Self Regulation in Diabetic Amputees

A Research Proposal

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"PREVENTION IS BETTER THAN CURE"

INTRODUCTION: The Problem

Diabetic Amputees (DAs)

In1500 BC Egyptians described diabetes as "too great emptying of the urine" and Indians described it as "Madhumeha = Honey urine"

- Diabetic conditions account for 50% or more of non-traumatic amputations.
- Foot problems: Ulceration and amputation account for more hospital admissions.
- Lower limb amputations, LEA - burden on health care resources.
- Up to 78% can be prevented with early identification and effective management.
- 9 - 13% of DAs will have further ipsilateral/contralateral amputation within 1 year.
- 30 - 50% of DAs will have a contralateral LEA between 1 and 3 years after the first.
- 2012: 34% required a second more extensive amputation within 16 weeks of the initial amputation.

INNOVATION

- New methodology required to improve outcomes, control, and health-related quality of life for DAs.
- Personalized approach to medicine.
- Innovative approach:-Incorporate effective diabetic and foot care management strategies
  -Recognize and address the unique challenges
- DAs must have: -Interest in their medical condition
  -Adequate understanding of the illness
  -Desire to control the disease
- These facets of disease management will be effectively addressed through a self-regulation intervention.

INNOVATION

- Many strategies work initially, but the effects wane over time.
- Self-regulation can extend the benefits of a program for much longer than traditional education.
- Able to incorporate the challenges and desires of minority populations, which are not typically addressed in other models.
- Our Goal: To apply the concepts of self-regulation to diabetic and foot care management in DAs, in order to produce beneficial and sustained outcomes.

  To incorporate key elements of the American Diabetic Association guidelines (standard diabetic self-management education, general self-foot care, diabetic action plan).

GOALS

Specific Aim:

Implement and evaluate an innovative self-regulation intervention for DAs.

Sub-Aims:

- Assess the effects of the intervention on amputee health care utilization (emergency department visits, hospitalizations, and urgent care visits).
- Assess the effects of the intervention on quality of life.
- Evaluate the effects on outcomes, including blood sugar control, cost effectiveness, foot care self-efficacy.

DESIGN

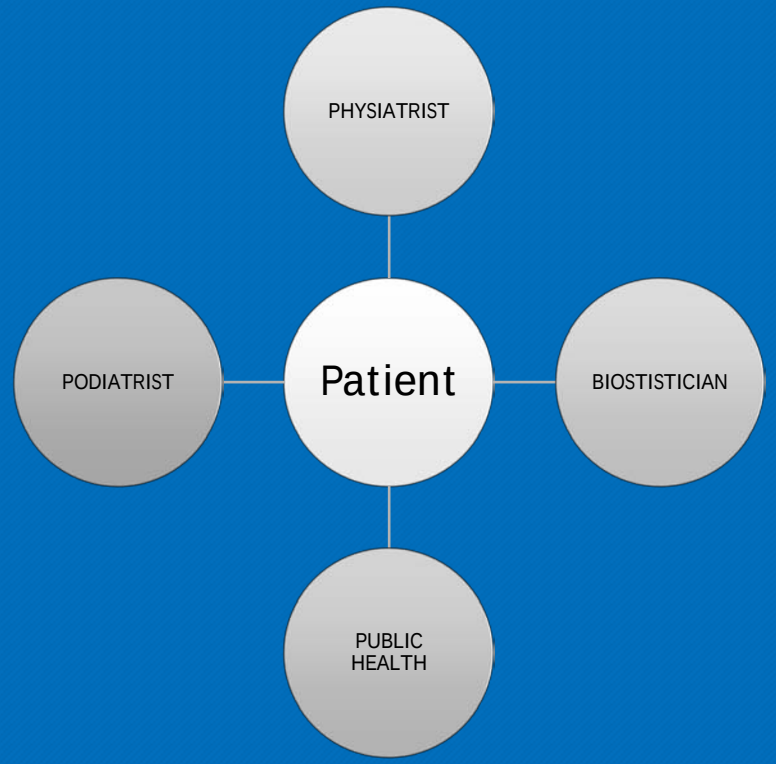
Design: Randomized Controlled Trial
Subjects: 30-50 DAs divided into 2 Groups, Study Group & Control Group

APPROACH

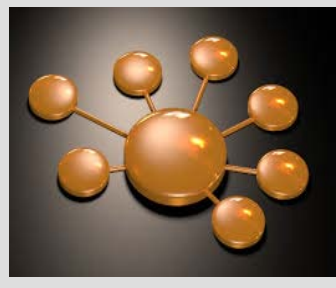
Goal: Implement and evaluate diabetic and foot care self- management intervention tailored to the challenges DAs face, based on a behavioral theory.

Our multidisciplinary team

- Physiatrist physician-scientist specialists
- Podiatrists
- Public health experts
- Biostatisticians



FRAMEWORK



- The intervention: Social cognitive theory, particularly the principles of self-regulation.
- Participants will be introduced step-by-step to a self-regulatory problem-solving process.

  Designed to increase DA's self-efficacy in diabetic and foot care management.

  Lack of self-efficacy is a major factor associated with severe diabetic complications.

- Self-regulatory steps, complimentary to the therapeutic plan and clinical recommendations.
- Participants will be guided through a period of self-observation using
  - Blood sugar testing and recording
  - Symptom diary
  - Checklist of physical activity
  - Environmental factors
  - Foot care and skin observation
  - Other potential causes

DAs will come to see the barriers to achieving desired management practices and outcomes

SOCIAL COGNITIVE THEORY (SCT)

- A useful framework for design of physical activity interventions.
- It proposes that personal, environmental, and behavioral factors operate as reciprocal, interacting determinants of each other.
- Cognitive processes presumably influence an individual's ability to control physical activity and its determinants (personal, environmental, and behavioral factors).
- Personal factors: demographic variables & psychosocial variables such as self-efficacy, outcome expectations, and self-regulation.
- Environmental factors key to adherence to physical activity involve social support

INCLUSION CRITERIA

- Consent to participate in the study
- Diabetic
- 18 years or older
- Status post acute minor or major amputation
- Cognitively intact
- Intent to self regulate
- Ability to converse over telephone (DA or relative)
- Ability to keep follow up appointments

EXCLUSION CRITERIA

- Below 18 yrs. of age
- Pregnancy
- Chronic Amputation
- Severely ill DAs which impairs ability to participate
- Cognitive impairment to include severe dementia/end stage of Alzheimer’s disease

PROPOSED RESULTS

In our PILOT study we anticipate to see:

- Improvement in the quality of life
- Reduced complication rates of diabetic amputees
- Reduced subsequent amputations
- Reduced ER, Hospital, Urgent care visits
- Reduced Health care management costs

RELATED RESEARCH

- Educating patients at risk for diabetic foot ulceration have been shown to be beneficial assessed the effectiveness of diabetic foot education by randomizing 103 patients (203 limbs) to receiving an hour foot care education and 100 patients (193 limbs) to receiving an hour of general diabetes mellitus education for 24 months total. (**Malone et al 1989; Litzelman et al 1993; Singh et al 2005: Malone et al (1989)**
- Comprehensive treatment of diabetes and prevention of its complications (Ronnemaa et al 1997; Plank et al 2003).
- concomitant management of a primary care physician with appropriate referrals to an endocrinologist, ophthalmologist, nephrologists, vascular surgeon, podiatrist, physical therapist, nutritionist, and a diabetic educator to help ensure adequate care (Dang and Boulton 2003; Schaper et al 2003; Singh et al 2005; Van Damme and Limet 2005).
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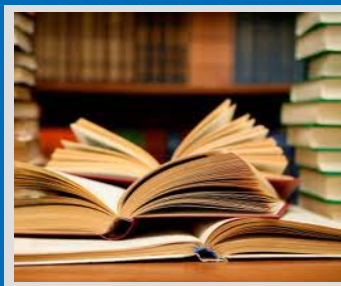

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My Mentor, Dr. Sara Salles for making me believe

"ITS NOT HOW HARD YOU FALL, ITS HOW HIGH YOU BOUNCE BACK"

THANKYOU

Dr. Joe Springer: For smiling and silently correcting my mistakes

Dr. Robert Nickerson: For challenging me

SPECIAL THANKS TO: Dr. Rajvardhan Bandaru (Observer)