

Key Words:

Curriculum design, Massive Open Online Course (MOOC), health promotion

Abstract:

WellnessRx is an online health education initiative designed to address gaps in nutrition and physical activity knowledge, skills and attitudes (KSAs). Five modules have been developed and piloted in health science faculties, with evaluation data demonstrating learner satisfaction with online modules, improvements in knowledge, and relevance for future health professionals and student self-health. The proposed project will develop the WellnessRx curriculum as a MOOC with three levels; the first level would be equivalent to a three credit course, and thus could be taken by any university student as an elective. The second level would provide a certificate of completion, and this may be of interest to health science students whose program cannot accommodate an elective. The third level would be available to health practitioners and could be used by anyone with an interest in improving their KSAs in the areas of nutrition and physical activity.

Project Description*Innovation*

WellnessRx is an online modular curriculum aimed at providing core nutrition and physical activity principles to health sciences students. The WellnessRx curriculum was developed in response to a needs assessment among health sciences faculties at the University of Alberta demonstrating a curricular gap in these domains (1,2). Similar gaps in nutrition and physical activity instruction have been identified in health sciences faculties at other institutions (3). This curriculum provides core concepts that are necessary for all future health professionals, with the ultimate goals of providing consistent, evidence-based health messaging and of promoting healthy lifestyle choices for Albertans. To achieve this, WellnessRx was designed to include five learning modules: 1) Role of nutrition and physical activity in wellness, 2) Self-health, 3) Nutrition and physical activity across the lifecycle, 4) Nutrition and physical activity in disease, 5) Nutrition and physical activity in health policies and practices. The modules include learning objectives, reading materials, learning resources, case studies, and self-health assessment tools including tools to enhance behaviour change. To date, the modules have been piloted in the Faculties of Medicine and Dentistry, Nursing, Physical Education and Recreation, and Rehabilitation Medicine.

Development and application of a nutrition and physical activity curriculum broadly across health sciences faculties, is in itself an innovative concept, and to our knowledge has not been replicated elsewhere. However, the core messaging of the WellnessRx curriculum has relevance beyond the realm of health sciences students. Educating students in general about the role of nutrition and physical activity in preventing and treating chronic disease, as well as steps to support positive behaviour change, is expected to improve student wellness, and to prepare future health professionals to advise patients/public. Ultimately these two approaches are expected to improve the health of our community at large. This broad applicability makes the WellnessRx curriculum particularly suitable for a MOOC format.

The proposed work will be undertaken in collaboration with the Office of the Provost and Vice-President (Academic) and University Digital Strategy, who are currently overseeing the development of other MOOCs at the University of Alberta. The WellnessRx team has already had initial meetings with

Onlea, University of Alberta Digital Strategies, and the office of the Provost and has been encouraged to proceed with development of the curriculum in a MOOC format. The elements of the curriculum have already been designed as online modules. The focus of this proposal is to redesign curricular elements to fit the MOOC platform. This will entail development of interactive learning objects, videos, and activities to support the curriculum.

Based on previous research, we know that interest in the topics of physical activity and nutrition is high among both students and faculty members in the health sciences (3-6), and so we believe uptake of the WellnessRx MOOC will be high both within the University and beyond. The availability of a WellnessRx MOOC is expected to enhance the University of Alberta's reputation in both health promotion and MOOC development, particularly as this initiative is unique and innovative in addressing an identified gap in health sciences curricula.

Collaboration

Development of the current WellnessRx curriculum has been an iterative process, involving stakeholders from multiple University of Alberta Faculties including Medicine and Dentistry, Nursing, Pharmacy and Pharmaceutical Sciences, Agricultural, Life and Environmental Sciences, Physical Education and Recreation, and the School of Public Health, as well as from Alberta Health Services who is a major employer of our graduates from these Faculties. This collaborative approach to curriculum development has produced a curriculum with broad relevance to students in various fields of learning.

Students from multiple Faculties have been collaborators as well, participating in focus groups and interviews following their direct involvement in pilot testing of the modules. This learner involvement provided valuable feedback for areas of ongoing improvement in curriculum content delivery, which was implemented after each module pilot and considered in the development of new modules.

External to the university community, Alberta Health Services has been a partner providing content expertise and in-kind support for module development. Industry support for module development was also obtained from the Alberta Livestock and Meat Association in the form of an unrestricted educational grant. A community engagement forum was held in 2013 with broad engagement from local stakeholders outside of the university setting to obtain feedback on the WellnessRx goals and objectives, and to identify community partners for their financial support, expertise in content or online delivery approaches, interest in pilot testing modules, and development of public health education messaging.

Evaluation

A formal developmental evaluation framework has been implemented in parallel with the development of the WellnessRx modules. Endpoints including learner satisfaction, pre- and post-test comparison of knowledge endpoints, and attitudinal markers of the importance of nutrition and physical activity concepts have been assessed. Evaluation strategies have also included interviews and focus groups with students and instructors to determine their perceptions of the module content and its relevance personally and professionally, online delivery approach, resources provided or made accessible, tools for nutrition and physical activity assessments, and overall satisfaction with modular approach integrated into their courses or curriculum. Evidence from this evaluation framework was recently accepted for publication (7,8).

As a MOOC, some evaluation endpoints such as learner satisfaction and knowledge will stay the same. This will provide an opportunity to compare performance of students who took the online modules as part of a larger course to those who participated in the MOOC.

The MOOC format also provides an opportunity for further research on the utility of this approach. We are particularly interested to learn about students' motivations for enrolling in the WellnessRx MOOC. Since nutrition and physical activity have personal relevance, the reasons for learners to take this course may differ from the motivations to take a MOOC of more traditional university content. Students will be

surveyed as to their motivation for enrolling in the course, and these motivations will be analyzed in relation to our endpoints of course completion, satisfaction, knowledge gained, and behaviour change. In addition, one of the goals of the WellnessRx program is healthy behaviour change, and students are asked to develop their own healthy lifestyle goals as part of the learning activities. Achievement of these healthy lifestyle goals provides the ultimate endpoint for a curriculum aimed at healthy lifestyle promotion. Thus, our future plans include the design of a study in which we would follow students over time to see whether they were able to implement the behaviour changes associated with their stated lifestyle goals.

Sustainability

To date, WellnessRx received initial start-up funding from the University of Alberta Centre for Teaching and Learning, and has been operating with funds from an unrestricted educational grant from the Alberta Livestock and Meat Agency. The team has also applied for other sources of grant funding including the Max Bell Foundation, and intends to apply for Killam Research funding. Ultimately, to ensure success, the curriculum will need to be financially self-sustaining.

Funds received from TLEF will be used to transform the five WellnessRx learning modules into a MOOC. Once established as a MOOC, learners may enrol in the course for free, but a fee will be required to take the course for a certificate or for course credit. This schema has particular relevance for WellnessRx, as current health care providers may wish to take the course as part of their ongoing professional development. These funds, together with funds available through the MOOC program, will ensure the sustainability of this initiative.

Dissemination

Dissemination of the WellnessRx curriculum to date has included presentations at the University of Alberta Festival of Teaching (9), Canadian Conference on Medical Education (10), Alberta Food Matters Conference (11) and Qualitative Health Research Conference (12). One manuscript was published on the knowledge translation from the environmental scan with the Health Sciences Faculties, which identified the gaps in nutrition, physical activity and wellness in health science curricula, and the design and development of a business case resulting in the establishment of WellnessRx (2). Two peer-reviewed publications have recently been accepted, one describing curriculum development (7) and the other describing the developmental evaluation framework, pilot application process and outcomes (8). One additional manuscript was recently submitted on the relevance of WellnessRx in supporting a shift from the "illness-care" model in current healthcare systems to a health promotion and risk prevention "health-care" model (13). The 2013 Stakeholder Forum was an example of a less traditional dissemination strategy intended to promote the identification and establishment of interested collaborators and partners.

We are also interested in using dissemination strategies that target health profession students at other universities and health professionals already in practice. Most recently, the College and Association of Registered Nurses of Alberta (CARNA) made the WellnessRx curriculum available to its members through its continuing competence program. To date 69 nurses have enrolled in the program. Other academic institutions have also shown interest in the WellnessRx curriculum. The University of Calgary Faculty of Medicine will be integrating WellnessRx into its curriculum for the 2015-2016 academic year, and staff from the Faculty of Health and Social Development at UBC-Okanagan campus have expressed an interest in exploring ways WellnessRx could be used as an elective for all undergraduate health science students.

We believe our team has demonstrated innovation and academic rigour in developing, implementing, and evaluating WellnessRx to this stage, and we are well positioned to grow and develop the curriculum into the next University of Alberta MOOC.