

Pre-Diabetes Project Report
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According to the Centers for Disease Control and Prevention (CDC), 86 million people in the United States currently have a condition called Pre-diabetes (PDM), which is defined as having a higher than normal level of blood glucose, yet not high enough to be diagnosed with Diabetes (DM). Of these people, most are unaware of their condition, which highly increases their risk of developing Type 2 Diabetes, which can then lead to cardiovascular disease, stroke, blindness, amputations, wounds, and kidney failure (CDC, 2016). Studies show that by making certain lifestyle changes, blood glucose levels can be controlled and consequently, the development of PDM and/or DM can be reversed or delayed. These changes include decreasing body weight by 5-7% and achieving 150 minutes per week of moderate-intensity activity (NIH, 2008). The Diabetes Coalition of CA (DCC) is one organization partnering with others to spread national awareness about pre-diabetes and the research-based programs available to help people make these changes. The students from the CSUEB RN-BSN program, Anna Baker and Tamara Martin, spent over 120 hours each to create a project to satisfy the second option from the DCC's internship designs to educate healthcare providers (HCPs) about PDM and Lifestyle Change Programs and then to encourage the HCPs' involvement to screen, test, and refer their patients, as instructed by the American Medical Association (AMA) and the CDC's STAT™ TOOLKIT (AMA, 2016).

The two goals of the project were to first, increase the knowledge level about PDM and the Lifestyle Change Programs among HCPs and then second, to assess the likeliness of the HCPs to use the screening tools and knowledge presented to them to begin implementing the screen and refer process into their clinical practice. To accomplish this goal, the students created a powerpoint presentation which was used during educational in-services at Tamara's workplace, Sutter Urgent Care. To assess the beginning and ending knowledge levels of the participants, a test of eight questions was compiled which outlined the key points of the presentation. This was administered before and then again after the in-service. An evaluation tool was paired with the post-test to assess the likeliness of the HCPs to implement the screen and refer process using the screening tools/methods introduced (CDC screening test, American Diabetes Association screening test, the students' video, and the TOOLKIT). As mentioned, a short video was created to educate about the Lifestyle Change Programs and was offered to the HCPs as one screening tool they could use to show their patients.

The students conducted multiple teaching sessions and had a total of 13 participants with a 100% response rate from the testing and evaluations. The results from the pre- and post-tests were compared, showing a higher score on the post-test in 100% of the participants. Many of the HCPs did not know what the National Diabetes Prevention Program was, what the CDC and AMA's acronym STAT™ represented, or that people with DM are not appropriate

referrals to a Lifestyle Change Program (the most commonly incorrect answer throughout). They didn't know what the risk factors for PDM were or what someone with PDM's hemoglobin A1C test results would be. After the in-service, however, there were significant improvements in scores. The lowest post-test score was 67% and the highest was 100%. Compare that to the pre-test scores, in which the lowest score was 11% and the highest was 67%.

After the in-service was conducted, the evaluations were administered (along with the post-test). 100% of the HCPs reported that they learned something new, that they increased their understanding of PDM and who is at risk for PDM, that they now understood not only what Lifestyle Change Programs are, but also how to refer someone to the programs. They were asked to rate their likeliness to use the questionnaires (CDC and ADA screening tests) to screen patients; how likely they were to use the video to screen patients; and how likely they were to use a screening method offered by the AMA's TOOLKIT. The rating scale consisted of: "not likely at all," "somewhat likely," or "very likely." The following table indicates the numbers of responses for each item.

	Questionnaires	Video	Toolkit
Very Likely	6 out of 13	9 out of 13	7 out of 13
Somewhat Likely	7 out of 13	4 out of 13	6 out of 13
Not at all Likely	0 out of 13	0 out of 13	0 out of 13

The participants were then asked for suggestions and comments regarding what could be done to increase their likeliness of implementing a screening method. The general themes among responses given were: to increase patient education at the primary HCP's office and in general, to make the availability of screening tools more readily available to the public, and to make the information more accessible.

For future efforts, it is recommended that the number of participants be increased. More facilities could be targeted, and specifically, more primary health care providers could be educated. Based on the results from the post-tests (not all participants attained a perfect score), it seems that not everyone understood the key points of the teaching, making it apparent that the teaching was ineffective to some degree, for unknown reasons. One participant identified a barrier—that the font color of the powerpoint slides was difficult to see—so changing to an easier to read format could improve comprehension. The powerpoint itself was fairly comprehensive, yet basic, so to improve the likeliness of implementation, a follow-up in-service should be conducted, with a more in-depth look at the TOOLKIT and the resources provided within. The powerpoint presented during this project could be used as an introduction to the issues surrounding PDM and the programs and resources available, but a more detailed presentation may encourage increased compliance and offer a better understanding of the actual process of screening, testing, and referring patients. The HCPs not only need to understand who they can and can't refer,

but exactly what steps should be taken to set up a screening method and which ICD 10 codes should be used when ordering tests and dealing with insurance companies. Advocating for insurance companies to cover the Lifestyle Change Programs is another way HCPs can become involved but the powerpoint used did not cover these aspects in detail. HCPs were just encouraged to explore the website and resources independently.

The video produced was perceived as easy to understand by the audience and could become a useful tool in the future. A recommendation to promote the video is to increase awareness among nursing students and new graduate nurses who most likely will work in a non-acute setting. These people can become instrumental in advocating starting screening for PDM and preventing DM. The more students and health care providers who learn about PDM and the ability to prevent DM, the more the knowledge will be spread via word of mouth, professional contacts, and social media. The video could be promoted on social media sites, and the link could be put on little cards and passed out at places throughout the communities. The opportunity for nursing students to participate in internships with community organizations is a key way to create a passion and desire to continue outreach and education.

References

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