



# Implementation of a Preventative Health Series at a Student-Run Free Clinic

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## Abstract

The Rowan Community Health Clinic (RCHC), located in a small community in southern New Jersey, strives to promote positive healthcare experiences as part of its service in a largely underserved area. A significant number of RCHC's patients are immigrants, lack primary care physicians, or have difficulty communicating with doctors. Many of them demonstrate limited health literacy, which has been associated with mismanagement of health conditions, increased costs, and distrust of physicians. Lack of opportunities for health education may contribute to decreased health literacy.

To address this concern affecting its patient population, the RCHC implemented a monthly Preventative Health Series (PHS) with the goal of engaging the community in order to improve health literacy. A specific health topic was emphasized each month, such as Diabetes Awareness in November and Mental Health Awareness in December. Infographics providing information about the selected topic were shared throughout the month via social media. Furthermore, during the third week of the month, a doctor or medical student gave an interactive presentation intended to facilitate discussion about the topic among healthcare workers and community members. Due to the coronavirus disease of 2019 (COVID-19) pandemic, these discussions had to be conducted online. However, using an online platform also allowed us to reach a wider audience.

## Introduction

Free clinics function to address the medical needs of individuals who cannot afford healthcare. Without free health clinics, uninsured Americans would not receive the same standard of medical care as their insured counterparts. A delay in disease diagnosis is one of the likely consequences, resulting in negative health outcomes for the individual and higher healthcare costs for society at large.<sup>1,2,3</sup> Furthermore, studies have shown that un- or underinsured individuals are often offered less preventative care. Approximately 50% of the deaths in the United States are considered premature, with 80% of those premature deaths attributed to lifestyle behaviors such as diet, exercise, and tobacco use.<sup>4</sup> Other lifestyle

behaviors that have been shown to influence the risk of premature death include alcohol consumption, sexual behavior, exposure to toxic agents, exposure to microbial agents, use of illicit drugs, use of firearms, and motor vehicle crashes.<sup>5</sup> Free clinics can have an impact on these lifestyle behaviors by providing information and health education.

There is a particular need for mental health education among those who visit free clinics. A study conducted in a Houston student-run clinic found that over 20% of the sample patient population had either bipolar disorder or schizophrenia. These patients were also more likely to have comorbidities such as heart disease or asthma.<sup>6</sup> A cross-sectional study by Kamimura demonstrated that higher social support in patients

correlated to better mental health functioning and less severe depression.<sup>7</sup> Both studies highlight the prevalence of mental health conditions among patients receiving care at free clinics. However, they do fail to recognize difficulties that limited budgets and personnel pose in meeting these needs.

Free clinics are uniquely positioned to provide crucial health education and preventative services to the communities they serve. Printed educational materials are relatively inexpensive, easy-to-provide means of educating patients about health promotion and disease prevention that can also strengthen communication between patient and physician.<sup>8</sup> However, it is essential that educational material, whether presented in print or orally, be provided in a way that patients can easily comprehend. In one study, participants with poor reading skills described the density of text used in a colorectal screening program as “intimidating and frightening.” Moreover, adults with limited health literacy are less likely to ask physicians questions regarding their healthcare needs and to follow through with recommended health screenings or tests.<sup>9</sup> Successful interventions in improving health literacy and behavior outcomes often emphasize pictorial, audio, and video formats; spatial design elements; simplified language; verification of understanding; and training professionals in communication techniques.<sup>10</sup> Educating family members as well as patients has been found to encourage better patient adherence to therapeutic lifestyle modifications, as it enables family members to offer motivation and emotional support. In addition, the family members may participate in these new routines with the patients, thus benefiting the health of the entire family unit.<sup>11</sup>

#### *Rowan Community Health Center*

Rowan Community Health Center (RCHC) is a student-run clinic operated under the auspices of Rowan University School of Osteopathic Medicine (RowanSOM). The clinic opened in 2003 in Camden, New Jersey, and moved in 2017 to Lindenwold, New Jersey. In March 2020, the coronavirus disease of 2019 (COVID-19) pandemic made it necessary for RCHC to suspend clinical patient care in the interest of public health. In response, efforts were shifted toward providing alternate forms of healthcare such as education for

patients and community members. In 2008, the Center for Health Care Strategies reported that approximately 35% of the United States population had low health literacy, often leading to mismanagement of health conditions, increased costs, and inherent distrust in physicians.<sup>12</sup> Part of RCHC’s mission is to promote patient education and improved health literacy. Motivated by an increased emphasis on public health resulting from the COVID-19 pandemic, the Special Projects department of RCHC decided to focus on bringing educational material and resources to people. This, in turn, led to the development of the Preventative Health Series (PHS) in October 2020.

### **Methods**

The Preventative Health Series consisted of focusing on specific health topics for one month each and developing resources dedicated to that topic. Topics were selected by reviewing the literature to determine which preventable diseases afflict a large proportion of the population. Following this review of literature, the Preventative Health Series executive board decided to address diabetes, mental health, and cardiovascular disease (Table 1).<sup>13-22</sup> It was also established that each month’s topic would follow a structure incorporating both passive and active education using social media and a virtual discussion. The former was accomplished by sharing infographics and other resources about the designated topics via social media (see Appendix A-B). The latter involved virtual presentations by medical students or professionals, such as residents or physicians, followed by participant discussion. A Google Form (Version 0.8, 2021, Alphabet Inc, Mountain View, CA) was created and a link shared to promote advance registration for these virtual education sessions and discussions. Registrants were also encouraged to share specific questions on the form that they wanted to have answered during the sessions, but discussions were conducted as an open forum for asking questions and learning about the topic. Each session was recorded and then posted online so others could view it at their convenience.

**Table 1.** Topics for preventative health series

Month/Year	Topic	Rationale	Goals and Objectives	Number of Attendees
November 2020	Diabetes Awareness Month	<ul style="list-style-type: none"> <li>2018: Approximately 1.5 million new cases of diabetes were diagnosed amongst new adults 18 years and older<sup>13</sup></li> <li>Lifestyle modification has shown to be effective at decreasing the incidence of type 2 diabetes<sup>14</sup></li> </ul>	<ul style="list-style-type: none"> <li>Discuss why one can get diabetes</li> <li>Difference between type 1 and type 2 diabetes</li> <li>Signs and symptoms of diabetes</li> <li>Blood tests needed to evaluate and confirm diagnosis</li> <li>Precautions to take following a diagnosis</li> <li>Where to find medications for cheaper prices</li> <li>General resources available</li> </ul>	4
December 2020	Mental Health Awareness Month	<ul style="list-style-type: none"> <li>During the winter holiday season, there is an increase in Emergency Department and patient visits due to alcohol abuse, self-harming behaviors, and aggression<sup>15-20</sup></li> <li>COVID-19 has also contributed to an increased prevalence of mental health problems, regardless of race, creed, or population<sup>21</sup></li> </ul>	<ul style="list-style-type: none"> <li>How to balance one's mental health during the holidays</li> <li>How to communicate with family and friends when in distress</li> <li>Resources or hotlines available for acute crises</li> </ul>	12-15, majority Rowan SOM students
February 2021	Heart Disease Awareness Month	<ul style="list-style-type: none"> <li>Worldwide, cardiovascular diseases are the leading contributor of morbidity and mortality amongst women<sup>22</sup></li> <li>Gender differences unfortunately create an atmosphere of less cardiovascular/coronary interventions for women, as compared to men</li> </ul>	<ul style="list-style-type: none"> <li>Emphasize the prevalence of heart disease</li> <li>Risk factors, associated with common cardiovascular disease</li> <li>Lifestyle preventative measures that can be taken to avoid heart disease for all genders, with a specific focus on women</li> </ul>	7-10

COVID-19: coronavirus disease of 2019; SOM: School of Medicine

### Discussion

The COVID-19 pandemic has changed how healthcare professionals and centers, such as RCHC, educate their patients. The increased use of telehealth and other digital platforms has prompted a shift from individual in-person patient education to virtual educational opportunities. The use of digital media content in patient education has been shown to be both a cost- and time-effective alternative to traditional patient education. Digital and computer-enhanced

materials include educational videos that supplement traditional office consultations, digital multimedia and 3D interactive content, programs using text and voice reminders, mobile apps, and tablet/PC-based education replacing conventional nurse-led patient education. Many studies have concluded that using digital learning formats to disseminate information about heart disease, asthma, lower back pain, and other medical conditions has improved patient understanding and motivation to adhere to instruction. Overall, use of computer-aided learning has been shown to have a positive impact on patient satisfaction,

knowledge, behavior, attitude, and general health. Although digital educational technology needs to be better tailored for some specific patient populations, most patients reported high levels of technology acceptance for the purpose of patient education.<sup>23</sup>

Published literature supports better patient outcomes after education in those who have depressive disorder, specifically concerning the known issue of medication noncompliance for those diagnosed with depression. Numerous barriers have been identified in regard to nonadherence, including poor medication instructions and lack of follow up.<sup>24</sup> The insight gained by patients who are educated about their conditions helps facilitate adherence by motivating them to continue care and properly take their prescribed medications.<sup>25</sup>

Education provided by free health clinics has contributed to better outcomes in diabetic patients as well. Barriers to effective diabetes treatment—including lack of knowledge, empowerment, and health literacy—can be addressed easily through the implementation of diabetes intervention and education programs in free clinics. Research has shown that diabetes education programs increase patients' self-care, adherence to treatment, and social support.<sup>26</sup> Long term education for patients with type 2 diabetes mellitus decreased body weight, blood pressure, and treatment costs.<sup>27</sup> In another study by Adu et al (2019), patients with type 2 diabetes who received educational material on diabetes noted improvements in knowledge on the disease, metabolic control, and treatment options.<sup>28</sup> Using conversation maps in diabetes education is reported to engage patients effectively in conversation, increase awareness about diabetic treatments, improve self-management, and ultimately reduce healthcare costs.<sup>29</sup> Implementation of diabetes education at free clinics has the ability to empower patients and improve their health.

Published literature also supports the utilization of free clinic educational programs in improving the health of patients with heart disease. A systematic review determined that a link exists between free clinics' repeated provision of information and reductions in predicted risk of coronary heart disease, while providing educational information only once was deemed ineffective.<sup>30</sup>

Furthermore, outpatient education over the course of 90 days in those with heart disease has led to statistically significant decreases in body mass index (BMI), glycemic levels, hemoglobin A1c (HbA1c), and positive changes in patient's lipid profile.<sup>30</sup> Clearly, patient education requires consistency in order to be effective.

Available literature demonstrates that patient education and increased health literacy favors more positive health outcomes in common, yet serious, conditions such as mental health, diabetes, and heart disease. Educators must consider a patient's educational level in order to provide education that is best for the patient and will lead to genuine change.<sup>31</sup> Increased and improved health education leads to empowered patients who are able to make informed decisions about the course of their condition.

From its inception, the Preventative Health Series demonstrated success. Participation in the online discussion sessions steadily increased as the series progressed. Particularly heavy attendance at the December session on mental health reflected interest from Rowan University School of Osteopathic Medicine (Rowan SOM) and community members alike. The discussion sessions provided attendees an opportunity to ask questions and have an open conversation with the presenters. Attendees noted their appreciation for having someone from the medical community take time to talk about the selected topics and share knowledge as well as resources to promote better community health. Following each discussion session, a "Healthy Happenings" pamphlet (see Appendix B) containing information about the topic and additional resources was shared with attendees. The ability to review recorded sessions could also enable attendees and others to pursue future discussions with healthcare providers.

#### *Community Support*

Support from the community constituted a major component of our ability to hold the PHS. Various departments within RCHC, such as Outreach, helped connect the organizations they work with to the PHS developers and included information about the program in monthly newsletters. Email conversations with community organizations helped us determine what topics

were important for inclusion in the series. Community Commitment Church, where RCHC is located, contributed invaluable support. It helped us reach its parishioners and truly served as a conduit for RCHC to connect with the Lindenvold community.

The PHS also gave RCHC the opportunity to work with more student organizations at Rowan SOM. For each discussion, we reached out to student groups to inquire whether they would be interested in presenting under the supervision of a faculty advisor. Students eagerly accepted our invitation to become more involved with RCHC as well as to do some community outreach. Even during times of COVID-19, RCHC found it important to create opportunities for students to remain involved in the community.

### *Limitations*

Working towards implementing the Preventative Health Series brought about many challenges. Due to COVID-19 restrictions, outreach to community members for the series was limited to online advertising. While social media advertisements can help reach a wider audience, we found that it impaired our ability to reach our target audience, including a critical cohort of those lacking internet access or the elderly who may not be familiar with social media sites. Working with the Commitment Community Church, we distributed email notices about the series to its members; however, we could only reach those with access to email. The platform we used for all our presentations was WebEx (Version 40.12, 2021, Cisco, San Jose, CA), which offers a "call in" option that does not require internet access. Using this option, though, limited the experience by preventing attendees from seeing slides and other visual components. We believe that in-person advertising and presentations would make PHS a more effective program.

Additionally, while attendees across all the sessions mentioned its helpfulness, we did not have a pre-discussion questionnaire or post-discussion survey for attendees to fill out. Lacking these instruments precluded our ability to measure the baseline health literacy and knowledge of each month's topic or to determine how much attendees learned. Thus, there was no objective data for assessing the effectiveness of

Preventative Health Series in improving health literacy of community members.

Educating patients at free clinics can present challenges due to organizational limitations. One limitation to providing simple educational information to individuals with lower health literacy in a free clinic setting is the high turnover of volunteers. Furthermore, due to the nature of medical school and the fact that RCHC and this project are fully student-run, it became difficult to continue the Preventative Health Series when medical board exams began in the spring. Thus, we paused the series in February 2021.

### *Future Directions*

The Preventative Health Series has relaunched in the 2022-23 academic year. The series is focusing on other preventable and chronic health conditions affecting South Jersey communities. With the easing of COVID-19 restrictions, we anticipate providing both in-person and virtual sessions so that those who may not have access to technology will have the opportunity to participate. Furthermore, a pre and post-session questionnaire will be distributed, enabling us to assess effectiveness of the Preventative Health Series.

## **Conclusion**

RCHC's implementation of the Preventative Health Series demonstrates dedication to serve the community and fulfill gaps in medical care. We hope that, in the near future, offering all PHS programs in person will permit more interactive discussions with greater frequency.

We consider the key lesson of this series is that people can be active participants in their own medical care. There are steps that individuals can take to prevent many chronic illnesses and resources to help them succeed. In times of COVID-19, when public health is in crisis, RCHC hopes to continue to empower and improve health literacy of all those who participate in PHS.

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The authors have no conflicts of interest to disclose.

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