTION

Health educators and health professionals worldwide have been calling for total commitment to good health as a way of life. Health is the physical, mental and social wellness of a person. According to Kelly and Lewis (1987) an individual cannot be active and productive in his/her day to day activities if they are unhealthy. UNICEF (2005) also observes that the health of children is important as it determines their physical growth and development, academic performance and participation in life activities. This is necessary because as Creswell (1993) observes, healthcare makes its greatest impact during the formative years of a child and that the possible causes of ill health among children are known to include malnutrition, childhood diseases and parasitic infections (Obade, 2007; Creswell, 1993; Oluoch, 2001).

The United Nations Convention on the Rights of Children (UNCRC) (1989), Article 24, also stipulates that every child has a right to the highest standard of health and medical care attainable and that states shall place special emphasis on the provision of primary and preventive healthcare, public health education and the reduction of child mortality. Moreover, several countries including Kenya agreed that every child should be provided with a nurturing, caring and safe environment in order to survive, be physically healthy, mentally alert, emotionally secure and socially competent to be able to learn (Obade, 2007). The Kenya Government has also demonstrated concern for improving the well-being of young children by putting in place initiatives such as the Kenya Educational Support Program (KESSP) whose aim is to improve the learning facilities of Kenyan Schools and by extension help school going children in realizing their full potential in life. This is in line with the National Early Childhood Development Policy Framework (KIE, 2006) which stipulates that for children to realize their full potential in life, they require quality healthcare, nutrition, early stimulation, protection, care and training services.

Despite all these efforts, the jigger has been known to have adverse effects on children's physical health. Jigger is the common name for Tungiasis, also known as Chigoe flea, bicho de pie, sad flea, bug of the foot and Tunga Penetrans (Akwe, 2008). According to Heukelbach J, Frank S. & Feildmeier (2004), jiggers are found among communities with limited resources in several countries within America, Asia and Africa. In some of these communities, jiggers attack a substantial number of children. Mutahi (2009) for example, quoted a journal known as 'e-medicine' which reported that 51% of children from Trinidad and 42% from Nigeria were jigger infested. Mutahi also reported that infection rates among native inhabitants of developing countries are much higher than those of developed countries and that some regions often seem to be more prone to jigger infestations than others. The report however, did not reveal any challenges faced by the infested children in participating in school activities.

In addition, a cross sectional study carried out in Cameroon found out that jigger prevalence was highest among school-going children. It decreased in adults and increased again among the elderly (Collins, 2009). The reason given for the prevalence in children was that the culture and the traditions of the people placed children at a higher risk. For example, they wore sandals or damaged shoes and played in dry and dusty areas. The study aimed at ascertaining the prevalence of Tungiasis (jiggers) among the inhabitants, assessing the impact of the infestation and identifying preventive measures in a number of rural settings in the North West province of Cameroon. The study concluded that the infestation was an important health problem which seemed to have been neglected. It suggested that the problem be addressed by medical health officers, community, educationists and sufferers themselves since it is a serious threat to health.

Jigger infestations have also been experienced in Kenya. According to the Director of Ahadi Kenya, 1.2 million children were jigger infested (Daily Nation, Oct. 5th 2010). Mutahi (2009) on the other hand puts the jigger prevalence in children in Kenya at 1.6 million. Despite the discrepancy, the statistics point to a considerable number of children who are infested with jiggers. These Kenyan reports, however, do not specify the number of school going children who have been infested and whose learning process may be threatened. Thus, the above figures suggest that the number of children infested with jiggers is large enough to raise concern.

In an African newsletter, Oroko (2009) expressed concern that jigger-infested children risked contracting the dreaded HIV/AIDS scourge due to sharing of unsterilized equipment used to

remove jiggers from different children while at school and at home. This signifies that children who are infested with jiggers may also suffer from other secondary diseases related to jigger, like the tetanus and hence worsen their health status. Consequently, they may fail to go to school due to the pain they experience. They may also be limited in carrying out activities that require vigour and enthusiasm. In the long run, children suffering from these health complications may gradually leave school prematurely.

PURPOSE OF THE STUDY

The purpose of this study was to establish the relationship between jigger infestation and children's rate of participation in outdoor activities.

METHODOLOGY

The study adopted the descriptive survey research design. The design was suitable in this study because data was collected on a wide range of subjects who were infested with jiggers and an equal number of those who were not infested, from several schools in Gatundu District. The study targeted pre-school and lower primary school children from all the public primary schools, and their class teachers. The schools were randomly selected but the pre-school and lower primary school teachers were purposely selected. Jigger infested pupils were also purposely selected.

RESEARCH INSTRUMENTS

The study utilized a questionnaire for ECD and lower primary school teachers, and an observation schedule for data collection. One of the Observation schedules was used to collect data directly from the jigger victims while the other one collected data from the attendance registers and report forms which were analyzed to give information on children's attendance and performance rates.

Questionnaire for Teachers

The questionnaire consisted of items that addressed all the objectives of the study. It collected both qualitative and quantitative data as per the objectives. The first section of the questionnaire gathered demographic information about the schools and the teachers. The second section of the questionnaire comprised of items which gathered information about the children who had jiggers and those who did not have jiggers in terms of the rate of school attendance, performance in outdoor activities, performance in evaluation tests as evidenced by teachers' records and the rate at which children dropped out of school.

Observation Checklist

This was used by the researcher to gather data that could be observed directly from the subjects as they took part in the outdoor play activities. It captured data on the frequency of participation at which the activities were carried out. If the child changed from one activity to another within duration of five minutes or below, it was considered a frequent change and the child was awarded 5 marks, moderate change of activity was that of duration of five to ten minutes and was awarded 3 marks. Children who did not change from one activity to another for ten or more minutes were considered to have a rare change and were awarded 1 mark each.

Data Collection

An approval to collect data was issued by Kenyatta University graduate school and a permit was acquired from the Ministry of Education. The questionnaires were filled the same day that

the researcher observed the performance of children infested with jiggers in outdoor activities. It took two weeks to visit all the schools that had been sampled.

Data Analysis

The data collected in this study was analyzed through qualitative and quantitative methods. The Qualitative method involved coding of the data, organizing data according to themes, describing and explaining the organized data from the questionnaires and the documents. The Statistical Package for Social Sciences (SPSS) was used to organize data for analysis. The Pearson Product Moment Correlation test was used to find the relationship between variables at 0.05 significance level. The following statistical hypotheses were tested;

There is no significant relationship between children's rate of participation in outdoor activities and jigger infestation.

Demographic Information of The Respondents

Eleven public schools were sampled in this study. Teachers who were in charge of pre-school to standard three participated in this study by filling in all the questionnaires. Table 1 presents the total number of respondents per class;

Table 1: Number of Respondents per Class

Class	Teaches per class(frequency)	Percent
Pre-school	10	22.73
Class one	11	25
Class two	11	25
Class three	11	25
Special unit	01	2.27
Total	44	100

Table 1 indicates that there were 10 (22.73%) respondents from pre-schools, 11(25%) respondents from class one, two, three and one respondent (2.27%), from a special unit.

Table 2: Responses to Jigger Infestation and Children's Performance in Outdoor Activities from the questionnaire

Statement	Strongly Agree		Agree		Disagree		Strongly disagree	
	F	%	F	%	F	%	F	%
Jigger infestation affects children's performance in outdoor activities	31	70.5	12	27.3	1	2.3	0	0
Children infested with jiggers perform worse in outdoor activities than those who are not	28	63.6	15	34.1	1	2.3	0	0
Children who are not infested perform worse than those who are infested	2	4.5	0	0	21	47.7	21	47.7
The rate of performance in outdoor activities is the same to those who are infested and to those who are not	1	2.3	3	6.8	17	38.6	23	52.3

The table above indicates that 31 out of 44 (70.5%) teachers strongly agreed with the given statement and 12 out of 44 (27.3%) respondents agreed that jigger greatly affected children's level of participation in outdoor activities. This was a total of 97.8%. 43 respondents (97.8%) respondents also reported that children infested with jiggers performed worse in outdoor activities as compared to those who are not. This high percentage of respondents is an indicator that jiggers are detrimental to the proper growth and development of the children. If children do not engage in play, it means their holistic development is at risk because play enhances development of fine and gross muscles as well as acquisition of labour-intensive skills in all the individuals' developmental aspects. Through play children also socialize with each other and learn to control their emotions.

Table 3: Summary on performance in outdoor activities from the observation checklist

Activity	Frequently		Moderately		Rarely	
	Children with jiggers who participated	Children without jiggers	Children with jiggers	Children without jiggers	Children with jiggers	Children without jiggers
Throwing a ball	2	4	1	6	0	0
Catching a ball	1	5	0	8	2	5
Rope skipping	0	5	3	12	0	9
Building blocks	2	6	0	10	1	8
Tyre rolling	2	12	2	3	2	8
Racing with tyres	1	15	3	4	0	5

Results from the observation checklist (table 4.4.1) indicated the frequency in which children changed from one activity to the other. This is because children are energetic and vigorous in outdoor activities. When supplied with materials they tend to change from one activity to the other very frequently so that they can make good use of all the available materials. Children cannot also concentrate on one task for a long period of time. Three children who were jigger infested participated in throwing the ball, as compared to ten children who were not infested. Those infested did not participate in skipping or racing with car tires at all, as compared to fourteen of those not infested. It was generally observed that there was minimal participation by all children infested with jiggers in all the selected activities.

The total points attained by children with and without jiggers who participated in the given activities in the observation checklist were correlated to determine the relationship between jigger infestation and children's performance in outdoor activities. The following null hypothesis was tested;

H02: There is no significant relationship between children's participation in outdoor activities and jigger infestation.

Pearson Product Moment Correlation Coefficient was utilized to test this hypothesis. The Correlation was tested at 0.05 significant levels. Table 4 presents findings for this hypothesis:

Table 4: Relationship between jigger infestation and children's outdoor play.

		Infested	Not Infested
Infested	Pearson Correlation	1	.306*
	Sig. (2-tailed)		.043
	N	44	44
Not infested	Pearson Correlation	.306*	1
	Sig. (2-tailed)	.043	
	N	44	44

Table 4 indicates that there was a positive correlation between the two variables where $r = 0.306$, $p = 0.043$, $n = 44$. There was therefore a positive correlation between jigger infestation and children's participation in outdoor activities. The results also revealed that the p-value was 0.043, which is less than 0.05 ($p=0.043 < 0.05$). This implies that statistically there is a significant relationship between the two variables. It also means that an increase in jigger infestation significantly relates to an increase in poor outdoor performance. The null hypothesis was therefore rejected.

This finding was consistent with that of Ngunjiri (2009) and Ahadi Kenya (2010) who found that jiggers caused difficulties in walking due to the pain and itching that is experienced by those infested. This finding also agrees with Akwe (2008) who stated that jiggers mostly affect the feet because they have poor jumping ability and that those infested experience irritation and pain. This suggests why the jigger infested children can hardly participate in outdoor activities.

CONCLUSION

It was found that the jiggers adversely affected children's play. Their participation in outdoor play activities was minimal. Play enhances the child's creativity, logical thinking and development of problem solving skills. It also promotes development of fine and gross body muscles. Children who do not effectively take part in play may have poor body posture, poor co-ordination of muscles and limited interpersonal skills. Jiggers are therefore injurious to children's physical, mental and social development.

RECOMMENDATIONS

Jiggers were found to negatively influence children's performance in outdoor activities. To improve on their performance, it is recommended that school children be closely checked and monitored to ascertain that they are free from these parasites that cause them discomfort during play. Class teachers should liaise with the children's parents' in order to advise them on the needs of every child and in return improve the health status of the children whether they are at school or at home. Since the number of children infested with jiggers seemed high, the Government, through the Ministry of Health should come up with a deliberate policy to supply fumigants to all schools and infested families.

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