Development of a Public Health Model for Translation of Best Practices in Addressing Vitamin D Deficiency

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PURPOSE

This pilot project aimed to develop and implement an evidence-based toolkit, including a public health model of best practices to:

1) increase knowledge about vitamin D deficiency (VDD)
2) increase confidence levels and translation of evidence into practice by nurses and dietitians in North Dakota, a northern state with many risk factors for VDD.

Vitamin D deficiency is associated with increased disease risk through all life stages and is safe, easy, and inexpensive to remedy. *(GrassrootsHealth, 2020)*

BACKGROUND

- Vitamin D deficiency (VDD) is the largest essential vitamin deficiency in the world and has been identified as a global public health concern [1,2].
- In 2015, due to massive strides in understanding the physiological impact of VDD on individual and population health outcomes and the cost-effectiveness of addressing VDD, vitamin D scientists and researchers recommended public health initiatives to decrease the global prevalence of VDD [3].
- Research shows healthcare professionals (HCP) may benefit from a translational model to guide decision-making processes and resources to improve their understanding of Vitamin D and VDD and increase the opportunity for practice change. Vitamin D education aimed at HCP may also result in feelings of enhanced self-efficacy and increased sustainability of evidence-based practice (EBP) [4].
- A literature search revealed no public health model of best practices for addressing VDD. Providing a translational model, healthcare professional education, and accompanying resources may increase confidence in utilizing evidence-based best practices in patient populations and public health policy.

METHODS

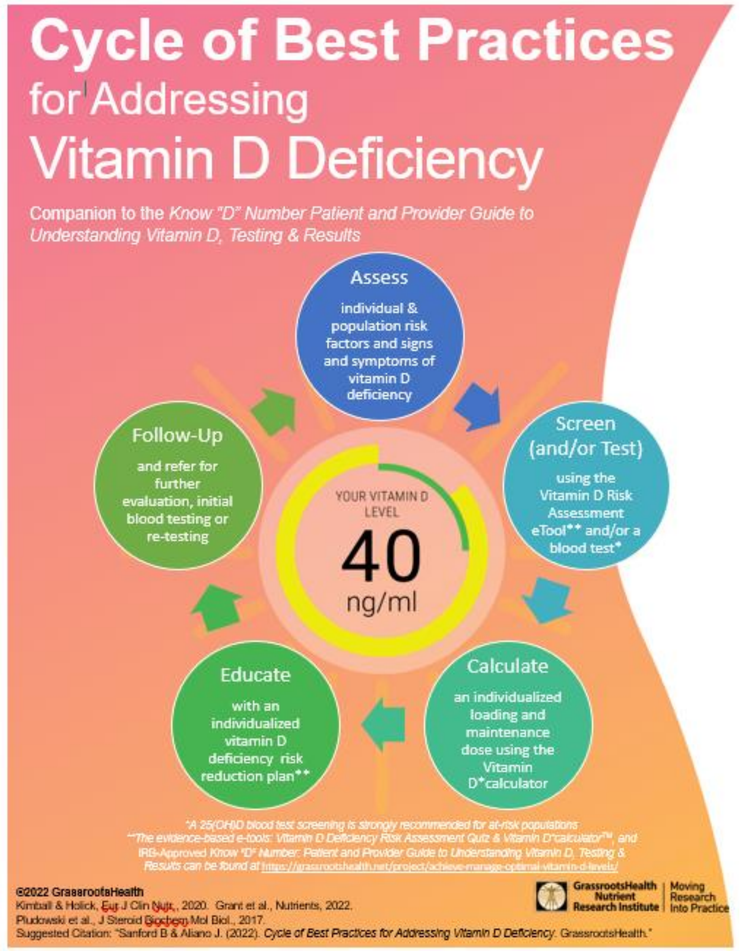
Project Design

- Pre-, post-test, and follow-up survey study design.
- A vitamin D toolkit was developed and implemented using an online, asynchronous platform, which included:
  - A self-paced vitamin D education course
  - *Cycle of Best Practices for Addressing Vitamin D Deficiency* model
  - Downloadable research & translation resources
- Face validity of participant assessments, the model, and all educational and translational content were established by subject matter experts.
- Participants' baseline content knowledge was assessed with a 10-question pre-test and then re-assessed with the same questions after moving through education modules.

Follow Up Survey

A follow-up survey sent two weeks post-education assessed:

- pre-and-post confidence,
- use of the model and best practice resources in their sphere of practice and influence, and
- perceived barriers to moving research into practice.



RESULTS

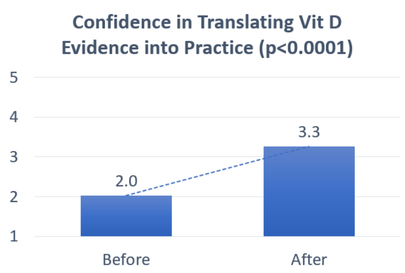
Toolkit (n=119)

Preliminary Mean Pre-Post Knowledge Scores t-test: paired two sample for means		
n=119	Pretest	Post-Test
Mean	30.67	65.13
		P<0.0001

Follow-Up Survey (n=86)

1) Of the 86 participants who completed the follow-up survey, confidence scores increased significantly from 2.0 to 3.3 on a scale of 1-5 (p<0.0001).

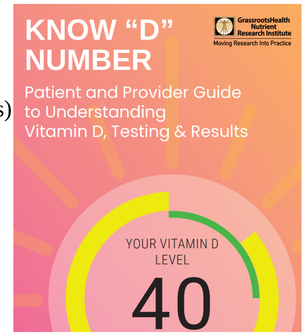
2) 100% of participants reported using at least one component of the model of best practices, with the top three components being: referred (54%), assess (50%), and educate (46%).



RESULTS (cont.)

3) Translation of research to practice or sphere of influence: participants 94% (n=85) shared knowledge within their practice or sphere of influence, with the most common levels being:

- 84% Interpersonal (friends, family, and patients)
- 73% Organizational/community



4) The most commonly reported resource used was the IRB-approved *Know D NUMBER: Patient and Provider Guide to Understanding Vitamin D, Testing & Results.*

5) The most commonly perceived barrier to translating vitamin D knowledge into practice was financial barriers r/t the cost of testing and lack of insurance coverage.

Vitamin D researchers agree—obtaining and maintaining vitamin D levels at a target goal of 40-60ng/ml is cost-effective, reducing direct costs of healthcare and preserving public health resources *(Baggerly et al., 2015)*

CONCLUSIONS

- Nurse and dietitians' knowledge of best practices for addressing VDD and translation of knowledge into practice is critical to:
  - Improving overall public health
  - Individual and population outcomes associated with VDD, and
  - Decreasing healthcare costs
- Providing resources for evidence-based practice translation to nurses and dieticians is critical to improving their confidence and satisfaction while providing care.
- Results of this project demonstrate implementing an evidence-based toolkit and applying a translational model with easily accessible resources should be part of public health initiatives to address VDD.
- Continuing research should include longitudinal studies in specific practice settings to track actual improvement in long-term patient, staff, and financial outcomes.

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