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The Goal Attainment Scale for Improving Collaborative Goal Setting for Patients with Diabetes

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The Goal Attainment Scale for Improving Collaborative

Goal Setting for Patients with Diabetes

Rebecca Mickel RN, MSN, CWON, CNE

University of Portland

Practice Issue and Proposed Practice Change

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Abstract

The financial cost of managing diabetes in Oregon is unsustainable. Furthermore, the physical consequences for patients can be devastating (American Diabetes Association [ADA], 2019). One solution to improve the management of diabetes is shared provider-patient decision making (Larme, A., & Pugh, J., 2001). The Goal Attainment Scale (GAS) method, was initially used and successful in mental health for improving self-care activities (Newton, 2013) and it appears to be a viable solution for improving collaborative goal setting to enhance self-care for patients with diabetes.

This practice improvement project focuses on the use of the GAS method to facilitate collaborative goals setting between a group of providers and patients with diabetes at one family practice clinic. For eight weeks, there were forty-eight qualifying encounters for forty patients with diabetes at the clinic and thirteen patients developed goals (32%) using the GAS method. The remaining twenty-seven patients (68%) refused to participate, or they were not ready to make a change in self-care of diabetes. Five of the thirteen patients with GAS goals returned for additional visits and of this group either maintained or improved on the scale during the eight weeks. The level of provider engagement and motivation in goal setting varied; however, the patients who developed GAS goals demonstrated a commitment to caring for their diabetes. The primary benefit of the GAS tool was patient involvement.

Introduction

According to the Centers for Disease Control and Prevention (CDC), over thirty million Americans have diabetes and are at risk for its devastating consequences. Diabetes is a chronic disease with significant impacts on health and wellbeing. Poorly managed diabetes can cause permanent nerve and kidney damage, skin infections, blindness, and can lead to disability and premature death. The ADA recommends shared decision making between the patient and health care provider to improve diabetes management. The ADA suggests that health care providers prioritize specific factors of the individual, which impacts the treatment. The best approach is to incorporate a shared provider-patient decision making, interdisciplinary collaborative management, ongoing monitoring, and the regular review of the treatment plan (Diabetes Care, 2019).

This practice improvement project focuses on the partnership of health care providers at one family practice clinic and patients with diabetes developing collaborative goals. The participating clinic is part of a health system with two acute care community hospitals, eight primary care clinics, and several other specialty services. The project team includes a Family Nurse Practitioner (FNP), a doctoral prepared Pharmacist (Pharm-D), and a Registered Dietician/ Certified Diabetes Educator (RD/CDE) and a registered nurse (RN) enrolled in a Doctor of Nursing Practice (DNP) program as the lead investigator.

According to Dick et al. (2018), change is shifting from one state to another, and humans by our nature fear change. Two theoretical approaches were used to organize the change process to help alleviate the fear of change. The Knowledge to Action Theory (KTA) was used to plan the steps of the project (Graham, 2006), (Appendix A). Additionally, the Cycle of Change (COC)

helps explain the pattern in the data for both the providers and the patients (Prochaska &DiClemente, 1983).

Problem description

In Oregon, approximately 435,000 people have a diagnosis of diabetes, and about 98,000 do not know they have the disease (CDC, 2019). People with diabetes have approximately 2.3 times higher medical expenses than those individuals without diabetes. In 2017, the total direct medical cost in Oregon was 3.1 billion dollars, and there is estimated to be an additional 1.2 billion in indirect financial costs (ADA, 2019). Liao, Lin, Haung, and Hsu (2015) identifies the best way to reduce the expense of diabetes care is to improve the patient-provider relationship with the result of an improvement of the continuity of care. The health system and the providers want to improve the continuity of care and intradisciplinary communication. One opportunity to improve communication is for the providers to routinely access the patient goals in the electronic health record (EHR). Currently, there is a gap between ADA recommendations of best practice and the process at the clinic. A random chart review of six electronic medical records of patients with diabetes discovered a low number of goals and no consistent method for measurement.

This project focuses on improving patient development of self-care goal-setting aligned with the health systems goal of improving glucose management in patients with a glycosylated hemoglobin (HbA1c) higher than nine percent. The health system did not mandate a specific protocol to reduce the HbA1c for patients with poorly managed diabetes. The clinic staff has the autonomy to develop solutions and tools for their patients, provided they meet evidence-based best practice. The practice improvement team selected patients with an HbA1c higher than seven percent (> 7 %) to provide improved care for a more significant number of clients with diabetes.

Current knowledge

The ADA (2019) endorses that all people with diabetes develop focused behavioral goals with an emphasis on improving self-management. The standards recommend a collaborative goal-setting focus on medication management, diet, exercise, and stress management (ADA, 2019). Larme and Pugh (2001) identify that health care providers lack the time needed for practice improvement, adequate support staff and intradisciplinary teamwork when implementing new evidence-based guidelines. Additionally, the specific patient challenges include awareness of diabetes, knowledge of nutrition, and inadequate monitoring of health condition.

Managing change is a complex and ongoing process, and practice change in health care requires planning and ongoing support. Evidence of a best practice is not enough to create a shift in health care practice. There also needs to be a sense of urgency to motive health systems and providers to change (Kotter, 2005). The Stages of Change (SOC) method evolve through the steps of pre-contemplation, contemplation, preparation, action, maintenance, and relapse (Prochaska & DiClemente, 1983) (Appendix B). The word relapse denotes a return to the original behavior and is not seen as a reason to abandon a positive change in behavior. A relapse is an opportunity to adjust the plan and resume the process with more skill. The SOC model is useful to explain the evolution of change for the target population of patients with diabetes and an elevated HbA1 and the healthcare providers.

People move through a non-linear series of stages when modifying behavior, and this process requires time and patience to be effective. Individuals in contemplation tend to be defensive and avoid changing their thinking and practice, and they need more support than individuals at other stages of the process (Prochaska & DiClemente, 1983).

Rationale

Self-management is central to diabetes care, and the ADA (2019) recommends dietary changes, increased physical activity, better blood glucose management with regular monitoring and medication management. The ADA also recommends shared decision making as one of the best ways for people with diabetes to manage their condition (2019). Lafata, Morris, Dobie, Heisler, Werner, and Dumenci (2013) report that a patient's self-management of diabetes improves when the health care provider work with them to develop goals. Collaborative goal development helps the health care providers focus on the patients' priorities as necessary.

The ADA (2019) recommends behavioral goals for all people with diabetes focus on improving individual self-management of diet, exercise, monitoring, medication, and stress management. Although collaborative goal-setting addresses the ADA recommendations, there is no specific goal-setting method recommendation for patients with diabetes. The team members chose to focus on improving goal setting to enhance patient participation in self-care.

Specific Aims

The desired aim of the practice improvement project was to increase the number of collaborative goals developed at the clinic. The target population of the intervention was the healthcare providers, and the focus was on one FNP's panel of patients at a community family practice clinic with diabetes and a HbA1c >7. The aim was to implement a standard method to enhance the creation of collaborative goals focused on the individual patient's self-care of diabetes. A secondary objective of the project was to increase the frequency of goal review by the health care providers at follow up office visits. The ongoing monitoring of goal achievement was intended to increase the motivation of the patient and address barriers to goal achievement.

Method

Context

Planning a practice improvement requires a thoughtful and reasoned approach. The Knowledge to Action Theory (KTA) framework is a seven-step process which provides a scaffolding for active collaboration and an exchange of ideas between researchers and the people most impacted by a change (Munce et al., 2013). Successful implementation of a practice improvement requires stakeholder involvement. The first step of the diabetes care improvement project was the identification of team members with an interest in improving the care of patients with poorly controlled diabetes.

The team included: one Family Nurse Practitioner (FNP), one doctoral prepared Pharmacist (Pharm-D), and one Registered Dietician/ Certified Diabetes Educator (RD/CDE) and a registered nurse (RN) enrolled in a Doctor of Nursing Practice (DNP) program. The RN in the DNP program served at the lead investigator with FNP as the co-investigator. The initial meeting with the author and the FNP and the Pharm-D identified three common challenges to caring for the patient with diabetes: Provider role strain, the need for organized care coordination across disciplines, and inconsistent use of goal setting as a tool for the patient with diabetes. Appointment times with the FNP are generally 20 minutes, and appointments with the Pharm-D and the RD are 60 minutes.

All patients with diabetes can benefit from an intradisciplinary approach, in fact, Davis, Ross, and Bloodworth (2017) identified patients who were managed by an intradisciplinary team demonstrated a statistically significant decrease in HbA1c, blood pressure, and cholesterol. Moreover, Lafata, Morris, Dobie, Heisler, Werner, and Dumenci (2013) report that patients improve in self-management with a collaborative care approach.

Intervention

A meta-analysis by Fredrix, McSharry, Flannery, Dinneen, and Byrne (2018) explicitly looked at the positive effect of goal setting on diabetes self-management; the analysis did not identify a specific goal-setting method. Therefore, an additional literature search was conducted to find an easy to use and reliable goal setting method for this project. The method identified as the best tool for the project. In 1968, Kiresuk and Sherman introduced the GAS process as a comprehensive measurement tool for outcome in mental health (Willer, & Miller, 1978). The original GAS method is a 5-point scale with the expected level of achievement at score zero. A score of +1 identifies "a little" improvement, and a +2 is "a lot" of improvement. Conversely, a score of -1 indicates "a little" bit less than expected, and -2 indicate "a lot" worst (Turner-Stokes & Williams, 2010). Cairns, Kavanaugh, Dark, and McPhail (2015) identified that the goal-setting process using the GAS method emphasizes the importance of individual ownership of goals.

The team members selected the GAS method as a viable solution for the local environment; The next step of the KTA process was identifying a workable solution for the clinic. The plan was to have the Pharm-D and RD develop goals with the patients, but all the team members would review goal achievement. A worksheet was designed to help the patient determine which self-care behavior they have the most motivation to improve (Appendix C). The worksheet was optional for the providers to use if they felt they did not have the time to engage in a motivational interview or wanted to have the patient contemplate the answers between appointments.

Two educational sessions coached team members on the use of the GAS method and the plan for data collection. To facilitate the use of the GAS method, a team member developed

computer short cuts called dot phrases, which coincided with the levels of the tool. The dot phrases insert sentences when they are used and assisted the providers in organizing goal development. Also, the provider who developed the dot phrases instructed the other team members on how to use the short cuts.

The initial plan was for the providers to self-identify the individual patients from their appointment schedule, who would be appropriate for the collaborative goal-setting process. The providers were to keep a tally of the potential patients, the goals developed, and the number of goals reviewed during the time frame. However, in the second week, the plan needed to be modified to improve participation. The practice improvement project received Institutional Review Board (IRB) approval from the lead investigator's university, and the health care institution and the intervention occurred over eight weeks.

Measures

The project team members received a weekly email containing a list of patient appointments of qualifying encounters. At the end of the week, a retrospective chart review was conducted to identify which patient arrived for scheduled appointments and which of those encounters resulted in collaborative goal setting using the GAS method. Each qualifying encounter counted as one on the tally, and each goal developed using the GAS method counted as one.

The second aim of the project was for the project team members to review collaborative GAS goals with the patients as they return for appointments. The patient with a GAS goal who returns to the clinic for an appointment with the team members counts as one, and a documented review of an existing GAS goal counts as one. The total number of patients with goals who return to the clinic was the denominator, and the number of goals reviewed was the numerator.

The final measure was provider satisfaction with the GAS method; a set of open-ended questions measured this outcome at week four and week eight.

Analysis

The data analysis was conducted using percentages for each week. The number of collaborative goals developed using the GAS method developed provided the value for the numerator, and the total number of qualifying patient encounters was the denominator. The clinic manager set a benchmark of at least 50% of qualifying patient encounters would have a collaborative goal created. Since the baseline was no collaborative goal, any goals developed by the team members during the time frame was a success for the providers and patients. Also, the patients with GAS goals established were added to the data table to identify a potential goal review. The total number of patients with GAS goals who returned for an appointment with a team member was the denominator, and each collaborative goal reviewed was the numerator.

Ethical considerations

The ethical considerations of the GAS practice improvement project reviewed potential harm to participants, privacy, and staff distress resulting from the disclosure of poor performance. Confidentiality of the individual participants was maintained by collecting de-identified data and analyzing the data in aggregate. The level of engagement varied among the providers. Consequently, the data in this paper does not contain information to identify the individual participants or patients with diabetes who received a GAS goal developed during the time frame. Participation was voluntary, and providers were encouraged but not coerced or punished for reduced involvement.

Results

Data collection

A new procedure for the referral of patients with diabetes to the Pharm-D and the RD coincided with the state of the project; therefore, in the second week of the project, it was apparent the project participants needed more support in identifying patients who met the inclusion criteria. The data collection method changed to include: 1) a weekly preview of scheduled appointments with the Pharm D or the RD to generate a list of expected encounters with patients who met the project criteria, and 2) a weekly retrospective chart review to identify how many goals were developed using the GAS method and any goals reviewed by the providers.

Data analysis

The providers were the primary subjects for the practice improvement of increasing the number of collaborative goals developed and the number of goals reviewed for patients with diabetes. During the eight weeks, there were forty-eight qualifying encounters for forty patients. Thirteen patients developed goals (32%) using the GAS method (Appendix D). The remaining twenty-seven patients (68%) refused to participate, or they were not emotionally ready to create a self-care goal.   Nevertheless, one patient did move into action and produced a GAS goal on the third appointment. Of the thirteen patients with GAS goals, five returned for additional visits, and goal achievement was measured. The review of developed goals was 100% (n=5), and the patients in this group either maintained or improved on the scale during the eight weeks. The focus of the goals included regular exercise (38 %), healthy living (23%), healthy eating (15%), and improved blood glucose monitoring (24%).

Provider satisfaction with the GAS was mixed. At week four, one provider responded to evaluation questions, and at the conclusion, a different provider returned to the same set of questions. At week four, provider number one was moderately satisfied with the GAS method but reported the primary barrier as the patient's level of readiness for change. After the project, provider number two reported limited satisfaction with the GAS method. The primary obstacle was the time commitment to develop collaborative goals using the GAS method. The primary benefit of the tool was patient involvement.

Discussion

Summary

The GAS method is an effective way to develop patient-centered goals for creating behavioral change (Newton, 2013). Behavior change is difficult for both health care providers and patients. The providers report that the GAS method does help organize the conversation about self-care for diabetes. However, the patient needs to be ready for change. The cycle of change is useful in explaining the dynamic and ongoing process of change and helps explain why change takes time. The Cycle of Change (Prochaska & DiClemente,1983) describes the six stages of change as a spiral beginning with pre-contemplation and cycling through contemplation, preparation, action, maintenance, and relapse. The data for this project models the stages of change.

Interpretation

The clinic staff established a goal of 50% of patient encounters would result in collaborative goal developed. However, the providers were not consistently developing goals with the patients before this project; therefore, developing any collaborative purpose during the time frame is a success for the provider and patient. One provider was actively engaged in

developing GAS goals with patients; the other providers were not able to incorporate the new method into their practice due to time constraints and individual barriers. The one provider developed 100 % of the GAS goals and reviewed 80% of the existing goals. If all providers produced patient goals equally, the benchmark would have exceeded the target.

The primary population for the practice improvement project was the providers, and the cycle of change helps explain the pattern in the data and the ability to change practice. The pre-implementation meetings and IRB process overlay the pre-contemplation, contemplation, and the beginning of the preparation stages of the project. The first two weeks of data collection overlaps at the preparation stage because the initial plan for identifying appropriate patients and how to collect data was not comfortable or functional. The third and fourth week reached the goals of 50% and coincided with the action stage of the cycle. The fifth week relapsed to the baseline and week six, seven, and eight returned to the action phase.

Limitation

The participating providers had competing demands for their time. In the initial two weeks of the project, there was an overlap of the initiations of a new clinic protocol for referring patients and the goal-setting project. This overlap distracted the providers from developing goals with patients. The purpose of fifty percent was too ambitious for several reasons. First, the team members had different levels of investment in improving goal setting. The most active participant assumed a higher level of responsibility for goals setting and review. The third provider may have participated in the evaluation of goals but did not document in the electronic health record.

The level of provider engagement in goal setting varied as did patient motivation to change. One provider reported a high proportion of the patients are in the pre-contemplation stage of change, and with time and gentle guidance, a patient moves into the action phase.

Conclusion

The GAS method is a reliable and useful tool for the development of self-care goals in diabetes when the patients are ready to act in self-care.   Providers need to feel they have the time and administrative support to create patient-focused goals. Moreover, the level of achievement for goal setting was dependent on the level of motivation of patients with diabetes. Patients need time to move past contemplation to get to the action. The GAS method was effective at maintaining or improving patient self-care activities, but developing goals using the tool was limited. Change is an ongoing process, and managing change is a complex, dynamic, and challenging process in health care. The best outcome is for providers to retain the patient's best interest at the center of the process, and that can be achieved using the GAS method for goal development.

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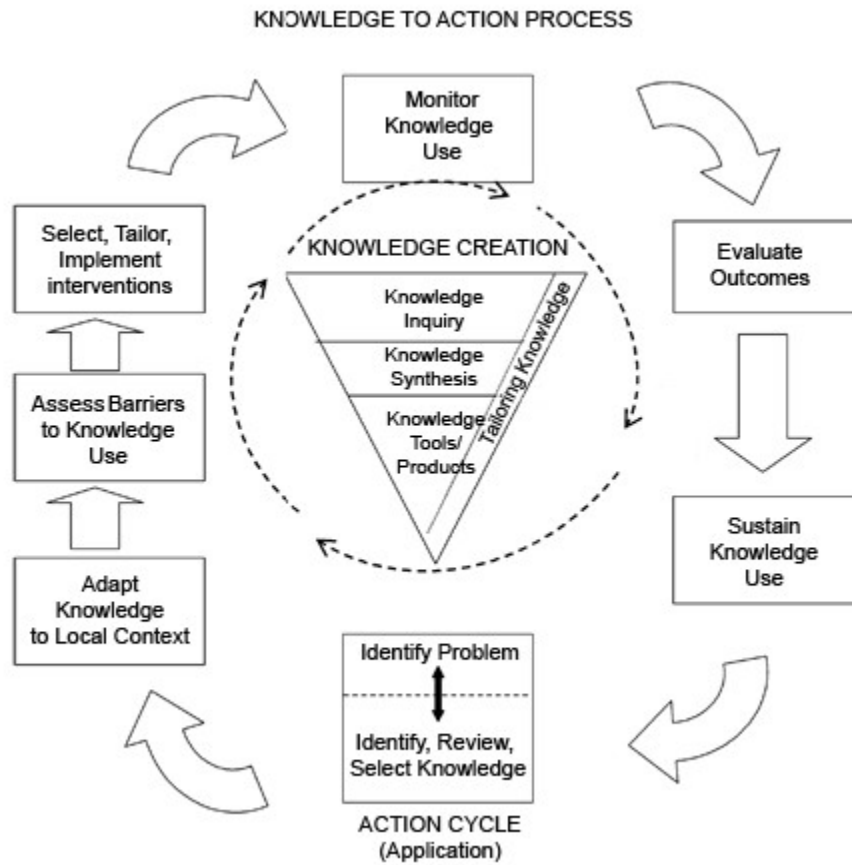
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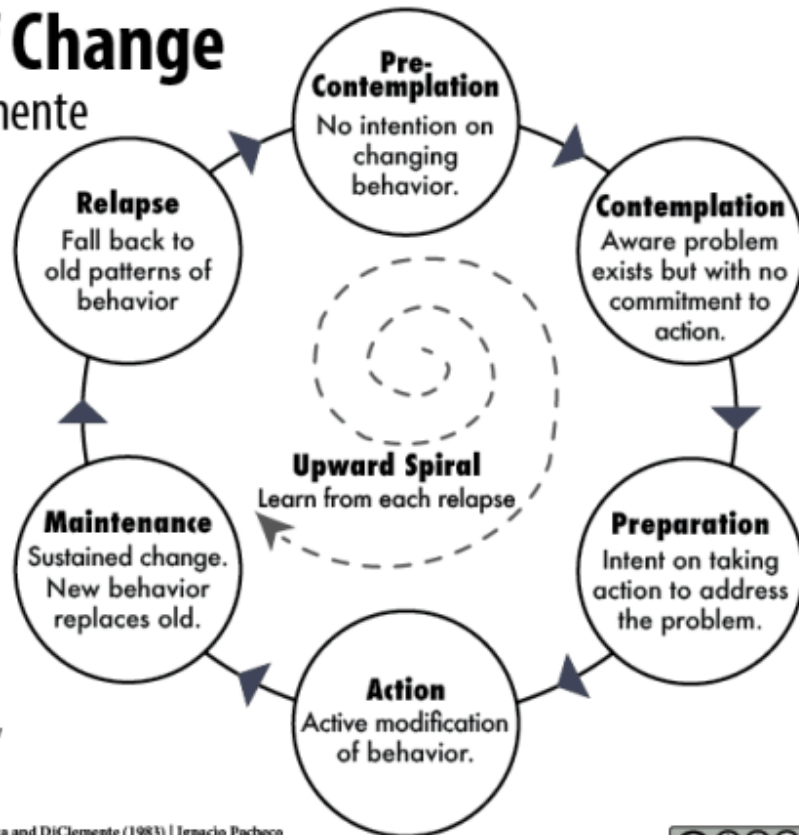
Appendix A

KNOWLEDGE TO ACTION PROCESS

Graham, I. et al. (2006). Lost in knowledge translation: time for a road map. journal of continuing education health professions, 26(1):13-24.

Appendix B

The Cycle of Change
Prochaska & DiClemente

- **Precontemplation:** A logical starting point for the model, where there is no intention of changing behavior; the person may be unaware that a problem exists
- **Contemplation:** The person becomes aware that there is a problem, but has made no commitment to change
- **Preparation:** The person is intent on taking action to correct the problem; usually requires buy-in from the client (i.e. the client is convinced that the change is good) and increased self-efficacy (i.e. the client believes s/he can make change)
- **Action:** The person is in active modification of behavior
- **Maintenance:** Sustained change occurs and new behavior(s) replaces old ones. Per this model, this stage is also transitional
- **Relapse:** The person falls back into old patterns of behavior
- **Upward Spiral:** Each time a person goes through the cycle, they learn from each relapse and (hopefully) grow stronger so that relapse is shorter or less devastating.

Pre-Contemplation
No intention on changing behavior.

Relapse
Fall back to old patterns of behavior

Contemplation
Aware problem exists but with no commitment to action.

Upward Spiral
Learn from each relapse

Preparation
Intent on taking action to address the problem.

Maintenance
Sustained change. New behavior replaces old.

Action
Active modification of behavior.

Appendix C

Identifying a behavioral change to improve diabetes self-management

1) Which of the following diabetes self-care activities do you feel is **the most important to you.** List from highest priority = 1 and the lowest = 5.

	Routine Blood glucose monitoring
	Healthy diet
	Regular exercise
	Taking medication as prescribed
	Stress management

2) Rate the level of **control you feel** you have on the following activities of managing your diabetes on a scale of 1 (Least) to 5 (best)

Activities of diabetes self-management	Least	Poor	Neutral	Good	Best
Routine Blood glucose monitoring	1	2	3	4	5
Healthy diet	1	2	3	4	5
Regular exercise	1	2	3	4	5
Taking medication as prescribed	1	2	3	4	5
Stress management	1	2	3	4	5

3) I feel pressure from my **family/friends** to change the following activities of managing your diabetes on a scale of 1 (Least) to 5 (most)

Activities of diabetes self-management	Least	little	Neutral	Somewhat	Most
Routine Blood glucose monitoring	1	2	3	4	5
Healthy diet	1	2	3	4	5
Regular exercise	1	2	3	4	5
Taking medication as prescribed	1	2	3	4	5
Stress management	1	2	3	4	5

4) Rate the amount of motivation **you** feel to change the following activities of managing your diabetes on a scale of 1 (Least) to 5 (best)

Activities of diabetes self-management	Least	Poor	Neutral	Good	Most
Routine Blood glucose monitoring	1	2	3	4	5
Healthy diet	1	2	3	4	5
Regular exercise	1	2	3	4	5
Taking medication as prescribed	1	2	3	4	5
Stress management	1	2	3	4	5

Developing your personal goal is a balance between your motivation and the level of control you feel you have over the activities. Look at your answers for 1 & 4 and choose one area to focus on at this time:

Goal Area: _____

Time line: _____

+2 Much better than expected	
+1 Somewhat better than expected	
0 Expected level of attainment	
-1 Somewhat less than expected	
-2 much less than expected	

Table 2 Sample goal statements and GAS

Goal attainment level	Score	Goal areas			
		Goal 1	Goal 2	Goal 3	Goal 4
		Oral health	Stress reduction	Physical activity	Healthy diet
		I will brush my teeth and gums three times a day for myself.	I will find some time and energy for recreational activities once per week.	I will establish a regular, routine fitness program three times per week.	I will increase intake of fruits and vegetables by one serving per day.
Much better than expected	+2	I brushed my teeth and gums more than four times a day for myself.	I reserved some time and energy for recreational activities several times each week.	I exercised more than four to five times per week.	I increased intake of fruits and vegetables to more than two servings per day.
Somewhat better than expected	+1	I brushed my teeth and gums four times a day for myself.	I reserved some time and energy for recreational activities more than once per week.	I exercised four to five times per week.	I increased intake of fruits and vegetables by two servings per day.
The expected level of attainment	0	I brushed my teeth and gums three times a day for myself.	I reserved some time and energy for recreational activities once per week.	I established a regular, routine fitness program three times per week.	I increased intake of fruits and vegetables by one serving per day.
Somewhat less than expected	−1	Brushing less than three times a day for myself.	No change in time and energy resources related to recreation.	Exercise less than three times per week.	No change in fruit and vegetable intake.
Much less than expected	−2	Brushing less than two times a day for myself.	Less time and energy resources reserved for recreation each week.	Very little or no exercise.	Decreased fruit and vegetable intake.

Abbreviation: GAS, Goal Attainment Scaling.

Appendix D
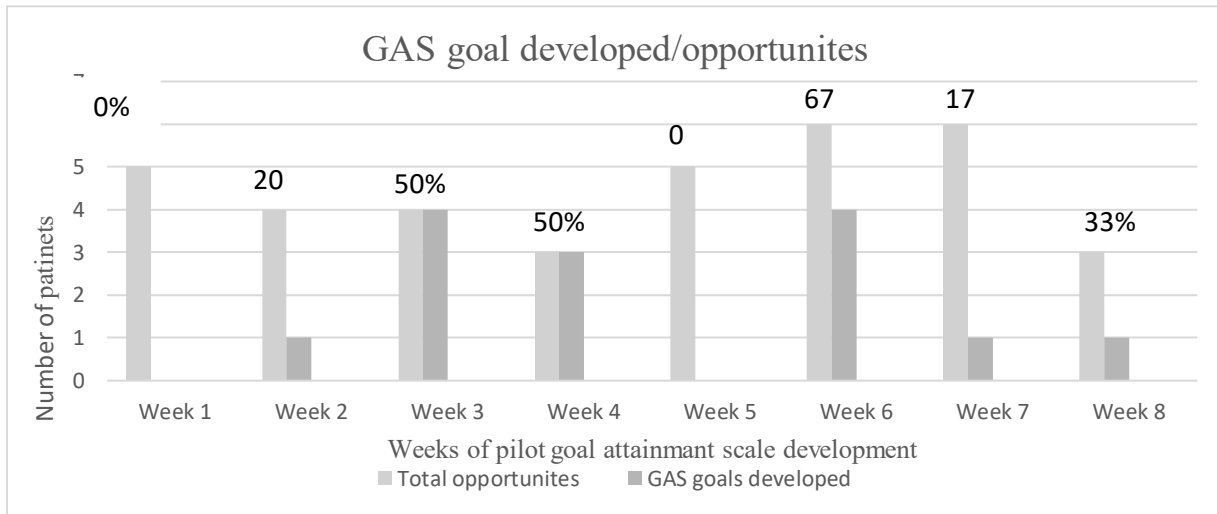
GAS goal developed/opportunites

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Total opportunities for new GAS development	5	5	8	5	5	6	7	4
Gas goals developed	0	1	4	3	0	4	1	1
Percentage of goals developed	0%	20%	50%	50%	0%	67%	17%	33%

Goals reviewed

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Total opportunities for new GAS development	5	5	8	5	5	6	7	4
Gas goals developed	0	1	4	3	0	4	1	1
Percentage of goals developed	0%	20%	50%	50%	0%	57%	14%	20%