A novel model in primary prevention for coronary artery disease amid the covid-19 pandemic

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Background: The implementation and especially the maintenance of primary prevention programs in improving health-related behavioral outcomes for coronary artery disease (CAD) may be very challenging especially during and post-pandemic conditions. The present study was designed to assess the feasibility and effectiveness of a longitudinally structured, online-enhanced education and follow-up program on behavioral outcomes for CAD prevention amid the COVID-19 pandemic.

Methods: Due to COVID-19 restrictions our university suspended face-to-face teaching activities on March 16, 2020, and re-started online education on March 30th via microsoft teams program. Coronary Artery Disease Online Prevention Project (SCAD-OPP) was designed as a model-longitudinal study and utilized medical school students to conduct the entire project under the supervision of professors. It started in April 2020 and had 2 different online education and training phases. In the first phase, 3rd year medical students underwent an online 8-months specially designed training program on primary prevention for CAD. In the second phase, a series of online conferences on primary prevention for CAD were organized by the University. Per inclusion criteria each student was asked to enroll 1 or 2 participants from local population and assist them during the online intervention. Pre and post conference knowledge were collected and assessed via online tools. Every intervention was conducted by specially trained 3rd year medical students and an education booklet which was specifically designed for this study was mailed to the participants. Every other month thereafter, for 6 months, each participant was followed by phone. At the 6 months follow-up, data was collected to assess the impact of enhanced education and follow-up program on behavioral outcomes.

Results: A total of 72 participants were enrolled; 71% were women, mean age was 45±13 years, only 7% had a graduate school degree; 22% were not working. Mean BMI was 26.2±4.6 kg/m². Overall knowledge on CAD risk factors, primary prevention measures, diet and daily exercise habits were very poor. After the online-enhanced education and follow-up program there was a significant improvement on the knowledge of CAD risk factors and primary prevention measures (p<0.001). More importantly, the follow-up program led participants to implement those positive changes into their lives and maintain a healthy lifestyle. A separate cost analysis showed significant savings.

Conclusion: This is the first study which showed that a longitudinally structured online-training program of medical students could be utilized to implement an online-enhanced education and follow-up program for primary prevention of CAD with successful outcomes. This model online program is not only cost-effective and beneficial for public interest but also enhances active interaction of medical students with patients at a very early stage of their career.