

審査の結果の要旨

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Introduction: Health literacy has emerged as a promising public health topic since its inception in the mid-1970s. It is now recognized as one of the important health determinants. Higher health literacy can assist adolescents in navigating the healthcare system and utilizing its resources. It also increases their participation in health-promoting activities and community health initiatives, making better use of preventative services. Despite its importance, health literacy research with adolescents remains limited.

In Palestine, only one qualitative study investigated how adolescents understood the concept of health and their perceptions towards health literacy. The same study proposed developing a health literacy scale specific to the Palestinian context to investigate the association between health literacy and the health outcomes of adolescents. Because of the high exposure to violence and war-like situations, Palestinian adolescents are at an increased risk of health problems such as obesity and overweight. Health literacy may reduce the detrimental health effects of long-term violence exposure among adolescents. In Palestine, previous research has focused on the prevalence of overweight and obesity among adolescents, showing that the prevalence of overweight and obese individuals has increased in the past decade. However, only a handful of studies have investigated the risk factors of obesity and overweight individuals. The association between exposure to violence and weight status has not been addressed among Palestinian adolescents. Moreover, research regarding health literacy's effect on reducing the negative impact of exposure to violence remains lacking among adolescents. Evidence is also limited on how health literacy can help achieve a better weight status among Palestinian adolescents regardless of exposure to violence.

Therefore, this study aimed to 1) develop an Arabic version of the Health Literacy Assessment Scale for Adolescents (HAS-A) and culturally adapt it to the Palestinian context; 2) evaluate the psychometric properties of the newly adapted scale among Palestinian adolescents; and 3) examine whether three health literacy-related constructs; communication, confusion and functional literacy can moderate the association between exposure to different forms of violence and Palestinian adolescents weight status, especially overweight and obesity.

Methods: This study was conducted using a cross-sectional household survey in the Ramallah and al-Bireh district, Palestine. The district was divided into three strata by locality type to sample the eligible households. A total of 1200 households were selected, consisting of 460 urban, 440 rural, and 300 refugee camp households. The eligible criteria were Palestinian households with adolescents who finished 6th to 9th grade in 2017 and living in the study district.

For the first objective of this study, the Arabic version of the HAS-A (HAS-A-AR) was derived through a forward-backward translation by multiple experts. The final translated version was conceptually equivalent to the original scale. To adapt HAS-A to the Palestinian context, a sixth option was added to each item to reflect that health care professionals talk with parents about the adolescent health, not directly with the adolescent. For the second objective, multiple methods were used to examine the psychometric properties of HAS-A-AR. First, face and content validity were evaluated during the translation process. Second, exploratory factor analysis (EFA) was performed to check the construct validity of the HAS-A-AR. Last, internal consistency was tested using Cronbach's alpha, MacDonald's omega, and the greatest lower bound (GLB) tests. The scale's average inter-item correlation was calculated. For the final objective, weight status, exposure to violence and

health literacy were assessed. Then, moderation analysis was performed to examine whether health literacy moderates the association between direct exposure to violence and weight status among adolescents. Nine multinomial logistic regression models were conducted by including the interaction terms between each of the three variables of exposure to violence with each of the three health literacy subscales.

Results: EFA showed that HAS-A-AR has a similar structure to the original HAS-A. It extracted three factors (communication, confusion and functional health literacy). Cronbach's alpha, MacDonald's omega and the GLB values for the communication subscale were 0.87, 0.88 and 0.90, and they were 0.78, 0.77 and 0.79 for the confusion subscale, while they were 0.77, 0.77 and 0.80, respectively, for functional, healthy literacy subscale.

The HAS-A-AR subscale results showed that 55% of adolescents had a low level of health literacy in interpersonal communication, 31% in confusion subscale, and 20% in their ability to read and understand health information. A high percentage (62.1%) of the adolescents were directly exposed to violence. Of those adolescents, 16.4% were exposed to political violence, while 56.5% were exposed only to domestic and school violence. The prevalence of obesity and overweight among adolescents was 6.3% and 16.7%, respectively. The prevalence of underweight was 2.2% among adolescents in this study.

Adolescents who were not exposed to domestic and school violence were 2.8 times more likely to be obese and 1.8 times more likely to be overweight when they had low health literacy in the communication subscale. Adolescents who had high functional health literacy were 62% less likely to be obese even when they were exposed to domestic and school violence. Adolescents who were not exposed to political violence were 4.4 times more likely to be obese when they had low health literacy in the communication subscale. Moreover, adolescents who were not exposed to political violence were 4.1 times more likely to be obese when they had low functional health literacy. Adolescents who were not exposed to any form of violence were 3.2 times more likely to be obese and 1.7 times more likely to be overweight when they had low health literacy in the communication subscale. Among adolescents who were not exposed to any form of violence, those who had high health literacy in the communication subscale were 72% less likely to be obese compared to those who had low health literacy. Adolescents who were not exposed to any form of violence were 3 times more likely to be obese when they had low health literacy in the confusion subscale. Moreover, adolescents who had high functional health literacy were 59% less likely to be obese even when they were exposed to any form of violence.

Conclusions: The HAS-A was translated into the Arabic language (HAS-A-AR) in this study. The translated version was found to be clear, understandable and comprehensible for the adolescents. The HAS-A-AR was also culturally adapted to the Palestinian context by adding an extra option to the questions reflecting adolescents' lack of active involvement with their health care management. HAS-A-AR is a valid and reliable scale to measure health literacy with appropriate psychometric properties. It is currently available for use among adolescents in Palestine and the surrounding Arab countries with similar language, culture, and political instability. This study then showed that health literacy moderated the association between direct exposure to violence and weight status among adolescents. When adolescents had higher levels of health literacy, lower obesity rates were predicted among adolescents who were directly exposed to 'any form of violence' or being exposed either to 'political violence only' or 'domestic and school violence only'. This study warrants further investigating the role of health literacy on the health of adolescents. Policymakers are recommended to integrate the health literacy concept within education and health systems. It is essential to conduct interventions or programs within school settings to improve adolescent health literacy. It also seems necessary to invest in interventions and training programs targeting parents and doctors.

よって本論文は博士（保健学）の学位請求論文として合格と認められる。