The influence of cognitive domain of psycho-education in community male-circumcision programmes (CMCPs), on theself-esteemof boysin public mixed-day secondary schools in Nyandarua-Kenya

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Abstract: Teachings during circumcisionarguably contribute to delinquent and anti-social behaviour among boys in Nyandarua County. The aim of this study was to examine influence of cognitive domain on boys' self-esteem in public mixed-day secondary schools.The study was grounded on psycho-education, behaviour modification and rational choice theories. It employed mixed method, concurrent triangulation design. Target population was 1,242 boys, with a sample of 144 participants comprising; boys, teachers, counsellors, psycho-educational service providers andparents.Random, purposive and proportional sampling procedures were used. Research instruments included; questionnaires, interview schedules and focus group discussion guides. Itemcontent validitywasapplied for enhancing validity while piloting of tools was used to assure for reliability (r_s = .622) through split-half testing. Credibility and dependability of instruments was assured through feedback during discussions and data triangulation from different sources. Data management included sorting, coding and keying before analysis with computer application SPSS v23. Pearson r, the paired samples t-test, and regression analysis (R) sufficed for data analysis. The study used null hypotheses, tested at α = .05.Results indicated that cognitive domain was related to boys' self-esteem (p = .028).It was also found out that it wasa suitable predictor of self-esteem in boys(R^2=.512). The study further indicated that self-esteemof boys circumcised in CMCPs was not any different from that of boysinitiated elsewhere[t (25) = .01, p = .51, α = .993]. The study recommended that M.O.E and M.O.H. play critical role in design of common curricula to be used as guide during instruction in CMCPs. It also recommended that cognitive instructionbe restructured and expanded to schools, so that all adolescents benefited from professional behaviour management skills,in order to stem indiscipline and other anti-social behaviour.

Keywords: Psycho-educational domain, Community male circumcision programmes (CMCPs), Self-esteem, Ministry of Education (MOE), Ministry of Health (MOH)

I. INTRODUCTION

Male circumcision has always been viewed as an important rite of passage in the systematic socio-cultural transition of boys from childhood to adulthood, among societies in many parts of the world. Among communities who practice the rite, male circumcision is considered not only anindividual persons' responsibility but also a family and community affair (Bailey & Egesah, 2006). In addition to surgical operation during the rite, the initiates also undergo a comprehensive cognitive domain instruction for the purpose of coaching and mentoring them, to be able to integrate and function effectively both in school and in the wider community. However, in most cases the initiates are taught by unprofessional caregivers who impart the wrong values and habits leading to acquisition of delinquent and other anti-social behaviour among the initiates (Chang'ach, 2013).

In Nyandarua County Kenya, community male-circumcision programmes (CMCPs) have been organised by community-based groups, non-governmental and faith-based organisations during December

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school holidays, for the purpose oftransiting the boys through the rite of passage in a modern setting so as to address behavioural problems.These programmes have significant community participation, in that, the community provides mentors for the initiates and participateboth in their training and infeeding. The community also participates in open days after the first week of seclusion, age-set identification and graduation ceremonyafter 14 days of initiate internment.These circumcision programmes are considered beneficial for enhancement of boys' self-esteem,bypreparing them for life not only at secondary school but also in the wider society.

II.   EMPIRICAL LITERATURE REVIEW

Cognitive domain of psycho-education comprised of instruction and activities aimed at enabling the boys inculcate and develop thinking abilities that would enable them make valid, rational and appropriate decisions in various real life experiences. In education, cognitive domain is critical because the taxonomy explains how information is processed in individuals including students (Anderson & Krathwohl, 2001). Benjamin SamuelBloom in 1956 delineated six levels of cognitive information processing, where he postulated that learning took place through acquisition of knowledge, ability to comprehend, application of matter learned in new situations, analysis of facts to make decisions and synthesize existing information to solve new problems.

In CMCPs boys wereinstructed on a variety of themes for example, self-awareness in the context of a larger community, knowledge of the harmful effects of HIV/Aids and sexually transmitted diseases, responsibility, commitment and focus in tasks, socialisation and sexuality, drug and substance abuse among other themes. These topics were all aimedat preparing boys apply the knowledge in not only understanding their challenging world, but also in analysing and synthesizing issues that confronted them in real life experiences. Therefore, the instructionwas important for enabling the boys use their knowledge and skills for independent thought,decision making and for behaviour modification.

When boys learn to independently use cognitive abilities to analyse and apply knowledge and experiences acquired in CMCPs, they were thence able to operate effectively in a challenging environment without undue influence from other people. Psycho-educational domains instruction included this buffet of knowledge necessary for enabling the boys adapt to new adult roles.

Dalgas-Pelish (2006) did a study entitled, *"effects of a self-esteem intervention program on school-age children",* aimed at finding out whether group-based self-esteem enhancement (cognitive domain instruction) programme improved students' self-esteem. Participants comprised of 98 sixth graders, 59 girls and 39 boys from Midwest California schools. The study adopted a pre/post-test design for finding out whether self-esteem enhancement or cognitive domain instruction improvedthe self-esteem of students. One tailed independent *t*- test was used for comparing the mean differences between the paired test administrations.

Results indicated that self-esteem enhancement improved the self-esteem of students ($p = .016$) and that there was no significant difference in self-esteem of boys and that of girls. However, the post-test scores were collected soon after the enhancement programme was completed and therefore, it was not clear if the changes in self-esteem had lasting impact on student behaviour. The study recommended integration of group-based self-esteem curriculum in schools to enable learners improve their behaviour.

Another similar study is reported by Nurten, 2009 entitled *"effect of self-esteem enrichment counseling program on self-esteem level of sixth grade students",* Middle-East Technical University, Ankara- Turkey. The study aimed at investigating effects of a self-esteem enhancement programme on students' self-esteem. A minor sample of 24 students (11 boys and 13 girls) were sampled for the study from a target population of 166 students. The study employed experimental design with treatment ($M = 25$, $SD = 7.45$, $N = 12$) and control group ($M = 28$, $SD = 8.75$, $N = 12$) using pre/post testing. Participants were tested for self-esteem levels using the Coppersmith self-esteem inventory (CSEI). The experimental group was treated with counselling enhancement for 80 minutes' sessions for eight weeks.

Both CSEI scores from pre-testing and post-testing of both groups were then subjected to analysis of variance (ANOVA). Results indicated that self-esteem levels of the experimental group significantly increased, while there was minimal change in self-esteem of the control group. The study concluded that the counselling intervention programme helped enhance self-esteem of students. Comparison between the mean differences of the two groups using the *t*-test, showed strong statistical significance [$t(11) = 1.71$, $p = .011$, $\alpha = .05$], indicating that self-esteem of the experimental group was significantly higher than that of the control.

The current study used two groups of boys; one from CMCPs and the other one from out of the programmes.The researcher comparedcognitive and self-esteem behaviour of the two groups using the paired samples *t*-test. Correlation *r* was also used to test the relationship between cognitive behaviour and self-esteem in the boys. Regression analysis was used to find out if variation in boys' self-esteem could be explained from cognitive domain. Inferential tests used aided for not only determining the association between cognitive domain and self-esteem, but also for establishing whether there existed significant differences between boys

circumcised in CMCPs and those initiated elsewhere. The regression model was suitable too for determining whether cognitive domain could be appliedfor the prediction of boys'self-esteem.

III. THEORETICAL FRAMEWORK

This study was grounded on three theories of behaviour change and development namely; psycho-educational theory, theory of behavior-modification (TBM) and rational choice theory. Cognitive domain (the independent variable)was anchored in psycho-education theory, which was comprised of the instruction given to boys in theprogrammes. Behaviour modification theory informed boys' self-esteem (the dependent variable). The assumption was that boys would display enhanced self-esteem after undergoing the cognitive training. However, irrespective of the content covered in CMCPs and how well designed the programmes were, ability and capacity of the boys to effect behaviour modification in themselves,was dependent on their rational and independent choices and hence reference to the rational choice theory.

IV. OBJECTIVE OF THE STUDY

The objective of this study was;
To determine the influenceofcognitive domain of psycho-education in community male circumcision programmes (CMCPs,) onthe self-esteem of boys in public mixed-day secondary schools in Nyandarua County-Kenya

V. RESEARCH QUESTION

The research question of the study was:
What is the influence of the cognitive domain of psycho-education in community male circumcision programmes (CMCPs),onthe self-esteem of boys in public mixed-day secondary schools in Nyandarua County- Kenya?

VI. RESEARCH HYPOTHESIS

This mixed method study adopted the null hypothesis indicated;
H_0: There's no statistically significant influenceof the cognitive domain of psycho-education in community male circumcision programmes (CMCPs), on the self-esteem of boys in public mixed-day secondary schools in Nyandarua County- Kenya

VII. METHODOLOGY

The study employed mixed method(QUAN-QUALmodel), concurrenttriangulation design which involvedthe application of both qualitative and quantitative perspectives in data collection, analysis, interpretation and inference. This was in order to have a wider and deeper understanding of the problem under study(Creswell, 2009; Gay et al. 2006). The procedureinvolved concurrent collection of both categories of data, weighting it equally, analysing it separately but merging it at the discussion and interpretation stage (Creswell, 2009;Gay et al. 2006; Onwuegbuzie & Johnson, 2004). This model when integrated in the research design, enabled the researcher to present quantitative facts, but wasstill able to further explain them in relation to what the boys felt and thought about them, thereby enhancingthe study's dependability and credibility (Gay et al, 2006; Onwuegbuzie & Johnson, 2004).Justification for the technique was that, analysis of quantitative data provided a deeper understanding of the problem while qualitative techniques refined the respondents' views and aided to explain statistical results to greater detail (Creswell, 2009; Tashakkori & Teddlie, 1998).Figure two shows how the *QUAN-QUAL* model was applied in the current study.
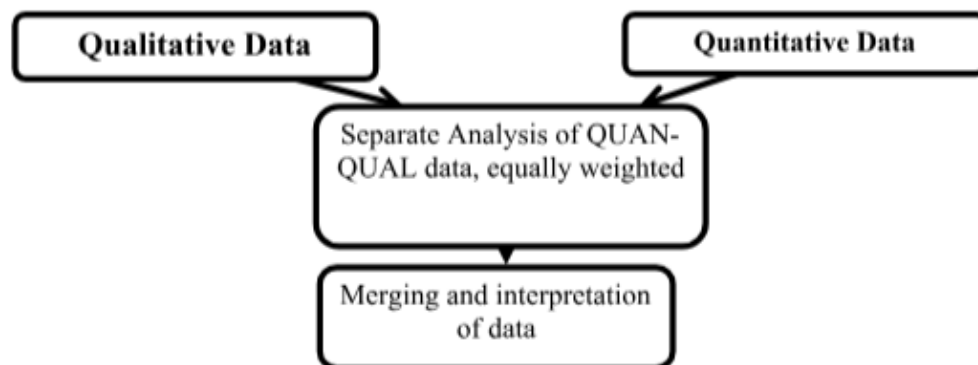

Figure 1: *QUAN-QUAL* model for the study

The accessible population was estimated at 1,242 boys from public mixed-day secondary schools, in Nyandarua County.Cluster, random and non-random sampling techniques were used forselecting 102 boys from13 schools.Thirteen form two class teachers, 13 school counsellors, 8 psycho-education service providers and 8 parents were also included in the study to make a sample of 144 respondents. The study divided the boys into two groups- those circumcised in CMCPs and others initiated elsewhere. Rosenberg self-esteemscale (RSE) was used for measuring the self-esteem level of the boys. The data obtained was transformed into percentiles for ease of analysis, comparison and interpretation. Data was subsequently keyed into SPSS v23 spreadsheets and Pearson correlation, the paired samples *t*-test and regression analyses (R) ran. Merging of both qualitative and quantitative data was done before interpretation and relation to empirical literature and research gaps.

VIII. FINDINGS AND DISCUSSION

Data was analysedboth qualitatively and quantitatively. Quantitative analysis involved both descriptive and inferential statistics. Descriptive statistics comprised of percentiles, means and standard deviationswhile inferential statistics included Pearson correlation, paired samples *t*-test and regression analysis.

1. Descriptive statistics- Cognitive domain in CMCPs and boys' self-esteem

Teachers, counsellors and psycho-educational service providers reported that cognitive domain in CMCPs influenced boys' self-esteem. Descriptive statistics on cognitive domain and self-esteem scores indicated a mean above the average and similar standard deviations, possibly implying that most boys had similar characteristics (Cognitive domain- *M = 51.4, SD = 8.2, N = 102*; self-esteem (*M = 71.5, SD = 8.2, N = 102*).Table one is the descriptive statistics summary on the cognitive domain and self-esteem scores.

Table 1: *Summary of cognitive domain and self-esteem scores.*

	N	Minimum	Maximum	Mean	Std. Deviation
Cognitive domain	102	26.0	68.0	51.4	8.2
Self-esteem	102	53.3	96.7	71.5	8.2

Both cognitive domain and self-esteem scores had similar standard deviations implying that they likely had behaviour close to each other. However cognitive domain scores had wide a range between the minimum and maximum, possibly implying that the boys displayed wide disparities in their cognitive behaviour.The self-esteem of the boys also appeared to be greater than their cognitive domain scores possibly indicating that there was some association between the two traits.

Inferential statistics- Cognitive domain in CMCPs and boys' self-esteem

Pearson correlation *r*, the paired samples *t*-test and regression analysis (*R*) were used for the analyses. A null hypothesis (*there is no statistically significant relationship between boys' cognitive domain behaviour and self-esteem)* was formulated for Pearson correlation test. Table two is the test matrix showing the association between cognitive domain and boys' self-esteem.

Table 2: *Pearson correlation test matrix- cognitive domain and boys' self-esteem*

		Self-esteem level
Cognitive domain	Pearson Correlation	.028
	Sig. (2-tailed)	.781
	N	102

The test indicated a statistical significance of *p = .028*, implying that the two variables were related and possibly the independent did influence the dependent variable. The obtained value was less than the priori criterion at α = .05, and therefore the researcher rejected the null hypothesis and accepted the alternative. However, Pearson correlation only indicated association and did not show causation or differences in self-esteem between boys circumcised in CMCPs and those initiated out of the programmes.

To determine the differences, the paired samples *t*-test was applied and a null hypothesis (*there are no statistically significant differences between the self-esteem of boys circumcised in CMCPs and those initiated elsewhere*) formulated. Boys circumcised in CMCPs were coded X, while Y were those initiated elsewhere. Table three is a *t*-test matrix of self-esteem between boys' circumcised in CMCPs and those initiated elsewhere.

Table 3: *T-test matrix- self-esteem ofboys' circumcised in CMCPs and those initiated elsewhere*

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
X - Y	.014	8.06	1.58	3.27	3.24	.009	25	.993

Paired samples *t*-test between X (*M* = 56.7, *SD* = 6.3, *n* = 26) and Y (*M* = 57.5, *SD* = 3.9, *n* = 26) was statistically insignificant [*t* (25) = .009, *p* = .993, α = .05]. The calculated statistic (ρ = .993), was greater than the priori criterion of α = .05 and consequently the researcher failed to reject the null hypothesis. The mean difference was .014, 95% CI: 3.24 to 3.27 were quite small (*eta* squared statistic = .04), implying that self-esteem of boys circumcised in CMCPs was no different from that of boys circumcised elsewhere and that any difference noted was quite small and possiblynot real.

Regression analysis was subsequently performed to establish whether variation in self-esteem could be explained from cognitive domain scores. It was also necessary to establish whether the sample mean scores on self-esteem could be reflected in the population. Table four is the model summary for the regression.

Table 4: *Regression Analysis Model Summary - Cognitive Domain and Self-Esteem*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.543[a]	.512	.486	5.27	1.510

a. Predictors: (Constant), cognitive\domain
b. Dependent Variable: self-esteem level

The model indicated that 51.2% of variation in self-esteem could be explained from cognitive domain (predictor variable). This proportion was above the mean and it could sufficiently be relied on for the prediction of boys' self-esteem (dependent variable) and to that extent, the model was considered fit. The regression formula was Y (self-esteem) = $66.934 + 0.4491x_{1+}6.319e$. Additionally, Cohen's effect size statistic indicated a moderate value (f^2 = .42), implying that cognitive domain had moderate predictive capabilities for self-esteem.

The *F*-test for cognitive domain and self-esteem scores indicated a statistical insignificance for$F = (5, 96) = .257$, $p = .613$, α = .05), implying that the model wholly be could not depended upon for the prediction of self-esteem of the boys, though the ANOVA statistic (*F*= .257 could not have happened by chance. Additionally, R^2 and the adjusted R^2 were not much varied, meaning that the model could still be used for generalizing the sample to a larger population. The independent errors assumption was also satisfactorily met, as Durbin Watson statistic was 1.510, approximately equal to 2 which is Field, 2009's recommendation for a fit regression model.

IX. CONCLUSIONS OF THE STUDY

The findings established existence of a statistically significant relationship between psycho-educationin CMCPs and self-esteem of boys' in public mixed-day secondary schools in Nyandarua County- Kenya. However, there was no difference in self-esteem between boys circumcised in CMCPs and those initiated elsewhere. Much of the boys' self-esteem could sufficiently be predicted using cognitive domain.Consequently,the researcher concluded thatthe domain was related to self-esteem and could sufficiently predict thebehaviour in the boys, although the *t*-test had indicated statistically insignificant difference between self-esteem of boys circumcised in CMCPs and of those initiated elsewhere.

X. RECOMMENDATIONS

The study recommended that the Ministry of Education (MOE) and Ministry of Health MOH)needed to collaborate in the design and development of a common CMCPs curricula to be used in circumcision programmes in the County, for the purpose of improving the self-esteem and other desirable behaviour of boys through the alternative rite of passage. The study also recommended that school administrations and teacher counsellors should also endeavour to establish cognitive training programmes in schools, to enable adolescents acquire knowledge and abilities that would help them in the cultivation and enhancement of self-esteem.

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