
Evaluation of School Wash, Sanitation and Hygiene (SWASH) Project: Has it Addressed Menstrual Health and Hygiene Management (MHHM) Related Challenges Facing School Girls in Muheza District?

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ABSTRACT:

Background: Many countries especially in Africa and Asia lack menstrual hygienic facilities in public places especially in schools where it is needed the most. The facilities entail sanitary pads, water to wash hands, clean toilets with locking doors, and disposal areas for sanitary pads. This goes in hand to low level of MHHM understanding among both girls and boys.

Methodology: This study was a concurrent mixed methods with analytical cross sectional study design where a formative evaluation approach was employed. 8 private and government secondary schools were purposely selected where 503 respondents were involved out of which, 458 girls were used as quantitative sample while 42 girls students were selected for in depth interviews out of quantitative sample, 5 FGD's each comprised 8 girls' students, 3 FGD's for boys each comprised 8 students, 16 teachers and 5 District Managers were used in this study as a part of qualitative sample. Data were quantitatively analyzed with the help of Stata 13, Python and QGIS for geospatial analyses. Qualitative analysis involved content analysis technique with the help of Atlas ti and online word cloud tools.

Results: it was found that none of 8 schools has met 100% MHHM requirements as envisaged in the guideline, mean students ratio per pit hole were observed to be 52 with the worst situation in government schools (>100 for some schools). Activeness of SWASH clubs is a challenge with its non-availability in private schools. Operations and maintenance was another challenge where non availability of soaps, emergency pads, water and dilapidated infrastructure were prevalent in government schools. With one sample test of proportions, it was observed that 0.14 is the proportion of girls' experience and observations of teasing/embarrassment from school boys during menstruation periods ($p < 0.001$). Age were observed to have a weak positive relationship to students' performance ($r = 0.35$) while menstrual experience years moderate ($r = 0.52$). "Form II", "Form III" and "Form IV" are 1.04, 1.36 and 1.39 respectively times likely to have desirable awareness level ($\geq 50\%$) compared to "Form I" ($p > 0.05$), primary and secondary educated mothers are 10% and 6% less likely to have desirable MHHM understanding compared to university educated mothers ($p = 0.732$ and 0.33 respectively) whereas Mothers who have not gone to school are 80% less likely to have a good understanding level than University/College mothers ($p = 0.033$). Implementers' commitment and responsiveness towards SWASH project in the area of MHHM was a challenge since implementers do not have profound insights on what the project is all about with less prioritization of MHHM and school health matters as academic matters are.

Conclusion: Unreliable funds, worse situation in MHHM operations and maintenance, lack of awareness on SWASH project, poor sectorial coordination and non-consideration of MHHM issues as vital are major challenges impinging smooth implementation of SWASH project. Considerable measures are to be taken by government and project designers in areas of scale up, implementation and progress monitoring so as to ensure achievement of envisioned outcomes.

INTRODUCTION

According to a report by The World Bank, "at least 500 million" females, both women and young girls, do not have access to adequate facilities as part of managing menstrual hygiene.³

More than that, many countries especially in Africa and Asia lack such menstrual hygienic facilities in public places where it is needed the most. These include schools, places of work, and public health facilities, the facilities entail sanitary pads, water to wash hands, clean toilets with locking doors, and disposal areas for sanitary pads, as a result, a lot of women and girls are left to have no "dignifying" ways to maintain their menstrual hygienic routine (WorldBank, 2018)

Hence; Due to the lack of menstrual management facilities and poor knowledge on menstruation and menstrual management, many girls choose to drop out or miss school due to their "inability to manage their menstrual hygiene in schools," the same World Bank

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report added.

In Tanzania, more children than ever before are attending school. This is the result of increased parents' awareness on importance of education especially to girls and a number of successful policy initiatives including abolition of school fees in 2002 in Primary schools, subsidization of day secondary school fees in 2004 and free education program in 2016.

As spoken by Mama Samia Suluhu Hassan (A Vice president of URT) during TGNP festival, one of positive outcomes of 2016's free education program is increased enrollment of girls in secondary schools (from 873,799 to 901,059 in 2012 and 2016 respectively). The same case is observed in Muheza District where there is observed increase in girls enrollment from 4549 to 4686 in 2013 to 2017 respectively).

This increase has mounted a huge demand for facilities particularly classrooms, chairs, laboratories, latrine and water supply, but unfortunately, water and latrine facilities did not receive equal attention like others (National Strategic Plan for SWASH 2012 - 2017. *page No. 1.*)

Apart from adequate infrastructural facilities, awareness creation on menstrual health and menstrual management is essential towards eliminating poor beliefs and myths as well as enhancing proper self-handling of school girls during menses (National Strategic Plan for SWASH, 2012 – 2017).

Hence, this evaluation aimed at assessing implementation of school WASH in the area of Menstrual Health and Hygiene management to determine secondary schools' alignment to stipulated SWASH menstrual management requirements, level of menstrual health and management understanding among

³<https://www.worldbank.org/en/news/feature/2018/05/25/menstrual-hygiene-management>

school girls, peer support of school boys on adolescent girls' menstruation, influence of socio demographic and geographic factors towards the state of menstrual health and management, explore implementers' commitment and responsiveness towards menstrual health and management challenges facing school girls and availability of School WASH Operation & Maintenance funds for menstrual health and management. All these have an influence towards the state of menstrual health, hygiene and management among school girls that has an impact to their health, class attendance and consequently academic performance to them.

EVALUATION METHODOLOGY STUDY AREA AND PERIOD

Muheza is one of the nine Districts in Tanga Region. It has a total area of 1,974 square kilometers and a total population of 204,461 (2012 census) whereby male 100,843 (49.3%) and female 103,618 (50.7%), the number of household is 47,920 with household size 4.3. Muheza District divided into 4 divisions which are Ngomeni, Amani, Bwembwera and Muheza comprising 33 wards 135 villages and 522 hamlets. The District has thirty-one (31) Secondary schools where 25 are government owned with 10004 students (4571 Male and 5433 Female) while six (6) are private owned with 11363 students (5327 Male and 6036 Female). As of 2017 Education report, in these schools there is a shortage of 440 pit latrines where two (2) do not have latrines at all. Tracing back to 2012 where there was a shortage of more than 811 pit latrines, this deemed necessary scaling up of School WASH in this district to ensure that the standards are met.

This evaluation process began with an evaluation plan in October 2018, where a pilot study was conducted by studying the area where evaluation was expected to be conducted. An evaluation proposal was prepared in March 2019 and all the stakeholders were earmarked. Data collection started on 27th May 2019 towards July 2019 followed by data analysis and interpretation.

EVALUATION APPROACH AND DESIGN

The study employed a formative evaluation approach. The aim was to assess whether School Wash project addresses menstrual health and Management challenges among school girls. Analytical cross sectional evaluation was employed to all eight schools visited, a snapshot on what is going on in the field were identified. Based on findings, relationships were created in hand to comparative analyses; these were achieved by conducting statistical tests of one-way ANOVA, Two sample t-tests, one sample test of proportion, pair wise correlation and binary logistic regression.

POPULATION AND SAMPLING

Target for this study were eight (8) secondary schools in Muheza District embracing six (6) government schools (Three each from urban and rural) and two (2) private owned secondary schools. Selection of these schools were purposive based on diversities in their location and type of ownership.

TARGET POPULATION

Target population refers to all the people that are affected by the study. The results gathered from this evaluation are expected to be

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transferred to all secondary schools in Tanzania

STUDY POPULATION

Data collection based on Muheza district council, secondary school boys and girls, headmasters, school health teachers from the eight (8) suggested schools and District Managers (DSEO, DWE, SLO and DSHCO)

SAMPLE SIZE

Selection of schools

Schools were purposively selected in order to ensure that a sample contains schools that meets wider range of characteristics in terms of location (Urban, rural), Distribution (in terms of divisions), school type (Private or Government) and religious affiliation (Christian or Moslem). This was done for the sake of ensuring representativeness. Therefore selected schools were categorized into Private schools (Hegongo and Alhuda), government Urban (Chifu Mang'anya, Kwemkabara and Kerenge) located in Muheza urban division and government rural schools which are Kwafungo, Ngomeni and Shebomeza located at Bwembwera, Ngomeni and Amani divisions respectively.

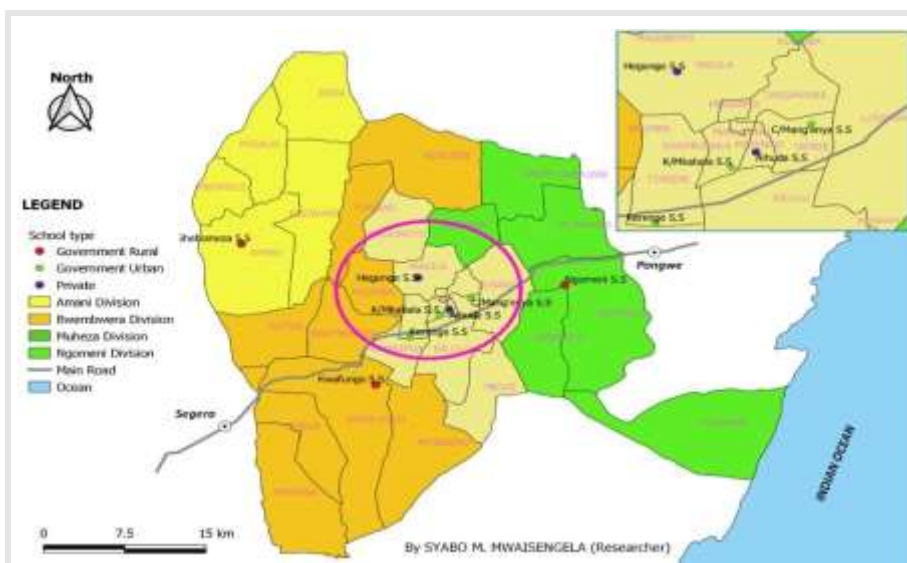


Figure 1: Map of Muheza showing distribution of sampled schools

Source: Researcher, 2019 designed in QGIS 3.8.1 Zanzibar, datum WGS 84

Sample size determination

503 respondents were involved out of which, 458 girls were used as quantitative sample while 42 girls students were selected for in depth interviews out of quantitative sample, 5 FGD's each comprised 8 girls' students, 3 FGD's for boys each comprised 8 students, 16 teachers and 5 District Managers were used in this study as a part of qualitative sample.

Qualitative sample were dependent on the level of saturation as per information needed from respondents. With above mentioned qualitative sample where respondents were explored through in-depth interviews and Focus group discussions, required information were adequately obtained.



Figure 2: A Focus Group Discussion with girls at Shebomeza SS

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Calculation of quantitative sample

Yamane formula were used to calculate the quantitative sample where by a sample size were calculated from each unit of study i.e schools, the figure below shows how the sample were calculated.

This is given by:

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = SAMPLE SIZE

N = SAMPLE FRAME

e = LEVEL OF SIGNIFICANCE

Hence at each school the sample size of school girls were as shown in table below:-

Table 1: Sample size calculation at each school to be involved in the study

Level of significance		0.1	
SN	NAME	SAMPLE FRAME (N)	SAMPLE SIZE (n)
PRIVATE (URBAN)			
1	ALHUDA	91	48
2	SWAFAA	53	35
3	HEGONGO	52	34
GOVERNMENT (URBAN)			
1	KWEMKABALA	345	78
2	MANG'ENYA	302	75
3	KERENGE	193	66
GOVERNMENT (RURAL)			
1	NGOMENI	252	72
2	BWEMBWERERA	110	52
3	SHEBOMEZA	227	69
GRAND TOTAL		1625	528

Expected quantitative sample to be achieved were 528 respondents but due to field inconveniences including exclusion of Swafaa SS that posed restrictions in conducting a study of this nature, a total number of 458 respondents were reached for a survey. These were asked a total number of 52 questions face to face through blank forms deployed from kobotool box server and accessed to ODK collect application in mobile phones.

DATA MANAGEMENT AND ANALYSIS

Quantitative data were extracted from Kobo tool box server and cleaned (using MS excel logical operators) and then imported into Stata 13 for inferential statistical analyses followed by visualization using Python Jupiter lab, MS excel and data driven info graphics

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charts and diagrams. Spatial data analysis was conducted by using QGIS 3.8.1 Zanzibar.

Data were descriptively analysed using MS excel where percentage distributions were also visualized using designer excel and info graphic charts and diagrams.

In inferential statistical analysis, Stata 13 and Python Jupiter lab were used whereby $p < 0.05$ were considered as a margin of error. For the sake of inferential statistical analyses, statistical tests that were taken into account entail: -

- Two samples ttest to determine whether there is a significant difference between girls who were aware on Menstruation before and after menarche.
- Pair wise Correlation where a correlation matrix heat map was visualized in Jupiter lab in python (within Anaconda Navigator) to observe strength and direction of relationship between students' performance, age and years experienced menstruation. Linear regression model were not established due to multi collinearity of independent variables i.e age and years experienced menstruation were highly correlated ($r=0.73$).
- One-way ANOVA. This were conducted to observe whether there exist mean differences amongst schools and school categories i.e Government Urban, Government Rural and Private schools (Attached appendix VIII).
- Logistic regression. This were conducted to observe as to what magnitude does students' class and mothers' levels of education influence MHHM understanding among girls students. With respect to this, Pearson and Hosmer-Leme show goodness-of-fit tests for the logit model were conducted ($p=0.26$ and 0.67 respectively), hence a model is a good fit. Outputs are attached as appendix VII.
- One samples test of proportions to determine statistical significance of proportions related to several dichotomous variables in a data set.

With regard to these statistical tests, comparison of the groups and influence of Independent variables to Dependent variables were determined.

ETHICAL ISSUES

Ethical consideration coupled with confidentiality of gathered information is unavoidable in any evaluation study. Participants' willingness is essential and their identities should be kept anonymous. In this evaluation study, these considerations were met.

PERMISSION FROM AUTHORITY

The evaluation proposal was submitted to Mzumbe University and Muheza District Council to be reviewed before data collection begins. The approval was given from both sides before the data collection process begins.

INFORMED CONSENT

All the participants of this study were well informed about the data collection process and were willing to participate themselves. Heads of schools were given paper to sign as proof of their willingness to allow this study to be conducted on behalf of students. None of the students were unwilling to be involved in this study.

CONFIDENTIALITY AND ANONYMITY

An evaluator or researcher is obliged to respect the study participants and the location of the researcher. After offering information all participants must remain undisturbed, ensuring their privacy was observed and security ensured (Creswell, 2003). All the information gathered from the study are going to be treated with high confidentiality. A report will only be used when authorized by Mzumbe University

FINDINGS PRESENTATION

ALIGNMENT TO MHHM GUIDELINES

It was found that no school has met all requirements set in the guidelines, bad enough only 2 schools i.e Shebomeza and Hegongo has at least met half of the minimum requirements in the checklist. As per study findings, requirements that were 100% met are; Wall front of latrines and presence of guidance teacher on MHHM but none of the schools had reserved space for pads in toilets, incinerator near latrine and Growth and changes guidance for MHHM and puberty knowledge impartation. The rest of the elements' scores range from 18% to 88%.

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A column chart below shows the aggregate percentage performance score for each school based on adherence to 17 elements enlisted in an observation checklist on envisaged requirements.

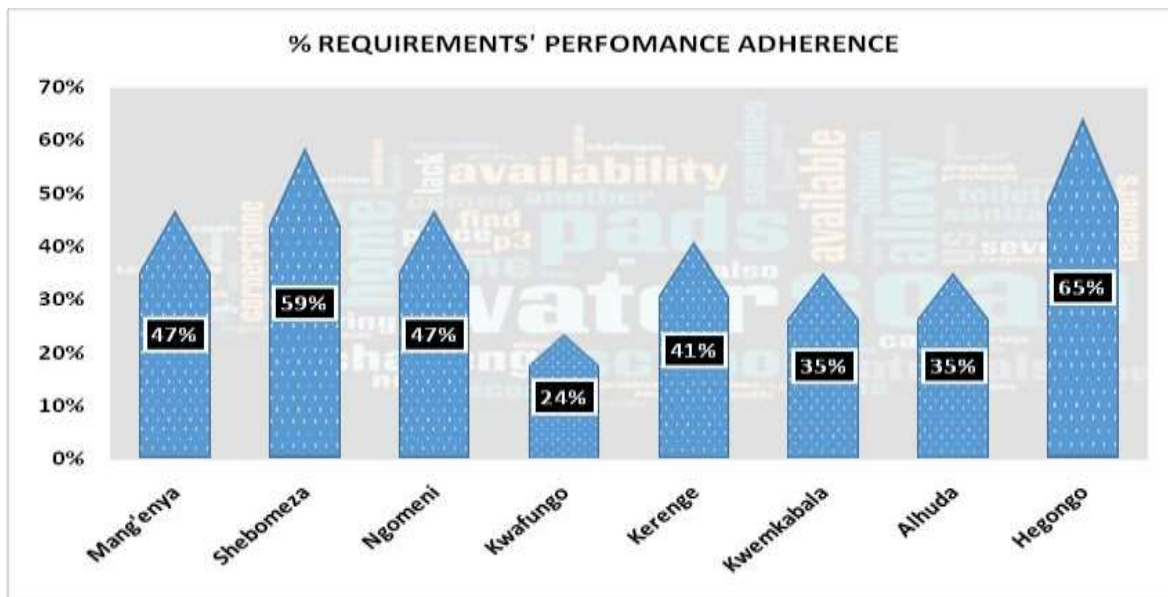


Figure 3: Schools % requirements performance adherence

Hence, the performance of Hegongo and Shebomeza Secondary Schools seems relatively higher as compared to its counterparts. The worst performance is observed at Kwafungo Secondary School with a percentage score of 24%.

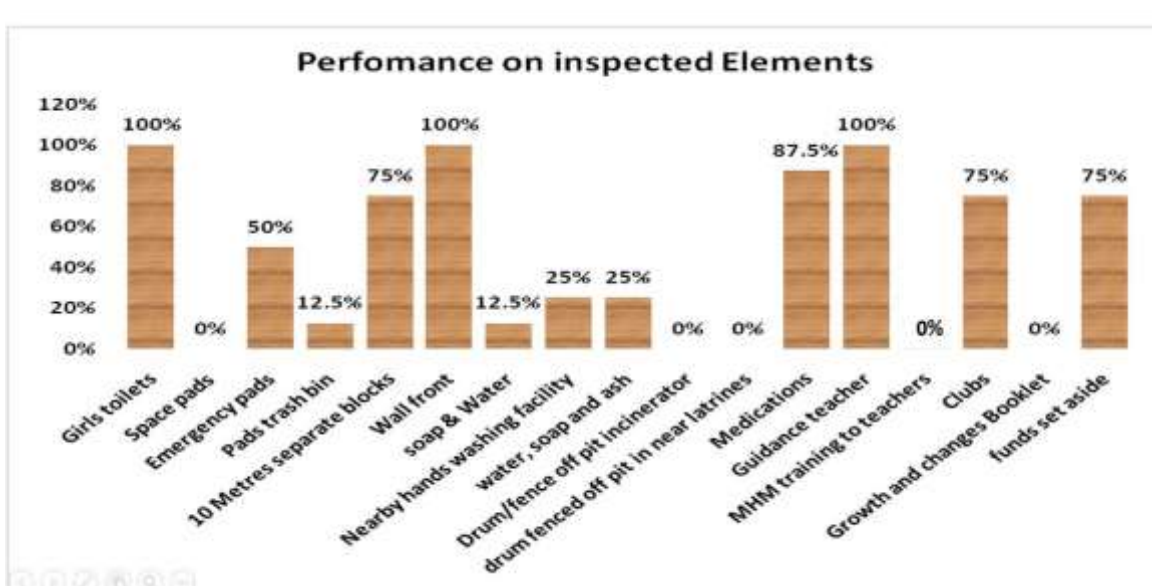


Figure 4: Performance of schools on inspected elements

As shown by above column chart, seventeen (17) elements were taken into account for observation checklist, among the elements 0% percent were observed in the availability of space for pads, availability of incinerators as well as growth and changes booklet that may serve as a guideline for puberty and MHHM knowledge impartation. 100% score was observed in the availability of girls' toilets, wall front of the door and availability of guidance teachers. In other elements, the scores range from 12.5% to 87.5%.

Students per hole ratio

The official Government standard is 1:20 and 1:25, for girls and boys respectively but initially this could be 40-50 in order to alleviate the urgent demands as reflected in MKUKUTA II (SWASH guideline, 2016 pg. 12). Hence for girls it is required that one latrine is shared by 20 students.

But in Muheza DC, students' latrine ratio per hole is a challenge indeed the mean ratio for all schools is 53 girls' students per latrine. The challenge is tremendously high in government schools.

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As it can be seen, all government schools (Mang'anya, Shebomeza, Ngomeni, Kwafungo, Kerenge, and Kwemkabala) have poor performance (> 20 girls per pit hole) as per what is envisaged Toolkit 1 i.e Assessment and Monitoring Tools for School WASH. This is not a case for private schools (Alhuda and Hegongo) which are both good performers with a ratio of 18 and 5 students per hole respectively.

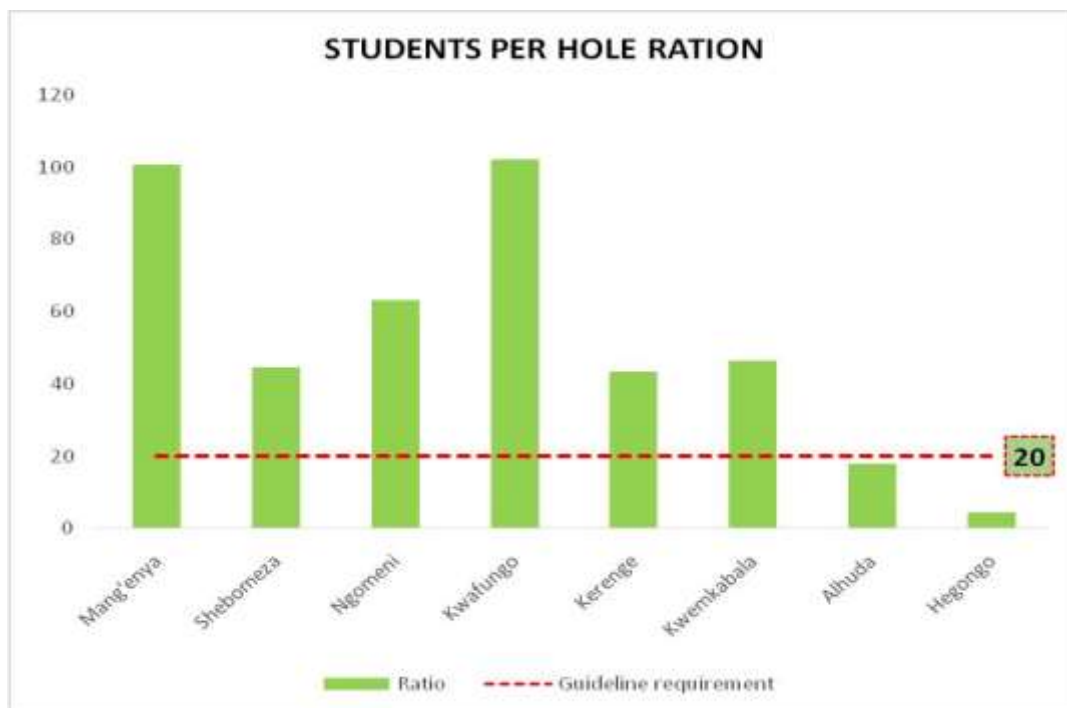


Figure 5: Number of students per one hole

Availability of SWASH clubs and guidance teachers

All government schools have guidance teachers on MHHM issues but private schools do not have SWASH specific teachers, rather school matron have roles to play on the issue. None of the teachers in both government and private schools underwent any training on MHHM as it is envisioned in the project guideline.

School health clubs and clubs of FEMA and Girl Guide are operating in government schools in both urban and rural. None of these operates in private schools.

Students complained that, clubs are largely inactive since teachers do not impose strict rules in regard to non-attendance, therefore students' attendance to clubs is very weak. On top of that, discussions on MHHM issues on how girls can manage themselves during menses are rarely in place.

All clubs are operating in a particular day, students belong to clubs of their interests, and hence it's not a necessity that they must be members of health clubs where awareness on health issues including MHHM will be created on them. Students suggested that, it should be a must that all girls participate and become members of health clubs and other clubs of FEMA and Girl Guide so that even when MHHM education is provided, accessibility will be to all of them.

MHHM training to school boys

As stipulated in the guideline, knowledge impartation is to be extended to schoolboys as peer community to girls at school. But with gathered findings, knowledge on MHHM to boys is only obtained through class lessons in Biology subject as a portion of form three (3) topic namely reproduction of which MHHM issues are not adequately covered.

Moreover, when a need arises to impart knowledge on girls especially newly coming Form one (1), girls are called separately, hence boys are normally being disregarded. This implies that those who have not reached form three can never access the knowledge, even those who access knowledge through the reproduction topic in form three (3) it is not adequate to sharpen their understanding and awareness on MHHM.

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Menstrual Sanitary materials used by students

Menstrual sanitary materials are the ones that are used by girls and women as a whole to manage menstruation. These entail sanitary pads, tampons, tissues, cotton wool, special cloth pieces, menstrual cups and cloth pieces out of torn out clothes.

In Muheza all students use or have ever used sanitary pads and homemade cloth pieces. But most of them use pads, followed by cloth pieces and others uses both sanitary pads and clothes pieces. Below is a diagrammatic presentation of used menstrual materials by students and its associated reasons for use.

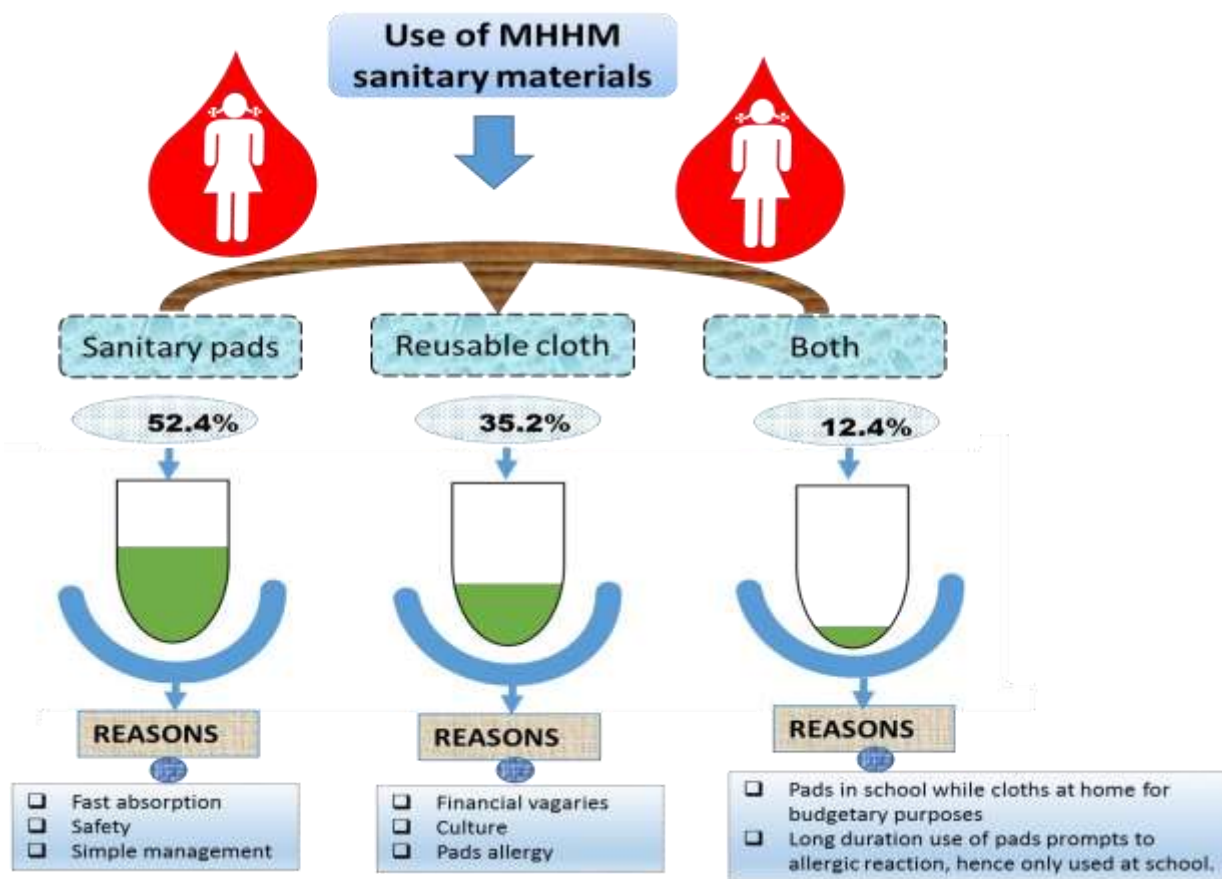


Figure 8: Diagrammatic presentation of sanitary materials used by students in Muheza District

The role of government and development partners towards sanitary pads accessibility

As it is observed from the findings, most of the students who use homemade pieces of cloth are not happy because they are forced to use it due to financial challenges prevalent in their families. That's why the government through the ministry of finance withdrew Value Added Tax for sanitary pads in order to enhance accessibility to sanitary pads at cheap prices.

Some other initiatives by private organizations were in place, a good and most widely known is an initiative namely "*Msichana Initiative*" which means "*Girls' Initiative*" with a slogan of "*# Namthamini*", a Swahili word meaning "I value her". This was a campaign organized by East Africa Television (EATV) in collaboration with East Africa Radio to donate sanitary pads to 1500 young girls in Tanzania, the campaign was launched on 6th March and ended on 31st March 2018 for the commemoration of international women's day.

Implementation of tax exemption step by government

In the course of implementation of this governments' decision, sanitary pads retailers seemed to be unfaithful since most of them took it for granted as they did not lower the price of sanitary pads.

This being a case, the government of the United Republic of Tanzania had to revert its previous decision of tax exemption for a financial year 2019/2020.

Reactions from community and civil society organizations

After the government decision to remove VAT for sanitary pads, individuals and civil society organizations rose against such a decision. It was claimed that menstruation is determined by nature and not willing, why would VAT be imposed on it? It was, therefore, suggested that, instead of re-imposing VAT on sanitary products, measures should be taken to enforce sanitary pads

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retailers in as far as adherence to lowering prices is concerned. This gave a rise to a rising a petition with a slogan “*Pedi bila kodi*” a Swahili phrase meaning anitary pads without tax.

Performance of schools

To assess the level of MHHM understanding an evaluator had to establish a list of 15 questions based on YES/NO responses of which all respondents were asked to respond. The questions were established based on SWASH guideline (2016) and a booklet on puberty namely Growth and Changes.

At the end responses for each respondent were calculated for proportions and percentage scores based on right responded questions as numerator and total number of asked questions as denominator.

Calculated proportions were re-coded in Stata/IC 13.0 and hence turned to Dichotomous categorical variables of “YES” when the score is greater than or equal to 50% and “NO” when its less than 50%. A researcher considered 50% as a floor for good performance since it is at least half of a desirable score i.e 100%.

As per findings, all eight government rural, private and government urban schools had a mean performance score of 53.4%.

Scores for individual schools entails, Chifu Mangenya (53.7), Kwemkabala (53.1), Kerenge (53.9), Ngomeni (53.8), Kwafungo (54.8), Shebomeza (55.5%), Alhuda (49.6%) and Hegongo (44.8) whereby $prob>F=0.15$, *Bartlet test for equal variances: $chi^2(7)=13.5962$ with $prob>chi^2=0.059$* . After conducting oneway ANOVA test (Consider Appendix VIII), data was visualized as shown by Figure

PEER SUPPORT OF SCHOOL BOYS ON ADOLESCENT GIRLS’ MENSTRUATION

SWASH guideline (2016) emphasizes that teaching and sensitizing boys about girls’ need for privacy, respect and support during their monthly menstruation is important to minimize teasing and mocking that may occur.

Hence: the Support of schoolboys is of paramount importance in as far as school girls’ welfare at menstruation is concerned. A good understanding of what menstruation is all about is of importance to enhance their support to school girls at a time.

But in schools, school boys are not considered in MHHM knowledge impartation. The only expectation is a reproduction topic from Biology subject in form III that’s why most of form one (1) and two (2) were a bit unaware on menstruation. This is a challenge in deed, since boys awareness and knowledge on MHHM as whole is not guaranteed, hence with this challenge avoiding teasing/mocking may not easily be achieved as SWASH project envisions.

School boys support to girls

According to findings, none of 458 surveyed school girls mentioned boys as supporters during their menstruation, rather all of them responded that its only teachers and peer girls who are giving them support during menstruation.

School girls’ willingness to share menstrual situation to boys

Only 12 out of 458 school girls responded as willing to share with some boys in case of emergency and non-availability of peer girls, rather the rest of them revealed to be unwilling to have shared their menstrual situation to boys in whatever situation.

Several reasons were given as prompting to such lack of willingness to share menstrual situation to boys, these are summarized in a figure below:

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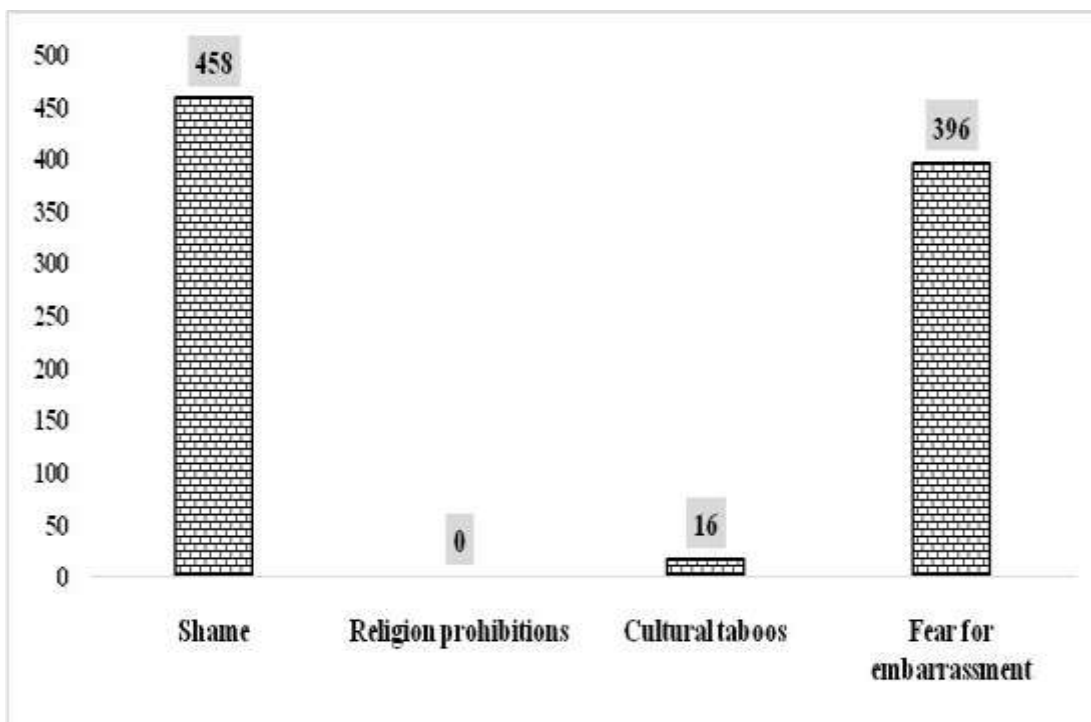


Figure 9: Reasons for School girls' lack of willingness to share menstrual situation to boys

Teasing/embarrassment experience from boys

Teasing from schoolboys is one of the reported challenges in many studies. According to (Pillitteri, 2012) Physical and verbal bullying were one of the main grievances of girls interviewed in Malawi. This same case applies in many Tanzanian schools including Muheza schools since findings suggest that, teasing and embarrassment from boys are highly prevailing among girls. Consider a Stata output below that shows that the teasing experience is a problem in Muheza district since 0.862 (86%) is the proportion of students who experienced or ever observed embarrassment from schoolboys to girls at menstruation ($P < 0.001$)

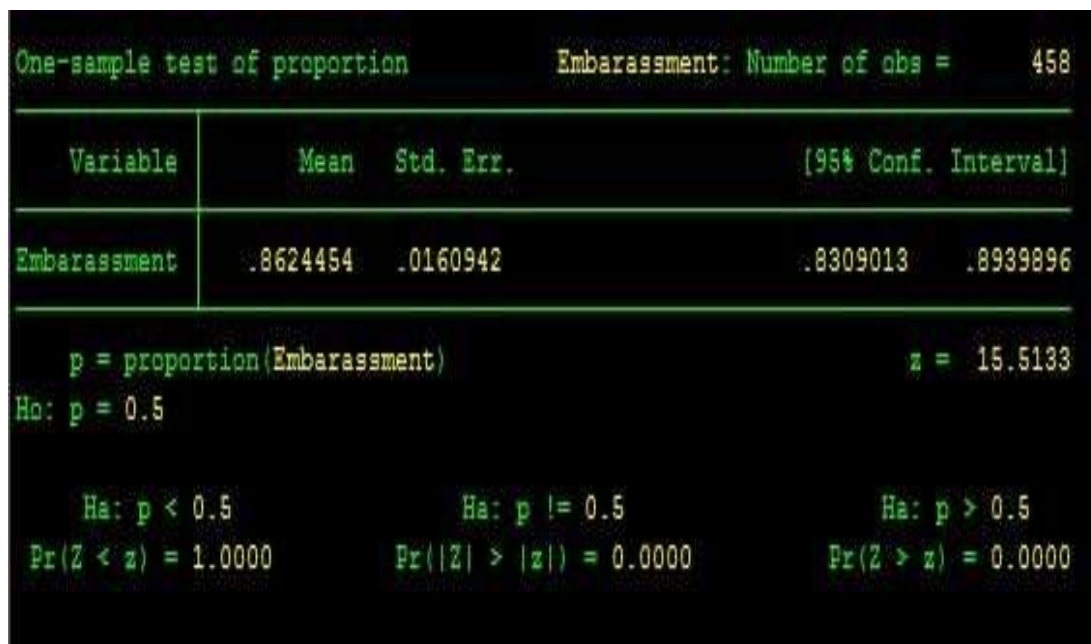


Figure 10: Girls experiences on teasing/embarrassment

Source: Field data, 2019

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INFLUENCE OF SOCIO ECONOMIC AND GEOGRAPHIC FACTORS TOWARDS THE STATE OF MENSTRUAL HEALTH AND MANAGEMENT.

School Category

Hence according to findings, with one-way analysis of variances for students' (refer Appendix VIII), mean performance based on schools' categories i.e Government Urban, Government Rural and Private was observed to be 53.5, 54.6 and 49 respectively as clearly shown by a column chart below:-

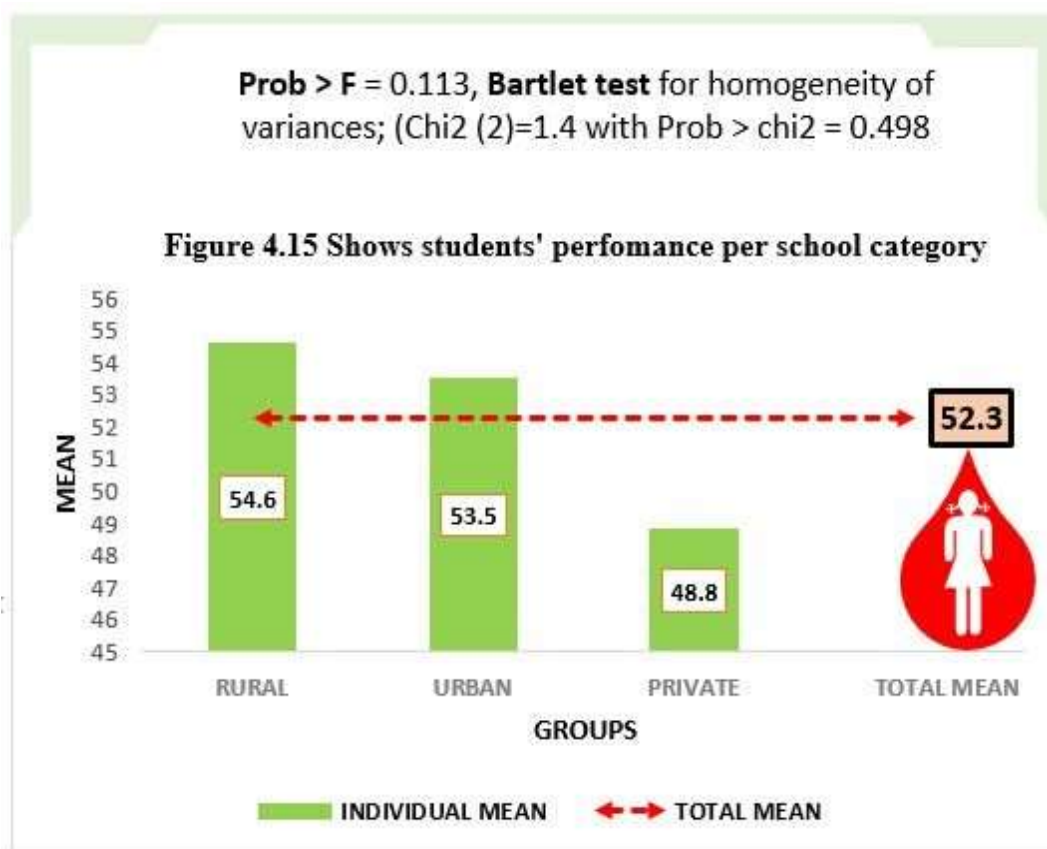


Figure 11: Column chart showing students' performance per school category

Source: Field data, 2019

As observed from the above figure, the mean performance for government schools is greater than 50. This is not a case for private schools that had a mean performance of 49 which is less than 50. A major reason may be that, in government schools, the operationalization of school health clubs, FEMA and Girl Guide is highly emphasized which may have a significant outcome on imparting knowledge to students. This is not a case in private schools.

Relationship between performance vs age, years spent in menstruation

With a correlation matrix heat map visualized using Python Jupiter lab, Age was observed to have a weak positive relationship to students' performance (with coefficient of correlation = 0.35) but on the other hand, years spent in menstruation which was obtained by calculating the difference between students' current age and the age when menstruation started had also a positive (strong) relationship (with correlation of coefficients = 0.52). Such differences in strengths of relationships are because school girls reached their puberty age and hence menstruation at different ages. Some of those started earlier (12 years of age) while others very late (16 years of age).

Therefore, with such a relationship, it implies that as the age of students and spent menstruation time increases, so students' performance does.

The figure below which is a correlation matrix heat map shows as to how the relationship is all about.

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Figure 12: Correlation matrix heat map showing strength and direction of relationship between students’ performance as dependent variable vs age and spent years in menstruation.

Other determinant factors towards MHHM understanding

As told by the findings, students’ class and mothers’ or female guardians’ levels of education have in one way or another influence towards MHHM understanding among girls’ students.

Students performance numeric variable observations were recoded into categories based criteria shown by the function below: -

$$f(x) \begin{cases} 0, \text{ where } x \geq 50 & \dots\dots\dots \text{Good performance} \\ 1, \text{ where } x < 50 & \dots\dots\dots \text{Poor performance} \end{cases}$$

As the function shows, numeric variables were recoded into 0 and 1 categories which were a label defined as poor and good performances respectively. Therefore, those who scored less than 50 were considered as poor performers while those who scored 50 and above were considered as good performers.

After conducting binary logistic regression test, the findings suggest that, on the side of students’ class, “Form II”, “Form III” and “Form IV” are 1.04, 1.36 and 1.39 respectively times likely to have desirable awareness level ($\geq 50\%$) compared to “Form I” ($p > 0.05$) at all categories.

But mothers’ education also seems to be influential since primary and secondary educated mothers or guardian students are 10% and 6% less likely to have desirable understanding level compared to mothers who have reached university/College level with insignificant p values i.e 0.732 and 0.33 respectively. Mothers who are not educated are 80% less likely to have a good understanding level than University/College mothers with strong evidence to tell the difference ($p = 0.033$).

IMPLEMENTERS’ COMMITMENT AND RESPONSIVENESS TOWARDS MENSTRUAL HEALTH AND MANAGEMENT CHALLENGES FACING SCHOOL GIRLS

Awareness on Availability of SWASH project

SWASH guideline (2016), defines school as primary and secondary schools; boarding/day or both; Rural or Urban located; Public

Evaluation of School Wash, Sanitation and Hygiene (SWASH) Project: Has it Addressed Menstrual Health and Hygiene Management (MHHM) Related Challenges Facing School Girls in Muheza District?

or Private school.

When it comes to knowledge on SWASH project, the coordinator knows about the project availability but the challenge is that she only knows that, the project is only for primary schools and not secondary schools. This is contrary to guideline provision as stated above. Since she is from primary schools, her activities are more based on primary schools than secondary schools. Hence more efforts are invested in primary schools.

She was quoted saying; *“SWASH project is for primary school, it is not yet implemented in secondary schools at the moment, may be it will be implemented in consequent phases”*

This is contrary to the guideline, whereby the guideline requires implementation in both primary and secondary schools, government and private schools intending to safeguard the lives of students. Regarding this, some of the requirements of the project are considerably met in some secondary schools such as the availability of emergency pads, sanitation facilities, and MHHM awareness sessions through school health clubs. All of these are being implemented unknowing that it is part and parcel of the project requirements.

Data feeding to NSMIS

SWASH data are to be fed in the National Sanitation Management Information System database, this is to be done after quarterly supervision conducted. The data elements included in a dataset are in the form of output indicators and are under the themes of sanitation, hygiene and hygiene promotion, water safety as well as safety management.

Some of the indicators that are to be tracked are in one way or another having effects on the state of Menstrual Health and hygiene management such as availability of sanitation facilities, friendly infrastructures for MHHM among girls, availability of soaps and clean water.

Hence having known the status of each indicator, the magnitude of challenges in schools can easily be spotted and hence intervened. But according to the findings, it was observed that in the whole year of 2018 to date, no data are being fed in the system. In the Tanga region, Muheza District is the only district that does not feed any data in the NSMIS database. Other councils' datasets for the year 2018 are fed with data though some have data that are openly unrealistic such as Lushoto and Pangani.

This is clearly shown by a thematic map of Tanga region with district councils' boundaries below.

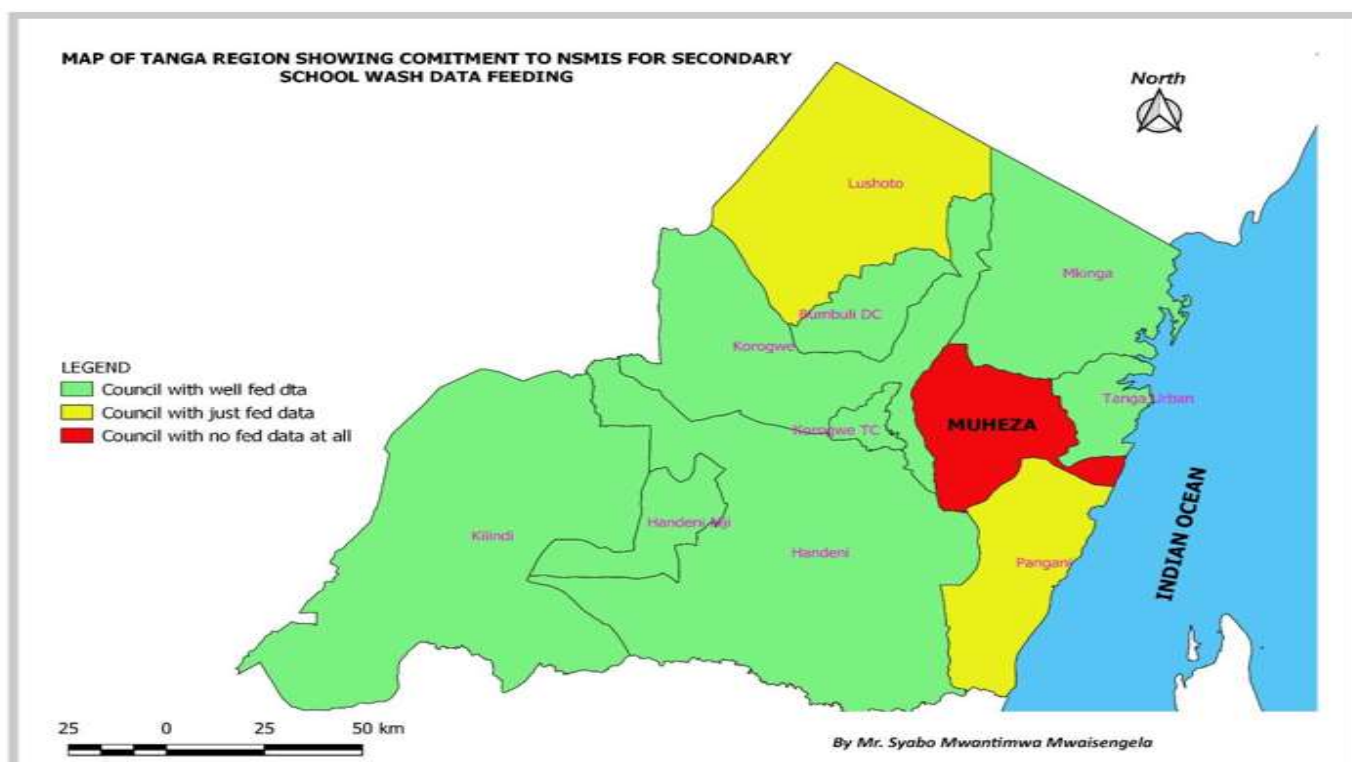


Figure 13: Map of Tanga showing councils' commitment to feeding data as per year 2018

Source: NSMIS data, 2018 designed in QGIS 3.8.1 Zanzibar, datum WGS 84

As above map shows, Muheza District is the only district that have not fed any data in NSMIS secondary school WASH dataset at all.

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When asked, SWASH coordinator from education department said that;

“We don’t know how to use the system since we don’t even have passwords for it and we have never seen it, no body trained us on how to use the system. We just hear about it from Health Department, I think they are the ones who are using it.”

Supportive supervision and monitoring for SWASH

The SWASH guideline (2016) stipulates the roles of implementers at the District level as to ensure that assessment (using Tool Kit 1A) of School WASH facilities is carried out once a year. Also monitoring and supervision of the implementation of School WASH guidelines in schools as part of the routine monitoring and inspection process (using Tool Kit 1B, twice a year).

But according to findings, none of these is conducted, rather an assessment is done once a year by the TSS tool which is comprehensive as it embraces all school elements including sanitation related but not as detailed as SWASH toolkits 1A and 1B are. School visits are regularly conducted in nearby government schools such as Kerenge, Kwemkabara, Chifu Mang’anya, and Kwafungo. But this is not a case for distant rural schools and private schools since visits are occasionally done. The existing challenge is the inadequate availability of resources especially fuel to facilitate such visits. Despite these visits, the area of MHHM is often not considered as one of the issues to be looked upon. The focus of visits is mainly on academic matters and some other issues as determined by a type of visit.

Implementers’ challenges in regard to SWASH implementation

Several challenges pertaining to SWASH project implementation especially in the area of MHHM were revealed, some of these challenges are as follows:-

1. Lack of training to teachers on MHHM, this is due to the fact that, even District School Health Coordinator has never attended any training with MHHM content that has to be imparted to teachers
2. Teachers being so busy due to academic responsibilities. School health teachers claimed to be so busy in academic and some other administrative responsibilities, therefore it was suggested that, School health teachers are detached from other responsibilities for them to be effective in assuming their responsibilities.
3. Lack of fuel for facilitating transportation for supportive supervision, this leads to hardships in visiting distant rural schools for supervisory activities.
4. Shortage of funds towards implementation of the project. Budget deficits were said to be one of prominent challenges since
5. The challenge related to resources sharing. This is due to non-allocation of WSDP funds to secondary schools, this is not a requirement since funds are to be allocated to both secondary and primary schools.

One of respondents were quoted saying:

“We are very busy with assuming our teaching responsibilities, you will find that there are a lot of topics to be covered and you are behind time, its sometime hard to consider teaching MHHM instead of subjects because that is what has brought them here, I advice that we as school health teachers are detached from other responsibilities so that we can have enough time invested in school health activities including MHHM related ones”



Figure 14: A tag Cloud for implementers quotes showing most repeated words

Source: Field data, 2019

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As shown by a tag cloud above, words busy, funds and training were more frequently said by respondents, therefore these are viewed as major challenges towards smooth implementation of MHHM area of SWASH project.

AVAILABILITY OF SCHOOL WASH OPERATION & MAINTENANCE FUNDS FOR MENSTRUAL HEALTH AND MANAGEMENT

Community Contributions

One of the recommended ways of doing this for a school is to introduce a parent/community contribution for the maintenance of School WASH facilities in collaboration with the school committee and the village government.

According to findings, in previous years, school management together with the school committee had the mandate to determine and propose an amount to be contributed by each parent/member of the community at a certain frequency for the sake of simple operations and maintenance for SWASH. But a new circular directs that any decisions regarding community contributions should be decided in village meetings, this seems to foster some delays and irresponsiveness amongst community members when it comes to these contributions. District School Health Coordinator was quoted saying that;

“It’s now difficult to mobilize communities from contributing to small contributions for operations such as buying of water and emergency sanitary pads. This is because, decisions pertaining to this is no longer under school committees but village meetings. With these challenges, community members seem to be reluctant in contributing”

Water Sector Development Program

This is one of the funds' sources for school WASH where funds are deposited to account of the Councils' water department from the Ministry of Water and Irrigation and then directed for school WASH. According to findings, in the current financial year, these funds were brought but are not consistently brought since, in Muheza district, were not brought during the last financial year. But another challenge is that, when brought, these funds are directed to primary schools only with non-consideration to secondary schools. SLO from secondary education department was quoted saying;

“We always hear about those funds but they are all allocated to primary schools, we have been asking ourselves as to why only primary schools are favored while we are all in the same worsened situation, I advise that funds should be directed to both of us to support supervision of activities”

But the funds are to be allocated to both primary and secondary schools as it may be needed in both departments:-

District Water Engineer were quoted saying:

“Yeah, you know these funds are just brought without specifying whether are for primary or secondary schools, I think they are meant for both of them. With reception of funds, we communicate to coordinator and tell her to enlist priorities. But we always see activities based on primary schools but we do not have a mandate to influence anything.”

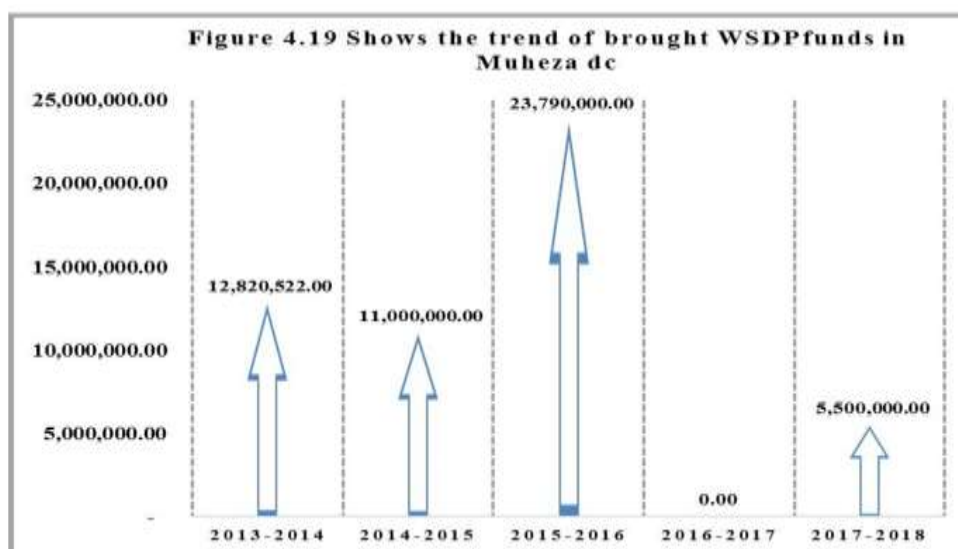


Figure 15: WSDP funds brought for 5 consecutive years for Muheza District

Source: Field data, 2019

As shown by figure above, in Muheza DC, during financial year 2016/2017 funds were not brought at all.

Capitation and School fee compensation

Contrary to guideline provision, this is as a result of a guideline that was released on December 2015, capitation funds are more

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directed to academics and procurement of learning and teaching materials including books, biological models and laboratory equipment.

But school fee compensation is to be disaggregated and allocated as follows: -

- i. Administration (35%)
- ii. Academics (30%)
- iii. Exams (15%)
- iv. Adherence to girls' requirements (10%)
- v. Minor repairs (10%)

As it can be seen from above funds sources, number 4 and 5 are the areas of which when intervened leads to adherence to SWASH guidelines.

But the observed challenge from the field is that funds disbursed are not adequate enough to implement all those areas. This leads to violation of a guideline in order to enable implementation of areas that are considered as of great importance mainly those associated with academics.

One of the headmasters were quoted saying;

"Funds that are brought are in small amount to the extent that, some of the areas are to be unallocated, it seems weird to consider buying sanitary pads keeping aside areas of academics and exams. When it comes to repairs, a lot of money is needed and these repairs entails furniture, schools building and toilets infrastructures, how can such small amount suffice all these?"

It is claimed that, at previous times when contributions for desks, buildings, water and any other that is thought about as per arising needs, it was easy since those contributions were helpful in dealing with furniture and general infrastructure rehabilitation. But since restrictions came into being it's a challenge indeed.

DISCUSSION

5.2 Secondary schools' alignment to stipulated MHHM requirements

Different studies showed that poor performance in schools was associated with poor sanitation facilities that results to pupils illness and drop out. Tinograh (2009), has explained the shortage of water in school latrines was a highly contributing factor of school girls dropping out of school due to the hardships they face during their menstrual periods. As according to findings, the same case applies in Muheza since no school has met MHHM requirements by 100% as required.

As per findings only 2 schools i.e Shebomeza and Hegongo has at least met half of minimum requirements in the checklist, these requirements are basic and entails Availability of girls' toilets, wall front of latrines and presence of guidance teacher on MHHM but none of the schools had a reserved space for pads in toilets, incinerator near latrine and Growth and changes guidance for MHHM and puberty knowledge impartation as whole.

A study conducted by (Waddington, 2009) presents that 90% of children in Tanzanian districts use toilets but they don't have access to wash their hands as a result they go to class with dirty hands. This is the case in Muheza, since shortage of water is a huge challenge that prompted into organizing parents' contributions in Kwafungo Secondary school, this went in hand to non-adherence to 1:20 latrine ratio to girls toilets where the mean ratio were 53, with only two schools meeting the ratio. Guidance teachers are there but school health clubs, FEMA and Girl Guide that have impact on imparting awareness on MHHM are only available in government schools.

Moreover no training on MHHM has been provided to school teachers since knowledge impartation to girls relies on female teachers' experiences since they are also experiencing the same phenomenon.

Physical and verbal bullying was one of the main grievances of girls interviewed in Malawi (Piper Pillitteri, 2012). In order to solve this challenge, it is required that MHHM training to school boys is considered. Knowledge impartation is to be extended to school boys as peer community to girls at school and community as whole. But with gathered findings, knowledge on MHHM to boys is only obtained through class lessons in Biology subject as a portion of a form three (3) topic of reproduction. This will in one way or another lead to existence of teasing and bullying to girls that will in turn embarrass them and eventually affect them socially and psychologically.

5.3 Level of MHHM understanding among girls' students

The same study by (Tegegne & Sisay, 2014) suggests that majority of the girls, 478 (86.75%) had heard about menstruation before they had menarche; where the leading sources of information were sisters, 204 (42.68%), followed by mothers, 183 (38.28%), friends 141 (29.50%) and teachers, 64 (13.39%). This is contrary to findings obtained from Muheza District. As it is known that the guideline puts emphasis on adequate impartation of MHHM knowledge to girls before their first menstruation (Menarche). All girls are to be aware and have insights on MHHM before onset of Menstruation. But as per findings, to many students (52%) learning succeeds first menstruation as most of them had learned on it after their first menstruation and it seemed so strange to them, only 48% did not perceive menstruation strangely, therefore its almost halfway. This is a huge challenge as it entails that MHHM

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awareness impartation is still a challenge.

In Muheza all students use or have ever used sanitary pads and cloth pieces. But most of them use pads, followed by cloth pieces and others use both sanitary pads and clothes. It was also found that even those who used homemade pieces of cloth wished to use sanitary pads instead, but due to inability to afford buying pads they ended up using cloths. This corresponds to a study conducted in Kenya which suggests that Poverty prevents girls from effectively managing their periods. For example, while girls often state that commercially-available pads are their preferred method for managing their periods, a lack of money inhibits them from purchasing pads and, in two instances, inhibited shopkeepers' or kiosk owners' ability to stock pads (McMahon, et al., 2016).

5.4 Peer support of school boys on girls' menstruation

SWASH guideline (2016) emphasizes that teaching and sensitizing boys about girls' need for privacy, respect and support during their monthly menstruation is important to minimize teasing and mocking that may occur.

Hence: Support of school boys is of paramount importance in as far as school girls' welfare at menstruation is concerned; a good understanding on what menstruation is all about is of importance in order to enhance their support to school girls at a time.

A study in Taiwan (Chang et al., 2012) explored boys' experiences and attitudes relating to menstruation. One issue was that no one wanted to talk about menstruation with the boys and they could not discuss menstrual issues with their mothers or sisters or their fathers. As quotes from boys interviewed in the study show, they were also discouraged from talking about menstruation with each other at school. This corresponds to findings in Muheza Only 12 out of 458 school girls responded as are willing to share with some boys in case of emergence and non-availability of peer girls but the rest of them said that are not willing to have shared their menstrual situation to boys in whatever situation, this is due to several reasons such as shame (458), fear of embarrassment (396) and Cultural taboos (16).

Nevertheless, it was reported that, girls are being restricted to share their menstrual situation to boys with the reason that, when boys know that a girl is already at menses, will persuade her to be involved in love affairs since, she will be considered as grown up girl. It is even considered unethical to allow boys or any male to see a menstrual cloth and hence, are not exposed directly to sunlight.

Training to boys is very crucial since they are school peers, adequate training to them may sharpen their understanding and hence reduce incidences of teasing and bullying. On the other hand, findings show that training on MHHM seems to be more focused on school girls themselves and not boys. When specific sessions are to be held, girls are being called separately in the absence of boys and menstrual issues are referred to as "Girls matters". The only expectation for boys to acquire the knowledge is through class sessions with the only hopes of reproduction topic in form three (3) which also does not cover the content of MHHM as exhaustively as per existing knowledge gaps.

5.5 Influence of socio demographic and geographic factors towards MHHM knowledge ability

As stated in chapter three (3), this study involved eight (8) schools which were purposively selected based on their location (Urban/Rural) and ownership (Government/Private). Hence for the purpose of this study, schools were categorized as follows:- Government Urban that includes Chifu Mang'anya, Kwemkabala as well as Kerenge Secondary schools, government rural which are Shebomeza secondary school from Amani division, Kwafungo Secondary school from Ngomeni division and Ngomeni Secondary school from Ngomeni division as well as private schools which were Hegongo secondary school and Alhuda secondary school.

Hence according to findings, with one-way analysis of variances for schools' performance based on categories i.e Government Urban, Government Rural and Private it was observed that, the school categories has mean performance of 53.5, 54.6 and 49 (**Prob** > **F** = 0.0113, **Bartlett test** for homogeneity of variances; $\chi^2(2) = 1.2$ with $\text{Prob} > \chi^2 = 0.498$). A major reason observed for poor performance of private school students is that, in government schools, emphasis is put on operationalization of school health clubs and other clubs such as FEMA and Girl guide which may have significant outcome on imparting awareness to students. This is not a case at all in private schools. Therefore, stakeholders should take care of this matter in the sense that, private schools should also be considered in as far as investment on MHHM impartation through clubs such as FEMA club and Girl guide clubs is concerned.

A study that conducted in China, 556 teenaged students showed that most had heard that girls should not consume cold foods or drinks during menstruation and that most believed that they should not wash their hair or attend funerals during menstruation (Chang et al., 2007). This is an indication that age has an influence towards awareness on menstruation and its management. As per findings of this study, Age has a positive relationship to students' performance (with coefficient of correlation = 0.35) and years spent in menstruation which were obtained by calculating the difference between students' current age and the age when menstruation started had also a positive relationship (with correlation of coefficients = 0.52). Such differences in strengths of relationships is due to the fact that, school girls reached their puberty age and menstruation at different ages. Some of who started earlier (12 years of age) while others very late (16 years of age). Therefore, with such relationship, it implies that as the age of students and spent menstruation time increases, so it does students' performance.

Other determinant factors include student classes and mothers levels of education whereby; form II, form III and form IV are 1.04, 1.36 and 1.39 respectively times more likely to have desirable awareness level (>

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= 50%) compared to “Form I” as a reference with ($p>0.05$) at all categories.

But mothers’ education also seems to be influential since primary and secondary educated mothers or guardian students are 10% and 6% less likely to have desirable understanding level compared to mothers who have reached university/College level with insignificant p values i.e 0.732 and 0.33 respectively. Mothers who are not educated are 80% less likely to be educated than University/College mothers with strong evidence to tell the difference ($p=0.033$).

5.6 Implementers commitments and responsiveness on SWASH project

The coordinator knows about the project availability but the challenge is that, she only knows that, the project is only for primary schools and not secondary schools. Since she is from primary schools, his activities are restricted to primary schools more than secondary schools. Hence more of efforts are invested in primary schools. This is contrary to SWASH guideline (2016) that refers school as to primary and secondary schools; boarding/day or both; Rural or Urban located; Public or Private school.

According to the findings, it was observed that no data are being fed in the National Management Information System. With respect to year 2018, in Tanga region as whole, Muheza District is the only district that does not feed any data in NSMIS database.

Supportive supervision and monitoring for SWASH is also a crucial component since SWASH guideline (2016) stipulates roles of implementers at District level as to ensure that assessment (using Tool Kit 1A) of School WASH facilities is carried out once a year as well as monitoring and supervision of implementation School WASH guidelines in schools as part of the routine monitoring and inspection process (using Tool Kit 1B, twice a year).

But according to findings, none of these is conducted, rather assessment is done once a year by TSS tool which is comprehensive as it embraces all school elements including sanitation related but not as detailed as SWASH toolkits. School visits are regularly conducted in nearby government schools. But this is not a case for distant rural schools and private schools since visits are occasionally done. This is due to inadequate availability of resources especially fuel to facilitate such visits. Despite these visits, the area of MHHM is often not considered as one of issues to be looked upon. Focus of visits is mainly on academic matters and some other specific issues as determined by nature of visits. This is detrimental to the state of MHHM among girls students due to existence of many unattended challenges on the ground.

5.7 Availability of School WASH Operation & Maintenance Funds

In regard to community contributions, findings revealed that it is now difficult to organize community members towards their contributions for cash, labor and in kind, this is due to a new circular which directs that any decisions regarding community contributions should be decided in village meetings, unlike previous times, this seems to foster some delays and irresponsiveness amongst community members when it comes to these contributions.

Water sector development program is one of funds sources for school WASH where funds are deposited to account of Councils’ water department from Ministry of Water and Irrigation and then directed for school WASH. The challenge regarding these funds is that, they are not consistently brought as findings revealed that were not brought for consecutive two (2) years back. Despite inconsistency of the funds, they are only directed to Primary schools. Capitation funds are more directed to academics and procurement of learning and teaching materials including books, biological models and laboratory equipment.

School compensation funds are disaggregated into five (5) areas of which 10% are to be directed to adherence to girls requirements and 10% for minor repairs, but these funds are not adequate enough to implement its areas of specifications. This leads to violation of a guideline in order to enable implementation of areas which are considered as of great importance mainly those associated to academics. With this situation, improvement of infrastructure, operations and maintenance for MHHM will be difficult which in turn may affect health and performance of girls in school.

6.3 CONCLUSION

Low understanding level on MHHM is detrimental to health and welfare of female students, lack of necessary facilities and existence of unfriendly infrastructure to them is a challenge that prompts them to being uncomfortable to school environment due to psychological distortion and this may in turn lead to their poor performance in class. It is therefore a necessity that considerations should be made by the government and development partners in terms of resources allocation and implementation. This will be an assurance towards impacts of improved performance and health of students as envisioned by the program.

3.12 Limitations

- i. Limited accessibility to rural schools. This was evident in Amani division route where accessibility to Shebomeza secondary school was a bit challenging due to road infrastructural challenges. Researcher and his assistants opted the use of Bodaboda (Motorcycle) to face the challenge.
- ii. Poor cooperation from private schools especially Muslim based schools since most of private schools are Muslim religion based. This led to non-granting of permission from Alhuda SS
- iii. The study was conducted in Muheza District where water is still a challenge to most schools and households as whole. This

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being a big among the factors of hygiene practices the results might not be transferred to schools with availability of water.

6.6 Areas for further research

A research should be conducted to identify as to what extent does MHHM challenges facing school girls prompts to absenteeism and poor performance among school girls.

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