



Contributing Towards “Clean And Green Pakistan” Through Health Awareness Activities Elementary School Education: Teachers’ Perspectives

Dr. Muhammad Samiullah¹, Sher Muhammad Awan², Waqar Hassan³, Prof. Dr. Hafiz Muhammad Ather Khan⁴

¹Assistant Professor Faculty of Education, Allama Iqbal Open University Islamabad, Pakistan, Email: Sami.ullah@aiou.edu.pk

²Professor (Social Sciences & Humanities), The Tenacious International College Rawalpindi, Pakistan, Email: sher.m.awan786@gmail.com

³Lecturer (Statistics) The Tenacious International College Rawalpindi, Pakistan

⁴Director ORIC, Allama Iqbal Open University Islamabad, Pakistan
Email: athar.khan@aiou.edu.pk

ARTICLE INFO

Keywords:

Clean And Green Pakistan, Health Awareness Activities, Elementary level.

Corresponding Author:

Dr. Muhammad Samiullah,
Assistant Professor Faculty of Education, Allama Iqbal Open University Islamabad, Pakistan,
Email: Sami.ullah@aiou.edu.pk

ABSTRACT

Pakistan is focusing on and striving extremely hard to ensure necessary measures for the development and awareness about these parameters. Lack of awareness, poor diet, water pollution and hygiene problems are the main health issues that lead us to communicable and non-communicable diseases. Despite improvement in the basic health issues and nutrition over time, the state of health is very miserable. Young children are open to the risks of various infections and diseases. It is the responsibility of the school to make students aware about healthy and hygienic behavior. The students need to take it as their first and foremost duty to guide the students and inspire them to adopt fruitful health practices. Therefore, this study had been planned to see the level of health awareness in elementary schools of Islamabad and Rawalpindi. Survey research had been conducted. Through random sampling, male and female elementary level students at public schools had been selected who were studying in class 8 in the year 2022-23. 600 Male and female elementary teachers had been selected randomly who had taught class 8 students in Rawalpindi and Islamabad. Some recommendations were made for the teachers of Science subjects at elementary school to improve the teaching methodology in a way that they may involve Health awareness activities to focus on students' health awareness. It was also recommended that the refresher courses for science teachers may be organized to nurture them in holding such activities.

Introduction

Clean Green Pakistan (CGP) was a flagship five-year campaign of the Government of Pakistan. It was a campaign by the WaterAid (a UK based Charity Organization) and the Government of Pakistan, which aimed to improve sanitation (cleanliness), promote hygiene (awareness about diseases, personal hygiene awareness specifically drinking water awareness, and balanced diet awareness), and awareness about environmental issues, particularly among youth. It envisioned a people-led movement to achieve a sustainable and safe environment. This study undertook Clean and Green Pakistan comprising the aspects as ahead:

Safe Drinking Water Awareness for Clean Pakistan (Clean from diseases)

Awareness to keep Environment Clean

Hygiene Practices Awareness for Clean Pakistan (Clean from diseases)

Plantation of Trees to keep Environment Green

Health awareness is a concept which shows a person's willingness to do something to his/her own health. It is to have mindfulness about health. It is state of complete physical prosperity. Health Awareness activities involve all those activities that are part of textbook course and require active participation and direct experience of the students for their awareness about health, neatness/cleanliness, plantation of trees and taking care of them.

The said campaign design involved these pillars and were undertaken in this study as well:

Safe drinking water

Waste management

Total Hygiene

Tree plantation.

Broadly three things were expected from the campaign:

- Develop a very comprehensive behavior change strategy and its implementation in Pakistan.
- Introduce rules and regulations associated with clean component to accelerate and sustain the achievement of SDG 6.
- Strengthen institutions and allocate resources at each level to address issue of water quality and its easy access.

These activities were suggested in the said campaign:

- Support ministry for developing strategy and 5-year roadmap.
- Provide support for three campaigns (the plastic ban, No Litter & Water Conservation) in Islamabad specifically in university campuses and in schools.
- Support developing WASH models in Islamabad.
- Implement training of school children on WASH behaviors in Islamabad.
- Implement the Clean Green campus campaign in Islamabad.

In light of above this project was undertaken to contribute in "Clean and Green Pakistan" campaign through Health Awareness activities in elementary schools.

Statement of Research Problem

In many science classes students are taught through traditional teaching methods ignoring health awareness activities. They do not take interest in practicing health awareness activities in and outside the classrooms. As the only focus is on academic achievements hence health awareness is neglected at elementary level in Pakistan. To link the said two, this research was conducted to see the extent of health awareness activities' contribution towards Clean and Green Pakistan as perceived by elementary level teachers.

Objective of the Research

This research was conducted to achieve following objective:

To determine effectiveness of textbook (HA) activities for awareness in terms of “Clean & Green Pakistan” as perceived by elementary school teachers.

Research Question

To what extent textbook (HA) activities are effective for hygiene practices awareness among elementary school students, as perceived by elementary school teachers?

Literature Review

Many factors are responsible for the learning process and the development of children. The most important of them is the health status of the children. The strong relationship that is existing between health and the performance of the student's stirred planners and educators to launch health awareness programs. The same relationship between health and performance of students was cited in the report of UNESCO (2017). So the concept of school-based health programs is not new. Currently many countries have taken grave steps to make school health programs. Therefore, this study had been planned.

The task of providing health education is challenging. Health education is the task of promoting and motivating child for good eating habits (Bannon & Schwartz, 2006). In this connection, schools make use of different tools to give awareness to the learners. Health awareness play the significant role to fulfill the purpose. Rapid expansion in food industry has been taken place in recent decades. It resulted in improved control of the food marketplaces, and modification of foodstuffs (World Health Organization, 2015).

Kids are confronting fast turn of events – intellectually and truly – along these lines great eating routine is significant. Dietary patterns in kids are commonly evolved since childhood. This remains continue till adulthood. Along these lines, nourishment instruction ought to be passed on to kids since the beginning. The school has been recognized as a reasonable spot to execute nourishment training programs since it has a deliberate situation. Nourishment instruction in schools could improve kids' dietary patterns. This is due to the reason that school provides such platform where practically all children can reach and they make interactions with others like with their peers and students (Willeford et al., 2000).

The quick change in financial status has brought about changes in way of life, including dietary patterns and nourishment admission. Changes in dietary patterns and driving stationary or latent ways of life are known to be a portion of the elements contributing towards expanding pervasiveness of constant infections, for example, diabetes, cardiovascular illnesses and hypertension in the populaces (Ismail, et al., 2002).

In data of past years it is quite visible that dengue fever increased rapidly. Around 30 fold, this figure is alarming for general public health. (WHO, 2009) There are several methods that can help to reduce the incident of dengue through community educational interventions. The situation can be changed by overcoming the rapid growth of larva in the suspected sites.

School education is the basic element of community education, so the transformation of knowledge at this level is essential for disseminating the information to general public. It is vital to create a source of reduction at common household level as preventive measure for mosquito borne diseases. Research conducted in some other countries have represented that there is remarkable success rate to enlighten elementary school children about giving them knowledge about prevention and control of dengue fever. It highlighted the role of young children as active community member to raise awareness about disease and preventive. Children spend many hours of day at school so

the school environment can increase the tendency of transmission of illness. In health promotion facilities school can play pivotal role to define disease prevention activities. Unorganized education programs and less awareness have adversely added to the dengue incidences during school timing which resulting in increased ratio of vector receptivity (Gunaathilaka et al., 2019).

Method and Procedure

The details regarding method and procedure are as under:

Design

It is Survey Research. It is descriptive and quantitative in nature. With the help of one questionnaire, numerical data was gathered in the study that helped to describe and understand the phenomenon. After analysis, the results of this study were generalized over a large population.

Sample

As a random sampling technique, it was resolved that at least two schools, one female and one male school, would have been selected from each Tehsil. From the comprehensive lists of schools, provided by the respective Deputy District Education Officers of each Tehsil, 15 schools (8 female and 7 male schools) were selected through a person having no relevance of any sort with this study. The sample was the male and female elementary level teachers who had taken class 8 in the year 2023.

Instrument

For conduction of this study one survey questionnaires were taken as the instrument. It was piloted. The questionnaires were based on 5-point Likert Scale i.e., 1 = Strongly Disagreed (SD), 2 = Disagreed (D), 3 = Undecided (U), 4 = Agreed (A) and 5 = Strongly Agreed (SA).

Data Analysis

The assistance of a research assistant and the faculty of the respective schools had been taken to administer and fill up the questionnaires. Researcher guided and trained them how to deal with students and teachers in collection of data.

Table 4.5

Teachers' Perceptions about Personal Hygiene Awareness

Sr #	Statement of Questions	SD %	D %	U %	A %	SA %	Total	Mean
1	The health awareness activity helps students for enhancing the health awareness							4.63
		5.5	10.9	10.6	27.6	45.3	100	
2	The health awareness activity is supportive to avoid epidemic in students.							4.44
		7.4	3.8	10.1	35.3	28.4	100	
3	The health awareness activity is helpful to avoid any disease in students other than epidemic.							4.26
		1.0	13.2	11.2	32.4	42.5	100	
4	The health awareness activity is helpful to avoid germs in students							4.29
		11.8	3.8	11.8	45.0	27.6	100	
5	The health awareness							4.62

	activity is helpful to avoid any viral disease in students	2.0	2.5	2.5	49.4	43.2	100	
6	The health awareness activity is helpful to avoid malaria and dengue in students							4.47
		2.3	3.9	2.6	42.1	49.1	100	

The majority of the teachers, (72.9%), agreed with this statement 1. The mean of the responses was calculated to be 4.63. The statement 2 provides the results as (63.7%) agreed with the statement, while (11.2%) disagreed. Meanwhile, teachers (10.1%) had no clear stance on the matter and were considered undecided. The mean response to the survey was 4.44, indicating that the overall sentiment among them was mixed but majority agreed with statement.

The statement 3 shows that teachers (74.9%) are in agreement of the statement 3 and that (11.2%) remained undecided in this regard. Whereas (2.2%) were against this statement. Moreover, the mean of the responses is 4.26. The statement 4 shows that teachers (72.6%) are in agreement of the statement and (11.8%) remained undecided in this regard. Whereas (15.6%) were against this statement. Moreover, the mean of the responses is 4.29.

The statement 5 shows that teachers (92.6%) were in agreement of the statement and that (2.5 %) remained undecided in this regard. Whereas (4.5%) were against this statement. Moreover, the mean of the responses is 4.62. Since most of the teachers agree on this notion seconded by their observation which is a favorable stance for health awareness learning process, so this is a case of Positive effects.

The statement 6 shows that (91.2%) were in agreement of the statement and that response of teachers was in a positive way. The teachers (2.6%) remained undecided in this regard. Whereas the teachers (5.4%) were against this statement. Moreover, the mean of the responses is 4.47. Since maximum number of the teachers are in favor of this statement, so this is a case of positive influence of health awareness activity for developing health awareness.

Table 4.6

Teachers' Perceptions about Safe Drinking Water & Balanced Diet Awareness

Sr #	Statement of Questions	SD %	D %	U %	A %	SA %	Total	Mean
7	The health awareness activity causes awareness about malnutrition in students.							4.38
		1.4	2.0	10.5	43.5	42.6	100	
8	The health awareness activity causes awareness about nutrition in students.							4.18
		0.2	7.4	2.5	46.5	43.2	100	
9	The health awareness activity causes awareness in students about balanced diet.							4.20
		2.5	2.5	5.0	44.9	45.1	100	

10	The health awareness activity causes awareness in students about diet choices.	0.4	0.3	1.7	49.4	48.2	100	4.05
11	The health awareness activity causes awareness in students about healthy food	3.2	10.8	2.0	43.5	40.5	100	4.01
12	The health awareness activity causes awareness in students about junk food.	4.4	5.2	25.0	25.0	41.4	100	4.03

The statement 7 presents the results of a survey regarding the agreement of teachers surveyed, (86.1%) expressed agreement with the statement, (10.5%) stated that they were unsure. On the other hand, some disagreed with the statement. The average of the responses was 4.38. The statement 8 provides the results of a survey conducted among the teachers regarding their opinion on the statement that exhibits a preference for activity to develop health awareness. The data shows that 89.7% of the teachers, concur with this statement. On the other hand, 2.5% of them, have not formed a definitive opinion on this matter and remain neutral. Additionally, 76% of the teachers, disagree with the statement. The mean of the responses, calculated as 4.18, indicates that the overall opinions of the teachers are inclined to agree. The statement 9 shows that the teachers (90%) are in agreement of the statement and that (5.0%) remained undecided in this regard. Whereas some teachers (5.0%) were against this statement. Moreover, the mean of the responses is 4.20. Since most of the teachers are in practice of carrying out such practice which is a favorable stance for health awareness.

The statement 10 presents the results of a survey where teachers were asked about their opinions on the impact of their health awareness activity practices. Out of the total respondents, maximum teachers (97.6%) agreed and that little percentage (0.7%) disagreed with this statement, while (1.7%) were neutral or undecided. The mean of the responses, calculated as 4.59, suggests that overall, the teachers were inclined to be agreed with the statement, indicating a mixture of opinions. This implies that the health awareness teaching practices is neither fully positive nor fully negative, but a combination of both.

The statement 11 shows that maximum teachers (84.0%) are in agreement of the statement and that some teachers (2.0%) remained undecided in this regard. Whereas some teachers (14.0%) were against this statement. Moreover, the mean of the responses is 4.01. The statement 12 reveals that maximum teachers, (66.4%) agreed with the statement that they encourage their students to practice with textbook activity in the classroom. However, some (25%) were uncertain about this statement, and a little portion (9.6%) disagreed with it. The average response score was 4.03, indicating a positive stance on the matter.

Table 4.7

Teachers' Perceptions about Water and Sanitation Awareness

Sr #	Statement of Questions	SD %	D %	U %	A %	SA %	Total	Mean
13	The health							4.33

	awareness activity causes awareness about washing hands in students.	1.8	2.1	14.7	53.8	38.6	100	
14	The health awareness activity causes awareness in students about using soap							4.06
		0.8	3.4	7.1	42.5	46.2	100	
15	The health awareness activity causes awareness in students about trimming nails							4.14
		1.9	2.0	2.4	48.1	45.6	100	
16	The health awareness activity causes awareness in students about haircut.							4.09
		3.5	2.9	2.4	40.6	50.6	100	
17	The health awareness activity causes awareness about brushing teeth in students.							4.53
		0.7	0.2	0.2	53.8	45.1	100	
18	The health awareness activity causes awareness in students about bathing regularly							4.26
		0.4	3.4	9.9	40.1	46.2	100	

The statement 13 shows that majority of teachers (92.4%) are in agreement of the statement that they do important activities, from the textbook. A few teachers (2.1 %) remained undecided in this regard. Whereas a few teachers (5.5 %) were against this statement. Moreover, the mean of the responses is 4.33. Since most of the teachers do carry out such practice which is a favorable stance for healthy teaching learning process, so this is a case of positive effect.

The statement 14 presents the results of a survey on the teaching practices of a group of teachers. Of the total participants, (88.7%) indicated that they agreed to the said statement. Some (7.1%) were unsure about their approach. However, (4.2%) disagreed with this statement. The mean was 4.06. The statement.15 shows that a number of teachers (93.7%) are in agreement of the statement and that some teachers (2.4%) remained undecided in this regard. Whereas there were some teachers (3.9%) who were against this statement. Moreover, the mean of the responses is 4.14. Since majority of teachers do this practice which is a favorable sign for health awareness activity.

The statement.16 reveals that out of total teachers, maximum (91.2%) agree with the statement and that there were some teachers (2.4%) who were uncertain about their stance on this issue, while the remaining teachers (6.4%) disagreed with the statement. The mean score of the responses was found to be 4.09. This indicates that a significant number of teachers are involved in this practice of health awareness.

The statement 17 presents the results of a survey asking teachers about their agreement with the statement. Out of the total number of teachers surveyed, 98.9% agreed with this statement, 0.2% were unsure, and 0.9% disagreed with it. The average response was 4.353. Given that the majority of teachers hold this view, which is considered to be positive for the overall teaching-learning process with health awareness activities.

The statement 18 shows that maximum number of the teachers (86.3 %) are in agreement of the statement and that some of them (9.9%) remained undecided in this regard. Whereas some teachers (3.8%) were against this statement. Moreover, the mean of the responses is 4.25.

Table 4.8

Teachers' Perceptions about Neat and Clean Environment

S. No.	Statement	SD %	D %	U %	A %	SA %	Total	Mean
19	The health awareness activity causes awareness in students about planting trees.	2.6	3.6	11.8	39.1	42.7	100	4.24
20	The health awareness activity causes awareness in students about clean environment	1.8	1.6	1.6	50.6	44.4	100	4.52
21	The health awareness activity causes awareness in students about using dustbin.	3.0	2.3	1.2	44.7	48.8	100	4.33
22	The health awareness activity causes awareness in students about water saving for environment.	0.6	1.1	2.1	54.7	41.5	100	4.50
23	The health awareness activity causes awareness about caring plants.	5.9	5.7	1.6	43.6	43.2	100	4.35

The statement 19 shows that teachers (81.8%) are in agreement of the statement. A few teachers (11.8%) remained undecided in this regard. Whereas some teachers (6.3%) were against this statement. Moreover, the mean of the responses is 4.24. The statement 20 displays the results of surveyed teachers, Out of all the teachers surveyed, (95.0%) concurred with this statement, while teachers (1.6%) remained neutral in their response. However, the few of the teachers, (3.4%), disagreed with this statement. The average of the responses received was 4.52.

The statement 21 shows that teachers (93.5%) are in agreement of the statement and (1.2%) remained undecided in this regard. Whereas teachers (5.3%) were against this statement. Moreover, the mean of the responses is 4.33. The statement 22 shows that maximum teachers (96.2%) are in agreement of the statement and teachers (2.1%) remained undecided in this regard. Whereas some teachers (1.7%) were against this statement. Moreover, the mean of the responses is 4.50. The statement 23 shows that maximum teachers (86.8%) are in agreement of the statement and teachers (1.6%) remained undecided in this regard. Whereas some teachers (11.6%) were against this statement. Moreover, the mean of the responses is 4.32.

Findings

From the analysis of data following findings were observed

In this research study, while analyzing the data, table 4.1 to table 4.8(08 tables) had been made for section 2 of student's as well as teachers' questionnaires. These findings were observed from the analyses of data:

It has been found that up to a significant extent textbook (HA) activities are effective for hygiene practices awareness among elementary school students, as perceived by their teachers. It has been found that up to a significant extent textbook (HA) activities are effective for clean drinking water and balanced diet awareness among elementary school students, as perceived by their teachers. It has been found that up to a significant extent textbook (HA) activities are effective for sanitation awareness among elementary school students, as perceived by their teachers. It has been found that up to a significant extent textbook (HA) activities are effective for hygiene tree plantation awareness among elementary school students, as perceived by their teachers.

Conclusions

Conclusions made from the findings of research and from the analysis of data are as follows.

It has been concluded from the findings that Health awareness activities may contribute towards awareness about "Clean Pakistan" significantly. Similarly, it is also concluded from the findings that Health awareness activities may contribute towards awareness about "Green Pakistan" significantly as perceived by elementary level school students in twin cities of Pakistan, that is, Rawalpindi and Islamabad.

Recommendation

The following suggestion is made in the light of the findings and conclusions of this study.

1. Health awareness activity is helpful in making concepts better. They help to comprehend the topics and guide students towards practical nature of things. Therefore it is recommended that Health awareness activities may be adopted at all levels to teach sciences in Pakistan.

Bibliography

- Ademuwagun, Z., Ajala, J., Moronkola O., Oke E. & Jegede (2002): Adolescent health issues Health Education and promotion. Royal people Publishers (Nigeria Limited. 117-119)
- Ahammed, F.; Smith, E. Prediction of Students' Performances Using Course Analytics Data: A Case of Water Engineering Course at the University of South Australia. *Educ. Sci.* 2019, 9, 245.
- Ahmed, M. F., & Ali, S. M. (2019). An overview of water, sanitation, and hygiene (WASH) services in schools in Pakistan. *Journal of Water, Sanitation and Hygiene for Development*, 9(1), 52-61.
- Alexander, K.T.; Dreibelbis, R.; Freeman, M.C.; Ojeny, B.; Rheingans, R. Improving service delivery of water, sanitation, and hygiene in primary schools: A cluster-randomized trial in western Kenya. *J. Water Health* 2013,
- Ali, H. F., Ehsan, U., Ahmad, M. B., Imran, M., & Zahid, M. (2019). Health Conscious Attitude Among University Students. *Human Resource Research*, 3(1).
- Alis, A. J. R. (2013). Knowledge, attitude and personal hygiene practices among female high school students (Unpublished Master's thesis). Central Philippine University, Jaro, Iloilo City.
- Al-Rifai, J. M., Al Haddad, A. M., & Qasem, J. A. (2018). Personal Hygiene among College Students in Kuwait: A Health Promotion Perspective. *Journal of Education and Health Promotion*, 7(92).

- Amuthavalli, & .Sivakumar. (2014). Impact of Activity Based Learning on Learning Science at Elementary Level. *Shanlax International Journal of Education* , 2(2), 60-70.
- Ashraah, M. M., Mahasneh, A. M., Al-Sawalmeh, A. A., &Abusheikh, A. I. (2013). Health Awareness among University Students in Jordan .*Review of European Studies*, 5(5).
- Aunger R, Curtis V. Behaviour Centred Design: towards an applied science of behaviour change. *Health psychology review*. 2016;10(4):425-46.
- Aziz .T, S. A. Al-Shami, J. A. Mahyoub, M. Hatabbi, A. H. Ahmad, and C. S. MdRawi, "Promoting health education and public awareness about dengue and its mosquito vector in Saudi Arabia," *Parasites & Vectors*, vol. 7, no. 1, p. 487, 2014.
- Azizullah, A., Khattak, M. N. K., Richter, P., &Häder, D. P. (2011). Water pollution in Pakistan and its impact on public health—a review. *Environment international*, 37(2), 479-497.
- Bannon, K., & Schwartz, M. B. (2006). Impact of nutrition messages on children's food choice: Pilot study. *Appetite*, 46(2), 124-129.
- Bednarz, S. W. (2004). Geographic information systems: A tool to support geography and environmental education. *GeoJournal*, 60(2), 191-199.
- Behavioural Insights Team. EAST: Four simple ways to apply behavioural insights Available from:https://www.behaviouralinsights.co.uk/wp_content/uploads/2015/07/BIT-Publication-EAST_FA_WEB.pdf.
- Bergqvist, A., &Rundgren, S.-N. C. (2017). The influence of Health awarenesss on teachers' knowledge of chemical bonding representations relative to teachersdifficulties understanding. *Journal of Research in Science and Technological Education*, 35(2), 215-237.
- Biran A, Schmidt W-P, Varadharajan KS, Rajaraman D, KumarR, Greenland K, Gopalan B, Aunger R, Curtis V, 2014. *Effect of a behaviour-change intervention on hand washing with soap in India (Super Amma): a cluster-randomized trial*. *Lancet Glob Health* 2:e145–e54.
- Blackwell C, Goya-Tocchetto D, Sturman Z, 2018. *Activitys in the restroom: how hand-washing can be impacted by environmental cues*. *J Behav Econ Policy* 2:41–47.
- Borrelli, B. (2011). The Assessment, Monitoring, and Enhancement of Treatment Fidelity In Public Health Clinical Trials. *Journal of Public Health Dentistry*. S52-S63. 0022-4006.
- Bourne, L., Hendricks, M., Marais, D., &Eley, B. (2007). Addressing malnutrition in young children in South Africa. Setting the national context for paediatric food-based dietary guidelines. *maternal and Child Nutrition*, 3(4), 230-238.
- Bowen, A.; Ma, H.; Ou, J.; Billhimer, W.; Long, T.; Mintz, E.; Hoekstra, R.M.; Luby, S. A cluster-randomized controlled trial evaluating the effect of a hand washing-promotion program in Chinese primary schools. *Am. J. Trop. Med. Hyg.* 2007, 76, 1166–1173. [[Google Scholar](#)] [[PubMed](#)]
- Brown,H.D.(2004).Language Assessment:Principles and Classroom Practices.WhitePlains,NY:Pearson Education.
- Bruce, G. (2019). Healthy Eating Curriculum Supports. Canada: Health and Physical Education.
- Bundy D.A., Lwin S, Osika JS, McLaughlin J, Pannenberg CO. What should schools do about malaria? *Parasitol Today*. 2000; 16:181–182.
- Carlerby, H. (2012). Health and Social Determinants Among Boys and Girls in Sweden: Focusing on Parental Background. *International Journal of Public health* , 56(5), 457464.
- Carter, M. A., &Swinburn, B (2004). Measuring the 'obesogenic' food environment in New Zealand elementary schools. *Health Promotion International*, 19(1), 15-20.

- Chappuis, J., Stiggins, R. J., Chappuis, S., & Arter, J. A. (2012). *Classroom Assessment for Student Learning: Doing It Right - Using It Well*, 2nd Edition
- Cheng, P.H.; Yeh, T.K.; Tsai, J.C.; Lin, C.R.; Chang, C.Y. Development of an Issue-Situation Based Board Game: A Systemic Learning Environment for Water Resource Adaptation Education. *Sustainability* 2019, 11, 134.
- Choo, C.B. (2007). Activity based Approach to Authentic Learning in a Vocational Institute. *Educational Media International*, Volume 44, Issue 3, 2007.
- Chua, K. B., & Gubler, D. J. (2013). Perspectives of public health laboratories in emerging infectious diseases. *Emerging microbes & infections*, 2(1), 1-6.
- Coban, G. U., Akpinar, E., Kucukcankurtaran, E., Yildiz, E., & Ergin, O. (2011). Elementary school teachers' water awareness. *International Research in Geographical and Environmental Education*, 20(01), 65-83.
- Cole, M.H.; Rosenthal, D.P.; Sanger, M.J. Two studies comparing teacher explanations of an oxidation-reduction reaction after viewing a single computer animation: The effect of varying the complexity of visual images and depicting water molecules. *Chem. Educ. Res. Pract.* 2019, 20, 738–759.
- Corbin, J. D., & Holl, K. D. (2012). Applied nucleation as a forest restoration strategy. *Forest Ecology and Management*, 265, 37-46.
- Cortese, A. (2003). The critical role of higher education in creating a sustainable future. *Planning for Higher Education*, 31(3), 15-22.
- Currie, C., Molcho, M., Boyce, W., Holstein, B., Torsheim, T., & Richter, M. (2008). Researching health inequalities in adolescents: the development of the Health Behaviour in School-Aged Children (HBSC) family affluence scale. *Social Science & Medicine*, 66(6), 1429-1436.
- Dawn NEWS. (2018). Retrieved from <https://www.dawn.com/news/1411992>
- Dietz, W. H., & Robinson, T. N. (2008). What Can We Do To Control Childhood Obesity? *The Analysis of the American Academy of Political and Social Science*, 615(1), 222.
- discourse. *Studies in Teaching 2011 Research Digest*: Wake Forest University, 41-48.
- Douglas, L., Piper, D., Moberg, P., & King, M. J. (2000). The Healthy for Life Project: Behavioral Outcomes. *Journal of Elementary Prevention*, 21(1), 47-73.
- Dreibelbis R, Winch PJ, Leontsini E, Hulland KR, Ram PK, Unicomb L, Luby SP, 2013. The integrated behavioural model for water, sanitation, and hygiene: a systematic review of behavioural models and a framework for designing and evaluating behaviour change interventions in infrastructure-restricted settings. *BMC Public Health* 13:1015.
- Edson F, Kayombo EJ (2007) Knowledge on malaria transmission and its prevention among schoolchildren in Kyela District, south-western Tanzania. *Tanzan Health Res Bull* 9: 207– 210.
- Ergul, R., Simsekli, Y., Calis, S., Ozdilek, Z., Gocmencelebi, S., & Sanli, M. (2011). The Effect of Inquiry-Based Science Teaching on Elementary School Students' Science Process Skills and Science Attitudes. *Bulgarian Journal of Science and Education Policy*, 5(1), 48-68.
- Fernández, P. T. (2019). Educational research in Cuba: the delayed rescue of the “child thrown out with the dirty water”. *Atenas*.
- Filmer, D., & Rogers, H. (2018). Learning to realize education's promise. *World Development Report. The World Bank*.
- Ford EW, Boyer BT, Menachemi N, Huerta TR. Increasing Hand Washing Compliance With a Simple Visual Cue. *American Journal of Public Health*. 2014;104(10):1851-6.
- Fraenkel, J. R., & Wallen, N. E. (2000). *How to design and evaluate research in education* (4th ed.). New York: McGraw-Hill.

- Freeman MC, Stocks ME, Cumming O, Jeandron A, Higgins JPT, Wolf J, et al. Systematic review: Hygiene and health: systematic review of hand washing practices worldwide and update of health effects. *Tropical Medicine & International Health*. 2014;19(8):906-16.
- Gay, L. R., & Airasian, P. (2000). *Educational research: Competencies for analysis and application* (6th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Government of Pakistan. (2009). *Pakistan Economic Survey 2008–09*.
- Graves, K. (2000). *Designing language courses: A Guide for Teachers*. Boston: Heinle & Heinle Publishers, 0-8384-7909-X.
- Gubler, D. (2013). Prevention and Control of Aedes aegypti-borne Diseases: Lesson Learned from Past Successes and Failures. *Asian -Pacific Journal Of Molecular Biology and Biotechnology*.
- Gustafsson, P. A., Thornberg, U., Duchon, K., & Landgren, M. (2010). EPA supplementation improves teacher-rated behavior and oppositional symptoms in children with ADHD. *Acta Paediatrica*, 99(10), 1440-1449.
- Guzman, A. D. (2004). Statement by World Bank in the Southeast Asian Ministers of Education Organization (SEAMEO). Presented at the 35th Council Conference.
- Hagquist, C., & Andrich, D. (2015). Determinants of artificial DIF – a study based on simulated polytomous data. *Psychological Test and Assessment Modeling*, 57(3), 342-376.
- Hansen PG. Nudging: To know 'what works' you need to know why it works. *Journal of Behavioral Economics for Policy*. 2019;3(S): 9–11.
- Hansen, P. G., & Jespersen, A. M. (2013). Activity and the manipulation of choice: a framework for the responsible use of the activity approach to behaviour change in public policy. *European Journal of Risk Regulation*, 4(1), 3–28.
- Hjern, A. (2006). Children's and young people's health. *Scandinavian journal of public health. Supplement*, 67(3), 165-183.
- Hung, H.-T. (2015). Flipping the classroom for English language learners to foster active learning. *Articles from the ICCE 2012 Conference on Technology Enhanced Language Learning (TELL)*, 28(1), 81-96.
- Hussain, I., Alamgir, M. A., & Shahzad, M. (2014, 25-37). A Study of Health Education and Its Needs for Elementary School Students. *I-manager's Journal on School Educational Technology*, 10(03).
- Hussain, M., & Akhtar, M. (2013). Impact of hands-on activities on students' achievement in science: An experimental evidence from Pakistan. *Middle East Journal of Scientific Research*, 16(5), 626-632.
- Imbahale SS, Fillinger U, Githeko A, Mukabana WR, Takken W (2010) An exploratory survey of malaria prevalence and people's knowledge, attitudes and practices of mosquito larval source management for malaria control in western Kenya. *Acta Trop* 15: 248–256.
- Ismail, M. N., Chee, S. S., Nawawi, H., Yusoff, K., Lim, T. O., & James, W. P. (2002). Obesity in Malaysia. 3(3), 203-208.
- Jackson, C. K., Johnson, R. C., & Persico, C. (2015). The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms. *The Quarterly Journal of Economics*, 131(1), 157-218.
- Jan, S., Bellman, C., Barone, J., Jessen, L., & Arnold, M. (2009). Shape it up: a school-based education program to promote healthy eating and exercise developed by a health plan in collaboration with a college of pharmacy. *Journal of managed care pharmacy*, 15(5), 403-413.
- Johnson, C., & McCoy, L. P. (2011). Guided discovery learning with collaborative
- Johnson, J. O. (2015): The importance of good personal Hygiene. Hygiene expert.

- Judah G, Aunger R, Schmidt W-P, Michie S, Granger S, Curtis V, 2009. Experimental pretesting of hand-washing interventions in a natural setting. *Am J Public Health* 99:S405–S11.32.
- Kahneman, D., & Tversky, A. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157), 1124-1131.
- Karkada, S., & Pai, M. S. (2016). Concept of Health Promoting School. *Manipal Journal of Nursing and Health Sciences*, 02(02), 65-68.
- Kazemian, R., Ghasemi, H., Movahhed, T., & Kazemian, A. (2014). Health Education in Elementary School Health awareness in Iran in School Year 2010–2011. *Journal of Dentistry of Tehran University of Medical Sciences*, 11(5), 536–544.
- Kelder, S., Perry, C., Klepp, K., & Lytle, L. (1994). Longitudinal Tracking of Adolescent Smoking, Physical Activity, and Food Choice Behaviors. *American Journal of Public Health*, 84, 1121-1126.
- Khan, M., Muhammad, N., Ahmed, M., Saeed, F., & Khan, S. A. (2012). Impact of Activity based Teaching on Students' Academic Achievements in Physics at Secondary Level. *Academic Research International*, 3(1), 146.
- Khataybeh, A. (2011). Multiple Intelligences of Students At Jordanian Universities. *Journal of International Education Research – Fourth Quarter 2011*, 7(4), 83-94.
- Khatoon, R., Sachan, B., Khan, M., & Srivastava, J. (2017). Impact of school health education program on personal hygiene among school children of Lucknow district. *Journal of Family schools of Bikaner, Rajasthan. International Journal of Advanced Community Medicine*, 2(2), 108–111.
- Khutorskoi, A. (2006). The place of the Health awareness in the didactic system: Russian Education and Society. 48(3).
- King D, Vlaev I, Everett-Thomas R, Fitzpatrick M, Darzi A, Birn-bach DJ, 2016. “Priming hand hygiene compliance in clinical environments .*Health Psycho* 35:96.
- Klymkowsky, M. W. (2007). Teaching without a Health awareness: Strategies to Focus Learning on Fundamental Concepts and Scientific Process. *CBE Life Sciences Education*, 6(3), 190-193.
- Kobayashi J, Jimba M, Okabayashi H, Singhasivanon P, Waikagul J. Beyond deworming: the promotion of school-health-based interventions by Japan. *Trends Parasitol.* 2007; 23:25–29.
- Kollmuss, A., & Agyeman, J. (2002). Mind gap: why do people act environmentally and what are barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239-260.
- Koppal, M., & Caldwell, A. (2004). Meeting the Challenge of Science Literacy: Project 206 Efforts To Improve Science Education. *American Association for the Advancement of Science*, 3.
- Langford, B., Bonell, C., Jones, H., & Poulou, T. (2014). The WHO Health Promoting School framework for improving the health and well-being of students and their academic achievement. *Cochrane database of systematic reviews*, 4(4).
- Lebrun, J., Laforest, M., Larose, F., & Spallanzani, C. (2002). Past and Current Trends in the Analysis of Health awareness in a Quebec Context. *Curriculum Inquiry*, 32(1), 51-83.
- Leonard, L. (2014): Hand washing, an easy way to prevent infection.
- Leontini, E.; Winch, P.J. Increasing hand washing with soap: Emotional drivers or social norms? *Lancet Glob. Health* 2014,
- Litz, D. R. (2005). Health awareness evaluation and ELT management: A South Korean case study. *Asian EFL journal*, 6(4), 12-20.
- Lopez-Quintero, C., Freeman, P., & Neumark, Y. (2009). Hand washing among school children in Bogota, Colombia. *American Journal of Public Health*, 99(1), 94-101.

- Luby, S.P.; Halder, A.K. Associations among hand washing indicators, wealth, and symptoms of childhood respiratory illness in urban Bangladesh. *Trop. Med. Int. Health* 2008,
- Marmot, M. (2005). Social determinants of health inequalities. *Public Health*, 365, 1099-1104.
- Matheson, D. M., & Spranger, K. (2001). Content Analysis of the Use of Fantasy, Challenge, and Curiosity in School-Based Nutrition Education Programs. *Journal of Nutrition Education*, 33(1), 10-16.
- Mathur, P. (2011) Hand Hygiene: Back to the Basics of Infection Control. *Indian Journal of Medical Research*, 134, 611-620.
- Mato-Juhasz, A., Kiss-Toth, E., & Szegedi, K. (2016). Holistic Health Model of Sustainable Development. *European Scientific Journal*, 12(21).
- McGuinness SL, Barker SF, O'Toole J, Cheng AC, Forbes AB, Sinclair M, et al. Effect of hygiene interventions on acute respiratory infections in childcare, school and domestic settings in low- and middle-income countries: a systematic review. *Tropical Medicine & International Health*. 2018
- Michie S, van Stralen MM, West R. The behaviour change wheel: A new method for characterizing and designing behaviour change interventions. *Implementation Science*. 2011;6(1):42.
- Mongin, P., & Cozic, M. (2014). Rethinking activitys. *HEC Paris Research Paper No. ECO/SCD-2014-1067*.
- Naluonde T, Wakefield C, Markle L, Martin A, Tresphor C, Abdullah R, Larsen DA, 2019. A disruptive cue improves hand washing in school children in Zambia .*Health Promote Int* 34:e119–e28.
- Newsom, J. T., Rook, K. S., Nishishiba, M., Sorkin, D. H., & Mahan, T. L. (2005). Understanding the Relative Importance of Positive and Negative Social Exchanges: Examining Specific Domains and Appraisals. *Journal of Gerontology Series B: Psychological Sciences & Social Sciences*. , 60(6), 304-312.
- Nielsen, H. L. (2014). Curating and nudging in virtual CLIL environments. *The Euro CALL Review*, 22(1), 40–46.
- Nomoto M, Nonaka D, Mizoue T, Kobayashi J, Jimba M (2011) Content analysis of school Health awareness on health topics: a systematic review. *Biosci Trends* 5: 61–68.
- Nonaka D, Kobayashi J, Jimba M, Vilaysouk B, Tsukamoto K, et al.(2008) Malaria education from school to community in Oudomxay province, Lao PDR. *Parasitol Int* 57: 76–82.
- Nudging and Habit Change for Open Defecation: New Tactics From Behavioral Science. World Bank. 2016.
- Nutbeam, D. (2000). Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century .*Health Promotion International*, 15(3), 259-267.
- Nutrition Education in Elementary Schools. (2005).The Reader ,Vol.01,92-5-105454-1 Retrieved from <http://www.fao.org/3/a0333e/a0333e00.pdf>
- O’Keeffe M, Traeger AC, Hoffmann T, Ferreira GE, Soon J, Maher C. Can activity-interventions address health service overuse and underuse? Protocol for a systematic review. *BMJ Open*.2019
- Okabayashi H, Thongthien P, Singhasvanon P, Waikagul J, Looareesuwan S, Jimba M, Kano S, Kojima S, Takeuchi T, Kobayashi J, Tateno S. Keys to success for a school-based malaria control program in elementary schools in Thailand. *Parasitol Int*. 2006; 55:121–126.

- Olawuni, P. O., & Daramola, O. P. (2013). Urban governance and access to environmental sanitation services: an example from Ile-Ife, Nigeria. *Journal of Applied Technology in Environmental Sanitation*, 3(1).
- Olivares, S., Kain, J., Lera, L., Pizarro, F., Vio, F., & Morón, C. (2004). Nutritional status, food consumption and physical activity among Chilean school children: a descriptive study. *European journal of clinical nutrition*, 58(9), 1278-1285.
- Organization WH. "WHO Director-General's opening remarks at the media briefing on COVID-19—11 March 2020" 2020
<https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>.
- Oshiname, F. O. (2013): Unpublished lecture notes for Postgraduate Students in Health and Promotion and Education. College of Medicine, University of Ibadan, Nigeria, School Health Programme.
- Pasha O, Del Rosso J, Mukaka M, Marsh D. The effect of providing fansidar (sulfadoxinepyrimethamine) in schools on mortality in school-age children in Malawi. *Lancet*. 2003; 361:577–578.
- Pengpid, S., & Peltzer, K. (2012). Hygiene behaviour and health attitudes in African countries. *Current Opinion in Psychiatry*, 25(2), 149-154.
- Perez-Rodrigo, C., Ribas, L., Serra-Majem, L., & Aranceta, J. (2003). Food preferences of Spanish children and young people: *The Kidstudy*. *European Journal of Clinical Nutrition*, 57(Suppl.1), S45-S48.
- Pfafftheicher S, Strauch C, Diefenbacher S, Schnuerch R. A field study on watching eyes and hand hygiene compliance in a public restroom. *Journal of Applied Social Psychology*. 2018;48(4):188-94.
- Pickering, A.J.; Blum, A.G.; Breiman, R.F.; Ram, P.K.; Davis, J. Video surveillance captures student hand hygiene behavior, reactivity to observation, and peer influence in Kenyan primary schools. *PLoS ONE* 2014.
- Pogrebna G, Kharlamov A. The Impact of Cross-Cultural Differences in Hand washing Patterns on the COVID-19 Outbreak Magnitude 2020.
- Putica, K., & Trivic, D. (2017). Improving high-school teachers' conceptual understanding and functionalization of knowledge about digestion through the application of the interdisciplinary teaching approach. *Journal of Baltic Science Education*, 16(1), 123-139.
- Radhika, N. M. L., Gunathilaka, N., Udayanga, L., Kasturiratne, A., & Abeyewickreme, W. (2019). Level of Awareness of Dengue Disease among School Children in Gampaha District, Sri Lanka, and Effect of School-Based Health Education Programmes on Improving Knowledge and Practices. *BioMed Research International*, 2019.
- Rani, S., & Dahiya, H. (2017). Study to evaluate the effectiveness of Planned Health Teaching Programme regarding oral hygiene among students in selected government elementary schools of Rohtak, Haryana. doi:10.13140/RG.2.2.10215.96165.
- Rasool Hassan BA (2012) Importance of Personal Hygiene. *Pharmacist* Anal Act a
- Ridder, D. d., Lensvelt-Mulders, G., Finkenauer, C., & Stok, M. (2012). Taking Stock of Self-Control: A Meta-Analysis of How Trait Self-Control Relates to a Wide Range of Behaviors. *Personality and Social Psychology Review*, 16(1), 76-99.
- Romano, J. L. (1992). Psychoeducational Interventions for Stress Management and Well-Being. *Journal of Counseling and Development*, 71(2), 199-202.
- Rowe, D. (2007). Education for a sustainable future. *Science*, 317, 323-324
- Sackes, M., Sackes, M., Bell, R. L., & O'Connell, A. A. (2011). The Influence of Early Science Experience in Kindergarten on Children's Immediate and Later Science

- Achievement: Evidence From the Early Childhood Longitudinal Study .*Journal of Research in Science Teaching* , 48(2), 217-235.
- Sadegholvad, S., Yeatman, H., Worsley, A., Parrish, A.-M., & Omidvar, N. (2017). Essential Nutrition and Food Systems Components for School Curricula: Views from Experts in Iran. *Iranian Journal of Public Health*, 46(7), 938-947.
- Samaltan, D., & Christidou, V. (2013). Water conservation in the nursery school. *Global Nest Journal* ,15(03),421-429.
- Sargana, S. I., & Mohyuddin, A. (2013). Malnutrition among School Going Children in Pakistan (A case study of Mandi Baha ud Din). *Indian Journal of Health and Wellbeing* , 4(9), 1654-1659.
- Shen, D., Bai, H., Li, Z., Yu, Y., Zhang, H., & Chen, L. (2016). Positive effects of resistant starch supplementation on bowel function in healthy adults: a systematic review and meta-analysis of randomized controlled trials. *International Journal of Food, Science and Nutrition*, 68(2), 149-157.
- Sipos, Y., Battisti, B., & Grimm, K. (2007). Achieving transformative sustainability learning: Engaging head, hands, and heart. *International Journal of Sustainability in Higher Education*, 9(1), 68-86.
- Sowat, W., & Saluna, N. (2013). Creating Success In Academic Writing: From Secondary To Higher Education.
- Story, M., Kaphingst, K., & French, S. (2006). The Role of Schools in Obesity Prevention. *Future of Children*. 16, 109-142.
- Sun, M. C., Lalsing, Y., & Subratty, A. H. (2009). Elementary school food environment in Mauritius. *Nutrition & Food Science*.
- Sunstein, C. R. (2016). People prefer system 2 activities (kind of). *Duke LJ*, 66, 121-168.
- Sunstein, C. R., Reisch, L. A., & Rauber, J. (2018). A worldwide consensus on nudging? Not quite, but almost. *Regulation & Governance*, 12(1),
- Swanepoel, F., Stroebe, A., & Moyo, S. (2010). The Role of Livestock in Developing Communities: Enhancing Multifunctionality.
- Talaat, M.; Afifi, S.; Dueger, E.; El-Ashry, N.; Marfin, A.; Kandeel, A.; Mohareb, E.; El-Sayed, N. Effect of hand hygiene campaigns on incidence of laboratory-confirmed influenza and absenteeism in schoolchildren, Cairo, Egypt. *Emerg. Infect. Dis.* J. 2011, 17, 619-625.
- Tamiru, D., Argaw, A., Gerbaba, M., Ayana, G., Nigussie, A., Jisha, H., & Belachew, T. (2017). Enhancing Personal Hygiene Behavior and Competency of Elementary School Adolescents through Peer-Led Approach and School Friendly: A Quasi-Experimental Study. *Ethiopian Journal of Health Sciences*, 27(3), 245-254.
- Taylor, M., Martin, B., & Wilsdon, J. (2010). The scientific century: securing our future prosperity.
- Tepas, M. M. (2013). Health and Fitness Awareness in Schools and Student Impact: A Quantitative Study. Graduate Master's Theses, Capstones, and Culminating Projects, 42. doi:<https://doi.org/10.33015/dominican.edu/2013.edu.27>.
- Thaler, R. H., & Sunstein, C. R. (2008). Activity: improving decisions about health, wealth, and happiness. London: Penguin.
- Thang, S. M., Wong, F. F., Noor, N. M., Mahmud, N., Latif, H., Sallehuddin, M., & Aziz, A. (2013). A Quantitative Inquiry into the Effects of Blended Learning on English Language Learning: The Case of Malaysian Undergraduates .*International Education Studies*, 6(6), 1-7.

- Tidball, K. & Krasny, M. (2010). Urban environmental education from a social-ecological perspective: Conceptual framework for civic ecology education. *Cities and the Environment*, 3(1): article 11.
- Trollvik, M. (2014). Program for Sustainable Gender Equality. Retrieved December 9, 2019.
- UNICEF, (2015): Humanitarian Action for Children HAC 2015 accessed on 23, June 2015 from www.unicef.org
- United Nations Educational, Scientific and Cultural Organization (2017). Health and well-being. Retrieved from <https://en.unesco.org/themes/education-health-and-well-being>
- Vivas, A., Gelaye, B., Aboset, N., Kumie, A., Berhane, Y., Williams, M. A. (2010). Knowledge, Attitudes, Practices (KAP) of Hygiene among School Children in Angolela, Ethiopia. *Journal of Preventive Medicine and Hygiene*, 51(2), 73-79.
- W.H. Organization (2020) Clinical Management of Severe Acute Respiratory Infection (SARI) When COVID-19 Disease Is Suspected: Interim Guidance, 13 March 2020. World Health Organization, Geneva.
- Wang, W., Zhang, Q., & Tang, T. (2019). Numerical study of the impact of water injection holes arrangement on cavitation flow control. 1-23.
- Wang, X., Ouyang, Y., Liu, J., Zhu, M., Zhao, G., W, W. B., & Hu, F. (2014). Fruit and vegetable consumption and mortality from all causes, cardiovascular disease, and cancer: systematic review and dose-response meta-analysis of prospective cohort studies. 29(349), 4490.
- Wansink, B., & Van Ittersum, K. (2013). Portion size me: plate-size induced consumption norms and win-win solutions for reducing food intake and waste. *Journal of Experimental Psychology: Applied*, 19(4), 320–332.
- Watson J, Dreibelbis R, Aunger R, Deola C, King K, Long S, et al. Child's play: Harnessing play and curiosity motives to improve child hand washing in a humanitarian setting. *Int J Hyg Environ Health*. 2019;222(2):177-82.
- WHO. (2000). Improving health through schools : national and international strategies. World Health Organization.
- WHO. (2015). WHO recommendations on health promotion interventions for maternal and newborn health.
- Willeford, C., Splett, P. L., & Reicks, M. M. (2000). The great grow along curriculum and student learning. *Journal of Nutrition Education and Behavior*, 32(5), 278-284.
- World Bank. 2015. World Development Report 2015: Mind, Society, and Behavior. Washington, DC: World Bank. doi: 10.1596/978-1-4648-0342-0.
- World Health Organization, (2014): Cholera Media Centre Fact Sheets. WHO, Geneva
- DC, (2009) Trachoma Centre for disease control Retrieved 15th March 2015 from <http://cdc>
- Worsley, A. (2002). Nutrition knowledge and food consumption: can nutrition knowledge change food behavior? *Asia Pacific Journal of Clinical Nutrition*, 11(s3), S579-S585.
- World, B. (2018). The World Development Report: Learning to Realize Education's Promise. Washington: World Health Organization, "Special programme for training in tropical diseases," in Dengue: Guidelines for Diagnosis, Treatment, Prevention and Control, World Health Organization, Geneva, Switzerland, 2009.