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科学研究費助成事業 研究成果報告書



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研究課題名（和文）A role for social norm and health based messages to manage non-communicable diseases in Bangladesh

研究課題名（英文）A role for social norm and health based messages to manage non-communicable disease in Bangladesh

研究代表者

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交付決定額（研究期間全体）：（直接経費） 3,100,000 円

研究成果の概要（和文）：12～18歳の1,350人の学生から、生活習慣及び食習慣、非感染性疾患への知識、人体測定のパラメータを収集した。その結果、バングラデシュ青年期において、標準体重未満者、過体重者、肥満者の割合はそれぞれ14.9%、18%、7.1%であった。毎日野菜を摂取している学生は37%、果物を摂取している学生は20%に留まった。一方、57%が清涼飲料を、37%がファストフードを週2回以上摂っていた。また、学生の15%に睡眠障害と質の悪い睡眠が見られた。本調査によりバングラデシュの青年期における短時間睡眠と肥満は関係があることが示された。同様に長時間の画面視聴も肥満の蔓延と関連があることがわかった。

研究成果の学術的意義や社会的意義

本調査から得た論拠・結論は、今後国内外での学会で発表する予定である。研究結果は、科学社会や医療（健康）政策立案者が、政策戦略を策定するのを助け、経験的証拠として役立つであろう。

研究成果の概要（英文）：We completed survey in five schools and collected data related to lifestyle and dietary behaviors, noncommunicable disease awareness knowledge, and anthropometric data from 1350 students aged 12 to 18 years. From the collected data, we already submitted one article in BMC Public Health journal on the topic sleep behaviors and obesity. It has now accepted for publication. Using our data, we found that prevalence of underweight, overweight and obese adolescents in Bangladesh were 14.9%, 18% and 7.1%, respectively. Only 37% students eat vegetables and 20% eat fruits daily. Among the students, 57% and 37% consumes soft drinks and fast food more than 2 times per week. More than 15% of the students reported sleep disturbance and bad sleep quality. Our study findings denoted short sleep duration to be associated with overweight/obesity among adolescents of Bangladesh. We also found higher screen viewing time were associated with higher prevalence of overweight/obesity.

研究分野：Management of non-communicable disease

キーワード：Non-communicable disease Health promotion School health Lifestyle behaviours Obesity

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1 . 研究開始当初の背景 (Background of the research)

Premature death and disability related to unhealthy lifestyle has become a major health concern in many developing countries, including Bangladesh. The high prevalence of communicable disease coupled with rapidly increasing prevalence of non-communicable diseases (NCDs) in Bangladesh set a challenge of double burden of disease. Lifestyle modification can largely decrease the risk of NCDs such as diabetes and heart disease. Influences from rapid economic development, urbanization and cultural admixtures have all contributed to a sharp increase in the availability and consumption of processed foods which are high-calorie and nutrient-poor. A broader transformation of food supply system lead by multinational food companies are providing impoverished people with an alternative cheap diet consisting of sugars, saturated fats, and salt. The rapid lifestyle transformations provide no support for individuals in resource-limited countries such as Bangladesh to raise their awareness of unhealthy lifestyle to prevent them from NCDs. It is imperative to develop intervention strategies that are safe, accurate, simple, and are cost-effective for Bangladeshi citizen for the prevention, promotion, and management of NCDs. Dietary guideline and lifestyle modification is the primary and important approach to reduce or mitigate NCD. Current students will be the leader for the future generation and any school level health promotion program could have a great impact on society as well as the country. Therefore, increasing knowledge and awareness about healthy dietary and lifestyle factors among school level students, teachers and their parents, is important to arrest NCD progression in future.

2 . 研究の目的 (Purpose of research)

School-based health promotion program has been shown to improve the lifestyle behavior of students and also influence family health in several studies. Yet there are no studies which have examined the impact of child-initiated education-based intervention about increasing knowledge of healthy lifestyle factors according to social norm in Bangladesh and its impact on non-communicable diseases (NCD). Bangladesh is a lower middle-income country, where NCD is now increasing at an alarming rate. Dietary guideline and lifestyle modification is the primary and important approach to reduce or mitigate the upraising NCD prevalence; however, there is no specific dietary and lifestyle guideline in the public health agenda to reduce NCD in Bangladesh. The objective of the current project is to assess the impact of 1-year intervention by increasing knowledge on healthy lifestyle and dietary factors among school children from grade eight to nine and their respective parents and teachers in four schools. Health camps will be established for general health screening before and after the intervention. This project is expected to explore empirical data of the effect of healthy lifestyle and dietary behaviours through education-based messages among school children.

3 . 研究の方法 (Research Methods)

A 1-year school-based intervention program was conducted in four schools, located in Dhaka

administrative division. This proposed intervention study includes range of strategies and resources to encourage participation and to improve retention, such as education session, information booklets, physical activities led by school teacher etc. All students from grade eight to nine was selected from two public schools and two private schools.

Adolescent students from grades 8 and 9 were enrolled into the study after obtaining students assent and parental or legal guardian consent and proper permission from the school authorities. Data were collected using a self-reported semi structured questionnaire. In each school a health checkup session was arranged. On the day of physical examination, the research team members circulated the questionnaires to the study participants along with detailed instructions. After completion of the interviews, the study team cross-checked the questionnaires for completeness and clarified responses with the participants, where needed. Anthropometric data of the adolescents (height and weight) were measured by trained personnel with precision following WHO standard protocol and standardized procedure. Using adequate devices (digital weighing machine and stadiometer) the respondents' weights and heights were determined, respectively.

4 . 研究成果 (Research results)

Using our data (n=1350) that we collected from four schools, we found that the prevalence of underweight, overweight and obese adolescents in Bangladesh were 14.9%, 18% and 7.1%, respectively. Only 37% students eat vegetables and 20% eat fruits daily. Among the students, 57% and 37% consumes soft drinks and fast food more than 2 times per week. More than 15% of the students reported sleep disturbance and bad sleep quality. Our study findings denoted short sleep duration to be associated with overweight/obesity among adolescents of Bangladesh. Adequate sleep may therefore serve as an effective obesity prevention strategy in the growing years of life. We also found that higher screen viewing time were associated with higher prevalence of overweight/obesity among school going adolescent in Bangladesh. Our finding adds to the evidence for the adverse effect of prolonged screen viewing time on overweight/obesity. We also found that combined risk of insufficient physical activity, and sleep duration, and excessive screen viewing time were associated with overweight/obesity in a dose-response manner among adolescent. Using our available data, hopefully, we can publish 5 or 6 papers in peer reviewed journals and presented our findings in national and international conferences.

Below are the lists of achievement that we performed during the project period.

Papers

1. Anam MR, Akter S, Hossain F, Bonny SQ, Akter J, Rahman MM, Md. Abul Basher Mian MAB. Association of sleep duration and sleep quality with overweight/obesity among adolescents of Bangladesh: a multilevel analysis. BMC Public Health (Accepted)
2. Akter S, Hossain F, Rahman MM, Ahmed R, Islam R, Rahman MM, Inoue Y, Sultana P,

Mizoue T. Association between screen viewing time and obesity among school going adolescent in Bangladesh (Draft completed).

3. Ahmed R, Akter S, Hossain F, Rahman MM, Islam R, Rahman MM, Akter J, Inoue Y, Sultana P, Mizoue T. Concurrent associations of physical activity, screen time, and sleep duration with adolescent obesity (Draft completed)

5 . 主な発表論文等

〔雑誌論文〕 計0件

〔学会発表〕 計1件（うち招待講演 0件 / うち国際学会 0件）

1 . 発表者名 Rifat Md Anam, Shamima Akter, Zobida Islam, Sharmin Quazi Bonny, Mizanur Md Rahman, Abul Basher Md Miah
2 . 発表標題 Sleep duration and overweight and obesity among adolescents in Bangladesh: a multilevel analysis
3 . 学会等名 The 30th Annual Scientific Meeting of Japan Epidemiological Association
4 . 発表年 2020年

〔図書〕 計0件

〔産業財産権〕

〔その他〕

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6 . 研究組織

	氏名 （ローマ字氏名） （研究者番号）	所属研究機関・部局・職 （機関番号）	備考
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7 . 科研費を使用して開催した国際研究集会

〔国際研究集会〕 計0件

8 . 本研究に関連して実施した国際共同研究の実施状況

共同研究相手国	相手方研究機関
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