

COVID-19 Pandemic: Challenges of Using Online Questionnaires on Food Security and Nutritional Status Research Studies

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The Covid-19 outbreak, which has been declared as a pandemic on 11 March 2020, has been able to affect social and economic structure and especially health plans in different countries (1, 2). Therefore, it has affected food security and dietary diversity in developed and undeveloped countries. Before incomes reduction and disruption of supply chains by the Covid-19 outbreak, impaired nutritional status was one of major health problem because of different factors such as socio-economic conditions, climate

change, and pests. Food security of people around the world has been threatened by the Covid-19 pandemic affecting vulnerable households in almost every country, with impacts expected to continue into 2022 (3). Although, the pandemic situation made people in developed country to have considerable tendency to use healthy food products with high fiber and protein content, and fewer tendencies to unhealthy foods that weaken the immune system (4) this situation, it can be stated with confidence that this novel health crisis has badly struck the least developed and developing countries, where people are extremely vulnerable to malnutrition (5).

Currently, especially by the emergence of the covid-19 pandemic, most of researches related to dietary behavior changes and nutritional quality carries out by means of online questionnaire because of some limitation for field research (6). Although online questionnaires are easy to distribute and gather data in disaster conditions and they also save time as well as cost in data processing, the results of the related studies can be biased in some cases because they may neglect a large number of people who they cannot use online questionnaire or have not required facility to access this tools. Also, the validity of such studies are in question because participants might be in hurry to complete the questionnaire and so might not give accurate responses (7). In most of online researches conducted in food security and nutrition fields during Covid-19 pandemic, factors such as age, education level, nutrition knowledge as well

as socio-economic vulnerability of people are not considered. Mentioned factors can produce some serious challenges in interpreting obtained data from online questionnaires and also reduce the validity and reliability of findings (8, 9). The most common technical challenge appeared to be the ability to use the internet. Less internet use ability has been associated with lower education, unemployment, disability, and lower level of income and social contact among older people (10, 11). Some studies also found that limited internet access and digital gadget constraints the possibility of participation of older people in studies which jeopardize the generalizability of studies (12, 13). The results of some studies considering nutritional status and food security during covid-19 pandemic which have been used online questionnaire, demonstrated that these studies did not include low socio-economic level people who have less nutritional knowledge and live in suburban area of a city. It can play a confounding role in findings of these studies (14).

To address online survey limitations in nutritional status, we recommend educational interventions to teach participant about how to access and use the internet. Increasing participant nutritional knowledge by providing training clip and brochures is one of the other ways to increase online questionnaire validity and reliability. Another solution is promoting nutritional knowledge of individuals and getting the help of a family member as their assistant while completing an online questionnaire by facilitating gadget access and clarifying its questions and responses.

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