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School-Based Efforts (SBEs) Towards Promotion of Health Literacy (HL) and Health-Related Knowledge (HRK) in Selected Primary Schools in Morogoro, Tanzania

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Abstract: *Numerous efforts have been made by the government in Tanzania to improve health literacy (HL). Despite the efforts, there are notable incidents of low and problematic HL among the general population. Socialization agents, schools inclusive, have been observed to have significant influence on health promotion. It is not empirically known to what extent schools as socialization agents have been involved in these initiatives. The schools can initiate school-based efforts (SBEs) to promote HL and health related knowledge to nurture health consciousness hence healthier lives. This study was conducted to identify school-based efforts (SBEs) towards promotion of health literacy (HL) and health-related knowledge (HRK) in selected primary schools. A cross-sectional research design was adopted to collect data from 939 respondents. Data were collected using a questionnaire survey, focus group discussions, and key informant interview. Data was analysed using IBM - SPSS (v20). Findings from teachers, 50.3% (95% CI: 82 to 108) showed that environments and pupils inspections were among the SBEs to promote HL in schools. Whereas, health education provision 25.9% (95% CI: 38 to 61), presence of learning materials in schools 23.8% (95% CI: 34 to 57). Findings from pupils 59.6% (95% CI: 399 to 497) and 24.9% (95% CI: 165 to 211) revealed that time available for health education, and learning materials on health issues were insufficient in schools, while 15.5% (95% CI: 98 to 136) of the respondents were ignorant about the efforts being made to improve HL. About 23.7% (95% CI: 35 to 54) of the respondents confirmed efforts made by health workers on health issues in schools towards HL promotion. Most teachers 76.6% (95% CI: 118 to 176) complained about health workers failures to update teachers on health issues. Generally, this study concludes that there are several efforts which have been made to promote HL in schools. However, these efforts have not yet fully succeeded to bring much positive effects since HRK is still low in schools. It is recommended that, to fully succeed in promoting HL and HRK, governments and other partners should support the schools' efforts undertaken to support HL in schools.*

Keywords: *School-based efforts; Promotion of Health Literacy; Health Related Knowledge; Primary schools; Tanzania.*

1.0 Background Information

Unquestionably, health literacy (HL) is an essential determinant of health outcomes, health care costs and utilization (Noon *et al.,* 2016; Muhanga and Malungo, 2018). Innumerable studies show that, HL is one of the challenges facing most people towards obtaining good health and when is limited to an individual, it impacts negatively a person`s ability to access and use health care, to interact with providers and to care for oneself (Muhanga and Malungo, 2017; Patel *et al.,* 2018; Ward *et al.,* 2019). Substantial HL is required for making decision on health-related issues, and lack of HL is obviously a cause of health disparities among the general population (Arena *et al.,* 2015; Nutbeam *et al.,* 2018). Generally, development of a community that is health literate is considered central to goals of health initiatives (Sørensen *et al.,* 2012). Notably, HL is increasingly becoming vital to aid people navigate a complex health system (access to health information, communicating with their health care) to comprehend provider messages and manage self-care (Pleasant, 2014; Laranjo *et al.,* 2018).

However, despite the importance of HL in the world (Paasche – Orlow and Wolf, 2007; Muhanga and Malungo, 20I9) and the global efforts made to boost it, it is reported that HL is still low and problematic due to inadequate health information which affects decision making on health-related issues (Parker and Gazmararian, 2003; Robbins, 2003). In attaining the global initiatives implemented and the significance of HL for national development based on its influence on health outcomes including reduced health care costs, the government of Tanzania has put into force numerous efforts towards improving HL (URT, 2007). Some of these efforts are documented in the Health Policy of 2017 which are targeting at promoting HL in the country; such efforts include fund provision for health education from health financial budgets and reinforcing governing principles, acts, regulations and guidelines for improvement of health services. Furthermore, these efforts made aim to promote health services and educating people to become more health literate for example developing both knowledge and skills desired to access, and understand basic health information is important towards healthier lifestyle choices to achieve positive health outcomes for humans and animals (URT, 2003a). Despite the efforts made and implemented in the country there are notable increases in health impairing behaviours (URT, 2003a; 2003b) which have resulted in a higher pervasiveness of infectious diseases in the community.

Thus, it is worth noting that, while there have been efforts made and implemented by the government in collaboration with other interested stakeholders, very little is empirically known on how socialization agents, primary schools inclusive, through primary school teachers have been integrated in the efforts made by the government to certify that HL issues are well addressed within school settings. It is clear that, schools are agents of socialization in the community through which HL can be cultivated and diffused to the general population (Rulison *et al.,* 2018). Socialization is a long-life process at which teachers plus pupils can acquire health-related knowledge, skills and other desired orientations through various interactions in primary schools, which in turn shape and form their lifestyles and behaviours in the society (Shim *et al.,* 2011; Kern *et al.,* 2019). Socialization within school environments is imperative since it can enable teachers to play a vital role in terms of moulding and modifying pupils' knowledge. While, HL is obvious essential for cultivating pupils' health literacy towards their adult life, definitely schools can help to impart health-related knowledge to pupils through socialization process and ease access to health information and improve decision making on health-related issues. In spite of the importance of HL within school settings for a better life, it is not well known how teachers are health literate and to what extent teachers can impart health-knowledge and skills towards improved HL in schools and communities in particular (Albrecht, 2019). In addition, understanding HL in school settings is more important since the promotion of HL through efforts made in schools can contribute significantly to the improvement of HL in the community settings as well as highlighting factors impacting on its effectiveness (Kilgour *et al.,* 2015).

However, innumerable studies in the world have indicated several incidences of low and problematic HL still existing among the general population despite a number of numerous efforts being undertaken to promote HL (Schrauben and Wiebe, 2017; Muhanga and Malungo, 2017; 2018; 2019). This situation has been perceived to be common even in economically developed countries with strong education structures (Sørensen *et al.*, 2015). However, this situation is reported to be worse in most developing countries Africa inclusive (Muhanga, 2018a; 2018b), most efforts that are made to promote HL among the general population face financial deficiencies in the respective countries (Meherali and Mevawala, 2020). In Tanzania few studies focused on HL have been conducted and documented (Stone *et al.,* 2011; Muhanga and Malungo, 2018). For instance, Stone *et al*. (2011) conducted a study focused on humans and found low HL still exists in the community, similarly, Muhanga and Malungo (2018) concentrated on the interface of humans, animals and the environment and its correlates under one health approach in Tanzania and found low health literacy. Despite, having a few studies on HL conducted however all those studies have not focused on how important socialization agents, school inclusive, have played a role in promoting HL in the country. Furthermore, little empirical information is available on how schools have been involved in the creation of health literate societies. Understanding efforts made in schools as the agents of socialization can support the creation of health literate societies and reduce health-related problems in the community. Again, less attention has been paid to understanding how HL can be promoted through school-based efforts while schools as the traditional socialization agents, thus through their actors who are teachers and pupils HL can be sustainably promoted in the community. Therefore, understanding HL within school settings can influence the promotion of HL and better decision making among the people on health-related issues (Mackey *et al*., 2016). This study was conducted to assess how important efforts made by socialization agents, school inclusive, have played roles in influencing HL and HRK in selected primary schools in Morogoro Municipality, Tanzania.

2.0 Theoretical and Conceptual Framework

This study is theoretically guided by Social Cognitive Theory (SCT) which suggests that human behaviour is determined by interactions between person, behaviour, and the environment (Govindaraju, 2021). It is perceived that this theory applies to HL because it explains clearly the

interaction between individuals and the environment that can influence individuals to be informed learn and understand health information (Muhanga and Malungo, 2017). Again, the theory indicates the relationships between personal, behavioural, and environmental impacts and depicts how it helps learners to acquire health knowledge in real-life situations. Again, the theory states that individual persons learn through observation, simulation and duplication of the behaviour of others (Jenkins *et al.,* 2018). From the theory, schools as institutions have responsibility to change individuals' behaviours' and influence to become health literate through various interactions with others. Therefore, this theory is useful in the study to analyse how the interactions between teachers, pupils and the environment can influence individuals to learn about health issues and become health literate in schools and community as well.

3.0 Methodology

3.1 Geographical Location of the Study and Justification for Its Choice

This study was carried out in Morogoro Municipality in Morogoro Region, Tanzania. The study involved six primary schools namely; Mazimbu B, Uhuru, Chamwino B, Azimio B, Mwembesongo, and Mkundi from six wards in Morogoro Municipality. That is one school was selected in each of the six selected wards. These schools represent similar characteristics to primary schools in Morogoro Municipality as they include only those owned by the government. Furthermore, these schools are located within Morogoro Municipalilty which is the Regional Head office of Morogoro. Morogoro Municipality is one of the nine districts in Morogoro region. Morogoro Municipality was chosen as a study area as the area has 1889 primary school teachers (Morogoro Municipal Council, 2020) who could provide sufficient information required to meet the research objectives. Previous studies conducted by Muhanga (2018; 2019) found low level of health literacy in the area among the general population. This study was conducted in Morogoro Municipality specifically to identify and assess on how school-based efforts have had influence on promotion of health literacy and health-related knowledge within school settings in the community (Figure 1).

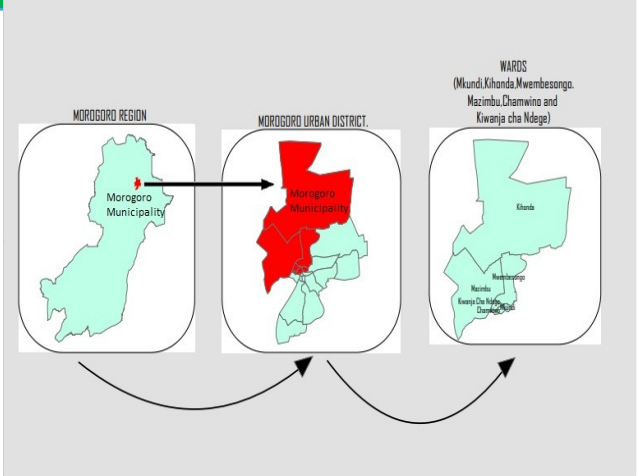

Figure 1: Map showing Research Areas in Morogoro Municipality, Morogoro Region

3.2 Research Design

A cross – sectional research design was employed in this study. The design is characterized by cheapness, quickness and effective utilization of limited resources (Rwegoshora, 2006). It is also very helpful for descriptive purposes and the data collected can be used to determine relationships between different variables focused on the field of study (George, 2019).

3.3 Sampling Procedures and Sample Size

This study used a sample size of 189 as the 10% of the 1889 primary school teachers and a sample size of 750 as the 10% of the 7500 pupils from selected primary schools to get useful information. According to Gay *et al.* (2012), a sample size of 10% to 20% of the population is recommended for survey research. Also, the study applied purposive and simple random sampling (SRS) techniques. Purposive sampling was used to select the wards covered by this study namely Mwembesongo, Kiwanja cha Ndenge, Chamwino, Kihonda, Mazimbu, and Mkundi. The (SRS) was also used to select six primary schools. That is one school was selected in each of the six selected wards. A sample of 939 respondents (189 teachers and 750 pupils) was selected from the six selected primary schools. Also, the formula of proportionate random sampling (Hansen *et al.,* 1983) was applied to ensure that the number of sampled teachers and pupils in school is in proportion to the total number of teachers and pupils.

3.4 Sources of Data and Collection Methods

Both primary and secondary data were collected in this study. Primary data were collected using a questionnaire survey, focus group discussion (FGD) and key informant interview. The questionnaire survey was conducted using a structured questionnaire. Also, FGD was used as a complementary technique for the data gathered through a questionnaire survey. A total of 6 FGDs involving teachers were conducted from six schools to get information that were used to enrich the study report. Each FGD consisted between

8 to 10 participants (Wong, 2008) argues that a group of participants between 8 to 10 people is manageable.

3.5 Data Processing and Analysis

The data collected were edited, sorted, coded and summarized as well as verified before analysis. The analysis was done using IBM - SPSS computer software Version 20. Descriptive statistics such as frequencies and percentages were computed to assess school-based efforts (SBEs) towards promotion of health literacy (HL) and health-related knowledge (HRK) in selected primary schools in the study area.

4.0 Findings and Discussion

4.1 Socio - Demographic Characteristics of the Respondents

Socio - demographic characteristics of the respondents in most social studies are found to be very important variables (Muyibi *et al.,* 2010). Therefore, some of these demographic characteristics provide important demographic information of the respondents which are considered to have an influence on health literacy promotion. In terms of the age the results in Table 1 explicitly show that 68.9% (95% CI: 117 to 142) of the respondents (teachers) in this study were aged between 36 and 45 years old, 15.3% (95% CI: 20 to 40) were aged between 46 and 55 years old, while 15.3% (95% CI: 20 to 40) had age between 26 - 35 years old. Also, the lowest age category which formed 0.5% (95% CI: 0 to 5) was 56 years and above years old. While, 59.1% (95% CI: 416 to 469) of the respondents (pupils) were between 13 and 15 years old in the study area and 40.9% (95% CI: 281 to 334) of the pupil were aged between 10 and 12 years old in schools. Results in Table 1 reveal that majority 54% (95% CI: 89 to 115) of the respondents (teachers) in the study area had attained diploma education while 29.6% (95% CI: 44 to 69) attained a degree, 15.3% (95% CI: 20 to 40) attained certificate level of education. Table 1 shows that only 1.1% (95% CI: 0 to 6) of the respondents from the study area had attained a master's degree. Other results, in Table 1 show that most of the respondents (pupils) in the study area were standard seven 42.9% (95% CI: 296 to 349) while standard six were 32.4% (95% CI: 218 to 269) and standard five were 24.7% (95% CI: 163 to 209). Also, results in this study reveal that 80.4% (95% CI: 140 to 162) of the teachers interviewed in Morogoro Municipality were females while 19.6% (95% CI: 27 to 49) of the respondents were males. The results in Table 1 show that the majority 58.7% (95% CI: 413 to 466) of the respondents (pupils) were females. Furthermore, the results in Table 1 indicate that the majority 78.8% (95% CI: 137 to 159) of teachers were married and 19.0% (95% CI: 137 to 159 were single, whereas 1.1% (95% CI: 0 to 6) were widows and 1.1% (95% CI: 0 to 6) were separated. While 41.3% (95% CI: 284 to 337) of the respondents were male pupils.

Table 1: Scio - Demographic characteristics of the respondents (n_t=189, n_p=750)

Variable	Category	Frequency	Percent	95% Confidence Interval	
				Lower Bound	Upper Bound
Age in years (Teachers)					
	26 - 35	29	15.3	20	40
	36 - 45	130	68.9	117	142
	46 - 55	29	15.3	20	40
	56 and above	1	0.5	0	5
(Pupils)	10 - 12	307	40.9	281	334
	13 - 15	443	59.1	416	469
Education level (Teachers)	Certificate in education	29	15.3	20	40
	Diploma in education	102	54.0	89	115
	Degree	56	26.6	44	69
	Master's	2	1.1	0	6
(Pupils)	Standard v	185	24.7	163	209
	Stand vi	243	32.4	218	269
	Standard vii	322	42.9	296	349
Sex (Teachers)	Female	152	80.4	140	162
	Male	37	19.6	27	49
(Pupils)	Female	440	58.7	413	466
	Male	310	41.3	284	373
Marital status (Teachers)	Married	149	78.8	137	159
	Single	36	19.0	26	47
	Widow	9	1.1	0	6
	Separated	9	1.1	0	6

4.2 School Based Efforts to Improve Teachers' HL and Pupils' HRK

The results in Table 2 show efforts made towards promotion of pupils' HRK in schools. The results indicate that 50.3% (95% CI: 82 to 108) of the respondents (teachers) pointed out that inspection of environments and pupils themselves are important efforts towards promotion of HL in schools. This means that inspection in schools helps to provide accurate information about the issues of pupils' hygiene and how to take care of the environment status in schools, which normally influences health related-knowledge. Undeniably, through inspections health issues are addressed based on pupils' hygiene and the environment in schools. Thus, the study noted from the FGDs that timely inspection of environments and pupils themselves raise awareness of health issues and promote HRK in school settings. The promotion of HL through efforts implemented within school environments inspires pupils to acquire HRK, and reduce problems associated with low HRK. In addition, the study observed from the FGDs that numerous efforts are made in schools to promote HRK hence a healthier lifestyle. These include insisting pupils adhere to personal hygiene include; body cleaning, cutting hairs, nails, and dressing in clean clothes. These create health consciousness to the pupils and reduce lifestyle-related diseases and build better a society that is healthier and more productive.

Table 2 shows that 25.9% (95% CI: 38 to 61) of the respondents (teachers) in the study area identified HE provision as one of the efforts towards promotion of HL. This implies that HE provided on various health issues in schools during classes and beyond classes' sessions influence pupils to change and shape their health behaviours. On the other hand, 59.6% (95% CI: 339 to 427) of the respondents (pupils) admitted that the availability of sufficient time for HE is important for improving pupils'

HRK in schools. Paakhari and Pakkari (2012) argue that the provision of education on health issues in schools is one of the efforts through which pupils' health behaviours can be shaped hence influencing HL. Indubitably, during FGDs participants elaborated that the government is doing a lot to improve HL through health education in schools. Though, such efforts are not enough to enable pupils to become health literate and enjoy a better healthy lifestyle in society. This is because; most of the topics included in science subjects to be taught in schools did not contain enough contents to enable pupils to become health literate in school settings. This also is consistent with the findings by DeBoer (2000) that health education provided through topics embedded in science subjects was insufficient to enable pupils to accumulate sufficient HRK. Similarly, Mood *et al.* (2019) reported that, to promote pupils' HRK for a better and healthy life in the community; HE must be provided in the classrooms to all pupils and sustainably insisted outside the classrooms in school settings. Also, participants in an FGD agreed as follows:

> …*"To improve HL in the school environment and make pupils become health literate in their adulthood, health education must be introduced and taught as other lessons than teaching HE through topics attached in science subjects which do not contain enough contents to make pupils health literate..."* (FGD participants, Mazimbu 'A' Primary School).

Likewise, the findings in Table 2 indicate that 23.8% (95% CI: 34 to 57) of the respondents (teachers) agreed that the presence of learning materials on health issues have great positive impacts on HL promotion in schools. Unquestionably, the presence of text books, health pamphlets, and posters on health can facilitate easy access to health information and acquire health related-knowledge that leads to the promotion of HL among the general population in schools. About a quarter 24.9% (95% CI: 165 to 211) of the respondents (pupils) accepted that presence of learning materials e.g., text books on health education is important in schools to improve HL. However, there was a slight difference in terms of percentage but both respondents (teachers and pupils) in the study area unanimously agreed that the presence of learning materials including text books for teachers and pupils was one of the efforts to be undertaken to improve HL in schools. The results in Table 2 show that 30.9% (95% CI: 165 to 211) of the pupils from the study area lamented about inadequate time availability for health education in schools. This implies that insufficient time available for learning and practising issues related to health inside and outside the classrooms have negative impacts on HL promotion in schools. Consequently, findings from FGDs revealed that to improve HL among the general population, ample time must be set as an effort to learn and practise health issues inside and outside classrooms within school settings. Furthermore, as shown in Table 2 the results show that 15.5% (95% CI: 98 to 136) of the respondents (pupils) were not aware of the efforts which are made to enhance HL in schools from the study area.

Table 1: School Efforts to Improve Pupils' HL (n_t=189, n_p=750)

Variable	Frequency	Percent	95% Confidence Interval	
			Lower Bound	Upper Bound
Teachers				
Inspection of school environment and pupils	95	50.3	82	108
Health education provision in schools	49	25.9	38	61
Presence of learning materials i.e. text books	15	23.8	34	57
Pupils				
Time available for HE in schools	447	59.6	399	497
Presence of learning materials	187	24.9	165	211
Do not know	116	15.5	98	136

4.3 Supportive Efforts to Improve HL in schools

The findings in Table 3 show supportive efforts which are made to enhance HL in schools. The results in Table 3 indicate that 46.6% (95% CI: 65 to 116) of the teachers admitted that awareness creation on health and other health-related issues is one of the supportive efforts made in schools towards promotion of HL. Obviously, health awareness creation is most important for making people become health literate in schools and community as well. In a health context, it is only through such consciousness pupils' HRK is boosted hence the promotion of their own health and that of others in the community. During a discussion with key informants, the study reveals that the promotion of HRK through health awareness creation is important within school settings that can help pupils have smart decision-making on health-related issues and enjoy adult healthier lives in the community. Again, the study reveals that teaching health care, diseases prevention and health promotion issues create wider health awareness and improves HL among the teachers within school settings and community in general. On the other hand, the results show that 37.0% (95% CI: 51 to 90) of the respondents consented that seminar provision in schools is one of the supportive efforts towards promotion of HL. Unquestionably, it is apparent that the provision of health seminars support efforts made and put into force towards promotion of HL in schools.

The study reveals that health-related seminars and other health-related trainings support both teachers and pupils to become health conscious by increasing their knowledge and ability to care for their well-being in communities. This also is consistent with the findings by (Smith *et al.,* 2011; Pearson, 2012) who found that the provision of seminars and other trainings on health issues unambiguously support efforts made within school settings and enables people to become health literate. However, from the Table 3 below a small proportion of 16.4% (95% CI: 24 to 45) of the respondents agreed that the provision of learning materials

on HE undeniably support efforts already put in place to improve HL in schools. It is obvious clear that the provision of health learning materials on health issues and other health-related knowledge from the government and other interested parties e.g., text books, pamphlets, posters and the like contribute towards improved HL in schools. Therefore, the availability of all necessary learning materials on health issues can indubitably prompt other efforts put in operation and empower both teachers and pupils to become health literate which in turn results in improved HL within school settings.

Table 3: Supportive efforts to improve HL in Schools (n_t=189)

Variable	Frequency	Percent	95% Confidence Interval	
			Lower Bound	Upper Bound
Provision of learning materials of HE	32	16.4	24	45
Provision of seminars on health issues	70	37.0	51	90
Awareness creation on health issues in schools	87	46.6	65	116

4.4 Hospital Workers' Visits to Update Teachers on Health Matters

In order to identify efforts made by hospital workers in schools towards promotion of HL, respondents were asked about hospital workers' visits to schools to update teachers on health issues. The results in Table 4 show that 23.3% (95% CI: 35 to 54) of the respondents agreed that hospital workers occasionally pay visits to schools to inform teachers on health matters concerning HL. Unquestionably, the study reveals that information provided by health professionals help teachers to become more knowledgeable on health-related issues and contribute significantly towards promotion of HL within school settings. It is therefore apparent that, health workers' visits to schools increase health knowledge to teachers and contribute to promotion of HL in schools. Similarly, it was noted during FGDs that the transmission of health information to teachers associated with encouragement to search for health-related information is considered as role that health workers have to play towards improved HL in schools and community as well. Furthermore, the results in Table 4 show that majority 76.7% (95% CI: 118 to 176) of the respondents complained that hospital workers never visit schools to update teachers on health issues for the promotion of HL. It is clear that lack of health information to teachers due to failure of health workers to visit and update teachers on issues related to health disproportionately affect the promotion of HL in schools. Again, it was observed from FGDs that, the habit of health professionals which focus on medication aspects and not on dissemination of health information to other institutions, schools inclusive overly affect efforts made in schools towards HL promotion.

Table 4: Hospital workers' visits to update teachers on health matters n_t=189

Variable	Frequency	Percent	95% Confidence Interval	
			Lower Bound	Upper Bound
Occasionally	44	23.3	35	54
Never	145	76.7	118	176

4.5 Government efforts to Improve HL in Schools

The results in Table 5 indicate that 37.6% (95% C: 62 to 94) of the respondents consented on financing HL programs in schools. Unquestionably, financing HL promotion programs in schools is essential for improved HL. The financed health programs have much room to improve HL to both teachers and pupils (Denuwara and Gunawarden, 2017). Health programs in schools, instigate awareness creation among the general population which helps both pupils and teachers to become health conscious and be able to make decisions on health issues throughout their lives. However, from the FGDs it was noted that active HL activities influence people to become health conscious who can make informed decisions on issues related to health. This is in line with the findings by Crooks *et al.* (2020) who found that financed HL programs in schools improves HL that strengthening self-awareness and self-management as well as promoting responsible decisions making on health issues which also have great impacts on academic performance of the pupils. Again, from the FGDs the study reveals that investing in HL promotion programs in schools promptly increases awareness of health issues and other health related knowledge which on the other hand can enable the government to improve HL in the community.

The results in Table 5 further reveal that 27.5% (95% CI: 34 to 51) of the respondents admitted an improved learning environment. Apparently, good learning environments greatly strengthen pupils' health status and reduce the magnitude of diseases emanating from low HL hence improving HL within school settings. During, FGDs with the discussants, the study reveals that a conducive learning environment is important to enabling both teachers and pupils practise HL activities so easily for improved HL in schools. Similarly, the results in Table 5 show that 22.2% (95% CI: 30 to 49) of the respondents agreed that HL can be improved through the provision of health trainings to teachers in schools. Then, the provision of HL trainings includes; health seminars, workshops and symposiums inter alia help teachers to keep informed with health issues. From FGDs the study reveals that, in order for a government to promote HL, health trainings are vital, through health trainings teachers acquire new knowledge and instructional skills needed to ensure that pupils learn HL knowledge to improve healthy lifestyle in schools and community as well. In addition, one key informant from education department when asked based on the efforts that the government should

do to enhance HL through teachers to make pupils become health literate had this to say:

> …"*Frankly speaking, to improve HL and make pupils become health literate the government should ensure that health seminars for science teachers who are responsible for health issues in schools must be given priority. Again, the government should ensure that health issues are taught in schools by considering the level of the pupils where possible the use of graphics and pictures are of great importance than words alone. Lastly, the learning environment must be improved to support both teachers and pupils learn and practise health issues in a healthy way in schools? …"* (KII, Ward Education Officer, Moroogoro Municipality).

Other results in Table 5 indicate that few 12.7% (95% CI: 18 to 31) of the respondents collectively accepted that HL can be improved in school environments by hiring health professionals. This implies that having health experts in schools working cooperatively with other staff can definitely help schools to identify numerous health problems that associate with low health literacy to be addressed and mitigated in schools. From the FGDs the study reveals that having health professionals in schools can provide and conduct indoor seminar trainings on health issues and help both teachers and pupils attain health literacy knowledge in schools. Again, from the FGDs the study reveals that presence of health professionals in schools seems to be imperative. It is clear that health professionals can be considered as the source of health information in schools from which health information can be communicated to both teachers and pupils and facilitate promotion of HL (Mcinnes and Haglund, 2011; Muhanga, 2021). In addition, the interactions between health workers with others especially on health issues and other health related knowledge can greatly contribute towards improved HL in schools. Furthermore, health experts in schools can play a great role in collaboration with teachers to provide health trainings to pupils in all issues linked to health in so doing HL can be strengthened and improved in schools and community as well.

Table 5: Government efforts to Improve HL in Schools (n=189)

Variable	Frequency	Percent	95% Confidence Interval	
			Lower Bound	Upper Bound
Provision of health trainings	42	22.2	30	49
Improving learning environment	52	27.5	34	51
Financing HL programs in schools	71	37.6	62	94
Hiring Professionals in schools	24	12.7	18	31

4.6 Respondents' Views on Health Promotion and HL in Schools

In order to evaluate health promotion efforts towards improved health literacy in schools, respondents were asked to give out their views on the statements given out to them. The results in Table 6 reveal that (97.4%) of the respondents acknowledged that schools offer pupils' health information awareness during teaching sessions which include physical activity and safety. This implies that schools are ideal places for provision of correct and appropriate quality health education to pupils. Definitely, schools fit to be health promoting areas because they implement a well-structured and methodological approach for development of health knowledge to pupils and the community as well (Ahmed *et al.,* 2017; Tett and Macleod, 2020). It is therefore apparent that, teachers support health promotion and HL through various ways in schools. For instance, teachers support pupils to make healthy choices includes; healthy eating, smart and healthy dressing, body cleaning and regular physical activity which have positive impacts on pupils' health and HL promotion in schools. Obviously, health literacy acquired through health awareness creation in schools help pupils to develop positive attitude towards improved decision making on all issues related to health.

The results in Table 6 show that majority (93.7%) of the respondents from the study area admitted that schools offer pupils' awareness on diet. Unquestionably, this implies that a lot of efforts are consistently made by the teachers in schools to promote HL. For example, insisting pupils to eat balanced diets during teaching sessions have great impacts on pupils' health throughout their lifespan and help children grow both physical and mentally well.

Other results in Table 6 indicate that (91.5%) of the respondents agreed that schools provide dental health education to pupils during teaching sessions. It is therefore obviously that the provision of dental health education during teaching sessions especially through science topics and other health speeches made in schools help pupils to become health conscious. Generally, it was noted from the FGDs that health education provided by teachers in schools during teaching help pupils obtain important health knowledge include; diseases prevention, healthy eating, and body cleaning required to adopt and maintain good health behaviors in schools as well as in the community. This also is in line with the findings by (Shim *et al.,* 2010; Saunders *et al.,* 2019) who found that health awareness offered in schools help pupils acquire functional health knowledge, and strengthen attitudes needed to maintain healthy behaviours throughout their lives which improve decision making on health issues.

Also, the results in Table 6 show that majority (94.7%) of the respondents in the study accepted that schools offer pupils' awareness on safety during teaching sessions. Undoubtedly,

safety education is offered to create awareness that pupils need in order to stay safe within school settings. In addition, schools have legal responsibility to protect pupils through HE from harms that might jeopardize health of the pupils and negatively affect health efforts toward HL promotion in schools. Openly, provision of safety education protects health of the pupils and on the other hand helps to improve HL in the schools. However, the lowest proportions (67.7%) of the respondents agreed that schools offer pupils' awareness on medication contrary to (32.3%) of the respondents who disagreed. While (78.8%) of the respondents accepted that sexuality and personal affairs are offered in schools during teaching. Obviously, sexual and personal affairs education is provided to pupils to create health awareness and empower pupils to realize their health well throughout their lives in schools and community as well.

Table 6: Respondents' views on health promotion and HL in schools (n=189)

Ns	Statement	Responses	
		Yes	No
i.	Does your school offer pupils' awareness during teaching regarding physical activity?	97.4	2.6
ii.	Does your school offer pupils' awareness during teaching regarding diet?	93.7	6.3
iii.	Does your school offer students' awareness during teaching regarding medication?	67.7	32.3
iv.	Does your school offer pupils' awareness during teaching regarding dental health?	91.5	8.5
v.	Does your school offer pupils' awareness during teaching regarding safety?	94.7	5.3
vi.	Does your school offer pupils' awareness during teaching regarding sexuality and personal affairs?	78.8	21.2

5.0 Ethical Considerations

Therefore, in reality research is a socio-psychological and political activity that involves the exercise of power by the researcher on one side and the participants on the other during data collection (Biddau *et al.,* 2016). In order to ensure that research processes do not harm the participants by any means by failing to protect their dignity, rights safety and well-being during data collection, the literature (UNICEF, 2012; Bhattacherjee, 2012) outlines various measures to be undertaken. In this context, the study had to adhere to; consent, protection, privacy and confidentiality. All these issues were important and observed by the researcher by conducting the interviews in the private places since the study involved both teachers and pupils (children) in the community. Furthermore, in order to avoid unnecessary difficultness in gathering information from the participants an attempt was made by the researcher to elucidate the purpose of the study to the government officials, heads of schools, teachers and pupils concerned to clear out the doubts in gathering information from them. This was regarded as the best way to honour leaders and participants, and enabled the researcher to collect information without complications from the study area. Participation in the study was voluntary and participants had free will to participate or withdraw from the study at any time without explanation or penalty. The researcher sought the verbal informed consent from the participants prior to interview and the discussions focused only on the topic of consent.

6.0 Conclusions and Recommendations

The focus of this study was on identifying school-based efforts towards promotion of health literacy and health-related knowledge in primary schools in Tanzania. It was found that, most schools in the study area do address HL through inspections. Inspections in schools must be strengthened and improved, since information obtained through inspections help pupils to become health conscious within school settings. Similarly, health education provision in schools is essential to improve HL and HRK. Thus, to improve HL and HRK thereby HE must be given priority and taught as other lessons than teaching HE through topics embedded in science subjects which do not contain enough contents. The study also concludes that health information communicated to teachers by health professionals play a great role in improving HL and HRK in schools. Obviously, good communication between teachers and health workers on issues related to health help teachers to increase health knowledge and influence pupils to become health literate in schools.

Furthermore, the study observed that financing HL programmes in schools is very essential for improving HL. Obviously, HL programmes can facilitate people to learn and understand health issues through observation, and acquire health-related knowledge. The study found that a number of efforts have been made in order to improve HL among the general population in schools. However, all efforts undertaken and the rest have not yet been fully successful to bring much positive effects since HL is still low and problematic within school environments in the community. This situation is due to little attention paid to the efforts undertaken to improve HL in schools, with few evaluations to address the problem studied. The study revealed from the FGDs that pupils had low HL despite numerous efforts made in schools. Undoubtedly, low health literacy causes pupils lack abilities and knowledge to access, understanding health information thoroughly for wise decision making on issues linked to health. It is therefore apparent that one important area for implementation would be to strengthen health programmes established in schools which can help pupils to learn and build confidence in their own ability to influence their health.

Based on the study findings, it is recommended that the government, communities and other interested parties should combine their efforts and work together in all academic institutions like schools which are some of the main agents of socialization through which health education can be

provided to increase HL and HRK. Moreover, the government should review curricula and ensure that all topics of health education embedded in science subjects contain enough contents for enabling pupils in schools to become health literate. Also, timely provision of seminars and other types of trainings on health education to all teachers in schools are required to build up the ability of teachers to attain great levels of HL, so they can teach the same to their pupils for improving HL in schools and community as well.

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