
Diabetes Behavioral Research: Exploring Current Knowledge and Future Directions

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Purpose of the Presentation

- Overall message from the behavioral research literature related to diabetes and prediabetes
- Behavioral research related to the proposed national objectives
- From diabetes behavioral research findings to actual behavior
- Where do we go from here?
- Proposing a first step



A Definition of Behavioral Research

Research into what motivates people to act as they do.

The results of such research can be used to help convince people to adopt healthy lifestyles and to follow life-saving screening and treatment guidelines.

Source: The American Cancer Society; www.cancer.org/docroot



Overall message from the Diabetes Behavioral Research Literature

- **Behavioral and lifestyle modifications can prevent or delay the complications of diabetes among persons with diabetes and among persons at risk for diabetes**
- **In the Division of Diabetes Translation (DDT), this information guides our National Objectives**



The Proposed National Objectives for the National Diabetes Program

- **Reduce rates of current smoking among persons with diabetes**
- **Increase rates of recommended physical activity among persons with diabetes**
- **Increase rates of 2 or more A1C tests per year among persons with diabetes**



Diabetes Behavioral Research Literature Related to the Proposed National Objectives



Smoking and Diabetes

“Tobacco... is of particular danger to people with diabetes. All late complications of diabetes, such as cardiovascular disease, foot problems, kidney and eye diseases are worsened by smoking.”

Source: International Diabetes Federation Position Statement, July 2003



Smoking and the Risk for Diabetes

- **A team of CDC researchers analyzed various data sets to determine whether a greater frequency of cigarette smoking accelerated the development of diabetes; and**
- **Whether quitting reversed the effect**
- **Key finding: Dose-response relationship seems likely between smoking and incidence of diabetes; quitters may derive substantial benefit from doing so.**

Source: Will et al, International J of Epidemiology 2001; 30:540-546



Physical Activity and Diabetes

The benefits of exercise in patients with diabetes are many:

- Reduced heart disease
- Improved muscle sensitivity to insulin
- Better blood sugar control
- Better blood pressure control
- Potential weight loss
- Improved general sense of well being

Source: MedicineNet.com, RMATHUR, WSHIEL, Jr: Exercise Therapy in Type 2 Diabetes, Part 1



Physical Activity and the Risk for Diabetes

Adherence to recommendations to participate in physical activities of moderate intensity such as brisk walking can substantially reduce the risk for type 2 diabetes.

Source: Jeon et al, Diabetes Care, Vol. 30, No 3, March 2007



A1c (Glycosylated Hemoglobin) and Diabetes

- **A1c is an indicator of glycemic control over the preceding 2-3 months**
- **Assesses treatment efficacy**
- **The DCCT and the UKPDS have shown that improved glycemic control is associated with fewer long-term microvascular and neuropathic complications of diabetes**

**Source: ADA Summary of 2007 Clinical Practice Recommendations,
Diabetes Care 2007 30: S3**



A1c and the Risk for Diabetes

- **In meta-analysis of 12 aerobic training studies and two resistance training studies, 504 subjects**
- **Key finding: Post intervention A1c was significantly lower in exercise than control groups; meta- regression confirmed that the effect was independent of any effect on body weight.**

Source: ADA Recommendations, 2007



A Vast Body of Evidence and Multitude of Resources Exist

- **Yet, type 2 diabetes, obesity, and accompanying comorbidities continue to increase**
- **A valid question is: How can we effectively influence our target populations to not only adopt but actually adhere to healthy lifestyle changes?**
- **Public health practitioners and researchers need to be active players in efforts to answer this and other questions**



Behavioral Research in the DDT

- Behavioral research as an explicit policy or agenda is currently not part of the DDT
- CDC researchers provide technical assistance
 - Behavioral and Social Sciences Work Group (BSSWG)
- DDT/ABRESE staff are involved in behavioral research
 - Behavioral Risk Factors Surveillance Survey Diabetes Module
- Grantees Diabetes Control and Prevention Programs (DPCPs)



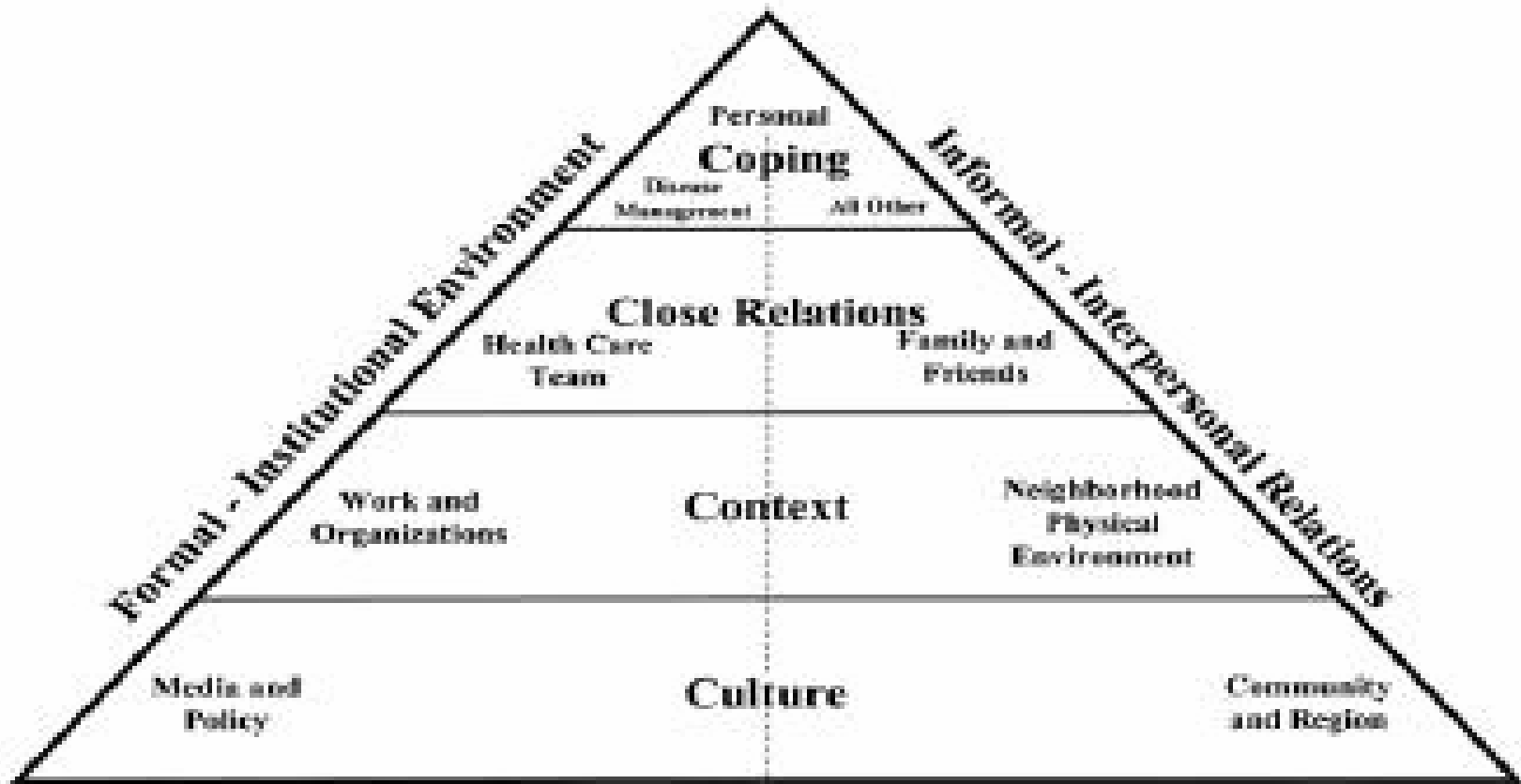
Where do We Go from Here?

- **Currently beginning to think about the possibility of expanding our involvement in diabetes behavioral research**
 - **Suggesting an area of interest in diabetes behavioral research to explore from a public health perspective**
 - **Exploring the applicability of existing models from experts in the field of diabetes behavioral research to public health**
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Looking at the Pyramid to Understand Adherence

- **Russell Glasgow and Colleagues have made many important contributions to the area of diabetes behavioral research, including adherence**
- **Use pyramid to represent the interconnectedness of the many forces at play in people's lives that hinder or enhance opportunities to adopt recommended behaviors such as self-management**
- **They offer a thorough guide for diabetes behavioral research in adherence**





Why Adherence as a Potential Starting Point?

In summary,

- From behavioral literature reviewed and growing numbers in diabetes type 2 and obesity, there is a need to understand factors related to adherence
- Adherence is a behavior that encompasses the large spectrum of personal and environmental aspects, as per Glasgow et al, above
- There's plenty information published to guide and inform initial efforts



Questions, Suggestions and Input



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