The Impact of Short Messaging System on Glycemic Control

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Background

- Diabetes is the seventh greatest cause of death in the United States in 2019
- In the United States 37.3 million individuals have diabetes, accounting for 11.3 % of the population
- In 2017 Diabetes cost the United States $327 billion
- There were 17 million emergency department visits with diabetes as any documented illnesses among individuals aged 18 and up in 2018. Out of the 17 million, 248,000 were for hypoglycemic crisis and 242,000 were for hypoglycemia
- In current practice, health care providers produce educational resources to help support patients with glycemic control, but many people are still struggling with managing their blood glucose levels
- Short messages system (SMS) is a strategy that is available to give diabetic patients reminders, daily information, and advice to achieve a healthy lifestyle and affect glycemic control.

Objectives

The purpose of this poster is to examine the impact of short messaging services on glycemic control in diabetic patients compared to traditional education and standard care.

References

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Evidence Review

Results	Level of Evidence	Quality Rating
The intervention group showed a 3.9% reduction in in HbA1c and 2.3% reduction in blood pressure while the control group showed a 3.5% decrease in HbA1c and 2.1% decrease in blood pressure.	I	Low Quality
A decrease of HbA1c at nine months was reported at −8.85 mmol/mol while in the control group showed a reduction of -3.96 mmol/mol. Significant improvements were seen in diabetes self care, perception of illness, diabetes support, and health status	I	Low Quality
There were no statistically significant between-group differences with respect to HbA1c BMI, total cholesterol, or triglycerides. The intervention group had 57% of people who had 100 % attendance for their appointments compared to 26% for the control group	I	Low Quality
In the intent-to-treat analysis, the median HbA1c level in the intervention arm of patients with a HbA1c ≥ 80 mmol/mol was considerably lower at 6 months: 73 mmol/mol (8.8%) in the SMS arm and 83 mmol/mol (9.7%) in the control arm (P = 0.03).	I	Low Quality
At 6 months, the intervention group had a greater reduction in HbA1C of -0.2 compared to 0.1 in the control group. 69.3% of people in the intervention group achieved a HbA1c of <7% versus 52.6% in the control	I	High Quality

Summary and Conclusions

Short messing system can potentially cause better glycemic control in diabetic patients. Short messaging system might be a viable and successful strategy to promote diabetes self management, increase quality of life, patient empowerment, comprehension of the chronic condition, physical activity and psychological health.

Needs for Future Research

- Strategies to increase recruitment in further studies to ensure adequate sample size.
- Ensure sample is homogenous
- Inclusion of participants from multiple health centers
- Studies on how SMS affects populations with low literacy
- How SMS affect patients with low incomes
- How SMS affects each specific type of diabetes
- Research on how SMS can be used for patients without a cellular device.
- More supporting research needed due to contrasting results and inability to generalize results. Conclusions were unable to be drawn in certain studies

Acknowledgements

I would like to thank Dr. Regina Phillips for all her guidance and support throughout this project. She has provided me with insight and wisdom not just with this project but throughout the CNL program that I will be able to take with me into my nursing career. .

Implications for Practice and Role of the Clinical Nurse Leader

Implications for Practice

- Information on glucose monitoring, blood pressure control, medication adherence, physical activity, and lifestyle given by nurses and the health care team can be reiterated to diabetic patients in and outside of the health care setting.
- Using SMS for diabetes education can be less expensive than providing care for patients with complications or mismanagement of their disease

Role of the Clinical Nurse Leader

- **Clinician:** Be knowledgeable of the intervention's facilitation, protocol and potential issues that may arise during implementation of the evidence-based practice.
- **Team Facilitator**: Promote empowering work environment and encourage collaboration, communication and teamwork. Encouraging training amongst staff to explain the intervention to patients and its potential affects.
- **Mentor:** Provide guidance of SMS to nurses, staff, and patients amongst the clinical setting
- **Interprofessional Collaborator: I**ntegrate an in service with nurses, health care providers and other team members discussing diabetes, and how the SMS affects glycemic control.

Methods

- **Database:** PubMed
- **Keywords: "**diabetes", "text messaging", "glycemic control"
- **Exclusion:** Before 2017, relevance to PICO topic desired outcome, limited data
- **Inclusion:** Randomized controlled trials, clinical trial, systemic reviews
- **Results:** Five articles thar was consistent with the objectives were used in the literature review