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1. PREVIEW study-influence of a behavior modification intervention (PREMIT) in over 2300 people with pre-diabetes: intention, self-efficacy and outcome expectancies during the early phase of a lifestyle intervention.

Authors Huttunen-Lenz, Maija; Hansen, Sylvia; Christensen, Pia; Meinert Larsen, Thomas; Sandø-Pedersen, Finn; Drummen, Mathijs; Adam, Tanja C; Macdonald, Ian A; Taylor, Moira A; Martinez, J Alfredo; Navas-Carretero, Santiago; Handjiev, Svetoslav; Poppitt, Sally D; Silvestre, Marta P; Fogelholm, Mikael; Pietiläinen, Kirsi H; Brand-Miller, Jennie; Berendsen, Agnes Am; Raben, Anne; Schlicht, Wolfgang
Source Psychology research and behavior management; 2018; vol. 11 ; p. 383-394
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Abstract PurposeOnset of type 2 diabetes (T2D) is often gradual and preceded by impaired glucose homeostasis. Lifestyle interventions including weight loss and physical activity may reduce the risk of developing T2D, but adherence to a lifestyle change is challenging. As part of an international T2D prevention trial (PREVIEW), a behavior change intervention supported participants in achieving a healthier diet and physically active lifestyle. Here, our aim was to explore the influence of this behavioral program (PREMIT) on social-cognitive variables during an 8-week weight loss phase.MethodsPREVIEW consisted of an initial weight loss, Phase I, followed by a weight- maintenance, Phase II, for those achieving the 8-week weight loss target of ≥ 8% from initial bodyweight. Overweight and obese (BMI ≥25 kg/m2) individuals aged 25 to 70 years with confirmed pre-diabetes were enrolled. Uni- and multivariate statistical methods were deployed to explore differences in intentions, self-efficacy, and outcome expectancies between those who achieved the target weight loss ("achievers") and those who did not ("non-achievers").ResultsAt the beginning of Phase I, no significant differences in intentions, self-efficacy and outcome expectancies between "achievers" (1,857) and "non-achievers" (163) were found. "Non-achievers" tended to be younger, live with child/ren, and attended the PREMIT sessions less frequently. At the end of Phase I, "achievers" reported higher intentions (healthy eating $\chi 2(1)=2.57$; P <0.008, exercising $\chi 2(1)=0.66$; P <0.008), self-efficacy ($F(2; 1970)=10.27$, P <0.005), and were more positive about the expected outcomes ($F(4; 1968)=11.22$, P <0.005).ConclusionAlthough statistically significant, effect sizes observed between the two groups were small. Behavior change, however, is multi-determined. Over a period of time, even small differences may make a cumulative effect. Being successful in behavior change requires that the "new" behavior is implemented time after time until it becomes a habit. Therefore, having even slightly higher self-efficacy, positive outcome expectancies and intentions may over time result in considerably improved chances to achieve long-term lifestyle changes.

2. PREVIEW Behavior Modification Intervention Toolbox (PREMIT): A Study Protocol for a Psychological Element of a Multicenter Project.

Authors Kahlert, Daniela; Unyi-Reicherz, Annelie; Stratton, Gareth; Meinert Larsen, Thomas; Fogelholm, Mikael; Raben, Anne; Schlicht, Wolfgang
Source Frontiers in psychology; 2016; vol. 7 ; p. 1136
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PubMedID 27559319
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Available at Frontiers in psychology from Unpaywall

Abstract BACKGROUNDLosing excess body weight and preventing weight regain by changing lifestyle is a challenging but promising task to prevent the incidence of type-2 diabetes. To be successful, it is necessary to use evidence-based and theory-driven interventions, which also contribute to the science of behavior modification by providing a deeper understanding of successful intervention components.OBJECTIVETo develop a physical activity and dietary behavior modification intervention toolbox (PREMIT) that fulfills current requirements of being theory-driven and evidence-based, comprehensively described and feasible to evaluate. PREMIT is part of an intervention trial, which aims to prevent the onset of type-2 diabetes in pre-diabetics in eight clinical centers across the world by guiding them in changing their physical activity and dietary behavior through a group counseling approach.METHODSThe program development took five progressive steps, in line with the Public Health Action Cycle: (1) Summing-up the intervention goal(s), target group and the setting, (2) uncovering the generative psychological mechanisms, (3) identifying behavior change techniques and tools, (4) preparing for evaluation and (5) implementing the intervention and assuring quality.RESULTSPREMIT is based on a trans-theoretical approach referring to valid behavior modification theories, models and approaches. A major "product" of PREMIT is a matrix, constructed for use by onsite-instructors. The matrix includes objectives, tasks and activities ordered by periods. PREMIT is constructed to help instructors guide participants' behavior change. To ensure high fidelity and adherence of program-implementation across the eight intervention centers standardized operational procedures were defined and "train-the-trainer" workshops were held. In summary PREMIT is a theory-driven, evidence-based program carefully developed to change physical activity and dietary behaviors in pre-diabetic people.

3. State of the evidence regarding behavior change theories and strategies in nutrition counseling to facilitate health and food behavior change.

Authors Spahn, Joanne M; Reeves, Rebecca S; Keim, Kathryn S; Laquatra, Ida; Kellogg, Molly; Jortberg, Bonnie; Clark, Nicole A
Source Journal of the American Dietetic Association; Jun 2010; vol. 110 (no. 6); p. 879-891
Publication Date Jun 2010
Publication Type(s) Journal Article Review Systematic Review
PubMedID 20497777
Database Medline
Available at Journal of the American Dietetic Association from ScienceDirect

Abstract Behavior change theories and models, validated within the field of dietetics, offer systematic explanations for nutrition-related behavior change. They are integral to the nutrition care process, guiding nutrition assessment, intervention, and outcome evaluation. The American Dietetic Association Evidence Analysis Library Nutrition Counseling Workgroup conducted a systematic review of peer-reviewed literature related to behavior change theories and strategies used in nutrition counseling. Two hundred fourteen articles were reviewed between July 2007 and March 2008, and 87 studies met the inclusion criteria. The workgroup systematically evaluated these articles and formulated conclusion statements and grades based upon the available evidence. Strong evidence exists to support the use of a combination of behavioral theory and cognitive behavioral theory, the foundation for cognitive behavioral therapy (CBT), in facilitating modification of targeted dietary habits, weight, and cardiovascular and diabetes risk factors. Evidence is particularly strong in patients with type 2 diabetes receiving intensive, intermediate-duration (6 to 12 months) CBT, and long-term (>12 months duration) CBT targeting prevention or delay in onset of type 2 diabetes and hypertension. Few studies have assessed the application of the transtheoretical model on nutrition-related behavior change. Little research was available documenting the effectiveness of nutrition counseling utilizing social cognitive theory. Motivational interviewing was shown to be a highly effective counseling strategy, particularly when combined with CBT. Strong evidence substantiates the effectiveness of self-monitoring and meal replacements and/or structured meal plans. Compelling evidence exists to demonstrate that financial reward strategies are not effective. Goal setting, problem solving, and social support are effective strategies, but additional research is needed in more diverse populations. Routine documentation and evaluation of the effectiveness of behavior change theories and models applied to nutrition care interventions are recommended.

4. Processes of behavior change and weight loss in a theory-based weight loss intervention program: a test of the process model for lifestyle behavior change.

Authors Gillison, Fiona; Stathi, Afroditi; Reddy, Prasuna; Perry, Rachel; Taylor, Gordon; Bennett, Paul; Dunbar, James; Greaves, Colin
Source The international journal of behavioral nutrition and physical activity; Jan 2015; vol. 12 ; p. 2
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PubMedID 25592314
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Available at The international journal of behavioral nutrition and physical activity from BioMed Central
Available at The international journal of behavioral nutrition and physical activity from Europe PubMed Central - Open Access

Available at The international journal of behavioral nutrition and physical activity from SpringerLink
Available at The international journal of behavioral nutrition and physical activity from ProQuest (MEDLINE with Full Text) - NHS Version
Available at The international journal of behavioral nutrition and physical activity from ProQuest (Health Research Premium) - NHS Version
Available at The international journal of behavioral nutrition and physical activity from Unpaywall

Abstract BACKGROUNDProcess evaluation is important for improving theories of behavior change and behavioral intervention methods. The present study reports on the process outcomes of a pilot test of the theoretical model (the Process Model for Lifestyle Behavior Change; PMLBC) underpinning an evidence-informed, theory-driven, group-based intervention designed to promote healthy eating and physical activity for people with high cardiovascular risk.METHODS108 people at high risk of diabetes or heart disease were randomized to a group-based weight management intervention targeting diet and physical activity plus usual care, or to usual care. The intervention comprised nine group based sessions designed to promote motivation, social support, self-regulation and understanding of the behavior change process. Weight loss, diet, physical activity and theoretically defined mediators of change were measured pre-intervention, and after four and 12 months.RESULTSThe intervention resulted in significant improvements in fiber intake (M between-group difference = 5.7 g/day, p < .001) but not fat consumption (-2.3 g/day, p = 0.13), that were predictive of weight loss at both four months (M between-group difference = -1.98 kg, p < .01; R(2) = 0.2, p < 0.005), and 12 months (M difference = -1.85 kg, p = 0.1; R(2) = 0.1, p < 0.01). The intervention was successful in improving the majority of specified mediators of behavior change, and the predicted mechanisms of change specified in the PMBLC were largely supported. Improvements in self-efficacy and understanding of the behavior change process were associated with engagement in coping planning and self-monitoring activities, and successful dietary change at four and 12 months. While participants reported improvements in motivational and social support variables, there was no effect of these, or of the intervention overall, on physical activity.CONCLUSIONSThe data broadly support the theoretical model for supporting some dietary changes, but not for physical activity. Systematic intervention design allowed us to identify where improvements to the intervention may be implemented to promote change in all proposed mediators. More work is needed to explore effective mechanisms within interventions to promote physical activity behavior.

5. Lifestyle change in Kerala, India: needs assessment and planning for a community-based diabetes prevention trial.

Authors Daivadanam, Meena; Absetz, Pilvikki; Sathish, Thirunavukkarasu; Thankappan, K R; Fisher, Edwin B; Philip, Neena Elezebeth; Mathews, Elezebeth; Oldenburg, Brian
Source BMC public health; Feb 2013; vol. 13 ; p. 95
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Available at BMC public health from SpringerLink
Available at BMC public health from ProQuest (Health Research Premium) - NHS Version
Available at BMC public health from Unpaywall

Abstract BACKGROUNDType 2 Diabetes Mellitus (T2DM) has become a major public health challenge in India. Factors relevant to the development and implementation of diabetes prevention programmes in resource-constrained countries, such as India, have been under-studied. The purpose of this study is to describe the findings from research aimed at informing the development and evaluation of a Diabetes Prevention Programme in Kerala, India (K-DPP).METHODSData were collected from three main sources: (1) a systematic review of key research literature; (2) a review of relevant policy documents; and (3) focus groups conducted among individuals with a high risk of progressing to diabetes. The key findings were then triangulated and synthesised.RESULTSPrevalence of risk factors for diabetes is very high and increasing in Kerala. This situation is largely attributable to rapid changes in the lifestyle of people living in this state of India. The findings from the systematic review and focus groups identified many environmental and personal determinants of these unhealthy lifestyle changes, including: less than ideal accessibility to and availability of health services; cultural values and norms; optimistic bias and other misconceptions related to risk; and low expectations regarding one's ability to make lifestyle changes in order to influence health and disease outcomes. On the other hand, there are existing intervention trials conducted in India which suggests that risk reduction is possible. These programmes utilize multi-level strategies including mass media, as well as strategies to enhance community and individual empowerment. India's national programme for the prevention and control of major non-communicable diseases (NCD) also provide a supportive environment for further community-based efforts to prevent diabetes.CONCLUSIONThese findings provide strong support for undertaking more research into the conduct of community-based diabetes prevention in the rural areas of Kerala. We aim to develop, implement and evaluate a group-based peer support programme that will address cultural and family determinants of lifestyle risks, including family decision-making regarding adoption of healthy dietary and physical activity patterns. Furthermore, we believe that this approach will be feasible, acceptable and effective in these communities; with the potential for scale-up in other parts of India.

6. Design of a randomized trial of diabetes genetic risk testing to motivate behavior change: the Genetic Counseling/lifestyle Change (GC/LC) Study for Diabetes Prevention.

Authors Grant, Richard W; Meigs, James B; Florez, Jose C; Park, Elyse R; Green, Robert C; Waxler, Jessica L; Delahanty, Linda M; O'Brien, Kelsey E
Source Clinical trials (London, England); Oct 2011; vol. 8 (no. 5); p. 609-615
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Publication Type(s) Research Support, N.i.h., Extramural Randomized Controlled Trial Journal Article
PubMedID 22013171
Database Medline
Available at Clinical trials (London, England) from SAGE Journals (Premier Health Sciences 2019)
Available at Clinical trials (London, England) from ProQuest (Health Research Premium) - NHS Version
Available at Clinical trials (London, England) from ProQuest (MEDLINE with Full Text) - NHS Version

Abstract BACKGROUNDThe efficacy of diabetes genetic risk testing to motivate behavior change for diabetes prevention is currently unknown.PURPOSEThis paper presents key issues in the design and implementation of one of the first randomized trials (The Genetic Counseling/Lifestyle Change (GC/LC) Study for Diabetes Prevention) to test whether knowledge of diabetes genetic risk can motivate patients to adopt healthier behaviors.METHODSBecause individuals may react differently to receiving 'higher' vs 'lower' genetic risk results, we designed a 3-arm parallel group study to separately test the hypotheses that: (1) patients receiving 'higher' diabetes genetic risk results will increase healthy behaviors compared to untested controls, and (2) patients receiving 'lower' diabetes genetic risk results will decrease healthy behaviors compared to untested controls. In this paper we describe several challenges to implementing this study, including: (1) the application of a novel diabetes risk score derived from genetic epidemiology studies to a clinical population, (2) the use of the principle of Mendelian randomization to efficiently exclude 'average' diabetes genetic risk patients from the intervention, and (3) the development of a diabetes genetic risk counseling intervention that maintained the ethical need to motivate behavior change in both 'higher' and 'lower' diabetes genetic risk result recipients.RESULTSDiabetes genetic risk scores were developed by aggregating the results of 36 diabetes-associated single nucleotide polymorphisms. Relative risk for type 2 diabetes was calculated using Framingham Offspring Study outcomes, grouped by quartiles into 'higher', 'average' (middle two quartiles) and 'lower' genetic risk. From these relative risks, revised absolute risks were estimated using the overall absolute risk for the study group. For study efficiency, we excluded all patients receiving 'average' diabetes risk results from the subsequent intervention. This post-randomization allocation strategy was justified because genotype represents a random allocation of parental alleles ('Mendelian randomization'). Finally, because it would be unethical to discourage participants to participate in diabetes prevention behaviors, we designed our two diabetes genetic risk counseling interventions (for 'higher' and 'lower' result recipients) so that both groups would be motivated despite receiving opposing results.LIMITATIONSFor this initial assessment of the clinical implementation of genetic risk testing we assessed intermediate outcomes of attendance at a 12-week diabetes prevention course and changes in self-reported motivation. If effective, longer term studies with larger sample sizes will be needed to assess whether knowledge of diabetes genetic risk can help patients prevent diabetes.CONCLUSIONSWe designed a randomized clinical trial designed to explore the motivational impact of disclosing both higher than average and lower than average genetic risk for type 2 diabetes. This design allowed exploration of both increased risk and false reassurance, and has implications for future studies in translational genomics.

7. Diabetes Prevention in Adolescents: Co-design Study Using Human-Centered Design Methodologies.

Authors Pike, Julie M; Moore, Courtney M; Yazel, Lisa G; Lynch, Dustin O; Haberlin-Pittz, Kathryn M; Wiehe, Sarah E; Hannon, Tamara S
Source Journal of participatory medicine; Feb 2021; vol. 13 (no. 1); p. e18245
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Abstract BACKGROUNDThe rise in pediatric obesity and its accompanying condition, type 2 diabetes (T2D), is a serious public health concern. T2D in adolescents is associated with poor health outcomes and decreased life expectancy. Effective diabetes prevention strategies for high-risk adolescents and their families are urgently needed.OBJECTIVEThe aim of this study was to co-design a diabetes prevention program for adolescents by using human-centered design methodologies.METHODSWe partnered with at-risk adolescents, parents, and professionals with expertise in diabetes prevention or those working with adolescents to conduct a series of human-centered design research sessions to co-design a diabetes prevention intervention for youth and their families. In order to do so, we needed to (1) better understand environmental factors that inhibit/promote recommended lifestyle changes to decrease T2D risk, (2) elucidate desired program characteristics, and (3) explore improved activation in diabetes prevention programs.RESULTSFinancial resources, limited access to healthy foods, safe places for physical activity, and competing priorities pose barriers to adopting lifestyle changes. Adolescents and their parents desire interactive, hands-on learning experiences that incorporate a sense of fun, play, and community in diabetes prevention programs.CONCLUSIONSThe findings of this study highlight important insights of 3 specific stakeholder groups regarding diabetes prevention and lifestyle changes. The findings of this study demonstrate that, with appropriate methods and facilitation, adolescents, parents, and professionals can be empowered to co-design diabetes prevention programs.

8. A systematic review of the behaviour change techniques and digital features in technology-driven type 2 diabetes prevention interventions.

Authors Van Rhoon, Luke; Byrne, Molly; Morrissey, Eimear; Murphy, Jane; McSharry, Jenny
Source Digital health; 2020; vol. 6 ; p. 2055207620914427
Publication Date 2020

Publication Type(s) Journal Article Review
PubMedID 32269830
Database Medline
Available at Digital health from SAGE Journals (Premier Health Sciences 2019)
Abstract ObjectivesOur aim was to conduct a systematic review to determine which technology-driven diabetes prevention interventions were effective in producing clinically significant weight loss, and to identify the behaviour change techniques and digital features frequently used in effective interventions.MethodsWe searched five databases (CINAHL, EMBASE, MEDLINE, PsychINFO, and Pubmed) from inception to September 2018 and reviewed 19 experimental and non-experimental studies of 21 technology-driven diet plus physical activity interventions for adults (≥18 years) at risk of developing type 2 diabetes. Behaviour change techniques were coded using the BCT taxonomy v1, and digital features were identified via thematic analysis of intervention descriptions.ResultsSixty-three per cent of interventions were effective in the short term (achieving ≥3% weight loss at ≤6 months), using an average of 5.6 more behaviour change techniques than non-effective interventions, and 33% were effective in the long term (achieving ≥5% weight loss at ≥12 months), using 3.7 more behaviour change techniques than non-effective interventions. The techniques of social support (unspecified), goal setting (outcome/behaviour), feedback on behaviour, and self-monitoring of outcome(s) of behaviour were identified in over 90% of effective interventions. Interventions containing digital features that facilitated health and lifestyle education, behaviour/outcome tracking, and/or online health coaching were most effective.ConclusionThe integration of specific behaviour change techniques and digital features may optimise digital diabetes prevention interventions to achieve clinically significant weight loss. Additional research is needed to identify the mechanisms in which behaviour change techniques and digital features directly influence physical activity, dietary behaviours, and intervention engagement.

9. Using the behavior change wheel to develop text messages to promote diet and physical activity adherence following a diabetes prevention program.

Authors MacPherson, Megan M; Cranston, Kaela D; Locke, Sean R; Bourne, Jessica E; Jung, Mary E
Source Translational behavioral medicine; Aug 2021; vol. 11 (no. 8); p. 1585-1595
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Database Medline
Available at Translational behavioral medicine from Europe PubMed Central - Open Access
Abstract Improving diet and physical activity (PA) can reduce the risk of developing type 2 diabetes (T2D); however, long-term diet and PA adherence is poor. To impact population-level T2D risk, scalable interventions facilitating behavior change adherence are needed. Text messaging interventions supplementing behavior change interventions can positively influence health behaviors including diet and PA. The Behavior Change Wheel (BCW) provides structure to intervention design and has been used extensively in health behavior change interventions. Describe the development process of a bank of text messages targeting dietary and PA adherence following a diabetes prevention program using the BCW. The BCW was used to select the target behavior, barriers and facilitators to engaging in the behavior, and associated behavior change techniques (BCTs). Messages were written to map onto BCTs and were subsequently coded for BCT fidelity. The target behaviors were adherence to diet and PA recommendations. A total of 16 barriers/facilitators and 28 BCTs were selected for inclusion in the messages. One hundred and twenty-four messages were written based on selected BCTs. Following the fidelity check a total of 43 unique BCTs were present in the final bank of messages. This study demonstrates the application of the BCW to guide the development of a bank of text messages for individuals with prediabetes. Results underscore the potential utility of having independent coders for an unbiased expert evaluation of what active components are in use. Future research is needed to demonstrate the feasibility and effectiveness of resulting bank of messages.

10. Evaluation and Refinement of a Bank of SMS Text Messages to Promote Behavior Change Adherence Following a Diabetes Prevention Program: Survey Study.

Authors MacPherson, Megan; Cranston, Kaela; Johnston, Cara; Locke, Sean; Jung, Mary E
Source JMIR formative research; Aug 2021; vol. 5 (no. 8); p. e28163
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Available at JMIR formative research from ProQuest (Health Research Premium) - NHS Version
Available at JMIR formative research from Unpaywall

Abstract BACKGROUNDSMS text messaging is a low-cost and far-reaching modality that can be used to augment existing diabetes prevention programs and improve long-term diet and exercise behavior change adherence. To date, little research has been published regarding the process of SMS text message content development. Understanding how interventions are developed is necessary to evaluate their evidence base and to guide the implementation of effective and scalable mobile health interventions in public health initiatives and in future research.OBJECTIVEThis study aims to describe the development and refinement of a bank of SMS text messages targeting diet and exercise behavior change to be implemented following a diabetes prevention program.METHODSA bank of 124 theory-based SMS text messages was developed using the Behaviour Change Wheel and linked to active intervention components (behavior change techniques [BCTs]). The Behaviour Change Wheel is a theory-based framework that provides structure to intervention development and can guide the use of evidence-based practices in behavior change interventions. Once the messages were written, 18 individuals who either participated in a diabetes prevention program or were a diabetes prevention coach evaluated the messages on their clarity, utility, and relevance via survey using a 5-point Likert scale. Messages were refined according to participant feedback and recoded to obtain an accurate representation of BCTs in the final bank.RESULTS76/124 (61.3%) messages were edited, 4/124 (3.2%) were added, and 8/124 (6.5%) were removed based on participant scores and feedback. Of the edited messages, 43/76 (57%) received minor word choice and grammar alterations while retaining their original BCT code; the remaining 43% (33/76, plus the 4 newly written messages) were recoded by a reviewer trained in BCT identification.CONCLUSIONSThis study outlines the process used to develop and refine a bank of SMS text messages to be implemented following a diabetes prevention program. This resulted in a bank of 120 theory-based, user-informed SMS text messages that were overall deemed clear, useful, and relevant by both individuals who will be receiving and delivering them. This formative development process can be used as a blueprint in future SMS text messaging development to ensure that message content is representative of the evidence base and is also grounded in theory and evaluated by key knowledge users.

11. Identifying Barriers and Facilitators to Diet and Physical Activity Behaviour Change in Type 2 Diabetes Using a Design Probe Methodology.

Authors Cradock, Kevin A; Quinlan, Leo R; Finucane, Francis M; Gainforth, Heather L; Martin Ginis, Kathleen A; Barros, Ana Correia de; Sanders, Elizabeth B-N; ÓLaighin, Gearóid
Source Journal of personalized medicine; Jan 2021; vol. 11 (no. 2)
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Abstract Treatment of Type 2 Diabetes (T2D) typically involves pharmacological methods and adjunct behavioural modifications, focused on changing diet and physical activity (PA) behaviours. Changing diet and physical activity behaviours is complex and any behavioural intervention in T2D, to be successful, must use an appropriate suite of behaviour change techniques (BCTs). In this study, we sought to understand the perceived barriers and facilitators to diet and PA behaviour change in persons with T2D, with a view to creating artefacts to facilitate the required behaviour changes. The Design Probe was chosen as the most appropriate design research instrument to capture the required data, as it enabled participants to reflect and self-document, over an extended period of time, on their daily lived experiences and, following this reflection, to identify their barriers and facilitators to diet and PA behaviour change. Design Probes were sent to 21 participants and 13 were fully completed. A reflective thematic analysis was carried out on the data, which identified themes of food environment, mental health, work schedule, planning, social support, cravings, economic circumstances and energy associated with diet behaviour. Similar themes were identified for PA as well as themes of physical health, weather, motivation and the physical environment.

12. Exploring non-health outcomes of health promotion: the perspective of participants in a lifestyle behaviour change intervention.

Authors Goebbels, Adrienne F G; Lakerveld, Jeroen; Ament, André J H A; Bot, Sandra D M; Severens, Johan L
Source Health policy (Amsterdam, Netherlands); Jul 2012; vol. 106 (no. 2); p. 177-186
Publication Date Jul 2012
Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Journal Article
PubMedID 22575768
Database Medline
Available at Health policy (Amsterdam, Netherlands) from ScienceDirect Available to PHE and Local Authority staff

Abstract OBJECTIVETo provide insights into health promotion outcomes that are not captured by conventional measures of health outcome used in economic evaluation studies, such as EQ5D based QALYs.METHODSTwelve semi-structured interviews and five focus group discussions were conducted with participants of a randomized controlled trial (n=52) evaluating the effectiveness of a theory-based lifestyle intervention in Dutch adults at risk for diabetes mellitus and/or cardiovascular disease. Transcripts were analysed by two independent researchers using a thematic analysis approach.RESULTSIn total we identified twelve non-health outcome themes that were important from the participant perspective. Four of these were reported as direct outcomes of the lifestyle intervention and eight were reported as consequences of lifestyle behaviour change. Our findings also suggest that lifestyle behaviour change may have spillover effects to other people in the participants' direct environment.CONCLUSIONThis study provides evidence that in the context of lifestyle behaviour change EQ5D based QALYs capture health promotion outcomes only partially. More insights are needed into non-health outcomes and spillover effects produced by health promotion in other contexts and how participants and society value these. Methods to account for these outcomes within an economic evaluation framework need to be developed and tested.

13. Lifestyle changes among people with type 2 diabetes are associated with participation in online groups and time since diagnosis.

Authors Hansen, Anne Helen; Wangberg, Silje C; Årsand, Eirik
Source BMC health services research; Jul 2021; vol. 21 (no. 1); p. 688
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Available at BMC health services research from Europe PubMed Central - Open Access
Available at BMC health services research from SpringerLink
Available at BMC health services research from ProQuest (Health Research Premium) - NHS Version
Available at BMC health services research from Unpaywall

Abstract BACKGROUNDFor people with Type 2 diabetes (T2D), lifestyle changes may be the most effective intervention. Online groups for people with diabetes holds a great potential to support such changes. However, little is known about the association between participation in online groups and lifestyle changes based on internet information in people with T2D. The aim of this study was to investigate the association between self-reported lifestyle changes and participation in online groups in people with T2D.METHODSWe used e-mail survey data from 1,250 members of The Norwegian Diabetes Association, collected in 2018. Eligible for analyses were the 540 respondents who reported to have T2D. By logistic regressions we studied the association between self-reported lifestyle changes and participation in online groups. Analyses were adjusted for gender, age, education, and time since diagnosis.RESULTSWe found that 41.9 % of the participants reported lifestyle changes based on information from the internet. Only 6 % had participated in online groups during the previous year. Among those with a disease duration of less than 10 years, 56.0 % reported lifestyle changes, whereas 33.4 % with a disease duration of 10 years or more did so. The odds for lifestyle changes were more than doubled for those who participated in online groups. People who had been diagnosed with diabetes for less than 10 years were significantly more likely to change their lifestyle compared to those with a longer disease duration.CONCLUSIONSLifestyle changes based on information from the internet among people with T2D are associated with participation in online groups. Lifestyle changes are also associated with time since diagnosis, making the first years after a T2D diagnosis particularly important for lifestyle interventions. People with T2D, web site developers, online group moderators, health care services, and patient organisations should be aware of this important window for lifestyle change, and encourage participation in online groups.

14. Evaluating mobile phone applications for health behaviour change: A systematic review.

Authors McKay, Fiona H; Cheng, Christina; Wright, Annemarie; Shill, Jane; Stephens, Hugh; Uccellini, Mary
Source Journal of telemedicine and telecare; Jan 2018; vol. 24 (no. 1); p. 22-30
Publication Date Jan 2018
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PubMedID 27760883
Database Medline
Available at Journal of telemedicine and telecare from SAGE Journals (Premier Health Sciences 2019)

Abstract Introduction Increasing smartphones access has allowed for increasing development and use of smart phone applications (apps). Mobile health interventions have previously relied on voice or text-based short message services (SMS), however, the increasing availability and ease of use of apps has allowed for significant growth of smartphone apps that can be used for health behaviour change. This review considers the current body of knowledge relating to the evaluation of apps for health behaviour change. The aim of this review is to investigate approaches to the evaluation of health apps to identify any current best practice approaches. Method A systematic review was conducted. Data were collected and analysed in September 2016. Thirty-eight articles were identified and have been included in this review. Results Articles were published between 2011- 2016, and 36 were reviews or evaluations of apps related to one or more health conditions, the remaining two reported on an investigation of the usability of health apps. Studies investigated apps relating to the following areas: alcohol, asthma, breastfeeding, cancer, depression, diabetes, general health and fitness, headaches, heart disease, HIV, hypertension, iron deficiency/anaemia, low vision, mindfulness, obesity, pain, physical activity, smoking, weight management and women's health. Conclusion In order to harness the potential of mobile health apps for behaviour change and health, we need better ways to assess the quality and effectiveness of apps. This review is unable to suggest a single best practice approach to evaluate mobile health apps. Few measures identified in this review included sufficient information or evaluation, leading to potentially incomplete and inaccurate information for consumers seeking the best app for their situation. This is further complicated by a lack of regulation in health promotion generally.

15. Office-based strategies for the management of obesity.

Authors Rao, Goutham
Source American family physician; Jun 2010; vol. 81 (no. 12); p. 1449
Publication Date Jun 2010
Publication Type(s) Journal Article Review
PubMedID 20540483
Database Medline
Available at American family physician from ProQuest (Health Research Premium) - NHS Version

Abstract Roughly two thirds of U.S. adults are overweight or obese. Obesity increases the risk of hypertension, type 2 diabetes mellitus, hyperlipidemia, heart disease, pulmonary disease, hepatobiliary disease, cancer, and a number of psychosocial complications. Physicians often feel unprepared to handle this important problem. Practical office-based strategies include: (1) making recommendations for assisted self-management, including guidance on popular diets, (2) advising patients about commercial weight-loss programs, (3) advising patients about and prescribing medications, (4) recommending bariatric surgery, and (5) supplementing these strategies with counseling about lifestyle changes using a systematic approach. Family physicians should provide basic information about the effectiveness and safety of popular diets and commercial weight-loss programs, and refer patients to appropriate information sources. Sibutramine and orlistat, the only medications currently approved for the long-term treatment of obesity, should only be prescribed in combination with lifestyle changes. Bariatric surgery is an option for adults with a body mass index of 40 kg per m2 or higher, or for those with a body mass index of 35 kg per m2 or higher who have obesity-related comorbidities such as type 2 diabetes. The five A's behavioral counseling paradigm (ask, advise, assess, assist, and arrange) can be used as the basis for a systematic, practical approach to the management of obesity that incorporates evidence for managing common obesity-related behaviors.

16. Low-glycemic index carbohydrates: an effective behavioral change for glycemic control and weight management in patients with type 1 and 2 diabetes.

Authors Burani, Johanna; Longo, Palma J
Source The Diabetes educator; 2006; vol. 32 (no. 1); p. 78-88
Publication Date 2006
Publication Type(s) Journal Article
PubMedID 16439496
Database Medline
Available at The Diabetes educator from Ovid (Journals @ Ovid)

Abstract PURPOSEThis retrospective study evaluated the incorporation of low-glycemic index (GI) carbohydrates into daily meal planning as an effective behavioral lifestyle change to improve glycemic control and weight management in patients with type 1 and 2 diabetes.METHODSTwenty-one subjects participated in this study. All office visits and interview sessions took place in a 2-physician private medical practice setting in Wayne, New Jersey. Patients' pre- and postcounseling HbA1c and body mass index (BMI) values and their antidiabetic medication dosages were recorded. Audiotaped interviews were conducted using the 10-question Glycemic Index Foods Quiz (GIFQ) and the 29-question Interview Questionnaire (IQ). The GI values of pre- and postcounseling meals were calculated. Assessment was based on triangulating the subjects' adherence to the low-GI carbohydrate behavioral change and the primary outcome measures: HbA1c and BMI.RESULTSLow-GI medical nutrition therapy (LGI-MNT) counseling reduced HbA1c by 19% (mean drop of 1.5 U) and decreased BMI by 8% (mean loss of 17 pounds). This was accomplished by the participants independently lowering the GI values of their meals by 25% (mean reduction of 15 points). Results were achieved over a time frame of 3 to 36 months from the initial LGI-MNT counseling session.CONCLUSIONSDaily incorporation of low-GI carbohydrates in meal planning can be an effective diabetes self-management strategy for glycemic control and weight management. The documented responses to the subjects' conceptual and practical knowledge of the GI confirm their acceptance of this approach as a permanent behavioral lifestyle change and not a "diet." The positive results of this study attest to what worked for these subjects, inviting diabetes educators to consider offering low-GI dietary advice to their diabetes patients.

17. On the efficacy of behavior change techniques in mHealth for self-management of diabetes: A meta-analysis.

Authors El-Gayar, Omar; Ofori, Martinson; Nawar, Nevine
Source Journal of biomedical informatics; Jul 2021; vol. 119 ; p. 103839
Publication Date Jul 2021
Publication Type(s) Review Meta-analysis Journal Article
PubMedID 34139330
Database Medline
Available at Journal of biomedical informatics from ScienceDirect Available to PHE and Local Authority staff
Abstract BACKGROUNDDiabetes prevalence has become a global crisis. Due to the substantial rise in smartphone use, a variety of mobile interventions have been developed to help improve the clinical outcomes of diabetes patients.OBJECTIVESThis study seeks to examine specific behavior change theories and techniques used in the design of self-management mobile app-based interventions aimed at achieving glycemic control in type 1 and type 2 diabetes.METHODSA meta-analysis of randomized control trials published in PubMed/Medline and Web of Science between January 2010 and October 2020 was conducted using studies that included diabetes patients, reported on well-described mobile app-based interventions, compared mHealth to usual care, and evaluated glycated hemoglobin (HbA1c) at baseline and follow-up.RESULTSWe reported on 21 studies with a total of 1,920 diabetes patients. Our findings show that mHealth apps led to statistically significant clinical outcomes as compared to standard care for glycemic control (-0.38, 95% CI = -0.50 to -0.25, $p < 0.0001$) indicating that such interventions result in a reduction in HbA1c. Interventions that used behavior theory for developing mHealth apps were not statistically different from those that did not ($p = 0.18$). However, increased use of behavior change techniques (BCTs) may result in slightly higher HbA1c reduction. Among all BCTs, the most effective ones appear to be "Action planning" and "Self-monitoring of outcome(s) of behavior.CONCLUSIONSThe current meta-analysis provides evidence that mHealth is likely to be beneficial for diabetes patients when the right behavior change techniques are applied to realize the full advantage of the intervention. Further investigation of the role of theory in the design of mHealth app-based interventions is warranted.

18. Protocol for the ADDITION-Plus study: a randomised controlled trial of an individually-tailored behaviour change intervention among people with recently diagnosed type 2 diabetes under intensive UK general practice care.

Authors Griffin, Simon J; Simmons, Rebecca K; Williams, Kate M; Prevost, A Toby; Hardeman, Wendy; Grant, Julie; Whittle, Fiona; Boase, Sue; Hobbis, Imogen; Brage, Soren; Westgate, Kate; Fanshawe, Tom; Sutton, Stephen; Wareham, Nicholas J; Kinmonth, Ann Louise; ADDITION-Plus study team
Source BMC public health; Apr 2011; vol. 11 ; p. 211
Publication Date Apr 2011
Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Journal Article
PubMedID 21463520
Database Medline
Available at BMC public health from BioMed Central
Available at BMC public health from Europe PubMed Central - Open Access
Available at BMC public health from SpringerLink
Available at BMC public health from ProQuest (Health Research Premium) - NHS Version
Available at BMC public health from Unpaywall

Abstract BACKGROUNDThe increasing prevalence of type 2 diabetes poses both clinical and public health challenges. Cost-effective approaches to prevent progression of the disease in primary care are needed. Evidence suggests that intensive multifactorial interventions including medication and behaviour change can significantly reduce cardiovascular morbidity and mortality among patients with established type 2 diabetes, and that patient education in self-management can improve short-term outcomes. However, existing studies cannot isolate the effects of behavioural interventions promoting self-care from other aspects of intensive primary care management. The ADDITION-Plus trial was designed to address these issues among recently diagnosed patients in primary care over one year.METHODS/DESIGNADDITION-Plus is an explanatory randomised controlled trial of a facilitator-led, theory-based behaviour change intervention tailored to individuals with recently diagnosed type 2 diabetes. 34 practices in the East Anglia region participated. 478 patients with diabetes were individually randomised to receive (i) intensive treatment alone (n = 239), or (ii) intensive treatment plus the facilitator-led individual behaviour change intervention (n = 239). Facilitators taught patients key skills to facilitate change and maintenance of key behaviours (physical activity, dietary change, medication adherence and smoking), including goal setting, action planning, self-monitoring and building habits. The intervention was delivered over one year at the participant's surgery and included a one-hour introductory meeting followed by six 30-minute meetings and four brief telephone calls. Primary endpoints are physical activity energy expenditure (assessed by individually calibrated heart rate monitoring and movement sensing), change in objectively measured dietary intake (plasma vitamin C), medication adherence (plasma drug levels), and smoking status (plasma cotinine levels) at one year. We will undertake an intention-to-treat analysis of the effect of the intervention on these measures, an assessment of cost-effectiveness, and analyse predictors of behaviour change in the cohort.DISCUSSIONThe ADDITION-Plus trial will establish the medium-term effectiveness and cost-effectiveness of adding an externally facilitated intervention tailored to support change in multiple behaviours among intensively-treated individuals with recently diagnosed type 2 diabetes in primary care. Results will inform policy recommendations concerning the management of patients early in the course of diabetes. Findings will also improve understanding of the factors influencing change in multiple behaviours, and their association with health outcomes.

19. Are behavioural approaches feasible and effective in the treatment of type 2 diabetes? A propensity score analysis vs. prescriptive diet.

Authors Forlani, G; Lorusso, C; Moscatiello, S; Ridolfi, V; Melchionda, N; Di Domizio, S; Marchesini, G
Source Nutrition, metabolism, and cardiovascular diseases : NMCD; Jun 2009; vol. 19 (no. 5); p. 313-320
Publication Date Jun 2009
Publication Type(s) Comparative Study Journal Article
PubMedID 18722095
Database Medline
Available at Nutrition, metabolism, and cardiovascular diseases : NMCD from ScienceDirect Available to PHE and Local Authority staff

Abstract BACKGROUND AND AIMSLifestyle changes are considered first line treatment in type 2 diabetes, but very few data are available in the "real world" of diabetes units. We aimed to measure the effectiveness of moderate and high intensity interventions on weight loss, metabolic control and insulin use. We report a prospective cohort study, carried out in 822 consecutive subjects with type 2 diabetes, first seen in a 4-year period in a diabetes unit of an academy hospital.METHODS AND RESULTSSubjects were treated with either a sole prescriptive diet (Diet), or received an additional short-course Elementary Nutritional Education (4 group sessions-ENE) or an intensive Cognitive Behavioural Therapy (12-15 group sessions-CBT). The results were adjusted for the propensity score to be assigned different treatments, derived from logistic regression on the basis of age, gender, BMI, HbA1c, diabetes duration and insulin use at baseline. Main outcome measures were weight loss and weight loss maintenance, metabolic control, and secondary failure to insulin use. Both structured programmes produced a larger weight loss, and the adjusted probability of achieving the 7% weight loss target was increased. Similarly, both programmes favoured metabolic control, irrespective of insulin use. After adjustment for propensity score, both ENE (hazard ratio, 0.48; 95% CI, 0.27-0.84) and CBT (hazard ratio, 0.36; 95% CI, 0.16-0.83) were associated with a reduced risk of de novo insulin treatment.CONCLUSIONStructured behavioural programmes aimed at lifestyle changes are feasible and effective in the "real world" setting of a diabetes unit for the treatment of type 2 diabetes.

20. Effective strategies for encouraging behavior change in people with diabetes.

Authors Hood, Korey K; Hilliard, Marisa; Piatt, Gretchen; Ievers-Landis, Carolyn E
Source Diabetes management (London, England); 2015; vol. 5 (no. 6); p. 499-510
Publication Date 2015
Publication Type(s) Journal Article
PubMedID 30100925
Database Medline
Available at Diabetes management (London, England) from ProQuest (Health Research Premium) - NHS Version

Available at Diabetes management (London, England) from ProQuest (MEDLINE with Full Text) - NHS Version

Abstract Behavioral management of diabetes leads to better health outcomes. This paper reviews the available literature on facilitators of behavior change in people with diabetes and highlights approaches and strategies diabetes care providers can utilize. The research and clinical evidence points to the critical nature of considering the content and structure of recommendations, and utilizing problem solving and teamwork approaches. Furthermore, close attention to individual and community factors will optimize behavior change. These factors include health literacy, community infrastructure, support within the family, and whether there are co-occurring eating and mood issues. Recommendations are provided to optimize communication and embed behavior change approaches in clinical and community encounters.

21. Use of Brief Messages Based on Behavior Change Techniques to Encourage Medication Adherence in People With Type 2 Diabetes: Developmental Studies.

Authors Bartlett, Yvonne Kiera; Farmer, Andrew; Rea, Rustam; French, David P
Source Journal of medical Internet research; May 2020; vol. 22 (no. 5); p. e15989
Publication Date May 2020
Publication Type(s) Research Support, Non-u.s. Gov't Journal Article
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Database Medline
Available at Journal of medical Internet research from Europe PubMed Central - Open Access
Available at Journal of medical Internet research from ProQuest (Health Research Premium) - NHS Version
Available at Journal of medical Internet research from Unpaywall

Abstract BACKGROUNDBrief messages are a promising way to improve adherence to medication for people with type 2 diabetes. However, it is often unclear how messages have been developed and their precise content, making it difficult to ascertain why certain messages are successful and some are not.OBJECTIVEThe goal of the research was to develop messages that have proven fidelity to specified evidence-derived behavior change techniques (BCTs) and are acceptable to people with type 2 diabetes.METHODSFour studies were conducted: (1) a workshop (n=21) where behavioral change researchers and health care professionals developed messages based on specific BCTs or beliefs or concerns related to taking medication, (2) a focus group study with people with type 2 diabetes (n=23) to assess acceptability of the approach, (3) a survey to ascertain the acceptability of a subset of messages to people with type 2 diabetes (n=61) and, (4) a survey with behavior change researchers to assess the fidelity of a subset of messages to their intended BCT (n=18).RESULTSIn study 1, 371 messages based on 38 BCTs and beliefs/concerns were developed. Workshop participants rated BCTs to be relevant to medication adherence (mean 7.12/10 [SD 1.55]) and messages to have good fidelity (mean 7.42/10 [SD 1.19]). In study 2, the approach of providing medication adherence support through text messages was found to be acceptable. In study 3, mean acceptability of all BCTs was found to be above the midpoint (mean 3.49/5 [SD 0.26]). In study 4, mean fidelity for all BCTs was found to be above the midpoint (mean 7.61/10 [SD 1.38]).CONCLUSIONSA library of brief messages acceptable to people with type 2 diabetes and representative of specific evidence-derived BCTs was developed. This approach allowed brief messages to be developed with known content that can be used to test theory.

22. Behaviour change during dietary Type 2 diabetes remission: a longitudinal qualitative evaluation of an intervention using a very low energy diet.

Authors Rehackova, L; Araújo-Soares, V; Steven, S; Adamson, A J; Taylor, R; Sniehotta, F F
Source Diabetic medicine : a journal of the British Diabetic Association; Jun 2020; vol. 37 (no. 6); p. 953-962
Publication Date Jun 2020
Publication Type(s) Journal Article Research Support, Non-u.s. Gov't
PubMedID 31269276
Database Medline
Available at Diabetic medicine : a journal of the British Diabetic Association from Wiley Online Library Medicine and Nursing Collection 2019
Available at Diabetic medicine : a journal of the British Diabetic Association from Ovid (Journals @ Ovid)

Abstract AIMTo understand the process of behaviour change through the experiences of people with Type 2 diabetes engaged in an 8-month diabetes remission intervention including a 2-month weight loss phase with the use of a very low energy diet (VLED), and a 6-month, structured weight maintenance phase.METHODSData were collected in three semi-structured interviews at baseline, week 8 (end of the weight loss phase), and month 8 (end of the weight maintenance phase). Longitudinal inductive thematic analysis was used to analyse participants' narratives and identify change over time.RESULTSEleven of 18 participants completed all three interviews. The following themes of change were identified in their narratives: (1) 'Building behavioural autonomy' as a process of growing confidence to engage in health behaviours that are independent of those of other people; (2) 'Behavioural contagion' describing how one's new health behaviours tend to affect those of other people; (3) 'From rigid to flexible restraint', reflecting the changes in attitudes and behaviours required for a successful adaptation from weight loss to weight maintenance; and (4) 'Shift in identity', representing changes in the participants' perceptions of themselves.CONCLUSIONSThis longitudinal qualitative study provided new insights into how behaviour change is experienced by people with Type 2 diabetes engaged on a weight management intervention using VLED, contributing to theoretical and practical understanding of weight management behaviours. The themes identify potential areas in which individuals can be supported in achieving dietary diabetes remission and long-term maintenance of weight loss.

23. Using a behaviour change techniques taxonomy to identify active ingredients within trials of implementation interventions for diabetes care.

Authors Presseau, Justin; Ivers, Noah M; Newham, James J; Knittle, Keegan; Danko, Kristin J; Grimshaw, Jeremy M
Source Implementation science : IS; Apr 2015; vol. 10 ; p. 55
Publication Date Apr 2015
Publication Type(s) Research Support, Non-u.s. Gov't Journal Article
PubMedID 25900104
Database Medline
Available at Implementation science : IS from BioMed Central
Available at Implementation science : IS from Europe PubMed Central - Open Access
Available at Implementation science : IS from SpringerLink
Available at Implementation science : IS from Unpaywall

Abstract BACKGROUNDMethodological guidelines for intervention reporting emphasise describing intervention content in detail. Despite this, systematic reviews of quality improvement (QI) implementation interventions continue to be limited by a lack of clarity and detail regarding the intervention content being evaluated. We aimed to apply the recently developed Behaviour Change Techniques Taxonomy version 1 (BCTTv1) to trials of implementation interventions for managing diabetes to assess the capacity and utility of this taxonomy for characterising active ingredients.METHODSThree psychologists independently coded a random sample of 23 trials of healthcare system, provider- and/or patient-focused implementation interventions from a systematic review that included 142 such studies. Intervention content was coded using the BCTTv1, which describes 93 behaviour change techniques (BCTs) grouped within 16 categories. We supplemented the generic coding instructions within the BCTTv1 with decision rules and examples from this literature.RESULTSLess than a quarter of possible BCTs within the BCTTv1 were identified. For implementation interventions targeting providers, the most commonly identified BCTs included the following: adding objects to the environment, prompts/cues, instruction on how to perform the behaviour, credible source, goal setting (outcome), feedback on outcome of behaviour, and social support (practical). For implementation interventions also targeting patients, the most commonly identified BCTs included the following: prompts/cues, instruction on how to perform the behaviour, information about health consequences, restructuring the social environment, adding objects to the environment, social support (practical), and goal setting (behaviour). The BCTTv1 mapped well onto implementation interventions directly targeting clinicians and patients and could also be used to examine the impact of system-level interventions on clinician and patient behaviour.CONCLUSIONSThe BCTTv1 can be used to characterise the active ingredients in trials of implementation interventions and provides specificity of content beyond what is given by broader intervention labels. Identification of BCTs may provide a more helpful means of accumulating knowledge on the content used in trials of implementation interventions, which may help to better inform replication efforts. In addition, prospective use of a behaviour change techniques taxonomy for developing and reporting intervention content would further aid in building a cumulative science of effective implementation interventions.

24. A case study approach to the examination of a telephone-based health coaching intervention in facilitating behaviour change for adults with Type 2 diabetes.

Authors McGloin, Helen; Timmins, Fiona; Coates, Vivien; Boore, Jennifer
Source Journal of clinical nursing; May 2015; vol. 24 (no. 9-10); p. 1246-1257
Publication Date May 2015
Publication Type(s) Journal Article
PubMedID 25319572
Database Medline

Available at Journal of clinical nursing from Wiley Online Library Medicine and Nursing Collection 2019
Available at Journal of clinical nursing from Ovid (Journals @ Ovid)

Abstract AIMS AND OBJECTIVESThis study aims to examine the effectiveness of the use of telephone empowerment-based health coaching as a cost-effective alternative to changing health behaviours of adults with Type 2 diabetes.BACKGROUNDGuidelines regarding lifestyle management to reduce the risk of complications in diabetes include changing patterns of eating, physical activity and smoking cessation. Traditional education/behavioural methods of support for behaviour change reveal mixed and mainly short-term effects.DESIGNA mixed method case study approach was used (n = 10).METHODSData were collected by means of physiological measurements survey and focus group interview both before and after telephone a coaching intervention.RESULTSParticipants took greater responsibility for health and revealed high self-efficacy scores. Short-term benefits were seen in physiological variables at three months but these deteriorated with the cessation of the intervention indicating the need for continuous support.CONCLUSIONTelephone coaching is a cost-effective approach to supporting health behaviour change for those with diabetes. It embraces the principles of empowerment and warrants further evaluation in supporting long-term behavioural changes. As such coaching emerges as a suitable proposition for this cohort.RELEVANCE TO CLINICAL PRACTICEHealth coaching has a positive impact on health behaviours for those with diabetes. Health coaching facilitates an increase in personal control of health and builds confidence in self-managing diabetes. Patients feel really supported and become motivated towards self-care.

25. Readiness for diabetes prevention and barriers to lifestyle change in women with a history of gestational diabetes mellitus: rationale and study design.

Authors Lipscombe, Lorraine L; Banerjee, Ananya Tina; McTavish, Sarah; Mukerji, Geetha; Lowe, Julia; Ray, Joel; Evans, Marilyn; Feig, Denice S
Source Diabetes research and clinical practice; Oct 2014; vol. 106 (no. 1); p. 57-66
Publication Date Oct 2014
Publication Type(s) Research Support, Non-u.s. Gov't Multicenter Study Journal Article
PubMedID 25154309
Database Medline
Available at Diabetes research and clinical practice from ScienceDirect Available to PHE and Local Authority staff

Abstract AIMSWomen with gestational diabetes mellitus (GDM) have a high risk of future diabetes, which can be prevented with lifestyle modification. Prior diabetes prevention programmes in this population have been limited by lack of adherence. The aim of this study is to evaluate readiness for behaviour change at different time points after GDM diagnosis and identify barriers and facilitators, to inform a lifestyle modification programme specifically designed for this group. The objective of this paper is to present the rationale and methodological design of this study.METHODSThe ongoing prospective cohort study has recruited a multi-ethnic cohort of 1353 women with GDM from 7 Ontario, Canada hospitals during their pregnancy. A questionnaire was developed to evaluate stage of readiness for behaviour change, and sociodemographic, psychosocial, and clinical predictors of healthy diet and physical activity. Thus far, 960 women (71%) have completed a baseline survey prior to delivery. Prospective postpartum follow-up is ongoing. We are surveying women at 2 time-points after delivery: 3-12 months postpartum, and 13-24 months postpartum. Survey data will be linked to health care administrative databases for long-term follow-up for diabetes. Qualitative interviews were conducted in a subset of women to gain a deeper understanding of barriers and facilitators to lifestyle change.CONCLUSIONSOur study is a fundamental first step in effectively addressing diabetes prevention in women with GDM. Our findings will aid in the design of a diabetes prevention intervention specifically targeted to women with recent GDM, which can then be evaluated in a clinical trial.

26. Use of behavioral change techniques in web-based self-management programs for type 2 diabetes patients: systematic review.

Authors van Vugt, Michael; de Wit, Maartje; Cleijne, Wilmy H J J; Snoek, Frank J
Source Journal of medical Internet research; Dec 2013; vol. 15 (no. 12); p. e279
Publication Date Dec 2013
Publication Type(s) Journal Article Review Systematic Review
PubMedID 24334230
Database Medline
Available at Journal of medical Internet research from Europe PubMed Central - Open Access
Available at Journal of medical Internet research from ProQuest (Health Research Premium) - NHS Version
Available at Journal of medical Internet research from Unpaywall

Abstract BACKGROUNDType 2 diabetes mellitus (T2DM) is a highly prevalent chronic metabolic disease characterized by hyperglycemia and cardiovascular risks. Without proper treatment, T2DM can lead to long-term complications. Diabetes self-management is recognized as the cornerstone of overall diabetes management. Web-based self-management programs for T2DM patients can help to successfully improve patient health behaviors and health-related outcomes. Theories can help to specify key determinants of the target behaviors and behavior change strategies required to arrive at the desired health outcomes, which can then be translated into specific behavioral techniques or strategies that patients can learn to apply in their daily life. From previous reviews of a wide range of online diabetes self-management tools and programs, it appears that it is still unclear which behavioral change techniques (BCTs) are primarily used and are most effective when it comes to improving diabetes self-management behaviors and related health outcomes.OBJECTIVEWe set out to identify which BCTs are being applied in online self-management programs for T2DM and whether there is indication of their effectiveness in relation to predefined health outcomes.METHODSArticles were systematically searched and screened on the mentioned use of 40 BCTs, which were then linked to reported statistically significant improvements in study outcomes.RESULTSWe found 13 randomized controlled trials reporting on 8 online self-management interventions for T2DM. The BCTs used were feedback on performance, providing information on consequences of behavior, barrier identification/problem solving, and self-monitoring of behavior. These BCTs were also linked to positive outcomes for health behavior change, psychological well-being, or clinical parameters.CONCLUSIONSA relatively small number of theory-based online self-management support programs for T2DM have been reported using only a select number of BCTs. The development of future online self-management interventions should be based on the use of theories and BCTs and should be reported accurately.

27. An Evaluation of the Reach and Effectiveness of a Diabetes Prevention Behaviour Change Program Situated in a Community Site.

Authors Bean, Corliss; Dineen, Tineke; Locke, Sean R; Bouvier, Brooklyn; Jung, Mary E
Source Canadian journal of diabetes; Jun 2021; vol. 45 (no. 4); p. 360-368
Publication Date Jun 2021
Publication Type(s) Journal Article
PubMedID 33323314
Database Medline
Available at Canadian journal of diabetes from ScienceDirect

Abstract More than 350 million people are living with prediabetes. Preventing type 2 diabetes (T2D) progression can reduce morbidity, mortality and health-care costs. Interventions can support people with diet and physical activity behaviour changes; however, many interventions are university-based, posing barriers (e.g. accessibility, limited reach and maintenance), which highlight the need for community intervention. Limited research has comprehensively evaluated programs in community contexts. The purpose of this study was to pragmatically examine the reach and effectiveness of a diabetes prevention behaviour change program in the community using the RE-AIM framework. Demographic and outcome data were collected through telephone screening and survey data, and analyzed using descriptive and multivariate analyses. Over 2 years, 9,954 individuals were identified by a medical laboratory as living with prediabetes. Information letters were sent by the laboratory to individuals upon physician approval (N=2,241, 22.5%) as a main form of recruitment. From this, 271 individuals and an additional 160 individuals via other recruitment methods contacted the research team (N=431). Two hundred thirteen adults with prediabetes were enrolled (87.4% Caucasian, 69.7% female; 95% program completion). Analyses of 6-month follow-up data revealed significant maintenance of reductions in weight and waist circumference and improvements in physical function, self-reported physical activity and all-food frequency items except fruit intake (N=121, d=0.21 to 0.68, p <0.05 to 0.001). The program demonstrated diabetes risk-reducing benefits for enrolled individuals. Future work is needed to increase physician referral and participant response rates and to explore program expansion through digitization to reach more individuals at risk of developing T2D.

28. An evaluation of diabetes targeted apps for Android smartphone in relation to behaviour change techniques.

Authors Hoppe, C D; Cade, J E; Carter, M
Source Journal of human nutrition and dietetics : the official journal of the British Dietetic Association; Jun 2017; vol. 30 (no. 3); p. 326-338
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Publication Type(s) Journal Article
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Database Medline
Available at Journal of human nutrition and dietetics : the official journal of the British Dietetic Association from Wiley Online Library Medicine and Nursing Collection 2019
Available at Journal of human nutrition and dietetics : the official journal of the British Dietetic Association from Ovid (Journals @ Ovid)

Available at Journal of human nutrition and dietetics : the official journal of the British Dietetic Association from Unpaywall

Abstract BACKGROUNDMobile applications (apps) could support diabetes management through dietary, weight and blood glucose self-monitoring, as well as by promoting behaviour change. The present study aimed to evaluate diabetes apps for content, functions and behaviour change techniques (BCTs).METHODSDiabetes self-management apps for Android smartphones were searched for on the Google Play Store. Ten apps each from the following search terms were included; 'diabetes', 'diabetes type 1', 'diabetes type 2', 'gestational diabetes'. Apps were evaluated by being scored according to their number of functions and BCTs, price, and user rating.RESULTSThe mean (SD) number of functions was 8.9 (5.9) out of a possible maximum of 27. Furthermore, the mean (SD) number of BCTs was 4.4 (2.6) out of a possible maximum of 26. Apps with optimum BCT had significantly more functions [13.8; 95% confidence interval (CI) = 11.9-15.9] than apps that did not (4.7; 95% CI = 3.2-6.2; P < 0.01) and significantly more BCTs (5.8; 95% CI = 4.8-7.0) than apps without (3.1; 95% CI = 2.2-4.1; P < 0.01). Additionally, apps with optimum BCT also cost more than other apps. In the adjusted models, highly rated apps had an average of 4.8 (95% CI = 0.9-8.7; P = 0.02) more functions than lower rated apps.CONCLUSIONS'Diabetes apps' include few functions or BCTs compared to the maximum score possible. Apps with optimum BCTs could indicate higher quality. App developers should consider including both specific functions and BCTs in 'diabetes apps' to make them more helpful. More research is needed to understand the components of an effective app for people with diabetes.

29. Identifying Behaviour Change Techniques and Motivational Interviewing Techniques in Small Steps for Big Changes: A Community-Based Program for Adults at Risk for Type 2 Diabetes.

Authors MacPherson, Megan M; Dineen, Tineke E; Cranston, Kaela D; Jung, Mary E
Source Canadian journal of diabetes; Dec 2020; vol. 44 (no. 8); p. 719-726
Publication Date Dec 2020
Publication Type(s) Journal Article
PubMedID 33279096
Database Medline
Available at Canadian journal of diabetes from ScienceDirect

Abstract BACKGROUNDThe risk of developing type 2 diabetes (T2D) can be reduced through diet and exercise changes. Given the rapidly increasing prevalence of T2D and the associated burden on the health-care system, there is a need for affordable and scalable diet and exercise programs to be delivered in communities. Small Steps for Big Changes (SSBC) is an evidence-based diabetes prevention program for improving diet and exercise adherence in individuals at risk for developing T2D. Detailed reporting of intervention components as SSBC transitions from laboratory to communities is an essential step to understand its effectiveness and subsequent uptake.METHODSThe aim of this study was to identify comprehensively the behaviour change techniques (BCTs) and motivational interviewing techniques used within the community-based SSBC. Intervention components were extracted from the SSBC session protocols using the Behaviour Change Technique Taxonomy v1 and the Table of Motivational Interviewing Techniques.RESULTSForty-three BCTs (interrater reliability [kappa]=0.77; prevalence and bias-adjusted kappa=0.78) and 20 MI techniques (kappa=0.63; prevalence and bias-adjusted kappa=0.64) were identified within SSBC session protocols (mean BCTs per session=30, mean MI techniques per session=16).CONCLUSIONSConsistent and thorough reporting of intervention components as seen in the current analysis is crucial for future meta-analyses to accurately test which intervention components are eliciting change in desired outcomes and can inform which components should be adapted to different settings. SSBC sessions had an emphasis on BCT categories, including "Goals and Planning," "Feedback and Monitoring" and "Repetition and Substitution," and MI technique processes, including "Engaging" and "Evoking." Use of these categories and processes can inform development of future effective diabetes prevention programs.

30. Examining the psychological pathways to behavior change in a group-based lifestyle program to prevent type 2 diabetes.

Authors Critchley, Christine R; Hardie, Elizabeth A; Moore, Susan M
Source Diabetes care; Apr 2012; vol. 35 (no. 4); p. 699-705
Publication Date Apr 2012
Publication Type(s) Randomized Controlled Trial Journal Article
PubMedID 22338102
Database Medline
Available at Diabetes care from HighWire - Free Full Text
Available at Diabetes care from ProQuest (Health Research Premium) - NHS Version
Available at Diabetes care from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Diabetes care from Ovid (Journals @ Ovid)
Available at Diabetes care from Unpaywall

Abstract OBJECTIVETo examine the psychological process of lifestyle change among adults at risk for type 2 diabetes.RESEARCH DESIGN AND METHODSA randomized control trial in which 307 volunteers (intervention, n = 208; wait control, n = 99) diagnosed with prediabetes completed a six-session group-based intervention to promote healthier living. Participants' motivation to change, diet and exercise self-efficacy, mood, knowledge about diabetes, activity levels, healthy eating, waist circumference, and weight were assessed before and after the program.RESULTSParticipation in the program was associated with significant increases in healthy eating and physical activity, reductions in waist and weight, and improvements in motivation, positive mood, self-efficacy, and knowledge. Examination of the pathways to lifestyle change showed that the educational aspect of the program increased activity levels because it increased diabetes knowledge and improved mood. Eating behavior was not mediated by any of the psychological variables. Improvements in diet and physical activity were, in turn, directly associated with changes in weight and waist circumference.CONCLUSIONSAlthough the program significantly improved motivation, self-efficacy, and mood, its impact on knowledge uniquely explained the increase in physical activity. Group-based programs that are tailored to lifestyle behaviors may provide a cost-effective method of diabetes prevention, but more research is needed to explain why they improve healthy eating.

31. Can type 2 diabetes be prevented in UK general practice? A lifestyle-change feasibility study (ISAIAH).

Authors Barclay, Chris; Procter, Kimberley L; Glendenning, Robert; Marsh, Peter; Freeman, Jenny; Mathers, Nigel
Source The British journal of general practice : the journal of the Royal College of General Practitioners; Aug 2008; vol. 58 (no. 553); p. 541-547
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Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Journal Article
PubMedID 18682012
Database Medline
Available at The British journal of general practice : the journal of the Royal College of General Practitioners from Europe PubMed Central - Open Access
Available at The British journal of general practice : the journal of the Royal College of General Practitioners from HighWire - Free Full Text
Available at The British journal of general practice : the journal of the Royal College of General Practitioners from Unpaywall
Abstract BACKGROUNDThe increasing incidence of type 2 diabetes mellitus is attributed to increasing weight, reduced physical activity, and poor diet quality. Lifestyle change in patients with pre-diabetes can reduce progression to diabetes but this is difficult to achieve in practice.AIMTo study the effectiveness of a lifestyle-change intervention for pre-diabetes in general practice.DESIGN OF THE STUDYA feasibility study.SETTINGA medium-sized general practice in Sheffield.METHODParticipants were 33 patients with pre-diabetes. The intervention was a 6-month delayed entry comparison of usual treatment with a lifestyle-change programme: increased exercise and diet change, either reduction in glycaemic load, or reduced-fat diet. The main outcome measures were weight, body mass index (BMI), waist circumference, fasting glucose, lipid profile, and nutrition.RESULTSA statistically significant difference was observed between control and intervention groups in three markers for risk of progression to diabetes (weight (P<0.03), BMI (P<0.03), and waist circumference (P<0.001)). No significant differences in fasting glucose or lipid profiles were seen. Aggregated data showed a statistically non-significant improvement in all the measures of metabolic risk of progression to diabetes in the low-glycaemic-load group when compared with a low-fat-diet group (P>0.05). Significant total energy, fat, and carbohydrate intake reduction was achieved and maintained in both groups.CONCLUSIONA lifestyle-change intervention feasibility programme for pre-diabetic patients was implemented in general clinical practice. The potential of a low-glycaemic-load diet to be more effective than a low-fat diet in promoting change in the features associated with progression to diabetes is worthy of further investigation.

32. Implementation of a nurse-led behaviour change intervention to support medication taking in type 2 diabetes: beyond hypothesised active ingredients (SAMS Consultation Study).

Authors Hardeman, Wendy; Lamming, Laura; Kellar, Ian; De Simoni, Anna; Graffy, Jonathan; Boase, Sue; Sutton, Stephen; Farmer, Andrew; Kinmonth, Ann Louise
Source Implementation science : IS; Jun 2014; vol. 9 ; p. 70
Publication Date Jun 2014
Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Journal Article
PubMedID 24902481
Database Medline
Available at Implementation science : IS from BioMed Central
Available at Implementation science : IS from Europe PubMed Central - Open Access
Available at Implementation science : IS from SpringerLink
Available at Implementation science : IS from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Implementation science : IS from ProQuest (Health Research Premium) - NHS Version
Available at Implementation science : IS from Unpaywall

Abstract BACKGROUNDImplementation of trial interventions is rarely assessed, despite its effects on findings. We assessed the implementation of a nurse-led intervention to facilitate medication adherence in type 2 diabetes (SAMS) in a trial against standard care in general practice. The intervention increased adherence, but not through the hypothesised psychological mechanism. This study aimed to develop a reliable coding frame for tape-recorded consultations, assessing both a priori hypothesised and potential active ingredients observed during implementation, and to describe the delivery and receipt of intervention and standard care components to understand how the intervention might have worked.METHODS211 patients were randomised to intervention or comparison groups and 194/211 consultations were tape-recorded. Practice nurses delivered standard care to all patients and motivational and action planning (implementation intention) techniques to intervention patients only. The coding frame was developed and piloted iteratively on selected tape recordings until a priori reliability thresholds were achieved. All tape-recorded consultations were coded and a random subsample double-coded.RESULTSNurse communication, nurse-patient relationship and patient responses were identified as potential active ingredients over and above the a priori hypothesised techniques. The coding frame proved reliable. Intervention and standard care were clearly differentiated. Nurse protocol adherence was good (M (SD) = 3.95 (0.91)) and competence of intervention delivery moderate (M (SD) = 3.15 (1.01)). Nurses frequently reinforced positive beliefs about taking medication (e.g., 65% for advantages) but rarely prompted problem solving of negative beliefs (e.g., 21% for barriers). Patients' action plans were virtually identical to current routines. Nurses showed significantly less patient-centred communication with the intervention than comparison group.CONCLUSIONSIt is feasible to reliably assess the implementation of behaviour change interventions in clinical practice. The main study results could not be explained by poor delivery of motivational and action planning components, definition of new action plans, improved problem solving or patient-centred communication. Possible mechanisms of increased medication adherence include spending more time discussing it and mental rehearsal of successful performance of current routines, combined with action planning. Delivery of a new behaviour change intervention may lead to less patient-centred communication and possible reduction in overall trial effects.TRIAL REGISTRATIONISRCTN30522359.

33. Is sense of coherence a predictor of lifestyle changes in subjects at risk for type 2 diabetes?

Authors Nilsen, V; Bakke, P S; Rohde, G; Gallefoss, F
Source Public health; Feb 2015; vol. 129 (no. 2); p. 155-161
Publication Date Feb 2015
Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Journal Article
PubMedID 25682903
Database Medline
Available at Public health from ScienceDirect Available to PHE and Local Authority staff

Abstract OBJECTIVETo determine whether the sense of coherence (SOC) could predict the outcome of an 18-month lifestyle intervention program for subjects at risk of type 2 diabetes.METHODSSubjects at high risk of type 2 diabetes mellitus were recruited to a low-intensity lifestyle intervention program by their general practitioners. Weight reduction ≥ 5% and improvement in exercise capacity of ≥ 10% from baseline to follow-up indicated a clinically significant lifestyle change. SOC was measured using the 13-item SOC questionnaire.RESULTSThe study involved 213 subjects with a mean body mass index of 37 (SD ± 6). Complete follow-up data were obtained for 131 (62%). Twenty-six participants had clinically significant lifestyle changes. There was a 21% increase in the odds of a clinically significant lifestyle change for each point increase in the baseline SOC score (odds ratio = 1.21; confidence interval = 1.11-1.32). The success rate was 14 times higher in the highest SOC score tertile group compared with the lowest.CONCLUSIONHigh SOC scores were good predictors of successful lifestyle change in subjects at risk of type 2 diabetes. SOC-13 can be used in daily practice to increase clinical awareness on the impact of mastery on the outcome of life-style intervention programs.

34. Investigating theoretical explanations for behaviour change: the case study of ProActive.

Authors Michie, Susan; Hardeman, Wendy; Fanshawe, Tom; Prevost, A Toby; Taylor, Lyndsay; Kinmonth, Ann Louise
Source Psychology & health; 2008; vol. 23 (no. 1); p. 25-39
Publication Date 2008
Publication Type(s) Research Support, Non-u.s. Gov't Controlled Clinical Trial Journal Article
PubMedID 25159905
Database Medline
Available at Psychology & health from EBSCO (Psychology and Behavioral Sciences Collection)

Abstract Developing more effective behavioural interventions requires an understanding of the mechanisms of behaviour change, and methods to rigorously test their theoretical basis. The delivery and theoretical basis of an intervention protocol were assessed in ProActive, a UK trial of an intervention to increase the physical activity of those at risk of Type 2 diabetes (N = 365). In 108 intervention sessions, behaviours of facilitators were mapped to four theories that informed intervention development and behaviours of participants were mapped to 17 theoretical components of these four theories. The theory base of the intervention specified by the protocol was different than that delivered by facilitators, and that received by participants. Of the intervention techniques delivered, 25% were associated with theory of planned behaviour (TPB), 42% with self-regulation theory (SRT), 24% with operant learning theory (OLT) and 9% with relapse prevention theory (RPT). The theoretical classification of participant talk showed a different pattern, with twice the proportion associated with OLT (48%), 21% associated with TPB, 31% with SRT and no talk associated with RPT. This study demonstrates one approach to assessing the extent to which the theories used to guide intervention development account for any changes observed.

35. Repertoires of lifestyle change and self-responsibility among participants in an intervention to prevent type 2 diabetes.

Authors Jallinoja, Piia; Pajari, Pia; Absetz, Pilvikki
Source Scandinavian journal of caring sciences; Sep 2008; vol. 22 (no. 3); p. 455-462
Publication Date Sep 2008
Publication Type(s) Research Support, Non-u.s. Gov't Journal Article
PubMedID 18840229
Database Medline
Available at Scandinavian journal of caring sciences from Wiley Online Library Medicine and Nursing Collection 2019
Available at Scandinavian journal of caring sciences from EBSCO (Psychology and Behavioral Sciences Collection)
Available at Scandinavian journal of caring sciences from Ovid (Journals @ Ovid)

Abstract This paper analyses participants' accounts on their experiences of lifestyle change during and after the intervention to prevent type 2 diabetes. This paper explores whether the individual is seen as capable of autonomously seeking for a healthier lifestyle or as dependent on external controls and support. The study is based on focus group interview data collected among intervention participants one-and-a-half years after the intervention ended. Those who had been successful in the weight reduction and those whose weight had increased after the intervention were interviewed in separate interview groups. Both weight-losers and weight-gainers agreed with the health-related objectives of the intervention. Despite this agreement, we found three distinct repertoires concerning individuals' potential to proceed in and maintain lifestyle change. The hopelessness repertoire was used mainly by the weight-gainers to describe experiences where lifestyle change was seen to be very difficult. The struggle repertoire was used frequently especially by the weight-gainers but also by the weight-losers to describe struggling against external temptations and one's weaknesses. The self-governing individual repertoire was used most often by weight-losers to describe experiences where new, healthier lifestyle had to a significant extent become a routine and the individual was seen as in charge of his/her lifestyle. The study revealed that the interviewees hold an ambivalent stance towards self-responsibility. The individual was seen as both a sovereign actor and a dependent object of interventions. Most of our interviewees called for continuous controls and even surveillance but at the same time rejected the idea of authoritarian health education. This ambivalence was most clearly present in the struggle repertoire and could be a fruitful target of clarification in health interventions. For a major part of intervention participants, lifestyle change is characterized as a constant struggle and hence interventions should plan the continuation of a support system.

36. Everyday use of patient-centred, motivational techniques in routine consultations between doctors and patients with diabetes.

Authors Moran, Janette; Bekker, Hilary; Latchford, Gary
Source Patient education and counseling; Nov 2008; vol. 73 (no. 2); p. 224-231
Publication Date Nov 2008
Publication Type(s) Journal Article
PubMedID 18701234
Database Medline
Available at Patient education and counseling from ScienceDirect Available to PHE and Local Authority staff

Abstract OBJECTIVEFacilitating lifestyle change and improved self-management are important aspects of diabetes treatment. Previous research shows motivational, patient-centred approaches are more effective at this than traditional, didactic approaches. This study explores the degree to which doctors with no previous training in motivational techniques employ these methods to affect behaviour change in routine consultations.METHODSA cross-sectional design was employed. Forty-four routine consultations with nine physicians were tape-recorded, of which nineteen focussed on behaviour change; patient questionnaires assessed patient demographics, intention to self-manage and satisfaction with consultation. Physician behaviour was coded for use of motivational, behaviour change techniques, patient-centeredness and other verbal communication variables; patient communication was also assessed.RESULTSLifestyle issues were raised in 43% of consultations but few motivational strategies were employed; 10% of physicians' communication was patient-centred. An association was found between physicians' use of patient-centred strategies and patients expressing views (r = .44, p < .05). Higher patient satisfaction with the consultation was related to physician partnership-building (r = .37, p < or = .05) and patients asking questions (r = -.31, p < or = .05). Familiarity between doctor and patient was associated with more physician recommendations and directives (r = .35, p < or = .05) and information giving (r= .30, p < or = .05), and more assertive responses by the patient (r = .31, p < or = .05).CONCLUSIONEffective communication strategies related to behaviour change were not used routinely in diabetes consultations in the clinic studied. More patient-centred approaches were associated with higher indicators of patient satisfaction.PRACTICE IMPLICATIONSPhysicians require training and support in employing behaviour change techniques if these are to be integrated into routine care.

37. Effectiveness of a Behavior Change Technique-Based Smartphone Game to Improve Intrinsic Motivation and Physical Activity Adherence in Patients With Type 2 Diabetes: Randomized Controlled Trial.

Authors Höchsmann, Christoph; Infanger, Denis; Klenk, Christopher; Königstein, Karsten; Walz, Steffen P; Schmidt-Trucksäss, Arno
Source JMIR serious games; Feb 2019; vol. 7 (no. 1); p. e11444
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PubMedID 30758293
Database Medline
Available at JMIR serious games from Europe PubMed Central - Open Access
Available at JMIR serious games from ProQuest (Health Research Premium) - NHS Version
Available at JMIR serious games from Unpaywall

Abstract BACKGROUNDRegular physical activity (PA) is an essential component of a successful type 2 diabetes treatment. However, despite the manifest evidence for the numerous health benefits of regular PA, most patients with type 2 diabetes remain inactive, often due to low motivation and lack of PA enjoyment. A recent and promising approach to help overcome these PA barriers and motivate inactive individuals to change their PA behavior is PA-promoting smartphone games. While short-term results of these games are encouraging, the long-term success in effectively changing PA behavior has to date not been confirmed. It is possible that an insufficient incorporation of motivational elements or flaws in gameplay and storyline in these games affect the long-term motivation to play and thereby prevent sustained changes in PA behavior. We aimed to address these design challenges by developing a PA-promoting smartphone game that incorporates established behavior change techniques and specifically targets inactive type 2 diabetes patients.OBJECTIVETo investigate if a self-developed, behavior change technique-based smartphone game designed by an interdisciplinary team is able to motivate inactive individuals with type 2 diabetes for regular use and thereby increase their intrinsic PA motivation.METHODSThirty-six inactive, overweight type 2 diabetes patients (45-70 years of age) were randomly assigned to either the intervention group or the control group (one-time lifestyle counseling). Participants were instructed to play the smartphone game or to implement the recommendations from the lifestyle counseling autonomously during the 24-week intervention period. Intrinsic PA motivation was assessed with an abridged 12-item version of the Intrinsic Motivation Inventory (IMI) before and after the intervention. In addition, adherence to the game-proposed PA recommendations during the intervention period was assessed in the intervention group via the phone-recorded game usage data.RESULTSIntrinsic PA motivation (IMI total score) increased significantly in the intervention group (+6.4 (SD 4.2; P<.001) points) while it decreased by 1.9 (SD 16.5; P=.623) points in the control group. The adjusted difference between both groups was 8.1 (95% CI 0.9, 15.4; P=.029) points. The subscales "interest/enjoyment" (+2.0 (SD 1.9) points, P<.001) and "perceived competence" (+2.4 (SD 2.4) points, P<.001) likewise increased significantly in the intervention group while they did not change significantly in the control group. The usage data revealed that participants in the intervention group used the game for an average of 131.1 (SD 48.7) minutes of in-game walking and for an average of 15.3 (SD 24.6) minutes of strength training per week. We found a significant positive association between total in-game training (min) and change in IMI total score (beta=0.0028; 95% CI 0.0007-0.0049; P=.01).CONCLUSIONSIn inactive individuals with type 2 diabetes, a novel smartphone game incorporating established motivational elements and personalized PA recommendations elicits significant increases in intrinsic PA motivation that are accompanied by de-facto improvements in PA adherence over 24 weeks.TRIAL REGISTRATIONClinicalTrials.gov NCT02657018; https://clinicaltrials.gov/ct2/show/NCT02657018.

38. Characterizing Active Ingredients of eHealth Interventions Targeting Persons With Poorly Controlled Type 2 Diabetes Mellitus Using the Behavior Change Techniques Taxonomy: Scoping Review.

Authors Kebede, Mihiretu M; Liedtke, Tatjana P; Möllers, Tobias; Pischke, Claudia R
Source Journal of medical Internet research; Oct 2017; vol. 19 (no. 10); p. e348
Publication Date Oct 2017
Publication Type(s) Journal Article Review
PubMedID 29025693
Database Medline
Available at Journal of medical Internet research from Europe PubMed Central - Open Access
Available at Journal of medical Internet research from ProQuest (Health Research Premium) - NHS Version
Available at Journal of medical Internet research from Unpaywall
Abstract BACKGROUNDThe behavior change technique taxonomy v1 (BCTTv1; Michie and colleagues, 2013) is a comprehensive tool to characterize active ingredients of interventions and includes 93 labels that are hierarchically clustered into 16 hierarchical clusters.OBJECTIVEThe aim of this study was to identify the active ingredients in electronic health (eHealth) interventions targeting patients with poorly controlled type 2 diabetes mellitus (T2DM) and relevant outcomes.METHODSWe conducted a scoping review using the BCTTv1. Randomized controlled trials (RCTs), studies with or pre-post-test designs, and quasi-experimental studies examining efficacy and effectiveness of eHealth interventions for disease management or the promotion of relevant health behaviors were identified by searching PubMed, Web of Science, and PsycINFO. Reviewers independently screened titles and abstracts for eligibility using predetermined eligibility criteria. Data were extracted following a data extraction sheet. The BCTTv1 was used to characterize active ingredients of the interventions reported in the included studies.RESULTSOf the 1404 unique records screened, 32 studies fulfilled the inclusion criteria and reported results on the efficacy and or or effectiveness of interventions. Of the included 32 studies, 18 (56%) were Web-based interventions delivered via personal digital assistant (PDA), tablet, computer, and/or mobile phones; 7 (22%) were telehealth interventions delivered via landline; 6 (19%) made use of text messaging (short service message, SMS); and 1 employed videoconferencing (3%). Of the 16 hierarchical clusters of the BCTTv1, 11 were identified in interventions included in this review. Of the 93 individual behavior change techniques (BCTs), 31 were identified as active ingredients of the interventions. The most common BCTs identified were instruction on how to perform behavior, adding objects to the environment, information about health consequences, self-monitoring of the outcomes and/or and prefers to be explicit to avoid ambiguity. Response: Checked and avoided of a certain behavior Author: Please note that the journal discourages the use of parenthesis to denote either and/or and prefers to be explicit to avoid ambiguity. Response: Checked and avoided "and/or" and prefers to be explicit to avoid ambiguity. Response: Checked and avoided, and feedback on outcomes of behavior.CONCLUSIONSOur results suggest that the majority of BCTs employed in interventions targeting persons with T2DM revolve around the promotion of self-regulatory behavior to manage the disease or to assist patients in performing health behaviors necessary to prevent further complications of the disease. Detailed reporting of the BCTs included in interventions targeting this population may facilitate the replication and further investigation of such interventions.

39. Preventing type 2 diabetes mellitus: room for residual risk reduction after lifestyle changes?

Authors Athyros, Vasilios G; Tziomalos, Konstantinos; Karagiannis, Asterios; Mikhailidis, Dimitri P
Source Current pharmaceutical design; 2010; vol. 16 (no. 34); p. 3939
Publication Date 2010
Publication Type(s) Journal Article Review
PubMedID 21128892
Database Medline
Abstract It is well known that type 2 diabetes mellitus (T2DM) is a major risk factor for cardiovascular diseases (CVD). A predicted worldwide increase in the incidence of T2DM, taking the form of an epidemic, is expected to induce a substantial increase in CVD incidence. Impaired glucose tolerance (IGT) and impaired fasting glucose (IFG) are related to an increased risk of developing T2DM, especially in obese people. Prevention of T2DM aiming to reversal of pre-diabetes to normal glucose tolerance seems to be a very attractive target, and favourably affects CVD risk factors. The Diabetes Prevention Program and the Finnish Diabetes Prevention studies showed that changes in lifestyle prevented or delayed the onset of new cases of T2DM in subjects with pre-diabetes by 58%. However, a fraction of participants still developed T2DM, suggesting a residual risk. Moreover, lifestyle changes are not usually followed on a long-term basis as shown in EUROASPIRE with an increase in new onset T2DM by 60% in subjects with CVD in just over a decade. T2DM is characterized by insulin resistance and/or β-cell dysfunction (impaired insulin secretion). Various interventions targeting those two mechanisms (e.g. metformin, thiazolidinediones, acarbose, orlistate, bariatric surgery, renin-angiotensin-aldosterone system axis inhibitors, fibrates, incretin mimetics or enhancers) can prevent or delay T2DM. Widespread application of these measures has, however, been limited by financial considerations, even though cost-effectiveness might be achieved at the population level. This review will investigate feasibility and usefulness of T2DM prevention, further to that achieved with lifestyle changes, in a cost-effective manner.

40. Empowering Diabetes Patients with Interventions Based on Behaviour Change Techniques.

Authors Jung, Oliver; Glachs, Dietmar; Strohmeier, Felix; Mulrenin, Robert; Huisman, Sasja; Smith, Ian; van Keulen, Hilde; Sont, Jacob; Ploessnig, Manuela
Source Studies in health technology and informatics; 2019; vol. 260 ; p. 154-161
Publication Date 2019
Publication Type(s) Journal Article
PubMedID 31118332
Database Medline
Abstract The number of people with diabetes is increasing in every European country and like all chronic diseases it cannot be cured. However, patient empowerment is an acknowledged strategy for improving the patients' health situation. This paper describes the Action Plan Engine developed as a tool for diabetes patients in the POWER2DM project. The Action Plan Engine offers a guided workflow based on treatment goals and activities. A periodic review evaluates how successful a patient has fulfilled these goals and activities. Part of the evaluation is detailed feedback, in particular about 170 interventions based on Behaviour Change Techniques in order to change a patient's lifestyle behaviour towards a healthier, diabetes-appropriate lifestyle. Additionally, the Action Plan Engine offers decision trees for coping with barriers regarding glucose monitoring, exercise, carbohydrate, insulin and stress.

41. Sustained effects of a nurse coaching intervention via telehealth to improve health behavior change in diabetes.

Authors Young, Heather; Miyamoto, Sheridan; Ward, Deborah; Dharmar, Madan; Tang-Feldman, Yajarayma; Berglund, Lars
Source Telemedicine journal and e-health : the official journal of the American Telemedicine Association; Sep 2014; vol. 20 (no. 9); p. 828-834
Publication Date Sep 2014
Publication Type(s) Research Support, N.i.h., Extramural Randomized Controlled Trial Journal Article
PubMedID 25061688
Database Medline
Available at Telemedicine journal and e-health : the official journal of the American Telemedicine Association from Unpaywall
Abstract BACKGROUNDDiabetes educators and self-management programs are scarce in rural communities, where diabetes is the third highest-ranking health concern. The goal of this study was to evaluate the benefits of nurse telehealth coaching for persons with diabetes living in rural communities through a person-centered approach using motivational interviewing (MI) techniques.MATERIALS AND METHODSA randomized experimental study design was used to assign participants to receive either nurse telehealth coaching for five sessions (intervention group) or usual care (control group). Outcomes were measured in both groups using the Diabetes Empowerment Scale (DES), SF-12, and satisfaction surveys. Mean scores for each outcome were compared at baseline and at the 9-month follow-up for both groups using a Student's t test. We also evaluated the change from baseline by estimating the difference in differences (pre- and postintervention) using regression methods.RESULTSAmong the 101 participants included in the analysis, 51 received nurse telehealth coaching, and 50 received usual care. We found significantly higher self-efficacy scores in the intervention group compared with the control group based on the DES at 9 months (4.03 versus 3.64, respectively; $p<0.05$) and the difference in difference estimation (0.42; $p<0.05$).CONCLUSIONSThe nurse MI/telehealth coaching model used in this study shows promise as an effective intervention for diabetes self-management in rural communities. The sustained effect on outcomes observed in the intervention group suggests that this model could be a feasible intervention for long-term behavioral change among persons living with chronic disease in rural communities.

42. A practical framework for encouraging and supporting positive behaviour change in diabetes.

Authors Fisher, L; Polonsky, W H; Hessler, D; Potter, M B
Source Diabetic medicine : a journal of the British Diabetic Association; Dec 2017; vol. 34 (no. 12); p. 1658-1666
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Publication Type(s) Research Support, N.i.h., Extramural Journal Article Review
PubMedID 28636745
Database Medline
Available at Diabetic medicine : a journal of the British Diabetic Association from Wiley Online Library Medicine and Nursing Collection 2019
Available at Diabetic medicine : a journal of the British Diabetic Association from Ovid (Journals @ Ovid)
Available at Diabetic medicine : a journal of the British Diabetic Association from Unpaywall

Abstract A wide range of diabetes-directed interventions - including novel medications, devices and comprehensive education programmes - have been shown to be effective in clinical trials. But in the real world of diabetes care their efficacy is often dependent upon on how well a clinician is able to support personal engagement and motivation of the person with diabetes to use these new tools and knowledge consistently, and as directed. Although many person-centred motivational and behavioural strategies have been developed, for example, action planning, motivational interviewing and empowerment-based communication, the sheer number and apparent lack of clear differences among them have led to considerable confusion. The primary goal of this review, therefore, is to provide a practical framework that organizes and structures these programmes to enhance their more systematic use in clinical care. Its purpose is to enhance clinician efforts to respectfully encourage and support engagement and motivation for behaviour change in people with diabetes. The three-step framework for organizing and describing the specific clinical processes involved is based on self-determination theory and includes: clinician preparation for a different type of clinical encounter, clinician/person with diabetes relationship building, and clinician utilization of specific behavioural tools. We conclude with practical considerations for application of this framework to the real world of clinical care.

43. Gamification and Behavior Change Techniques in Diabetes Self-Management Apps.

Authors Priesterroth, Lilli; Grammes, Jennifer; Holtz, Kimberly; Reinwarth, Anna; Kubiak, Thomas
Source Journal of diabetes science and technology; Sep 2019; vol. 13 (no. 5); p. 954-958
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Available at Journal of diabetes science and technology from SAGE Journals (Premier Health Sciences 2019)
Available at Journal of diabetes science and technology from Europe PubMed Central - Open Access
Available at Journal of diabetes science and technology from Ovid (Journals @ Ovid)

Abstract BACKGROUNDDiabetes management apps may have positive effects on diabetes self-management. It remains unclear, however, which app features are particularly effective and encourage sustained app usage. Behavior change techniques (BCTs) and gamification are promising approaches to improve user engagement. However, little is known about the frequency BCTs and gamification techniques (GTs) are actually used. This app review aims to provide an overview of BCTs and GTs in current diabetes management apps.METHODSGoogle's Play Store was searched for applications using a broad search strategy (keyword: "diabetes"). We limited our research to freely available apps. A total of 56 apps matched the inclusion criteria and were reviewed in terms of the features they offer to support self-management. We used a taxonomy comprising 29 BCTs and 17 GTs to evaluate the applications. Two independent raters tested and evaluated each app.RESULTSInterrater agreement was high (ICC = .75 for BCTs; ICC = .90 for GTs). An average of 7.4 BCTs (SD = 3.1) and an average of 1.4 out of 17 GTs (SD = 1.6) were implemented in each app. Five out of 29 BCTs accounted for 55.8% of the BCTs identified in total. The GT most often identified was "feedback" and accounted for 50% of the GTs.CONCLUSIONSThe potential of BCTs and GTs in diabetes management apps has not been fully exploited yet. Only very restricted sets of BCTs and gamification features were implemented. Systematic research on the efficacy of specific BCTs and GTs is needed to provide further guidance for app design.

44. Preliminary efficacy and feasibility of referral to exercise specialists, psychologists and provision of a technology-based behavior change support package to promote physical activity in school teachers 'at risk' of, or diagnosed with, type 2 diabetes: The 'SMART Health' Pilot Study Protocol.

Authors Murphy, Maria L; Lubans, David R; Cohen, Kristen E; Robards, Sara L; Wilczynska, Magdalena; Kennedy, Sarah G; James, Erica L; Brown, Wendy J; Courneya, Kerry S; Sigal, Ronald J; Plotnikoff, Ronald C
Source Contemporary clinical trials; Mar 2019; vol. 78 ; p. 53-62
Publication Date Mar 2019
Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Clinical Trial Protocol Journal Article
PubMedID 30639752
Database Medline
Available at Contemporary clinical trials from ScienceDirect Available to PHE and Local Authority staff
Available at Contemporary clinical trials from Unpaywall

Abstract INTRODUCTIONType 2 diabetes mellitus (T2DM) is a global public health concern. Aerobic physical activity (PA) and resistance training (RT) play significant roles in the prevention and management of T2DM. The aim of this pilot trial is to determine the preliminary efficacy and confirm feasibility of referral to exercise physiologists, psychologists, and provision of a technology-based behavior change support package to promote aerobic PA and RT in school teachers 'at risk' of or diagnosed with T2DM.RESEARCH DESIGN AND METHODSThe SMART (Support, Motivation and Physical Activity Research for Teachers') Health pilot study will be evaluated using a three-arm randomized controlled trial. The intervention will be guided by Social Cognitive Theory, Health Action Process Approach Model and Cognitive Behavioral Therapy strategies. The participants will be randomly allocated to one of three study groups: Group 1: wait-list control group; Group 2: 5 face-to-face visits with a psychologist and exercise specialist over 3 months; and Group 3: same as Group 2 plus technology-based behavior change support package for an additional 6 months. Assessments will be conducted at baseline, 3-, 9- (primary time-point) and 18-months post-baseline. The primary outcome will be PA measured with pedometers.DISCUSSIONSMART Health is an innovative, multi-component intervention, that integrates referral to exercise specialists, psychologists and provision of a technology-based behavior support package to promote PA and RT in adults diagnosed with T2DM or 'at risk' of T2DM. The findings will be used to guide future PA interventions and to develop effective community-based diabetes prevention and treatment programs.TRIAL REGISTRATIONAustralian New Zealand Clinical Trials Registry No: ACTRN12616001309471.

45. A Randomised Controlled Trial to Reduce Sedentary Time in Young Adults at Risk of Type 2 Diabetes Mellitus: Project STAND (Sedentary Time ANd Diabetes).

Authors Biddle, Stuart J H; Edwardson, Charlotte L; Wilmot, Emma G; Yates, Thomas; Gorely, Trish; Bodicoat, Danielle H; Ashra, Nuzhat; Khunti, Kamlesh; Nimmo, Myra A; Davies, Melanie J
Source PloS one; 2015; vol. 10 (no. 12); p. e0143398
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Available at PloS one from Public Library of Science (PLoS)
Available at PloS one from ProQuest (MEDLINE with Full Text) - NHS Version
Available at PloS one from ProQuest (Health Research Premium) - NHS Version
Available at PloS one from Unpaywall

Abstract AIMSType 2 diabetes mellitus (T2DM), a serious and prevalent chronic disease, is traditionally associated with older age. However, due to the rising rates of obesity and sedentary lifestyles, it is increasingly being diagnosed in the younger population. Sedentary (sitting) behaviour has been shown to be associated with greater risk of cardio-metabolic health outcomes, including T2DM. Little is known about effective interventions to reduce sedentary behaviour in younger adults at risk of T2DM. We aimed to investigate, through a randomised controlled trial (RCT) design, whether a group-based structured education workshop focused on sitting reduction, with self-monitoring, reduced sitting time.METHODSAdults aged 18-40 years who were either overweight (with an additional risk factor for T2DM) or obese were recruited for the Sedentary Time ANd Diabetes (STAND) RCT. The intervention programme comprised of a 3-hour group-based structured education workshop, use of a self-monitoring tool, and follow-up motivational phone call. Data were collected at three time points: baseline, 3 and 12 months after baseline. The primary outcome measure was accelerometer-assessed sedentary behaviour after 12 months. Secondary outcomes included other objective (activPAL) and self-reported measures of sedentary behaviour and physical activity, and biochemical, anthropometric, and psycho-social variables.RESULTS187 individuals (69% female; mean age 33 years; mean BMI 35 kg/m2) were randomised to intervention and control groups. 12 month data, when analysed using intention-to-treat analysis (ITT) and per-protocol analyses, showed no significant difference in the primary outcome variable, nor in the majority of the secondary outcome measures.CONCLUSIONSA structured education intervention designed to reduce sitting in young adults at risk of T2DM was not successful in changing behaviour at 12 months. Lack of change may be due to the brief nature of such an intervention and lack of focus on environmental change. Moreover, some participants reported a focus on physical activity rather than reductions in sitting per se. The habitual nature of sedentary behaviour means that behaviour change is challenging.TRIAL REGISTRATIONControlled-Trials.com ISRCTN08434554.

46. Beyond good intentions: The role of proactive coping in achieving sustained behavioural change in the context of diabetes management.

Authors Thoolen, Bart Johan; de Ridder, Denise; Bensing, Jozien; Gorter, Kees; Rutten, Guy
Source Psychology & health; Mar 2009; vol. 24 (no. 3); p. 237-254
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Publication Type(s) Randomized Controlled Trial Journal Article
PubMedID 20204991
Database Medline

Available at Psychology & health from EBSCO (Psychology and Behavioral Sciences Collection)
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Abstract This study examines the effectiveness of a brief self-management intervention to support patients recently diagnosed with type-2 diabetes to achieve sustained improvements in their self-care behaviours. Based on proactive coping, the intervention emphasizes the crucial role of anticipation and planning in maintaining self-care behaviours. In a randomised controlled trial among recent screen-detected patients, participants who received the intervention were compared with usual-care controls, examining changes in proximal outcomes (intentions, self-efficacy and proactive coping), self-care behaviour (diet, physical activity and medication) and weight over time (0, 3 and 12 months). Subsequently, the contribution of proactive coping in predicting maintenance of behavioural change was analysed using stepwise hierarchical regression analyses, controlling for baseline self-care behaviour, patient characteristics, and intentions and self-efficacy as measured after the course. The intervention was effective in improving proximal outcomes and behaviour with regard to diet and physical activity, resulting in significant weight loss at 12 months. Furthermore, proactive coping was a better predictor of long-term self-management than either intentions or self-efficacy. Proactive coping thus offers new insights into behavioural maintenance theory and can be used to develop effective self-management interventions.

47. Increasing efficacy of primary care-based counseling for diabetes prevention: rationale and design of the ADAPT (Avoiding Diabetes Thru Action Plan Targeting) trial.

Authors Mann, Devin M; Lin, Jenny J
Source Implementation science : IS; Jan 2012; vol. 7 ; p. 6
Publication Date Jan 2012
Publication Type(s) Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Journal Article
PubMedID 22269066
Database Medline
Available at Implementation science : IS from BioMed Central
Available at Implementation science : IS from Europe PubMed Central - Open Access
Available at Implementation science : IS from SpringerLink
Available at Implementation science : IS from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Implementation science : IS from ProQuest (Health Research Premium) - NHS Version
Available at Implementation science : IS from Unpaywall

Abstract BACKGROUNDStudies have shown that lifestyle behavior changes are most effective to prevent onset of diabetes in high-risk patients. Primary care providers are charged with encouraging behavior change among their patients at risk for diabetes, yet the practice environment and training in primary care often do not support effective provider counseling. The goal of this study is to develop an electronic health record-embedded tool to facilitate shared patient-provider goal setting to promote behavioral change and prevent diabetes.METHODSThe ADAPT (Avoiding Diabetes Thru Action Plan Targeting) trial leverages an innovative system that integrates evidence-based interventions for behavioral change with already-existing technology to enhance primary care providers' effectiveness to counsel about lifestyle behavior changes. Using principles of behavior change theory, the multidisciplinary design team utilized in-depth interviews and in vivo usability testing to produce a prototype diabetes prevention counseling system embedded in the electronic health record.RESULTSThe core element of the tool is a streamlined, shared goal-setting module within the electronic health record system. The team then conducted a series of innovative, "near-live" usability testing simulations to refine the tool and enhance workflow integration. The system also incorporates a pre-encounter survey to elicit patients' behavior-change goals to help tailor patient-provider goal setting during the clinical encounter and to encourage shared decision making. Lastly, the patients interact with a website that collects their longitudinal behavior data and allows them to visualize their progress over time and compare their progress with other study members. The finalized ADAPT system is now being piloted in a small randomized control trial of providers using the system with prediabetes patients over a six-month period.CONCLUSIONSThe ADAPT system combines the influential powers of shared goal setting and feedback, tailoring, modeling, contracting, reminders, and social comparisons to integrate evidence-based behavior-change principles into the electronic health record to maximize provider counseling efficacy during routine primary care clinical encounters. If successful, the ADAPT system may represent an adaptable and scalable technology-enabled behavior-change tool for all primary care providers.TRIAL REGISTRATIONClinicalTrials.gov Identifier NCT01473654.

48. Demographic and Social-Cognitive Factors Associated with Weight Loss in Overweight, Pre-diabetic Participants of the PREVIEW Study.

Authors Hansen, Sylvia; Huttunen-Lenz, Maija; Sluik, Diewertje; Brand-Miller, Jennie; Drummen, Mathijs; Fogelholm, Mikael; Handjieva-Darlenska, Teodora; Macdonald, Ian; Martinez, Alfredo J; Larsen, Thomas Meinert; Poppitt, Sally; Raben, Anne; Schlicht, Wolfgang
Source International journal of behavioral medicine; Dec 2018; vol. 25 (no. 6); p. 682-692
Publication Date Dec 2018
Publication Type(s) Randomized Controlled Trial Multicenter Study Journal Article

PubMedID	30128932
Database	Medline Available at International journal of behavioral medicine from SpringerLink Available at International journal of behavioral medicine from ProQuest (MEDLINE with Full Text) - NHS Version Available at International journal of behavioral medicine from EBSCO (Psychology and Behavioral Sciences Collection) Available at International journal of behavioral medicine from ProQuest (Health Research Premium) - NHS Version Available at International journal of behavioral medicine from Unpaywall
Abstract	PURPOSEWeight loss has been demonstrated to be a successful strategy in diabetes prevention. Although weight loss is greatly influenced by dietary behaviors, social-cognitive factors play an important role in behavioral determination. This study aimed to identify demographic and social-cognitive factors (intention, self-efficacy, outcome expectancies, social support, and motivation with regard to dietary behavior and goal adjustment) associated with weight loss in overweight and obese participants from the PREVIEW study who had pre-diabetes.METHODProspective correlational data from 1973 adult participants were analyzed. The participants completed psychological questionnaires that assessed social-cognitive variables with regard to dietary behavior. Stepwise multiple regression analyses were performed to identify baseline demographic and social-cognitive factors associated with weight loss.RESULTSOverall, being male, having a higher baseline BMI, having a higher income, perceiving fewer disadvantages of a healthy diet (outcome expectancies), experiencing less discouragement for healthy eating by family and friends (social support), and lower education were independently linked to greater weight loss. When evaluating females and males separately, education was no longer associated with weight loss.CONCLUSIONThe results indicate that a supportive environment in which family members and friends avoid discouraging healthy eating, with the application of a strategy that uses specific behavior change techniques to emphasize the benefits of outcomes, i.e., the benefits of a healthy diet, may support weight loss efforts. Weight loss programs should therefore always address the social environment of persons who try to lose body weight because family members and friends can be important supporters in reaching a weight loss goal.

49. Facilitating treatment adherence with lifestyle changes in diabetes.

Authors	Koenigsberg, Marlon Russell; Bartlett, Donald; Cramer, J Steven
Source	American family physician; Jan 2004; vol. 69 (no. 2); p. 309-316
Publication Date	Jan 2004
Publication Type(s)	Research Support, U.s. Gov't, Non-p.h.s. Journal Article Review
PubMedID	14765768
Database	Medline Available at American family physician from ProQuest (Health Research Premium) - NHS Version
Abstract	Healthy eating and increased physical activity can prevent or delay diabetes and its complications. Techniques that facilitate adherence to these lifestyle changes can be adapted to primary care. Often, the patient's readiness to work toward change must be developed gradually. To prepare patients who are reluctant to change, it is effective to assess and address their conviction and confidence. Patients facing the long-term task of making lifestyle changes benefit from assistance in setting highly specific behavior-outcome goals and short-term behavior targets. Individualization is achieved by tailoring these goals and targets to the patient's preferences and progress, building the patient's confidence in small steps, and implementing more intensive interventions according to a stepped-care model. At each office visit, physician follow-up of the patient's self-monitored goals and targets enhances motivation and allows further customization of the plan. A coaching approach can be used to encourage positive choices, develop self-sufficiency, and assist the patient in identifying and overcoming barriers. More intensive intervention using a team approach maximizes adherence.

50. A systematic review of recruitment strategies and behaviour change techniques in group-based diabetes prevention programmes focusing on uptake and retention.

Authors	Begum, Sonia; Povey, Rachel; Ellis, Naomi; Gidlow, Christopher
Source	Diabetes research and clinical practice; Aug 2020; vol. 166 ; p. 108273
Publication Date	Aug 2020
Publication Type(s)	Journal Article Systematic Review
PubMedID	32590009
Database	Medline Available at Diabetes research and clinical practice from ScienceDirect Available to PHE and Local Authority staff Available at Diabetes research and clinical practice from Unpaywall

Abstract BACKGROUNDMany countries worldwide have developed diabetes prevention programmes (DPPs) that involve lifestyle modification. Research has shown that uptake and retention of DPPs are important and by exploring recruitment strategies and behaviour change techniques (BCTs) used, factors that are most effective in promoting uptake and retention can be identified.OBJECTIVESThis review aims to identify recruitment strategies of group-based DPPs that are associated with high uptake and common BCTs associated with high retention.METHODSPapers were identified with a systematic literature search. Programmes that were predominantly group-based and involved lifestyle modification and in which uptake and/or retention could be determined, were included. Intervention details were extracted, recruitment strategies and BCTs identified, and response, uptake and retention rates were calculated.RESULTSA range of recruitment strategies were used making it difficult to discern associations with uptake rates. For BCTs, all programmes used a credible source, 81% used instruction on how to perform a behaviour and 71% used goal setting (behaviour). BCTs more commonly found in high retention programmes included problem-solving, demonstrating the behaviour, using behavioural practice and reducing negative emotions.CONCLUSIONSRecommendations include that DPPs incorporate BCTs like problem-solving and demonstrating the behaviour to maximise retention.

51. Using motivational interviewing to reduce diabetes risk.

Authors Carino, Judy Lau; Coke, Lola; Gulanick, Meg
Source Progress in cardiovascular nursing; 2004; vol. 19 (no. 4); p. 149-154
Publication Date 2004
Publication Type(s) Journal Article Review
PubMedID 15539976
Database Medline
Abstract With the growing prevalence of diabetes worldwide, controlling modifiable risk factors for diabetes is essential to preventing complications and disease progression. Recent research strongly supports targeting at-risk prediabetes clients through therapeutic lifestyle change. Many behavior change techniques and strategies are known to be successful, yet are seldom implemented in today's health care arena. Nurses are in an excellent position to serve as change agents to assist at-risk prediabetes clients in making necessary lifestyle changes. Motivational interviewing has been shown to be effective in counseling clients toward behavior change. The major principles of motivational interviewing will be described and motivational interviewing techniques will be demonstrated using a scenario with a prediabetes client.

52. The Impact of Automated Brief Messages Promoting Lifestyle Changes Delivered Via Mobile Devices to People with Type 2 Diabetes: A Systematic Literature Review and Meta-Analysis of Controlled Trials.

Authors Arambepola, Carukshi; Ricci-Cabello, Ignacio; Manikavasagam, Pavithra; Roberts, Nia; French, David P; Farmer, Andrew
Source Journal of medical Internet research; Apr 2016; vol. 18 (no. 4); p. e86
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Publication Type(s) Research Support, Non-u.s. Gov't Meta-analysis Journal Article Review Systematic Review
PubMedID 27095386
Database Medline
Available at Journal of medical Internet research from Europe PubMed Central - Open Access
Available at Journal of medical Internet research from ProQuest (Health Research Premium) - NHS Version
Available at Journal of medical Internet research from Unpaywall

Abstract BACKGROUNDBrief automated messages have the potential to support self-management in people with type 2 diabetes, but their effect compared with usual care is unclear.OBJECTIVETo examine the effectiveness of interventions to change lifestyle behavior delivered via automated brief messaging in patients with type 2 diabetes.METHODSA systematic literature review of controlled trials examined the impact of interventions, delivered by brief messaging, and intended to promote lifestyle change in people with type 2 diabetes, on behavioral and clinical outcomes. Bibliographic databases searched included Medline, Embase, CINAHL, PsycINFO, and ISI WoK. Two reviewers independently screened citations. We extracted information on study risk of bias, setting (high versus low- and middle-income countries) and intervention characteristics (including use of theory and behavior-change techniques). Outcome measures included acceptability of the interventions and their impact on 1) determinants of lifestyle behavior (knowledge about diabetes, self-efficacy, attitudes towards self-management), 2) lifestyle behavior (diet, physical activity), and 3) clinical and patient-reported outcomes. Where possible, we pooled data using random-effects meta-analyses to obtain estimates of effect size of intervention compared to usual care.RESULTSWe identified 15 trials (15 interventions) meeting our inclusion criteria. Most interventions were delivered via short message service text messaging (n=12) and simultaneously targeted diet and physical activity (n=11). Nine interventions consisted of unidirectional messages, whereas six consisted of bidirectional messages, with patients receiving automated tailored feedback based on self-reported data. The acceptability of the interventions, and their impact on lifestyle behavior and its determinants, were examined in a low proportion of trials, with heterogeneous results being observed. In 13 trials (1155 patients) where data were available, there was a difference in glycated hemoglobin of -0.53% (95% CI -0.59% to -0.47%) between intervention groups compared to usual care. In five trials (406 patients) there was a non-significant difference in body mass index of -0.25 kg/m2 (95% CI -1.02 to 0.52). Interventions based on unidirectional messages produced similar effects in the outcomes examined, compared to those based on bidirectional messages. Interventions conducted in low- and middle-income countries showed a greater impact than those conducted in high-income countries. In general, trials were not free of bias and did not use explicit theory.CONCLUSIONSAutomated brief messages strategies can improve health outcomes in people with type 2 diabetes. Larger, methodologically robust trials are needed to confirm these positive results.

53. Behaviour change techniques targeting both diet and physical activity in type 2 diabetes: A systematic review and meta-analysis.

Authors Cradock, Kevin A; ÓLaighin, Gearóid; Finucane, Francis M; Gainforth, Heather L; Quinlan, Leo R; Ginis, Kathleen A Martin
Source The international journal of behavioral nutrition and physical activity; Feb 2017; vol. 14 (no. 1); p. 18
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Database Medline
Available at The international journal of behavioral nutrition and physical activity from BioMed Central
Available at The international journal of behavioral nutrition and physical activity from Europe PubMed Central - Open Access
Available at The international journal of behavioral nutrition and physical activity from SpringerLink
Available at The international journal of behavioral nutrition and physical activity from ProQuest (MEDLINE with Full Text) - NHS Version
Available at The international journal of behavioral nutrition and physical activity from ProQuest (Health Research Premium) - NHS Version
Available at The international journal of behavioral nutrition and physical activity from Unpaywall

Abstract BACKGROUNDChanging diet and physical activity behaviour is one of the cornerstones of type 2 diabetes treatment, but changing behaviour is challenging. The objective of this study was to identify behaviour change techniques (BCTs) and intervention features of dietary and physical activity interventions for patients with type 2 diabetes that are associated with changes in HbA1c and body weight.METHODSWe performed a systematic review of papers published between 1975-2015 describing randomised controlled trials (RCTs) that focused exclusively on both diet and physical activity. The constituent BCTs, intervention features and methodological rigour of these interventions were evaluated. Changes in HbA1c and body weight were meta-analysed and examined in relation to use of BCTs.RESULTSThirteen RCTs were identified. Meta-analyses revealed reductions in HbA1c at 3, 6, 12 and 24 months of -1.11 % (12 mmol/mol), -0.67 % (7 mmol/mol), -0.28 % (3 mmol/mol) and -0.26 % (2 mmol/mol) with an overall reduction of -0.53 % (6 mmol/mol [95 % CI -0.74 to -0.32, P < 0.00001]) in intervention groups compared to control groups. Meta-analyses also showed a reduction in body weight of -2.7 kg, -3.64 kg, -3.77 kg and -3.18 kg at 3, 6, 12 and 24 months, overall reduction was -3.73 kg (95 % CI -6.09 to -1.37 kg, P = 0.002). Four of 46 BCTs identified were associated with >0.3 % reduction in HbA1c: 'instruction on how to perform a behaviour', 'behavioural practice/rehearsal', 'demonstration of the behaviour' and 'action planning', as were intervention features 'supervised physical activity', 'group sessions', 'contact with an exercise physiologist', 'contact with an exercise physiologist and a dietitian', 'baseline HbA1c >8 %' and interventions of greater frequency and intensity.CONCLUSIONSDiet and physical activity interventions achieved clinically significant reductions in HbA1c at three and six months, but not at 12 and 24 months. Specific BCTs and intervention features identified may inform more effective structured lifestyle intervention treatment strategies for type 2 diabetes.

54. Effectiveness of lifestyle change plus dental care program in improving glycemic and periodontal status in aging patients with diabetes: a cluster, randomized, controlled trial.

Authors Saengtipbovorn, Saruta; Taneepanichskul, Surasak
Source Journal of periodontology; Apr 2015; vol. 86 (no. 4); p. 507-515
Publication Date Apr 2015
Publication Type(s) Research Support, Non-u.s. Gov't Comparative Study Randomized Controlled Trial Journal Article
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Database Medline
Available at Journal of periodontology from Wiley Online Library Medicine and Nursing Collection 2019
Available at Journal of periodontology from Ovid (Journals @ Ovid)

Abstract BACKGROUNDCurrently, there is an increased prevalence of diabetes mellitus among the aging adult population. To minimize adverse effects on glycemic control, prevention and management of general and oral complications in patients with diabetes are essential. The objective of this study is to assess the effectiveness of the lifestyle change plus dental care (LCDC) program to improve glycemic and periodontal status in aging patients with diabetes.METHODSA cluster, randomized, controlled trial was conducted in Health Centers 54 (intervention) and 59 (control) from October 2013 to April 2014. Sixty-six patients with diabetes per health center were included. At baseline, the intervention group attended 20-minute lifestyle and oral health education, individual lifestyle counseling, application of a self-regulation manual, and individual oral hygiene instruction. At month 3, the intervention group received individual lifestyle counseling and oral hygiene instruction. The intervention group received booster education every visit by viewing a 15-minute educational video. The control group received a routine program. Participants were assessed at baseline and 3- and 6-month follow-up for glycemic and periodontal status. Data were analyzed by using descriptive statistic, $\chi(2)$ test, Fisher exact test, t test, and repeated-measures analysis of variance.RESULTSAfter the 6-month follow-up, participants in the intervention group had significantly lower glycated hemoglobin, fasting plasma glucose, plaque index, gingival index, probing depth, and attachment loss when compared with the control group.CONCLUSIONThe combination of lifestyle change and dental care in one program improved both glycemic and periodontal status in older patients with diabetes.

55. Motivation and Problem Solving Versus Mobile 360° Videos to Promote Enrollment in the National Diabetes Prevention Program's Lifestyle Change Program Among People With Prediabetes: Protocol for a Randomized Trial.

Authors Gibson, Bryan; Simonsen, Sara; Barton, Jonathan; Zhang, Yue; Altizer, Roger; Lundberg, Kelly; Wetter, David W
Source JMIR research protocols; Jun 2021; vol. 10 (no. 6); p. e28884
Publication Date Jun 2021
Publication Type(s) Journal Article
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Database Medline
Available at JMIR research protocols from Europe PubMed Central - Open Access
Available at JMIR research protocols from ProQuest (Health Research Premium) - NHS Version
Available at JMIR research protocols from Unpaywall

Abstract BACKGROUNDMore than 88 million Americans are at risk of developing type 2 diabetes mellitus (T2DM). The National Diabetes Prevention Program's Lifestyle Change Program (DPP LCP) has been shown to be effective in reducing the risk of progressing from prediabetes to T2DM. However, most individuals who could benefit from the program do not enroll.OBJECTIVEThe aim of this trial is to test the real-world efficacy of 3 mobile phone-based approaches to increasing enrollment in the DPP LCP including a best-practice condition and 2 novel approaches.METHODSWe will conduct a 3-armed randomized clinical trial comparing enrollment and 1-month engagement in the DPP LCP among adults with prediabetes from 2 health care settings. Participants in the best-practice condition will receive SMS-based notifications that they have prediabetes and a link to a website that explains prediabetes, T2DM, and the DPP LCP. This will be followed by a single question survey, "Would you like the DPP LCP to call you to enroll?" Participants in the 2 intervention arms will receive the same best-practice intervention plus either 2 mobile 360° videos or up to 5 brief phone calls from a health coach trained in a motivational coaching approach known as Motivation and Problem Solving (MAPS). We will collect measures of diabetes-related knowledge, beliefs in the controllability of risk for T2DM, risk perceptions for T2DM, and self-efficacy for lifestyle change pre-intervention and 4 weeks later. The primary outcomes of the study are enrollment in the DPP LCP and 4-week engagement in the DPP LCP. In addition, data on the person-hours needed to deliver the interventions as well as participant feedback about the interventions and their acceptability will be collected. Our primary hypotheses are that the 2 novel interventions will lead to higher enrollment and engagement in the DPP LCP than the best-practice intervention. Secondary hypotheses concern the mechanisms of action of the 2 intervention arms: (1) whether changes in risk perception are associated with program enrollment among participants in the mobile 360° video group and (2) whether changes in self-efficacy for lifestyle change are associated with program enrollment among participants in the MAPS coaching group. Finally, exploratory analyses will examine the cost effectiveness and acceptability of the interventions.RESULTSThe project was funded in September 2020; enrollment began in February 2021 and is expected to continue through July 2022.CONCLUSIONSWe are conducting a test of 2 novel, scalable, mobile phone-based interventions to increase enrollment in the DPP LCP. If effective, they have tremendous potential to be scaled up to help prevent T2DM nationwide.TRIAL REGISTRATIONClinicalTrials.gov NCT04746781; https://clinicaltrials.gov/ct2/show/NCT04746781.INTERNATIONAL REGISTERED REPORT IDENTIFIER (IRRID)DERR1-10.2196/28884.

56. Successful behavioural strategies to increase physical activity and improve glucose control in adults with Type 2 diabetes.

Authors Avery, L; Flynn, D; Dombrowski, S U; van Wersch, A; Sniehotta, F F; Trenell, M I
Source Diabetic medicine : a journal of the British Diabetic Association; Aug 2015; vol. 32 (no. 8); p. 1058-1062
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PubMedID 25764343
Database Medline
Available at Diabetic medicine : a journal of the British Diabetic Association from Wiley Online Library Medicine and Nursing Collection 2019
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Available at Diabetic medicine : a journal of the British Diabetic Association from Unpaywall

Abstract AIMSTo explore which behaviour change techniques and other intervention features are associated with increased levels of physical activity and improved HbA1c in adults with Type 2 diabetes.METHODSModerator analyses were performed on a dataset of 21 behaviour change techniques and six intervention features identified in a systematic review of behavioural interventions (N = 1975 patients with Type 2 diabetes) to establish their associations with changes in physical activity and HbA1c .RESULTSFour behaviour change techniques (prompt focus on past success, barrier identification/problem-solving, use of follow-up prompts and provide information on where and when to perform physical activity) had statistically significant associations with increased levels of physical activity. Prompt review of behavioural goals and provide information on where and when to perform physical activity behaviour had statistically significant associations with improved HbA1c . Pedometer use was associated with decreased levels of physical activity.CONCLUSIONSThese data suggest that clinical care teams can optimise their consultations by incorporating specific behaviour change techniques that are associated with increased levels of physical activity and improved long-term glycaemic control.

57. Sociocognitive factors associated with lifestyle intervention attrition after successful weight loss among participants with prediabetes-The PREVIEW study.

Authors Huttunen-Lenz, Maija; Raben, Anne; Meinert-Larsen, Thomas; Drummen, Mathijs; Macdonald, Ian; Martínez, José Alfredo; Handjieva-Darlenska, Teodora; Poppitt, Sally D; Jalo, Elli; Muirhead, Roslyn; Schlicht, Wolfgang
Source Public health nursing (Boston, Mass.); May 2020; vol. 37 (no. 3); p. 393-404
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Available at Public health nursing (Boston, Mass.) from Unpaywall

Abstract INTRODUCTIONMajor risk factors for type 2 diabetes are lifestyle choices such as lack of physical activity (PA) and poor diet. Many individuals either do not take part or struggle to complete interventions supporting lifestyle changes. Demographic and theory-based sociocognitive factors associated with PREVIEW intervention attrition after successful weight loss were examined.METHODSParticipants (1,856) who started the weight maintenance phase after completion of low-energy diet were retrospectively divided into three clusters depending on the point they left the trial. Discriminant analysis examined which demographic and theory-based sociocognitive variables were associated with cluster membership.RESULTSMost of the participants were women and well-educated. Two discriminant functions were calculated ($\chi 2$ (24) = 247.0, $p \geq .05$, d = 0.78). The demographic variables, such as age and ethnicity, and the social cognitive variable outcome expectancies on the other side were associated with cluster membership. Older age, Caucasian ethnicity, and fewer expected disadvantages of PA were associated with high success.DISCUSSIONThe discriminant model gave insight into some factors associated with early attrition. For practitioners planning interventions it underlines the necessity to take extra attention to younger participants and to those being afraid that being physically active causes unpleasant ramifications.

58. 'We're all in the same boat': A qualitative study on how groups work in a diabetes prevention and management programme.

Authors Borek, Aleksandra J; Abraham, Charles; Greaves, Colin J; Tarrant, Mark; Garner, Nikki; Pascale, Melanie
Source British journal of health psychology; Nov 2019; vol. 24 (no. 4); p. 787-805
Publication Date Nov 2019
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Available at British journal of health psychology from Ovid (Journals @ Ovid)
Available at British journal of health psychology from Unpaywall

Abstract OBJECTIVESAlthough many health interventions are delivered in groups, it is unclear how group context can be best used to promote health-related behaviour change and what change processes are most helpful to participants. This study explored participants' experiences of attending type 2 diabetes prevention and management programme, and their perceptions of how group participation influenced changes in diet and physical activity.DESIGNQualitative.METHODSSemi-structured telephone interviews were conducted with 20 participants (twelve men) from nine groups in the Norfolk Diabetes Prevention Study. Interviews were audio-recorded, transcribed verbatim, and analysed using thematic analysis in NVivo.RESULTSParticipants benefited from individual change processes, including information provision, structuring and prioritizing health goals, action planning, self-monitoring, and receiving feedback. They also benefited from group processes, including having a common purpose, sharing experiences, making social comparisons, monitoring and accountability, and providing and receiving social support in the groups. Participants' engagement with, and benefits from, the groups were enhanced when there was a supportive group context (i.e., group cohesion, homogeneous group composition, and a positive group atmosphere). Optimal facilitation to develop an appropriate group context and initiate effective change processes necessitated good facilitator interpersonal and professional skills, credibility and empathy, and effective group facilitation methods. Participants reported developing a sense of responsibility and making behaviour changes that resulted in improvements in health outcomes and weight loss.CONCLUSIONSThis study highlights the role of individual and group processes in facilitating health-promoting behaviour change, and the importance of group context and optimal facilitation in promoting engagement with the programme. Statement of contribution What is already known on this subject? Many health interventions, including programmes to help prevent or manage diabetes and facilitate weight loss, are delivered in groups. Such group-based behaviour-change interventions are often effective in facilitating psychological and behaviour change. There is considerable research and theory on individual change processes and techniques, but less is known about which change processes and techniques facilitate behaviour change in group settings. What does this study add? This study contributes to our understanding of how participating in group-based health programmes may enhance or impede individual behaviour change. It identified individual (intrapersonal) and group (interpersonal, facilitated through group interaction) change processes that were valued by group participants. The findings also show how these change processes may be affected by the group context. A diagram summarizes the identified themes helping to understand interactions between these key processes occurring in groups. The study offers an insight into participants' views on, and experiences of, attending a group-based diabetes prevention and management programme. Thus, it helps better understand how the intervention might have helped them (or not) and what processes may have influenced intervention outcomes. Key practical recommendations for designing and delivering group-based behaviour-change interventions are presented, which may be used to improve future group-based health interventions.

59. Effectiveness of behavioral change techniques employed in eHealth interventions designed to improve glycemic control in persons with poorly controlled type 2 diabetes: a systematic review and meta-analysis protocol.

Authors	Kebede, Mihiretu; Christianson, Lara; Khan, Zohaib; Heise, Thomas L; Pischke, Claudia R
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Database	Medline Available at Systematic reviews from BioMed Central Available at Systematic reviews from Europe PubMed Central - Open Access Available at Systematic reviews from SpringerLink Available at Systematic reviews from ProQuest (MEDLINE with Full Text) - NHS Version Available at Systematic reviews from ProQuest (Health Research Premium) - NHS Version Available at Systematic reviews from Unpaywall
Abstract	BACKGROUNDThe incorporation of Behavioral Change Techniques (BCTs) in eHealth interventions for the management of non-communicable diseases (NCDs), such as type 2 diabetes mellitus (T2DM), might be a promising approach to improve clinical and behavioral outcomes of NCDs in the long run. This 3paper reports a protocol for a systematic review that aims to (a) identify the effects of individual BCTs in eHealth interventions for lowering glycated hemoglobin levels (HbA1c) and (b) investigate which additional intervention features (duration of intervention, tailoring, theory-base, and mode of delivery) affect levels of HbA1c in this population. The protocol follows the Preferred Reporting Items for Systematic review and Meta-Analysis Protocols (PRISMA-P) 2015 guideline.METHODS/DESIGNTo identify eligible studies, an extensive systematic database search (PubMed, Web of Science, and PsycINFO) using keywords will be conducted. This review will include randomized controlled trials examining the effects of eHealth interventions on HbA1c in persons with poorly controlled T2DM over a minimum follow-up period of 3 months. Relevant data will be extracted from the included studies using Microsoft Excel. The content of the interventions will be extracted from the description of interventions and will be classified according to the BCT taxonomy v1 tool. The quality of studies will be independently assessed by two reviewers using the Cochrane risk of bias tool. If the studies have adequate homogeneity, meta-analysis will be considered. The effect sizes of each BCT will be calculated using the random effect model. The quality of the synthesized evidence will be evaluated employing the Grading of the Recommendations Assessment, Development and Evaluation (GRADE) criteria.DISCUSSIONThis systematic review is one of the firsts to appraise the effectiveness of eHealth interventions employing BCTs which aimed at improving glycemic control in persons with poorly controlled T2DM. The review will aggregate the effect sizes of BCTs on HbA1c levels. The results may inform future eHealth interventions targeting poorly controlled T2DM populations.SYSTEMATIC REVIEW REGISTRATIONPROSPERO CRD42016049940.

60. Socioeconomic status and psychosocial mechanisms of lifestyle change in a type 2 diabetes prevention trial.

Authors	Hankonen, Nelli; Absetz, Pilvikki; Haukkala, Ari; Uutela, Antti
Source	Annals of behavioral medicine : a publication of the Society of Behavioral Medicine; Oct 2009; vol. 38 (no. 2); p. 160-165
Publication Date	Oct 2009
Publication Type(s)	Journal Article
PubMedID	19997790
Database	Medline Available at Annals of behavioral medicine : a publication of the Society of Behavioral Medicine from SpringerLink Available at Annals of behavioral medicine : a publication of the Society of Behavioral Medicine from ProQuest (Health Research Premium) - NHS Version Available at Annals of behavioral medicine : a publication of the Society of Behavioral Medicine from ProQuest (MEDLINE with Full Text) - NHS Version Available at Annals of behavioral medicine : a publication of the Society of Behavioral Medicine from Ovid (Journals @ Ovid)

Abstract BACKGROUNDLittle is known about psychosocial mechanisms that may underlie differences in lifestyle change between socioeconomic groups.PURPOSEThe purpose of this study is to examine how educational level influences middle-aged participants' (N = 385) psychosocial responses to the GOAL Lifestyle Implementation Trial.METHODSThe measurements of self-efficacy and planning for healthy lifestyle were conducted pre-intervention (T1) and post-intervention (T2, 3 months), and measurements of exercise and healthy eating as outcomes at T1 and at 12 months (T3).RESULTSPsychosocial determinants at T1 and their T1-T2 changes were mostly similar, irrespective of educational levels. Exercise barriers self-efficacy was enhanced slightly less (p = 0.08) among the low-SES. T2 levels as well as pre-post-intervention changes in exercise self-efficacy predicted 12-month changes in exercise, and T2 diet coping planning predicted changes in dietary fat intake. The associations were similar across all SES groups.CONCLUSIONSEnhancing self-efficacy and planning is similarly effective among intervention participants regardless of education level.

61. Lifestyle Change Plus Dental Care (LCDC) program improves knowledge, attitude, and practice (KAP) toward oral health and diabetes mellitus among the elderly with type 2 diabetes.

Authors Saengtipbovorn, Saruta; Taneepanichskul, Surasak
Source Journal of the Medical Association of Thailand = Chotmaihet thangphaet; Mar 2015; vol. 98 (no. 3); p. 279-290
Publication Date Mar 2015
Publication Type(s) Research Support, Non-u.s. Gov't Controlled Clinical Trial Multicenter Study Journal Article
PubMedID 25920299
Database Medline
Abstract BACKGROUNDCurrently, there is an increased prevalence of diabetes mellitus among the elderly. Chronic inflammation from diabetes mellitus effects glycemic control and increases risk of diabetes complications.OBJECTIVETo assess the effectiveness of a Lifestyle Change plus Dental Care (LCDC) program by improved knowledge, attitude, and practice (KAP) toward oral health and diabetes mellitus among the elderly with type 2 diabetes.MATERIAL AND METHODA quasi-experimental study was conducted in two Health Centers (HC 54 intervention and HC 59 control) between October 2013 and April 2014. Sixty-six diabetic patients per health center were recruited. At baseline, the intervention group attended a 20-minute lifestyle and oral health education program, individual lifestyle counseling using motivational interviewing, application of self-regulation manual, and individual oral hygiene instruction. At 3-month follow-up, the intervention group received individual lifestyle counseling and oral hygiene instruction. The intervention group received booster education every visit by viewing a 15-minute educational video. The control group received the routine program. Participants were assessed at baseline, 3-month, and 6-month follow-up for knowledge, attitude, and practice (KAP) toward oral health and diabetes mellitus. Data was analyzed by using descriptive statistic, Chi-square test, Fisher's exact test, and repeated measure ANOVA.RESULTSAfter the 6-month follow-up, repeated measure ANOVA analysis showed that participants in the intervention group had significantly higher knowledge and attitude toward oral health and diabetes mellitus. The participants in the intervention group were more likely to exercise, modify diet, have foot examinations, always wear covered shoes, participate in self-feet screening, use dental floss, and use inter-proximal brush than the control group with statistically significant differences.CONCLUSIONThe combination of lifestyle change and dental care in one program improved knowledge, attitude, andpractice (KAP) toward oral health and diabetes mellitus in the elderly with type 2 diabetes. Trial registration: ClinicalTrials.in.th: TCTR20140602001.

62. Implementing Lifestyle Change Interventions to Prevent Type 2 Diabetes in US Medicaid Programs: Cost Effectiveness, and Cost, Health, and Health Equity Impact.

Authors Laxy, Michael; Zhang, Ping; Ng, Boon Peng; Shao, Hui; Ali, Mohammed K; Albright, Ann; Gregg, Edward W
Source Applied health economics and health policy; Oct 2020; vol. 18 (no. 5); p. 713-726
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PubMedID 32607728
Database Medline
Available at Applied health economics and health policy from SpringerLink
Available at Applied health economics and health policy from Unpaywall

Abstract BACKGROUNDLifestyle change interventions (LCI) for prevention of type 2 diabetes are covered by Medicare, but rarely by US Medicaid programs that constitute the largest public payer system in the USA. We estimate the long-term health and economic implications of implementing LCIs in state Medicaid programs.METHODSWe compared LCIs modeled after the intervention of the Diabetes Prevention Program versus routine care advice using a decision analytic simulation model and best available data from representative surveys, cohort studies, Medicaid claims data, and the published literature. Target population were non-disability-based adult Medicaid beneficiaries aged 19-64 years at high risk for type 2 diabetes (BMI ≥25 kg/m2 and HbA1c ≥ 5.7% or fasting plasma glucose ≥ 110 mg/dl) from eight study states (Alabama, California, Connecticut, Florida, Iowa, Illinois, New York, Oklahoma) that represent around 50% of the US Medicaid population. Incremental cost-effectiveness ratios (ICERs) measured in cost per quality-adjusted life years (QALYs) gained, and population cost and health impact were modeled from a healthcare system perspective and a narrow Medicaid perspective.RESULTSIn the eight selected study states, 1.9 million or 18% of non-disability-based adult Medicaid beneficiaries would belong to the eligible high-risk target population - 66% of them Hispanics or non-Hispanic black. In the base-case analysis, the aggregated 5- and 10-year ICERs are US$226 k/QALY and US$34 k/QALY; over 25 years, the intervention dominates routine care. The 5-, 10-, and 25-year probabilities that the ICERs are below US$50 k (US$100 k)/QALY are 6% (15%), 59% (82%) and 96% (100%). From a healthcare system perspective, initial program investments of US$800 per person would be offset after 13 years and translate to US$548 of savings after 25 years. With a 20% LCI uptake in eligible beneficiaries, this would translate to upfront costs of US$300 million, prevent 260 thousand years of diabetes and save US$205 million over a 25-year time horizon. Cost savings from a narrow Medicaid perspective would be much smaller. Minorities and low-income groups would over-proportionally benefit from LCIs in Medicaid, but the impact on population health and health equity would be marginal.CONCLUSIONSIn the long-term, investments in LCIs for Medicaid beneficiaries are likely to improve health and to decrease healthcare expenditures. However, population health and health equity impact would be low and healthcare expenditure savings from a narrow Medicaid perspective would be much smaller than from a healthcare system perspective.

63. Prediabetes screening intervention used to promote a lifestyle change program.

Authors Gladback, Chelsea; Oprinovich, Sarah
Source Journal of the American Pharmacists Association : JAPhA; 2021; vol. 61 (no. 4S); p. S135
Publication Date 2021
Publication Type(s) Journal Article Research Support, Non-u.s. Gov't
PubMedID 33582028
Database Medline
Available at Journal of the American Pharmacists Association : JAPhA from ScienceDirect
Abstract BACKGROUNDAccording to the 2020 Centers for Disease Control and Prevention (CDC) report on diabetes in the United States, an estimated 88 million Americans have prediabetes. A study found that those who were aware that they had prediabetes were more likely to engage in diabetes risk-reducing behaviors. There is no current literature supporting methods to promote a lifestyle change program (LCP), which were proven effective at lowering the risk of prediabetes. We theorized that the results of this study may be used to justify the screening intervention to promote this LCP.OBJECTIVEThe objective of this study was to describe the impact of a prediabetes risk-screening intervention on (1) increasing awareness of participants' risk of prediabetes and (2) enrollment in the LCP.METHODSThe screening intervention consisted of informed consent, preintervention survey, intervention, and postintervention survey. The intervention included the CDC Prediabetes Screening Test, body mass index calculation, and brief risk counseling. Participants who had a CDC Prediabetes Screening Test score lower than 9 were released from counseling and the postintervention survey. Eligible participants were offered enrollment in the LCP. Preintervention and postintervention survey scores were compared using paired t tests, with significance set at P ≤ 0.05.RESULTSOf the 53 total participants, 46 screened positive on the CDC Prediabetes Screening Test. Of these 46 participants, 33 met the CDC eligibility requirements for the LCP. Of these 33 participants, 12 enrolled in the LCP, which was the same number as a previous pilot study. Mean survey scores increased from 9.41 to 9.65 out of 10 (P = 0.002). Overall, 89.1% (N = 46) of participants reported that the intervention increased their awareness of the risk of prediabetes.CONCLUSIONThe prediabetes screening intervention successfully increased awareness of risk of prediabetes, both quantitatively and according to participant report. The intervention led to equivalent enrollment in the LCP as the previous pilot year.

64. Changing physical activity behavior in type 2 diabetes: a systematic review and meta-analysis of behavioral interventions.

Authors Avery, Leah; Flynn, Darren; van Wersch, Anna; Sniehotta, Falko F; Trenell, Michael I
Source Diabetes care; Dec 2012; vol. 35 (no. 12); p. 2681-2689
Publication Date Dec 2012
Publication Type(s) Research Support, Non-u.s. Gov't Meta-analysis Journal Article Review Systematic Review
PubMedID 23173137
Database Medline
Available at Diabetes care from HighWire - Free Full Text

Available at Diabetes care from ProQuest (Health Research Premium) - NHS Version
Available at Diabetes care from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Diabetes care from Ovid (Journals @ Ovid)
Available at Diabetes care from Unpaywall

Abstract OBJECTIVEBehavioral interventions targeting "free-living" physical activity (PA) and exercise that produce long-term glycemic control in adults with type 2 diabetes are warranted. However, little is known about how clinical teams should support adults with type 2 diabetes to achieve and sustain a physically active lifestyle.RESEARCH DESIGN AND METHODSWe conducted a systematic review of randomized controlled trials (RCTs) (published up to January 2012) to establish the effect of behavioral interventions (compared with usual care) on free-living PA/exercise, HbA(1c), and BMI in adults with type 2 diabetes. Study characteristics, methodological quality, practical strategies for increasing PA/exercise (taxonomy of behavior change techniques), and treatment fidelity strategies were captured using a data extraction form.RESULTSSeventeen RCTs fulfilled the review criteria. Behavioural interventions showed statistically significant increases in objective (standardized mean difference [SMD] 0.45, 95% CI 0.21-0.68) and self-reported PA/exercise (SMD 0.79, 95% CI 0.59-0.98) including clinically significant improvements in HbA(1c) (weighted mean difference [WMD] -0.32%, 95% CI -0.44% to -0.21%) and BMI (WMD -1.05 kg/m(2), 95% CI -1.31 to -0.80). Few studies provided details of treatment fidelity strategies to monitor/improve provider training. Intervention features (e.g., specific behavior change techniques, interventions underpinned by behavior change theories/models, and use of ≥10 behaviour change techniques) moderated effectiveness of behavioral interventions.CONCLUSIONSBehavioral interventions increased free-living PA/exercise and produced clinically significant improvements in long-term glucose control. Future studies should consider use of theory and multiple behavior change techniques associated with clinically significant improvements in HbA(1c), including structured training for care providers on the delivery of behavioural interventions.

65. Public Health Approaches to Type 2 Diabetes Prevention: the US National Diabetes Prevention Program and Beyond.

Authors Gruss, Stephanie M; Nhim, Kunthea; Gregg, Edward; Bell, Miriam; Luman, Elizabeth; Albright, Ann
Source Current diabetes reports; Aug 2019; vol. 19 (no. 9); p. 78
Publication Date Aug 2019
Publication Type(s) Journal Article Review
PubMedID 31385061
Database Medline
Available at Current diabetes reports from SpringerLink
Available at Current diabetes reports from ProQuest (Health Research Premium) - NHS Version
Available at Current diabetes reports from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Current diabetes reports from Unpaywall

Abstract PURPOSE OF REVIEWThis article highlights foundational evidence, translation studies, and current research behind type 2 diabetes prevention efforts worldwide, with focus on high-risk populations, and whole-population approaches as catalysts to global prevention.RECENT FINDINGSContinued focus on the goals of foundational lifestyle change program trials and their global translations, and the targeting of those at highest risk through both in-person and virtual modes of program delivery, is critical. Whole-population approaches (e.g., socioeconomic policies, healthy food promotion, environmental/systems changes) and awareness raising are essential complements to efforts aimed at high-risk populations. Successful type 2 diabetes prevention strategies are being realized in the USA through the National Diabetes Prevention Program and elsewhere in the world. A multi-tiered approach involving appropriate risk targeting and whole-population efforts is essential to curb the global diabetes epidemic.

66. The cost-effectiveness of interventions targeting lifestyle change for the prevention of diabetes in a Swedish primary care and community based prevention program.

Authors Neumann, Anne; Lindholm, Lars; Norberg, Margareta; Schoffer, Olaf; Klug, Stefanie J; Norström, Fredrik
Source The European journal of health economics : HEPAC : health economics in prevention and care; Sep 2017; vol. 18 (no. 7); p. 905-919
Publication Date Sep 2017
Publication Type(s) Journal Article
PubMedID 27913943
Database Medline
Available at The European journal of health economics : HEPAC : health economics in prevention and care from SpringerLink
Available at The European journal of health economics : HEPAC : health economics in prevention and care from ProQuest (MEDLINE with Full Text) - NHS Version
Available at The European journal of health economics : HEPAC : health economics in prevention and care from ProQuest (Health Research Premium) - NHS Version
Available at The European journal of health economics : HEPAC : health economics in prevention and care from Unpaywall

Abstract BACKGROUNDPolicymakers need to know the cost-effectiveness of interventions to prevent type 2 diabetes (T2D). The objective of this study was to estimate the cost-effectiveness of a T2D prevention initiative targeting weight reduction, increased physical activity and healthier diet in persons in pre-diabetic states by comparing a hypothetical intervention versus no intervention in a Swedish setting.METHODSA Markov model was used to study the cost-effectiveness of a T2D prevention program based on lifestyle change versus a control group where no prevention was applied. Analyses were done deterministically and probabilistically based on Monte Carlo simulation for six different scenarios defined by sex and age groups (30, 50, 70 years). Cost and quality adjusted life year (QALY) differences between no intervention and intervention and incremental cost-effectiveness ratios (ICERs) were estimated and visualized in cost-effectiveness planes (CE planes) and cost-effectiveness acceptability curves (CEA curves).RESULTSAll ICERs were cost-effective and ranged from 3833 €/QALY gained (women, 30 years) to 9215 €/QALY gained (men, 70 years). The CEA curves showed that the probability of the intervention being cost-effective at the threshold value of 50,000 € per QALY gained was very high for all scenarios ranging from 85.0 to 91.1%.DISCUSSION/CONCLUSIONThe prevention or the delay of the onset of T2D is feasible and cost-effective. A small investment in healthy lifestyle with change in physical activity and diet together with weight loss are very likely to be cost-effective.

67. Diabetes Self-Management: Facilitating Lifestyle Change.

Authors Koenigsberg, Marlon Russell; Corliss, Jennifer
Source American family physician; Sep 2017; vol. 96 (no. 6); p. 362-370
Publication Date Sep 2017
Publication Type(s) Journal Article
PubMedID 28925635
Database Medline
Available at American family physician from ProQuest (Health Research Premium) - NHS Version

Abstract Healthy eating and increased physical activity can prevent or delay the onset of diabetes mellitus and facilitate diabetes management. Current guidelines recommend long-term weight loss of 5% to 7% of body weight and 150 minutes of at least moderate-intensity physical activity per week for most patients with prediabetes and diabetes. Techniques to assess and facilitate adherence to these lifestyle changes can be practical in primary care. During office visits, physicians should assess and gradually encourage patients' readiness to work toward change. Addressing patients' conviction and confidence can be effective in moving them toward action. Long-term goals are best separated into highly specific short-term outcome goals and achievable behavior targets. Lifestyle goals and targets should be tailored to patients' preferences and progress while building confidence in small steps. Screening for diabetes-related attitudes, expectations, and quality of life, and addressing psychosocial factors, both favorable and unfavorable, can facilitate the likelihood of success. Follow-up contact with patients helps maintain and expand progress by reviewing self-monitored goals, targets, and achievements; finding opportunities to encourage and empower; reviewing slips, triggers, and obstacles; and negotiating further customization of the plan.

68. DiAlert: a prevention program for overweight first degree relatives of type 2 diabetes patients: results of a pilot study to test feasibility and acceptability.

Authors Heideman, Wieke H; de Wit, Maartje; Middelkoop, Barend J C; Nierkens, Vera; Stronks, Karien; Verhoeff, Arnoud P; Snoek, Frank J
Source Trials; Sep 2012; vol. 13 ; p. 178
Publication Date Sep 2012
Publication Type(s) Research Support, Non-u.s. Gov't Evaluation Study Journal Article
PubMedID 23013843
Database Medline
Available at Trials from BioMed Central
Available at Trials from Europe PubMed Central - Open Access
Available at Trials from SpringerLink
Available at Trials from Unpaywall

Abstract BACKGROUNDPrevalence of type 2 diabetes mellitus is increasing due to lifestyle changes, particularly affecting those genetically at risk. We developed DiAlert as a targeted group-based intervention aimed to promote intrinsic motivation and action planning for lifestyle changes and weight loss in first degree relatives of patients with type 2 diabetes mellitus.The main objective of the pilot of the DiAlert intervention was to assess fidelity, feasibility and acceptability prior to starting the randomized controlled trial.METHODSIndividuals with a family history of type 2 diabetes mellitus were self-identified and screened for eligibility. DiAlert consists of two group sessions. Feasibility, fidelity, acceptability and self-reported perceptions and behavioral determinants were evaluated in a pre-post study using questionnaires and observations. Determinants of behavior change were analyzed using paired-samples t tests and Wilcoxon signed rank tests.RESULTSDiAlert was delivered to two groups of first degree relatives of patients with type 2 diabetes mellitus (N = 9 and N = 12). Feasibility and fidelity were confirmed. Overall, the DiAlert group sessions were positively evaluated (8.0 on a scale of 1 to 10) by participants. The intervention did not impact perceived susceptibility or worry about personal diabetes risk. Action planning with regard to changing diet and physical activity increased.CONCLUSIONSDiAlert proved feasible and was well-accepted by participants. Positive trends in action planning indicate increased likelihood of actual behavior change following DiAlert. Testing the effectiveness in a randomized controlled trial is imperative.TRIAL REGISTRATIONNetherlands National Trial Register (NTR): NTR2036.

69. Implementing lifestyle change through phone-based motivational interviewing in rural-based women with previous gestational diabetes mellitus.

Authors Reinhardt, Judith A; van der Ploeg, Hidde P; Grzegrzulka, Richard; Timperley, Jennifer G
Source Health promotion journal of Australia : official journal of Australian Association of Health Promotion Professionals; Apr 2012; vol. 23 (no. 1); p. 5-9
Publication Date Apr 2012
Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Journal Article
PubMedID 22730940
Database Medline
Available at Health promotion journal of Australia : official journal of Australian Association of Health Promotion Professionals from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Health promotion journal of Australia : official journal of Australian Association of Health Promotion Professionals from Ovid (Journals @ Ovid)

Abstract ISSUE ADDRESSEDSubstantial numbers of women with past gestational diabetes mellitus (GDM) develop type 2 diabetes mellitus (T2DM). In northern New South Wales 23% of women attending diabetes services between 2007 and 2010 with T2DM previously had GDM. This study investigated whether phone-based lifestyle education using motivational interviewing resulted in positive lifestyle change post GDM for women in a large rural area.METHODThirty-eight women were recruited to this pilot study following GDM diagnosis and randomly allocated to either the control or intervention group. Following baseline assessment, the intervention group received a 6-month phone-based motivational interviewing program, and access to usual care. The control group received usual care only. Measures were collected at baseline (6 weeks postnatal), and at 6 months follow-up. Outcome measures included body mass index, diet, and physical activity.RESULTSAt follow-up, the intervention group compared to the control group significantly reduced total fat intake by -19 g/d (95%CI: -37 to -1), total carbohydrate intake by -42 g/d (95%CI: -82 to -1), and glycaemic load by -26 units (95%CI: -48 to -4). These women also increased leisure physical activity compared to the control group by 11 min/d (95%CI: 1 to 22); no significant change in total physical activity levels occurred. At follow-up, body mass index in the intervention group improved by -1.5 kg/m2 (95%CI: -2.8 to -0.1) compared to the control group.CONCLUSIONThe intervention group showed positive trends across lifestyle variables compared to the control group. Further large-scale research on the effectiveness of phone-based lifestyle counselling following GDM is warranted.

70. A Pharmacist Telephone Intervention to Identify Adherence Barriers and Improve Adherence Among Nonadherent Patients with Comorbid Hypertension and Diabetes in a Medicare Advantage Plan.

Authors Abughosh, Susan M; Wang, Xin; Serna, Omar; Henges, Chris; Masilamani, Santhi; Essien, Ekere James; Chung, Nancy; Fleming, Marc
Source Journal of managed care & specialty pharmacy; Jan 2016; vol. 22 (no. 1); p. 63-73
Publication Date Jan 2016
Publication Type(s) Journal Article
PubMedID 27015053
Database Medline
Available at Journal of managed care & specialty pharmacy from Unpaywall

Abstract BACKGROUNDPatients with comorbid hypertension (HTN) and diabetes mellitus (DM) are at a high risk of developing macrovascular and microvascular complications of DM. Controlling high blood pressure can greatly reduce these complications. Angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin II receptor blockers (ARBs) are recommended for patients with both DM and HTN by the American Diabetes Association guidelines, and their benefit and efficacy in reducing macrovascular and microvascular complications of DM have been well documented. Poor adherence, however, remains a significant barrier to achieving full effectiveness and optimal outcomes.OBJECTIVETo examine the effect of a brief pharmacist telephone intervention in identifying adherence barriers and improving adherence to ACEI/ARB medications among nonadherent patients with comorbid HTN and DM who are enrolled in a Medicare Advantage plan.METHODSCigna-HealthSpring's medical claims data was used to identify patients with HTN and DM diagnoses by using ICD-9-CM codes 401 and 250, and at least 2 fills for ACEIs or ARBs between January 2013 and October 2013. Patients who failed to refill their medication for more than 1 day and had a proportion of days covered (PDC) < 0.8 were considered nonadherent and were contacted by a pharmacist by phone to identify adherence barriers. Two outcome variables were evaluated: The first was adherence to ACEIs/ARBs, defined as PDC during the 6 months following the phone call intervention. The second outcome variable was a categorical outcome of discontinuation versus continuation. Discontinuation was defined as not using ACEIs/ARBs during the 6-month post-intervention period. Patients who disenrolled from the plan in 2014 or were switched to another medication commonly used for treating DM and HTN were excluded from further analysis. Descriptive statistics were conducted to assess the frequency distribution of sample demographic characteristics at baseline. Multiple linear regression was conducted to assess the intervention effect on adherence during the 6 months post-intervention using the first outcome of post-intervention PDC, adjusting for baseline PDC and other covariates. Logistic regression was performed to assess the association between medication discontinuation and other baseline characteristics using the second outcome of discontinuation. Other control variables in the models included demographics (age, sex, language), physician specialty (primary care vs. specialist), health plan (low-income subsidy vs. other), Centers for Medicare & Medicaid risk score, Charlson Comorbidity Index, and number of distinct medications.RESULTSIn total, 186 hypertensive diabetic patients, nonadherent to ACEIs/ARBs (PDC < 0.8), were included in the study. Of the 186 patients, 87 received the pharmacist phone call intervention. Among these patients, forgetfulness (25.29%) and doctor issues, such as having difficulty scheduling appointments (16.79%), were the most commonly reported barriers. After excluding those who switched from ACEIs/ARBs to another medication, 157 patients were included in the logistic regression model. Of those, 131 had continued using ACEIs/ARBs and were included in the linear regression model. The mean (±SD) post-intervention PDC for the intervention group was 0.58 (±0.26) and for the control group 0.29 (±0.17). Intervention was a significant predictor of better adherence in the linear regression model after adjusting all the other baseline covariates (β = 0.3182, 95% CI = 0.19-0.38, P < 0.001). Other covariates were not significantly associated with better adherence. In the logistic regression model (discontinuation: 26 [yes]/131 [no]) for predicting medication discontinuation, patients who received intervention were more likely to continue using ACEIs/ARBs (OR = 3.56, 95% CI = 1.06-11.86), and those with a higher comorbidity index were less likely to continue using them (OR = 0.72, 95% CI = 0.53-0.99).CONCLUSIONSThe brief pharmacist telephone intervention resulted in significantly better PDCs during the 6 months following the intervention as well as lower discontinuation rates among a group of nonadherent patients with comorbid HTN and DM. The overall PDC rates in both the intervention and control groups were still lower than the recommended 80%. Improving adherence to clinically meaningful values may require more than a brief pharmacist phone call. Incorporating motivational interviewing techniques with follow-up calls to address adherence barriers may be more influential in forming sustainable behavioral change and enhancing medication adherence.

71. Lifestyle intervention, glucose tolerance, and risk of developing type 2 diabetes mellitus.

Authors Mensink, Marco
Source Metabolic syndrome and related disorders; 2005; vol. 3 (no. 1); p. 26-34
Publication Date 2005
Publication Type(s) Journal Article
PubMedID 18370707
Database Medline

Abstract Diabetes mellitus is rapidly becoming one of the main health issues in the 21st century. Environmental factors such as lifestyle habits (i.e., physical inactivity and dietary intake) and obesity may act as initiating factors or progression factors for type 2 diabetes. Therefore, changes in lifestyle (i.e., diet and physical activity) should have the potential to postpone or prevent the development of type 2 diabetes mellitus in subjects at high risk (for example, those with impaired glucose tolerance [IGT]). Several independent and well-controlled randomized studies have shown the beneficial impact of a lifestyle intervention program on glucose tolerance, insulin resistance, and diabetes risk in populations at risk for developing type 2 diabetes mellitus. After 2 years of a combined diet and physical activity intervention program, according to general public health guidelines, the Study on Lifestyle-intervention and IGT Maastricht (SLIM) revealed an improved glucose tolerance in the intervention group compared to a further deterioration in the control group. The Finnish Diabetes Prevention Study (DPS) and the US Diabetes Prevention Program (DPP) both observed a 58% reduction in diabetes risk after 3 years of intervention in a high-risk population. Although other intervention strategies can reduce the incidence of diabetes, lifestyle changes are the most effective mean of delaying or preventing the development of type 2 diabetes mellitus. For a successful implementation of a diabetes prevention program in a primary healthcare setting, both patients and healthcare professionals should be aware of the (clinical) significance of impaired glucose tolerance and the effectiveness of lifestyle interventions to prevent or postpone type 2 diabetes mellitus and its complications.

72. Primary prevention of diabetes mellitus type 2 and cardiovascular diseases using a cognitive behavior program aimed at lifestyle changes in people at risk: Design of a randomized controlled trial.

Authors Lakerveld, Jeroen; Bot, Sandra D M; Chinapaw, Marijke J; van Tulder, Maurits W; van Oppen, Patricia; Dekker, Jacqueline M; Nijpels, Giel
Source BMC endocrine disorders; Jun 2008; vol. 8 ; p. 6
Publication Date Jun 2008
Publication Type(s) Journal Article
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Database Medline
Available at BMC endocrine disorders from BioMed Central
Available at BMC endocrine disorders from Europe PubMed Central - Open Access
Available at BMC endocrine disorders from SpringerLink
Available at BMC endocrine disorders from Unpaywall

Abstract BACKGROUNDThe number of people with cardiovascular disease (CVD) and diabetes mellitus type 2 (T2DM) is growing rapidly. To a large extend, this increase is due to lifestyle-dependent risk factors, such as overweight, reduced physical activity, and an unhealthy diet. Changing these risk factors has the potential to postpone or prevent the development of T2DM and CVD. It is hypothesized that a cognitive behavioral program (CBP), focused in particular on motivation and self-management in persons who are at high risk for CVD and/or T2DM, will improve their lifestyle behavior and, as a result, will reduce their risk of developing T2DM and CVD.METHODS12,000 inhabitants, 30-50 years of age living in several municipalities in the semi-rural region of West-Friesland will receive an invitation from their general practitioner (n = 13) to measure their own waist circumference with a tape measure. People with abdominal obesity (male waist >/= 102 cm, female waist >or= 88 cm) will be invited to participate in the second step of the screening which includes blood pressure, a blood sample and anthropometric measurements. T2DM and CVD risk scores will then be calculated according to the ARIC and the SCORE formulae, respectively. People with a score that indicates a high risk of developing T2DM and/or CVD will then be randomly assigned to the intervention group (n = 300) or the control group (n = 300).Participants in the intervention group will follow a CBP aimed at modifying their dietary behavior, physical activity, and smoking behavior. The counseling methods that will be used are motivational interviewing (MI) and problem solving treatment (PST), which focus in particular on intrinsic motivation for change and self-management of problems of the participants. The CBP will be provided by trained nurse practitioners in the participant's general practice, and will consists of a maximum of six individual sessions of 30 minutes, followed by 3-monthly booster sessions by phone. Participants in the control group will receive brochures containing health guidelines regarding physical activity and diet, and how to stop smoking. The primary outcome measures will be changes in T2DM and CVD risk scores. Secondary outcome measures will be changes in lifestyle behavior and cost-effectiveness and cost-utility ratios. All relevant direct and indirect costs will be measured, and there will be a follow-up of 24 months.DISCUSSIONChanging behaviors is difficult, requires time, considerable effort and motivation. Combining the two counseling methods MI and PST, followed by booster sessions may result in sustained behavioral change.TRIAL REGISTRATIONCurrent Controlled Trials ISRCTN59358434.

73. The Logan Healthy Living Program: a cluster randomized trial of a telephone-delivered physical activity and dietary behavior intervention for primary care patients with type 2 diabetes or hypertension from a socially disadvantaged community--rationale, design and recruitment.

Authors Eakin, Elizabeth G; Reeves, Marina M; Lawler, Sheleigh P; Oldenburg, Brian; Del Mar, Chris; Wilkie, Ken; Spencer, Adele; Battistutta, Diana; Graves, Nicholas

Source Contemporary clinical trials; May 2008; vol. 29 (no. 3); p. 439-454
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Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Journal Article
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Available at Contemporary clinical trials from ScienceDirect Available to PHE and Local Authority staff
Abstract BACKGROUNDPhysical activity and dietary behavior changes are important to both the primary prevention and secondary management of the majority of our most prevalent chronic conditions (i.e., cardiovascular disease, hypertension, type 2 diabetes, breast and colon cancer). With over 85% of Australian adults visiting a general practitioner each year, the general practice setting has enormous potential to facilitate wide scale delivery of health behaviour interventions. However, there are also many barriers to delivery in such settings, including lack of time, training, resources and remuneration. Thus there is an important need to evaluate other feasible and effective means of delivering evidence-based physical activity and dietary behaviour programs to patients in primary care, including telephone counseling interventions.METHODSUsing a cluster randomized design with practice as the unit of randomization, this study evaluated a telephone-delivered intervention for physical activity and dietary change targeting patients with chronic conditions (type 2 diabetes or hypertension) recruited from primary care practices in a socially disadvantaged community in Queensland, Australia. Ten practices were randomly assigned to the telephone intervention or to usual care, and 434 patients were recruited. Patients in intervention practices received a workbook and 18 calls over 12 months. Assessment at baseline, 4-, 12- and 18-months allows for assessment of initial change and maintenance of primary outcomes (physical activity and dietary behavior change) and secondary outcomes (quality of life, cost-effectiveness, support for health behavior change).CONCLUSIONSThis effectiveness trial adds to the currently limited number of telephone-delivered intervention studies targeting both physical activity and dietary change. It also addresses some of the shortcomings of previous trials by targeting patients from a disadvantaged community, and by including detailed reporting on participant representativeness, intervention implementation and cost-effectiveness, as well as an evaluation of maintenance of health behavior change.

74. The diabetes educator: trying hard, but must concentrate more on behaviour.

Authors Knight, K M; Dornan, T; Bundy, C
Source Diabetic medicine : a journal of the British Diabetic Association; May 2006; vol. 23 (no. 5); p. 485-501
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Available at Diabetic medicine : a journal of the British Diabetic Association from Wiley Online Library Medicine and Nursing Collection 2019
Available at Diabetic medicine : a journal of the British Diabetic Association from Ovid (Journals @ Ovid)
Abstract Current guidelines state that education is fundamental to help people with diabetes modify their lifestyle and prevent ill health and early death. However, many people with diabetes are not receiving adequate education. There is a widespread assumption that transferring knowledge will improve health outcomes but there is little empirical support for this assertion. Indeed, knowledge and behaviour are poorly correlated. Knowledge may be a necessary condition but is rarely a sufficient condition for behaviour change. Single interventions, cognitive or behavioural, have had disappointing results, unsurprisingly given the complexity of human behaviour. The most effective interventions are multifaceted and include education, behavioural and psychosocial elements, and target lifestyle change and factors such as self-efficacy and empowerment. We advocate that educational interventions should have multiple components. They should aim to improve patients' sense of self-efficacy and empowerment, and build attitudes towards diabetes that will support the lifestyle changes needed for successful self-management. These conclusions have implications for future research and clinical practice.

75. Primary care nurses struggle with lifestyle counseling in diabetes care: a qualitative analysis.

Authors Jansink, Renate; Braspenning, Jozé; van der Weijden, Trudy; Elwyn, Glyn; Grol, Richard
Source BMC family practice; May 2010; vol. 11 ; p. 41
Publication Date May 2010
Publication Type(s) Research Support, Non-u.s. Gov't Journal Article
PubMedID 20500841
Database Medline
Available at BMC family practice from BioMed Central
Available at BMC family practice from Europe PubMed Central - Open Access
Available at BMC family practice from SpringerLink
Available at BMC family practice from Unpaywall

Abstract BACKGROUNDPatient outcomes are poorly affected by lifestyle advice in general practice. Promoting lifestyle behavior change require that nurses shift from simple advice giving to a more counseling-based approach. The current study examines which barriers nurses encounter in lifestyle counseling to patients with type 2 diabetes. Based on this information we will develop an implementation strategy to improve lifestyle behavior change in general practice.METHODIn a qualitative semi-structured study, twelve in-depth interviews took place with nurses in Dutch general practices involved in diabetes care. Specific barriers in counseling patients with type 2 diabetes about diet, physical activity, and smoking cessation were addressed. The nurses were invited to reflect on barriers at the patient and practice levels, but mainly on their own roles as counselors. All interviews were audio-recorded and transcribed. The data were analyzed with the aid of a predetermined framework.RESULTSNurses felt most barriers on the level of the patient; patients had limited knowledge of a healthy lifestyle and limited insight into their own behavior, and they lacked the motivation to modify their lifestyles or the discipline to maintain an improved lifestyle. Furthermore, nurses reported lack of counseling skills and insufficient time as barriers in effective lifestyle counseling.CONCLUSIONSThe traditional health education approach is still predominant in primary care of patients with type 2 diabetes. An implementation strategy based on motivational interviewing can help to overcome 'jumping ahead of the patient' and promotes skills in lifestyle behavioral change. We will train our nurses in agenda setting to structure the consultation based on prioritizing the behavior change and will help them to develop social maps that contain information on local exercise programs.

76. A pilot randomized trial of technology-assisted goal setting to improve physical activity among primary care patients with prediabetes.

Authors Mann, Devin M; Palmisano, Joseph; Lin, Jenny J
Source Preventive medicine reports; Dec 2016; vol. 4 ; p. 107-112
Publication Date Dec 2016
Publication Type(s) Journal Article
PubMedID 27413670
Database Medline
Available at Preventive medicine reports from ScienceDirect
Available at Preventive medicine reports from Europe PubMed Central - Open Access

Abstract Lifestyle behavior changes can prevent progression of prediabetes to diabetes but providers often are not able to effectively counsel about preventive lifestyle changes. We developed and pilot tested the Avoiding Diabetes Thru Action Plan Targeting (ADAPT) program to enhance primary care providers' counseling about behavior change for patients with prediabetes. Primary care providers in two urban academic practices and their patients with prediabetes were recruited to participate in the ADAPT study, an unblinded randomized pragmatic trial to test the effectiveness of the ADAPT program, including a streamlined electronic medical record-based goal setting tool. Providers were randomized to intervention or control arms; eligible patients whose providers were in the intervention arm received the ADAPT program. Physical activity (the primary outcome) was measured using pedometers, and data were gathered about patients' diet, weight and glycemic control. A total of 54 patients were randomized and analyzed as part of the 6-month ADAPT study (2010-2012, New York, NY). Those in the intervention group showed an increase total daily steps compared to those in the control group (+ 1418 vs - 598, p = 0.007) at 6 months. There was also a trend towards weight loss in the intervention compared to the control group (- 1.0 lbs. vs. 3.0 lbs., p = 0.11), although no change in glycemic control. The ADAPT study is among the first to use standard electronic medical record tools to embed goal setting into realistic primary care workflows and to demonstrate a significant improvement in prediabetes patients' physical activity.

77. Primary Care Providers' Prediabetes Screening, Testing, and Referral Behaviors.

Authors Nhim, Kunthea; Khan, Tamkeen; Gruss, Stephanie M; Wozniak, Gregory; Kirley, Kate; Schumacher, Patricia; Luman, Elizabeth T; Albright, Ann
Source American journal of preventive medicine; Aug 2018; vol. 55 (no. 2); p. e39
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Available at American journal of preventive medicine from Unpaywall

Abstract INTRODUCTIONIntensive behavioral counseling is effective in preventing type 2 diabetes, and insurance coverage for such interventions is increasing. Although primary care provider referrals are not required for entry to the Centers for Disease Control and Prevention (CDC)-recognized National Diabetes Prevention Program lifestyle change program, referral rates remain suboptimal. This study aims to assess the association between primary care provider behaviors regarding prediabetes screening, testing, and referral and awareness of the CDC-recognized lifestyle change program and the Prevent Diabetes STAT: Screen, Test, and Act Today™ toolkit. Awareness of the lifestyle change program and the STAT toolkit, use of electronic health records, and the ratio of lifestyle change program classes to primary care physicians were hypothesized to be positively associated with primary care provider prediabetes screening, testing, and referral behaviors.METHODSResponses from primary care providers (n=1,256) who completed the 2016 DocStyles cross-sectional web-based survey were analyzed in 2017 to measure self-reported prediabetes screening, testing, and referral behaviors. Multivariate logistic regression was used to estimate the effects of primary care provider awareness and practice characteristics on these behaviors, controlling for provider characteristics.RESULTSOverall, 38% of primary care providers were aware of the CDC-recognized lifestyle change program, and 19% were aware of the STAT toolkit; 27% screened patients for prediabetes using a risk test; 97% ordered recommended blood tests; and 23% made referrals. Awareness of the lifestyle change program and the STAT toolkit was positively associated with screening and referring patients. Primary care providers who used electronic health records were more likely to screen, test, and refer. Referring was more likely in areas with more lifestyle change program classes.CONCLUSIONSThis study highlights the importance of increasing primary care provider awareness of and referrals to the CDC-recognized lifestyle change program.

78. Psychological aspects of diabetes care: Effecting behavioral change in patients.

Authors Chew, Boon-How; Shariff-Ghazali, Sazlina; Fernandez, Aaron
Source World journal of diabetes; Dec 2014; vol. 5 (no. 6); p. 796-808
Publication Date Dec 2014
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PubMedID 25512782
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Available at World journal of diabetes from Unpaywall

Abstract Patients with diabetes mellitus (DM) need psychological support throughout their life span from the time of diagnosis. The psychological make-up of the patients with DM play a central role in self-management behaviors. Without patient's adherence to the effective therapies, there would be persistent sub-optimal control of diseases, increase diabetes-related complications, causing deterioration in quality of life, resulting in increased healthcare utilization and burden on healthcare systems. However, provision of psychosocial support is generally inadequate due to its challenging nature of needs and demands on the healthcare systems. This review article examines patient's psychological aspects in general, elaborates in particular about emotion effects on health, and emotion in relation to other psychological domains such as cognition, self-regulation, self-efficacy and behavior. Some descriptions are also provided on willpower, resilience, illness perception and proactive coping in relating execution of new behaviors, coping with future-oriented thinking and influences of illness perception on health-related behaviors. These psychological aspects are further discussed in relation to DM and interventions for patients with DM. Equipped with the understanding of the pertinent nature of psychology in patients with DM; and knowing the links between the psychological disorders, inflammation and cardiovascular outcomes would hopefully encourages healthcare professionals in giving due attention to the psychological needs of patients with DM.

79. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin.

Authors Knowler, William C; Barrett-Connor, Elizabeth; Fowler, Sarah E; Hamman, Richard F; Lachin, John M; Walker, Elizabeth A; Nathan, David M; Diabetes Prevention Program Research Group
Source The New England journal of medicine; Feb 2002; vol. 346 (no. 6); p. 393-403
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PubMedID 11832527
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Available at The New England journal of medicine from Ovid (Journals @ Ovid)
Available at The New England journal of medicine from ProQuest (Health Research Premium) - NHS Version

Abstract BACKGROUNDType 2 diabetes affects approximately 8 percent of adults in the United States. Some risk factors--elevated plasma glucose concentrations in the fasting state and after an oral glucose load, overweight, and a sedentary lifestyle--are potentially reversible. We hypothesized that modifying these factors with a lifestyle-intervention program or the administration of metformin would prevent or delay the development of diabetes.METHODSWe randomly assigned 3234 nondiabetic persons with elevated fasting and post-load plasma glucose concentrations to placebo, metformin (850 mg twice daily), or a lifestyle-modification program with the goals of at least a 7 percent weight loss and at least 150 minutes of physical activity per week. The mean age of the participants was 51 years, and the mean body-mass index (the weight in kilograms divided by the square of the height in meters) was 34.0; 68 percent were women, and 45 percent were members of minority groups.RESULTSThe average follow-up was 2.8 years. The incidence of diabetes was 11.0, 7.8, and 4.8 cases per 100 person-years in the placebo, metformin, and lifestyle groups, respectively. The lifestyle intervention reduced the incidence by 58 percent (95 percent confidence interval, 48 to 66 percent) and metformin by 31 percent (95 percent confidence interval, 17 to 43 percent), as compared with placebo; the lifestyle intervention was significantly more effective than metformin. To prevent one case of diabetes during a period of three years, 6.9 persons would have to participate in the lifestyle-intervention program, and 13.9 would have to receive metformin.CONCLUSIONSLifestyle changes and treatment with metformin both reduced the incidence of diabetes in persons at high risk. The lifestyle intervention was more effective than metformin.

80. Goal setting: an integral component of effective diabetes care.

Authors Miller, Carla K; Bauman, Jennifer
Source Current diabetes reports; Aug 2014; vol. 14 (no. 8); p. 509
Publication Date Aug 2014
Publication Type(s) Journal Article Review
PubMedID 24907180
Database Medline
Available at Current diabetes reports from SpringerLink
Available at Current diabetes reports from ProQuest (Health Research Premium) - NHS Version
Available at Current diabetes reports from ProQuest (MEDLINE with Full Text) - NHS Version

Abstract Goal setting is a widely used behavior change tool in diabetes education and training. Prior research found specific relatively difficult but attainable goals set within a specific timeframe improved performance in sports and at the workplace. However, the impact of goal setting in diabetes self-care has not received extensive attention. This review examined the mechanisms underlying behavioral change according to goal setting theory and evaluated the impact of goal setting in diabetes intervention studies. Eight studies were identified, which incorporated goal setting as the primary strategy to promote behavioral change in individual, group-based, and primary care settings among patients with type 2 diabetes. Improvements in diabetes-related self-efficacy, dietary intake, physical activity, and A1c were observed in some but not all studies. More systematic research is needed to determine the conditions and behaviors for which goal setting is most effective. Initial recommendations for using goal setting in diabetes patient encounters are offered.

81. Determinants of lifestyle behavior change to prevent type 2 diabetes in high-risk individuals.

Authors den Braver, N R; de Vet, E; Duijzer, G; Ter Beek, J; Jansen, S C; Hiddink, G J; Feskens, E J M; Haveman-Nies, A
Source The international journal of behavioral nutrition and physical activity; Jun 2017; vol. 14 (no. 1); p. 78
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Available at The international journal of behavioral nutrition and physical activity from Europe PubMed Central - Open Access
Available at The international journal of behavioral nutrition and physical activity from SpringerLink
Available at The international journal of behavioral nutrition and physical activity from ProQuest (MEDLINE with Full Text) - NHS Version
Available at The international journal of behavioral nutrition and physical activity from ProQuest (Health Research Premium) - NHS Version
Available at The international journal of behavioral nutrition and physical activity from Unpaywall

Abstract BACKGROUNDAlthough there are many effective lifestyle interventions for type 2 diabetes (T2DM) prevention, insight into effective intervention pathways, especially of long-term interventions, is often lacking. This study aims to provide insight into the effective intervention pathways of the SLIMMER diabetes prevention intervention using mediation analyses.METHODSIn total, 240 participants at increased risk of T2DM were included in the analyses over 18 months. The intervention was a combined lifestyle intervention with a dietary and a physical activity (PA) component. The primary and secondary outcomes were change in fasting insulin (pmol/L) and change in body weight (kg) after 18 months, respectively. Firstly, in a multiple mediator model, we investigated whether significant changes in these outcomes were mediated by changes in dietary and PA behavior. Secondly, in multiple single mediator models, we investigated whether changes in dietary and PA behavior were mediated by changes in behavioral determinants and the participants' psychological profile. The mediation analyses used linear regression models, where significance of indirect effects was calculated with bootstrapping.RESULTSThe effect of the intervention on decreased fasting insulin was 40% mediated by change in dietary and PA behavior, where dietary behavior was an independent mediator of the association (34%). The effect of the intervention on decreased body weight was 20% mediated by change in dietary and PA behavior, where PA behavior was an independent mediator (17%). The intervention significantly changed intake of fruit, fat from bread spread, and fiber from bread. Change in fruit intake was mediated by change in action control (combination of consciousness, self-control, and effort), motivation, self-efficacy, intention, and skills. Change in fat intake was mediated by change in action control and psychological profile. No mediators could be identified for change in fiber intake. The change in PA behavior was mediated by change in action control, motivation, and psychological profile.CONCLUSIONThe effect of the SLIMMER intervention on fasting insulin and body weight was mediated by changes in dietary and PA behavior, in distinct ways. These results indicate that changing dietary as well as PA behavior is important in T2DM prevention.

82. Cluster randomised controlled trial of a theory-based multiple behaviour change intervention aimed at healthcare professionals to improve their management of type 2 diabetes in primary care.

Authors Presseau, Justin; Mackintosh, Joan; Hawthorne, Gillian; Francis, Jill J; Johnston, Marie; Grimshaw, Jeremy M; Steen, Nick; Coulthard, Tom; Brown, Heather; Kaner, Eileen; Elovainio, Marko; Sniehotta, Falko F
Source Implementation science : IS; May 2018; vol. 13 (no. 1); p. 65
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Available at Implementation science : IS from Europe PubMed Central - Open Access
Available at Implementation science : IS from SpringerLink
Available at Implementation science : IS from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Implementation science : IS from ProQuest (Health Research Premium) - NHS Version
Available at Implementation science : IS from Unpaywall

Abstract BACKGROUNDNational diabetes audits in the UK show room for improvement in the quality of care delivered to people with type 2 diabetes in primary care. Systematic reviews of quality improvement interventions show that such approaches can be effective but there is wide variability between trials and little understanding concerning what explains this variability. A national cohort study of primary care across 99 UK practices identified modifiable predictors of healthcare professionals' prescribing, advising and foot examination. Our objective was to evaluate the effectiveness of an implementation intervention to improve six guideline-recommended health professional behaviours in managing type 2 diabetes in primary care: prescribing for blood pressure and glycaemic control, providing physical activity and nutrition advice and providing updated diabetes education and foot examination.METHODSTwo-armed cluster randomised trial involving 44 general practices. Primary outcomes (at 12 months follow-up): from electronic medical records, the proportion of patients receiving additional prescriptions for blood pressure and insulin initiation for glycaemic control and having a foot examination; and from a patient survey of a random sample of 100 patients per practice, reported receipt of updated diabetes education and physical activity and nutrition advice.RESULTSThe implementation intervention did not lead to statistically significant improvement on any of the six clinical behaviours. 1,138,105 prescriptions were assessed. Intervention (29% to 37% patients) and control arms (31% to 35%) increased insulin initiation relative to baseline but were not statistically significantly different at follow-up (IRR 1.18, 95%CI 0.95-1.48). Intervention (45% to 53%) and control practices (45% to 50%) increased blood pressure prescription from baseline to follow-up but were not statistically significantly different at follow-up (IRR 1.05, 95%CI 0.96 to 1.16). Intervention (75 to 78%) and control practices (74 to 79%) increased foot examination relative to baseline; control practices increased statistically significantly more (OR 0.84, 95%CI 0.75-0.94). Fewer patients in intervention (33%) than control practices (40%) reported receiving updated diabetes education (OR = 0.74, 95%CI 0.57-0.97). No statistically significant differences were observed in patient reports of having had a discussion about nutrition (intervention = 73%; control = 72%; OR = 0.98, 95%CI 0.59-1.64) or physical activity (intervention = 57%; control = 62%; OR = 0.79, 95%CI 0.56-1.11). Development and delivery of the intervention cost £1191 per practice.CONCLUSIONSThere was no measurable benefit to practices' participation in this intervention. Despite widespread use of outreach interventions worldwide, there is a need to better understand which techniques at which intensity are optimally suited to address the multiple clinical behaviours involved in improving care for type 2 diabetes.TRIAL REGISTRATIONISRCTN, ISRCTN66498413 . Registered April 4, 2013.

83. Physical activity consultation for people with Type 2 diabetes: evidence and guidelines.

Authors Kirk, A F; Barnett, J; Mutrie, N
Source Diabetic medicine : a journal of the British Diabetic Association; Aug 2007; vol. 24 (no. 8); p. 809-816
Publication Date Aug 2007
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Database Medline
Available at Diabetic medicine : a journal of the British Diabetic Association from Wiley Online Library Medicine and Nursing Collection 2019
Available at Diabetic medicine : a journal of the British Diabetic Association from Ovid (Journals @ Ovid)

Abstract Physical activity is an important, but often underused, therapeutic strategy within diabetes care. To date, little is known about the best way to promote physical activity in diabetes care. Physical activity consultation is an intervention designed to promote physical activity behaviour change. This article provides guidelines on how to conduct a physical activity consultation with people who have Type 2 diabetes, and reviews the evidence surrounding the effectiveness of this intervention in this population. The trans-theoretical model is the underlying theory of behaviour change for the physical activity consultation intervention. The review identifies research which supports the use of this model for understanding physical activity behaviour in people with Type 2 diabetes. The review outlines a number of modifiable variables associated with physical activity behaviour change in this population. How each of these variables is addressed within the guidelines for conducting a physical activity consultation is identified. Finally, limited but consistent research highlights the effectiveness of physical activity consultation for promoting physical activity in people with Type 2 diabetes.

84. Health information, behavior change, and decision support for patients with type 2 diabetes: development of a tailored, preference-sensitive health communication application.

Authors Weymann, Nina; Härter, Martin; Petrak, Frank; Dirmaier, Jörg
Source Patient preference and adherence; 2013; vol. 7 ; p. 1091-1099
Publication Date 2013
Publication Type(s) Journal Article
PubMedID 24174871
Database Medline
Available at Patient preference and adherence from Europe PubMed Central - Open Access
Available at Patient preference and adherence from Unpaywall

Abstract PURPOSEPatient involvement in diabetes treatment such as shared decision-making and patient self-management has significant effects on clinical parameters. As a prerequisite for active involvement, patients need to be informed in an adequate and preference-sensitive way. Interactive Health Communication Applications (IHCAs) that combine web-based health information for patients with additional support offer the opportunity to reach great numbers of patients at low cost and provide them with high-quality information and support at the time, place, and learning speed they prefer. Still, web-based interventions often suffer from high attrition. Tailoring the intervention to patients' needs and preferences might reduce attrition and should thereby increase effectiveness. The purpose of this study was to develop a tailored IHCA offering evidence-based, preference-sensitive content and treatment decision support to patients with type 2 diabetes. The content was developed based on a needs assessment and two evidence-based treatment guidelines. The delivery format is a dialogue-based, tunneled design tailoring the content and tone of the dialogue to relevant patient characteristics (health literacy, attitudes toward self-care, and psychological barriers to insulin treatment). Both content and tailoring were revised by an interdisciplinary advisory committee.CONCLUSIONThe World Wide Web holds great potential for patient information and self-management interventions. With the development and evaluation of a tailored IHCA, we complement face-to-face consultations of patients with their health care practitioners and make them more efficient and satisfying for both sides. Effects of the application are currently being tested within a randomized controlled trial.

85. The Effectiveness of Motivational Interviewing on Glycemic Control for Adults with Type 2 Diabetes Mellitus (DM2): A Systematic Review.

Authors Concert, Catherine M; Burke, Robert E; Eusebio, Anny M; Slavin, Eileen A; Shortridge-Baggett, Lillie M
Source JBI library of systematic reviews; 2012; vol. 10 (no. 42)
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Publication Type(s) Journal Article
PubMedID 27820150
Database Medline

Abstract REVIEW QUESTION/OBJECTIVEThe objective of this systematic review is to synthesize the best available evidence on the effects of motivational interviewing (MI) interventions (including adaptions of motivational interviewing [AMIs]) on the improvement of glycemic control in adults with type 2 diabetes.BACKGROUNDWorldwide, 346 million people have diabetes. With the growing prevalence of diabetes, controlling modifiable risk factors is essential to preventing complications and disease progression. The prevalence of type 2 diabetes is estimated to be double the present rate and by the year 2034 nearly 44 million Americans will have this preventable disease. In the United States (US), nearly 13 percent of adults aged 20 years and older have diabetes; this includes 25.8 million people, adults and children . Type 2 diabetes is more common in ethnic groups inclusive of African Americans, Latinos, Native Americans, and Asian Americans, Native Hawaiians and other Pacific Islanders. Diabetes is especially common in the elderly, 10.9 million or 26.9% of those aged 65 years and older have the disease. The US Centers for Disease Control and Prevention (CDC) estimates that 26% of US adults have impaired fasting glucose (IFG) of 100-125mg/dl and that 34% of adults meet the criteria for metabolic syndrome. An additional 35 % of adults have pre-diabetes, a condition marked by elevated blood sugar that is not yet in the diabetic range.Type 2 diabetes occurs when people have insulin resistance and insulin cannot be appropriately utilized for blood sugar regulation. Type 2 diabetes is characterised by impaired glucose tolerance. It can be defined by the criteria derived from the World Health Organization [WHO] that uses a single fasting glucose value of ≥ 126mg/dl or a single two hour glucose value of ≥ 200mg/dl. A laboratory blood test examining levels of glycosylated haemoglobin (HgbA1c) provides an estimated average blood glucose level over the past two-three months. An HbA1C level of 6.5% or higher can indicate diabetes.Serious complications and premature death can ensue if type 2 diabetes is not treated. Collaboratively, the health care team and people with type 2 diabetes aim to manage this disease process, and lessen the risk of complications to the heart, blood vessels, nerves, eyes and kidneys. Comprehensive support, knowledge, multidisciplinary therapy and treatment modalities will enhance health outcomes and slow disease progression.The Healthy People 2020 initiative outlines several objectives to achieve these changes and cover a comprehensive assortment of disease specific management accountabilities including regular medical care and self-management education/training. Many behaviour change techniques and strategies are known to be successful, yet are seldom implemented in today's health care arena. Dieticians, diabetes educators, and nurse practitioners are in an excellent position to serve as change agents to assist patients with diabetes in making necessary lifestyle changes.Motivational interviewing (MI) is a well-known, scientifically tested method of counseling clients first described by Miller and further developed by Miller and Rollnick. Motivational interviewing is a useful intervention strategy in the treatment of lifestyle problems and diseases such as diabetes . MI is a client-oriented, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence. The four guiding principles of MI are: express empathy, develop discrepancies, roll with resistance, and support self-efficacy. Adaptation of motivational interviewing (AMI) utilises the basic elements of motivational interviewing and also includes a feedback component. In clinical research, most empirical studies have dealt with the efficacy of AMIs and no studies have addressed the efficacy of MI in its relatively pure form.In clinical practice, health care providers utilise AMIs solely or in combination with other approaches such as the transtheoretical model (TTM) to promote behavioural change. These techniques are often used in brief sessions to maximise time, cost and efficiency.Motivational interviewing has been shown to be effective in counseling patients towards behaviour change in smoking cessation , increasing exercise, and reducing alcohol consumption. While combined effect estimates including body mass index (BMI) show a significant effect for MI, combined effect estimates for cigarettes per day and glycosylated haemoglobin (HA1c) were not significant . Isolated effects of MI on BMI and/or HbA1c have not been identified. Strong clinical evidence suggests that patients with diabetes should achieve certain clinical goals such as lowering HbA1c to reduce morbidity and mortality. Motivational interviewing is a technique that is effective in behaviour change and could potentially be effective with achieving these goals. MI may lead to improved quality of life, health status and clinical outcomes for persons with type 2 diabetes through empowerment and supporting informed decision-making, self-care behaviors, and problem-solving, with active participation and collaboration with the interdisciplinary health care team.A search of the MEDLINE, DARE, CINHAHL, PROSPERO, Joanna Briggs and Cochrane Libraries of Systematic Reviews failed to locate a review conducted on this topic.

86. Behaviour change in diabetes: behavioural science advancements to support the use of theory.

Authors McSharry, J; Byrne, M; Casey, B; Dinneen, S F; Fredrix, M; Hynes, L; Lake, A J; Morrissey, E
Source Diabetic medicine : a journal of the British Diabetic Association; Mar 2020; vol. 37 (no. 3); p. 455-463
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Available at Diabetic medicine : a journal of the British Diabetic Association from Ovid (Journals @ Ovid)
Available at Diabetic medicine : a journal of the British Diabetic Association from Unpaywall

Abstract Behaviour is central to the management of diabetes, both for people living with diabetes and for healthcare professionals delivering evidence-based care. This review outlines the evolution of behavioural science and the application of theoretical models in diabetes care over the past 25 years. There has been a particular advancement in the development of tools and techniques to support researchers, healthcare professionals and policymakers in taking a theory-based approach, and to enhance the development, reporting and replication of successful interventions. Systematic guidance, theoretical frameworks and lists of behavioural techniques provide the tools to specify target behaviours, identify why ideal behaviours are not implemented, systematically develop theory-based interventions, describe intervention content using shared terminology, and evaluate their effects. Several examples from a range of diabetes-related behaviours (clinic attendance, self-monitoring of blood glucose, retinal screening, setting collaborative goals in diabetes) and populations (people with type 1 and type 2 diabetes, healthcare professionals) illustrate the potential for these approaches to be widely translated into diabetes care. The behavioural science approaches outlined in this review give healthcare professionals, researchers and policymakers the tools to deliver care and design interventions with an evidence-based understanding of behaviour. The challenge for the next 25 years is to refine the tools to increase their use and advocate for the role of theoretical models and behavioural science in the commissioning, funding and delivery of diabetes care.

87. Spoken Animated Self-Management Video Messages Aimed at Improving Physical Activity in People With Type 2 Diabetes: Development and Interview Study.

Authors van Het Schip, Colette; Cheung, Kei Long; Vluggen, Stan; Hoving, Ciska; Schaper, Nicolaas C; de Vries, Hein
Source Journal of medical Internet research; Apr 2020; vol. 22 (no. 4); p. e15397
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Available at Journal of medical Internet research from ProQuest (Health Research Premium) - NHS Version
Available at Journal of medical Internet research from Unpaywall

Abstract BACKGROUNDWeb-based tailored interventions are a promising approach to help people with type 2 diabetes successfully adopt regular physical activity. Spoken animation seems to be effective regardless of the characteristics of the user and may be a relevant strategy to communicate complex health information.OBJECTIVEThe objectives of our study were to evaluate (1) pretesting communication elements and user appreciation, and (2) the applied behavior change techniques of the previously designed spoken animated video messages in a tailored self-management program for people with type 2 diabetes.METHODSWe conducted semistructured interviews with patients with type 2 diabetes recruited from general practices located in different socioeconomic status urban neighborhoods. Based on the pretesting key communication elements of Salazar's model, we asked participants about the spoken animated video messages' attractiveness, comprehensibility, acceptance, believability, involvement, and relevance and to what extent the video messages motivated them to become more physically active. We also assessed participants' intention to use the spoken animated video messages and to recommend them to others. To evaluate participants' appreciation of the different applied behavior change techniques, we conducted a post hoc analysis of the qualitative data using the MAXQDA program. Transcripts were coded by 2 coders using iterative qualitative content analysis methods to uncover key health communication issues.RESULTSOf 23 patients who expressed an interest in participating, 17 met the inclusion criteria and 15 took part in the interviews. The positive appreciation of the comprehensibility, believability, and personalization was supported by participants' statements on behavior change techniques and other communication elements. Reinforcement of and feedback on participants' answers were positively evaluated as was the simplicity and concreteness of the spoken animated video messages. Most participants indicated reasons for not feeling motivated to increase their physical activity level, including being already sufficiently physically active and the presence of other impeding health factors.CONCLUSIONSSpoken animated video messages should be simple, short, concrete, and without the use of medical terminology. Providing positive reinforcement, feedback on participants' answers, examples that match user characteristics, and the possibility to identify with the animation figures will enhance involvement in the health message. To connect more with patients' needs and thereby increase the perceived relevance of and motivation to use an animated video program, we suggest offering the program soon after diabetes mellitus is diagnosed. We recommend piloting behavior change techniques to identify potential resistance.

88. Why Effective Interventions Do Not Work for All Patients: Exploring Variation in Response to a Chronic Disease Management Intervention.

Authors Edlind, Merritt; Mitra, Nandita; Grande, David; Barg, Frances K; Carter, Tamala; Turr, Lindsey; Glanz, Karen; Long, Judith A; Kangovi, Shreya
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PubMedID 29939912
Database Medline
Available at Medical care from Ovid (Journals @ Ovid)
Available at Medical care from Unpaywall
Abstract BACKGROUNDHalf of all Americans have a chronic disease. Promoting healthy behaviors to decrease this burden is a national priority. A number of behavioral interventions have proven efficacy; yet even the most effective of these has high levels of nonresponse.OBJECTIVESIn this study, we explore variation in response to an evidence-based community health worker (CHW) intervention for chronic disease management.RESEARCH DESIGNWe used a convergent parallel design that combined a randomized controlled trial with a qualitative process evaluation that triangulated chart abstraction, in-depth interviews and participant observation.SUBJECTSEligible patients lived in a high-poverty region and were diagnosed with 2 or more of the following chronic diseases: diabetes, obesity, hypertension or tobacco dependence. There were 302 patients in the trial, 150 of whom were randomly assigned to the CHW intervention. Twenty patients and their CHWs were included in the qualitative evaluation.RESULTSWe found minimal differences between responders and nonresponders by sociodemographic or clinical characteristics. A qualitative process evaluation revealed that health behavior change was challenging for all patients and most experienced failure (ie, gaining weight or relapsing with cigarettes) along the way. Responders seemed to increase their resolve after failed attempts at health behavior change, while nonresponders became discouraged and "shut down."CONCLUSIONSFailure is a common and consequential aspect of health behavior change; a deeper understanding of failure should inform chronic disease interventions.

89. Primary Care Cluster RCT to Increase Diabetes Prevention Program Referrals.

Authors Keck, James W; Roper, Karen L; Hieronymus, Laura B; Thomas, Alisha R; Huang, Zhengyuan; Westgate, Philip M; Fowlkes, John L; Cardarelli, Roberto
Source American journal of preventive medicine; Jul 2020; vol. 59 (no. 1); p. 79-87
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Available at American journal of preventive medicine from Unpaywall
Abstract INTRODUCTIONThe Diabetes Prevention Program, an intensive lifestyle change program, effectively reduces the risk of progression from prediabetes to type 2 diabetes but is underutilized. An implementation study using formative research was undertaken to increase Diabetes Prevention Program referrals at a primary care clinic.STUDY DESIGNA pragmatic, cluster randomized, mixed-methods study.SETTING/PARTICPANTSClusters were teams of primary care clinicians from 2 primary care clinics. The 3 intervention clusters had 8-11 clinicians, and the 3 control clusters had 7-20 clinicians.INTERVENTIONImplementation activities occurred from December 2017 to February 2019. The activities included targeted clinician education, a prediabetes clinician champion, and a custom electronic health record report identifying patients with prediabetes.MAIN OUTCOME MEASURESThe primary outcome was referral of patients with prediabetes to the institutional Diabetes Prevention Program. Study data, including patient demographic and clinical variables, came from electronic health record. Interviews with clinicians evaluated the implementation strategies. Generalized estimating equation analyses that accounted for multiple levels of correlation and interview content analysis occurred in 2019.RESULTSStudy clinicians cared for 2,992 patients with a prediabetes diagnosis or HbA1c indicative of prediabetes (5.7%-6.4%). Clinicians in the intervention clusters referred 6.9% (87 of 1,262) of patients with prediabetes to the Diabetes Prevention Program and those in the control clusters referred 1.5% (26 of 1,730). When adjusted for patient age, sex, race, HbA1c value, HbA1c test location, and insurance type, intervention clinicians had 3.85 (95% CI=0.40, 36.78) greater odds of referring a patient with prediabetes to the Diabetes Prevention Program. The 11 interviewed intervention clinicians had mixed opinions about the utility of the interventions, reporting the prediabetes clinic champion (n=7, 64%) and educational presentations (n=6, 55%) as most helpful.CONCLUSIONSIntervention clinicians were more likely to make Diabetes Prevention Program referrals; however, the study lacked power to achieve statistical significance. Clinician interviews suggested that intervention components that triggered Diabetes Prevention Program referrals varied among clinicians.

90. The Systematic Design of a Behavioural Mobile Health Application for the Self-Management of Type 2 Diabetes.

Authors Goyal, Shivani; Morita, Plinio; Lewis, Gary F; Yu, Catherine; Seto, Emily; Cafazzo, Joseph A
Source Canadian journal of diabetes; Feb 2016; vol. 40 (no. 1); p. 95-104
Publication Date Feb 2016
Publication Type(s) Journal Article Review

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Database Medline
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Available at Canadian journal of diabetes from Unpaywall
Abstract Patients with diabetes often face serious complications due to limited self-management skills, the inability to adhere to care regimens, and psychosocial factors. Although regular self-monitoring of blood glucose is known to benefit patients receiving insulin therapy, its role in patients not treated with insulin has been unclear. However, recent studies have demonstrated that structured self-monitoring of blood glucose can significantly benefit patients who are not taking insulin, facilitating improved self-awareness and clinical decision making. We hypothesize that effective self-management by patients with type 2 diabetes who do not need insulin requires a behavioural intervention that enables the association between lifestyle behaviours, such as dietary intake and physical activity, and overall glycemic control. Mobile health applications (apps), coupled with wireless medical peripheral devices, can facilitate self-monitoring; deliver tailored, actionable knowledge; elicit positive behaviour changes and promote effective self-management of diabetes. Although existing apps incorporate tracking and feedback from healthcare providers, few attempt to elicit positive behaviour changes for the purposes of developing patients' self-care skills. The purpose of this article is to present a systematic approach to the design and development a diabetes self-management mobile app, which included 1) a scoping review of literature; 2) the development of an overarching theoretical approach and 3) validation of the app features through user-centred design methods. The resulting app, bant II, facilitates 1) self-monitoring of blood glucose, physical activity, diet and weight; 2) identification of glycemic patterns in relation to lifestyle; 3) remedial decision making and 4) positive behaviour change through incentives.

91. Multi-component weight-loss interventions for people with cardiovascular disease and/or type 2 diabetes mellitus: a systematic review.

Authors Gallagher, Robyn; Armari, Elizabeth; White, Haidee; Hollams, Daniel
Source European journal of cardiovascular nursing : journal of the Working Group on Cardiovascular Nursing of the European Society of Cardiology; Aug 2013; vol. 12 (no. 4); p. 320-329
Publication Date Aug 2013
Publication Type(s) Research Support, Non-u.s. Gov't Journal Article Review Systematic Review
PubMedID 23303770
Database Medline
Abstract OBJECTIVESTo determine whether weight loss interventions, which combine dietary, exercise and behaviour change strategies, result in reduced weight, body mass index (BMI) and waist circumference in people with coronary heart disease (CHD), hypertension (HTN) and/or type 2 diabetes mellitus (T2DM).DESIGNA systematic review of studies published 1997 to 2010.DATA SOURCESThe electronic databases MEDLINE, PsycINFO, COCHRANE, CINAHL and EMBASE.REVIEW METHODSStudies were included if samples were: ≥ 18 years old, overweight or obese (BMI 26-39.99 kg/m(2)), and diagnosed with CHD, T2DM and/or HTN. Only randomised controlled trials (RCTs) or systematic reviews of RCTs reporting group-based interventions that combined dietary, exercise and behavioural change strategies and outcomes for weight, BMI and/or waist circumference up to 12 months were included. Two researchers extracted data and appraised quality, with a third making final decisions.RESULTSEight RCTs were included (total n = 1428). Participants' mean age was 60.4 years and 61% were female. Interventions varied by contact time, content and delivery. Mean weight loss ranged from -2 kg to -4 kg (SD 4 kg) at 3-4 months, -1.3 kg to -8.2 kg (SD 4 kg) at 5-6 months and -0.87 (SD 0.57 kg) to -6.9 kg (SD 4 kg) at 12 months. Of the few studies that measured waist circumference the mean reduction was -3.1 cm at three and 12 months.CONCLUSIONSWeight loss interventions that combine exercise, diet and behaviour change strategies result in minor weight loss at 3-12 months in people with CHD, T2DM or HTN. Further research is required to determine the most effective and efficient methods.

92. Telehealth Behavioral Intervention for Diabetes Management in Adults With Physical Disabilities: Intervention Fidelity Protocol for a Randomized Controlled Trial.

Authors Zengul, Ayse; Evans, Eric; Hall, Allyson; Qu, Haiyan; Willig, Amanda; Cherrington, Andrea; Thirumalai, Mohanraj
Source JMIR research protocols; Sep 2021; vol. 10 (no. 9); p. e31695
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Available at JMIR research protocols from Europe PubMed Central - Open Access
Available at JMIR research protocols from ProQuest (Health Research Premium) - NHS Version

Abstract BACKGROUNDDiabetes mellitus is a major health problem among people with physical disabilities. Health coaching has been proven to be an effective approach in terms of behavioral changes, patient self-efficacy, adherence to treatment, health service use, and health outcomes. Telehealth systems combined with health coaching have the potential to improve the quality of health care by increasing access to services. Treatment fidelity is particularly important for behavior change studies; however, fidelity protocols are inadequately administered and reported in the literature.OBJECTIVEThe aim of this study is to outline all the intervention fidelity strategies and procedures of a telecoaching intervention-artificial intelligence for diabetes management (AI4DM)-which is a randomized controlled trial to evaluate the feasibility, acceptability, and preliminary efficacy of a telehealth platform in adults with type 2 diabetes and permanent impaired mobility. AI4DM aims to create a web-based disability-inclusive diabetes self-management program. We selected the National Institutes of Health Behavior Change Consortium (NIH BCC) fidelity framework to describe strategies to ensure intervention fidelity in our research.METHODSWe have developed fidelity strategies based on the five fidelity domains outlined by the NIH BCC-focusing on study design, provider training, treatment delivery, treatment receipt, and enactment of treatment skills. The design of the study is grounded in the social cognitive theory and is intended to ensure that both arms would receive the same amount of attention from the intervention. All providers will receive standardized training to deliver consistent health coaching to the participants. The intervention will be delivered through various controlling and monitoring strategies to reduce differences within and between treatment groups. The content and structure of the study are delivered to ensure comprehension and participation among individuals with low health literacy. By constantly reviewing and monitoring participant progress and protocol adherence, we intend to ensure that participants use cognitive and behavioral skills in real-world settings to engage in health behavior.RESULTSEnrollment for AI4DM will begin in October 2021 and end in October 2022. The results of this study will be reported in late 2022.CONCLUSIONSDeveloping and using fidelity protocols in behavior change studies is essential to ensure the internal and external validity of interventions. This study incorporates NIH BCC recommendations into an artificial intelligence embedded telecoaching platform for diabetes management designed for people with physical disabilities. The developed fidelity protocol can provide guidance for other researchers conducting telehealth interventions within behavioral health settings to present more consistent and reproducible research.TRIAL REGISTRATIONClinicalTrials.gov NCT04927377; http://clinicaltrials.gov/ct2/show/NCT04927377.INTERNATIONAL REGISTERED REPORT IDENTIFIER (IRRID)PRR1-10.2196/31695.

93. The Italian Diabetes and Exercise Study 2 (IDES-2): a long-term behavioral intervention for adoption and maintenance of a physically active lifestyle.

Authors Balducci, Stefano; Sacchetti, Massimo; Haxhi, Jonida; Orlando, Giorgio; Zanuso, Silvano; Cardelli, Patrizia; Cavallo, Stefano; D'Errico, Valeria; Ribaudo, Maria Cristina; Di Biase, Nicolina; Salvi, Laura; Vitale, Martina; Bollanti, Lucilla; Conti, Francesco G; Nicolucci, Antonio; Pugliese, Giuseppe; Italian Diabetes and Exercise Study 2 (IDES_2) Investigators
Source Trials; Dec 2015; vol. 16 ; p. 569
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Publication Type(s) Research Support, Non-u.s. Gov't Randomized Controlled Trial Journal Article
PubMedID 26651484
Database Medline
Available at Trials from BioMed Central
Available at Trials from Europe PubMed Central - Open Access
Available at Trials from SpringerLink
Available at Trials from Unpaywall

Abstract BACKGROUNDPhysical activity (PA)/exercise have become an integral part of the management of type 2 diabetes mellitus (T2DM). However, current guidelines are difficult to put into action in this population due to a number of barriers, especially the lack of acceptable, feasible, and validated behavioral intervention strategies. The present manuscript reports the rationale, study design and methods, and design considerations of the Italian Diabetes and Exercise Study (IDES)-2, a randomized controlled trial testing the efficacy of a behavior change strategy in increasing total daily PA and reducing sedentary time (SED-time) in patients with T2DM.METHODS/DESIGNStarting 7 January 2014, the IDES_2 began enrolling 300 patients with known T2DM of at least 1-year duration in three tertiary referral outpatient Diabetes Clinics in Rome. Additional requirements are age 40 to 80 years, body mass index 27 to 40 kg/m(2), sedentary lifestyle, and physically inactive for at least 6 months, ability to walk 1.6 km without assistance, and eligibility after cardiovascular evaluation. Patients are randomized by center and within each center, by age and type of diabetes treatment to either the intervention or the control group. Patients in the intervention (INT) group (n = 150) receive theoretical and practical exercise counseling consisting of aggregated behavior change techniques (one individual theoretical counseling session plus eight twice-a-week individual theoretical and practical exercise counseling sessions) once a year for 3 years. Patients in the control (CON) group (n = 150), receive standard care, including general physician recommendations for daily PA. The primary outcomes are total daily PA and SED-time, as measured objectively by the use of an accelerometer. Secondary outcomes include physical fitness, modifiable cardiovascular risk factors, musculoskeletal disturbances, well-being/depression, and health-related quality of life.DISCUSSIONThe behavioral intervention strategy tested in the IDES_2 is based on solid theoretical grounds and uses several behavioral change techniques, two factors which were found to improve effectiveness of behavioral intervention. In addition, physicians and exercise specialists have been specifically trained for counselling/prescribing and supervising PA/exercise, respectively, in subjects suffering from metabolic disorders. Finally, the large sample size, the long study duration, and the objective measurement of PA allow statistically significant and scientifically robust conclusions to be drawn on the feasibility and efficacy of this intervention in T2DM patients.TRIAL REGISTRATIONClinicalTrials.gov; NCT01600937 ; 10 October 2012.

94. Effects of lifestyle changes to reduce risks of diabetes and associated cardiovascular risks: results from large scale efficacy trials.

Authors Horton, Edward S
Source Obesity (Silver Spring, Md.); Dec 2009; vol. 17
Publication Date Dec 2009
Publication Type(s) Journal Article Review
PubMedID 19927146
Database Medline
Available at Obesity (Silver Spring, Md.) from Wiley Online Library
Available at Obesity (Silver Spring, Md.) from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Obesity (Silver Spring, Md.) from ProQuest (Health Research Premium) - NHS Version
Available at Obesity (Silver Spring, Md.) from Unpaywall

Abstract The increasing prevalence of type 2 diabetes throughout the world is now recognized as a major health problem. A growing segment of the population has impaired glucose tolerance (IGT), which is a strong predictor of progression to type 2 diabetes. Further, 24% of Americans now meet the criteria for the metabolic syndrome, a risk factor for both type 2 diabetes and cardiovascular disease (CVD). The diabetes epidemic is associated with changes in lifestyle-most notably increased energy intake, changes in diet composition and decreased levels of physical activity-and the development of overweight and obesity. This review examines the effects of several intensive lifestyle intervention trials on the risk of diabetes and CVD among high-risk populations. Common features of these lifestyle interventions are dietary modification, weight loss and increased physical activity. These trials indicate that lifestyle modification is effective in decreasing the progression from IGT to type 2 diabetes and reducing CVD risk factors. However, the effectiveness of lifestyle interventions for reductions in CVD events has yet to be determined.

95. Improving employee health: evaluation of a worksite lifestyle change program to decrease risk factors for diabetes and cardiovascular disease.

Authors Kramer, M Kaye; Molenaar, Donald M; Arena, Vincent C; Venditti, Elizabeth M; Meehan, Rebecca J; Miller, Rachel G; Vanderwood, Karl K; Eaglehouse, Yvonne; Kriska, Andrea M
Source Journal of occupational and environmental medicine; Mar 2015; vol. 57 (no. 3); p. 284-291
Publication Date Mar 2015
Publication Type(s) Research Support, N.i.h., Extramural Randomized Controlled Trial Journal Article
PubMedID 25742535
Database Medline
Available at Journal of occupational and environmental medicine from Ovid (Journals @ Ovid)
Available at Journal of occupational and environmental medicine from Unpaywall

Abstract OBJECTIVETo determine whether an evidence-based, behavioral lifestyle intervention program delivered at a worksite setting is effective in improving type 2 diabetes and cardiovascular disease risk factors.METHODSA randomized 6-month delayed control design was utilized, with two thirds of the participants assigned to begin intervention immediately, and one third beginning 6 months later. The year-long program (weekly for 3 months transitioning to monthly) focused on weight loss and increasing physical activity.RESULTSThe immediate intervention group had greater mean weight loss (-10.4 lb, 5.1%, vs -2.3 lb, 1%; P = 0.0001) than the delayed control group at 6 months and relatively greater improvements in activity, HbA1c, and other risk factors. The delayed group experienced similar improvements after completing the intervention program.CONCLUSIONSA worksite behavioral lifestyle intervention is feasible and effective in significantly improving risk factors for type 2 diabetes and cardiovascular disease.

96. Nurse-led telephone intervention for lifestyle changes on glycaemic control in people with prediabetes: Study protocol for a randomized controlled trial.

Authors Abbate, Manuela; Fresneda, Sergio; Yañez, Aina; Ricci-Cabello, Ignacio; Galmes-Panades, Aina M; Aguilo, Antoni; Bennasar-Veny, Miquel; PREDIPHONE trial group
Source Journal of advanced nursing; Jul 2021; vol. 77 (no. 7); p. 3204-3217
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Publication Type(s) Clinical Trial Protocol Journal Article
PubMedID 33769603
Database Medline
Available at Journal of Advanced Nursing from Wiley Online Library Medicine and Nursing Collection 2019
Available at Journal of Advanced Nursing from Ovid (Journals @ Ovid)
Abstract AIMTo evaluate the effectiveness of a nurse-led personalized telephone lifestyle intervention versus automated SMSs in the reduction of fasting plasma glucose in adults with prediabetes.DESIGNThe PREDIPHONE is a randomized controlled, parallel, two arms, superiority trial with 15 months of follow-up. Participants will be randomized to either the intervention group (teleconsultations) or the active control group (SMSs).METHODSA total of 428 participants will be randomized in a 1:1 ratio to one of the two arms and followed up during 9 months. The teleconsultations group will receive nurse-led personalized advice, while the SMSs group will receive 4-5 brief SMSs a week. Participants in both groups will receive evidence-based recommendations for diet and physical activity (PA). Outcome measures will be collected at baseline, months 4 and 9 and at month 15, to evaluate post-intervention effects.DISCUSSIONPrevention of diabetes through the implementation of lifestyle interventions remains an important priority. The current pandemic situation has magnified its urgency as it heavily affected the functionality of the healthcare system. Moreover, it created the need of remotely delivering preventative interventions. This study will provide insights on the effectiveness and feasibility of a telephone-based intervention led by nurses in the amelioration of risk factors associated with diabetes.IMPACTFindings from this study will offer health services decision-makers sound evidence regarding an alternative method to face-to-face consultations that could be practical, acceptable and inexpensive, and that concretely answers the need for easily implementable prevention strategies.TRIAL REGISTRATIONNCT04735640 (ClinicalTrials.gov identifier).PROTOCOL VERSIONV1.0, 18/02/2021.

97. Therapeutic interventions to reduce the risk of progression from prediabetes to type 2 diabetes mellitus.

Authors Portero McLellan, Katia Cristina; Wyne, Kathleen; Villagomez, Evangelina Trejo; Hsueh, Willa A
Source Therapeutics and clinical risk management; 2014; vol. 10 ; p. 173-188
Publication Date 2014
Publication Type(s) Journal Article Review
PubMedID 24672242
Database Medline
Available at Therapeutics and clinical risk management from Europe PubMed Central - Open Access
Available at Therapeutics and clinical risk management from Unpaywall
Abstract Clinical trials have demonstrated that it is possible to prevent diabetes through lifestyle modification, pharmacological intervention, and surgery. This review aims to summarize the effectiveness of these various therapeutic interventions in reducing the risk of progression of prediabetes to diabetes, and address the challenges to implement a diabetes prevention program at a community level. Strategies focusing on intensive lifestyle changes are not only efficient but cost-effective and/or cost-saving. Indeed, lifestyle intervention in people at high risk for type 2 diabetes mellitus (T2DM) has been successful in achieving sustained behavioral changes and a reduction in diabetes incidence even after the counseling is stopped. Although prediabetes is associated with health and economic burdens, it has not been adequately addressed by interventions or regulatory agencies in terms of prevention or disease management. Lifestyle intervention strategies to prevent T2DM should be distinct for different populations around the globe and should emphasize sex, age, ethnicity, and cultural and geographical considerations to be feasible and to promote better compliance. The translation of diabetes prevention research at a population level, especially finding the most effective methods of preventing T2DM in various societies and cultural settings remains challenging, but must be accomplished to stop this worldwide epidemic.

98. Effects of lifestyle changes on adults with prediabetes: A systematic review and meta-analysis.

Authors Glechner, Anna; Keuchel, Lina; Affengruber, Lisa; Titscher, Viktoria; Sommer, Isolde; Matyas, Nina; Wagner, Gernot; Kien, Christina; Klerings, Irma; Gartlehner, Gerald
Source Primary care diabetes; Oct 2018; vol. 12 (no. 5); p. 393-408
Publication Date Oct 2018
Publication Type(s) Research Support, Non-u.s. Gov't Meta-analysis Journal Article Systematic Review
PubMedID 30076075
Database Medline
Available at Primary care diabetes from ScienceDirect Available to PHE and Local Authority staff
Available at Primary care diabetes from Unpaywall
Abstract AIMSTo assess the efficacy, safety, and cost-effectiveness of lifestyle intervention, compared with treatment as usual in people with prediabetes as defined by the American Diabetes Association. For older studies, we used the 1985 World Health Organization definition.METHODSWe systematically searched multiple electronic databases and referenced lists of pertinent review articles from January 1980 through November 2015. We performed an update search in MEDLINE on April 26, 2017. Based on a priori established eligibility criteria, we dually reviewed the literature, extracted data, and rated the risk of bias of included studies with validated checklists. To assess the efficacy of lifestyle intervention to prevent or delay further progression to type 2 diabetes, we conducted a random-effects meta-analysis. We assessed the certainty of evidence using the GRADE (Grading of Recommendations Assessment, Development and Evaluation) approach.RESULTPooled results of 16 randomized controlled trials showed that people with prediabetes who received lifestyle intervention had a lower rate of progression to type 2 diabetes after one (4% vs. 10%, RR 0.46 [CI 0.32, 0.66]) and three years of follow-up (14% vs. 23%, RR 0.64 [95% CI 0.53, 0.77]). The majority of the studies also showed a greater weight loss in lifestyle intervention participants, with a great variation between studies. Costs per quality-adjusted life-year were lower when the benefits of lifestyle intervention were analyzed over a lifelong time horizon compared to only the period of lifestyle intervention (three years) or to modeling over a ten-year period.CONCLUSIONLifestyle intervention is an efficacious, safe, and cost-effective measure to reduce the risk of progression to type 2 diabetes in people diagnosed with prediabetes. More research is necessary to compare the efficacy of various modes, frequencies, and intensities of lifestyle intervention across studies.

99. Development of a model to assess the cost-effectiveness of gestational diabetes mellitus screening and lifestyle change for the prevention of type 2 diabetes mellitus.

Authors Lohse, Nicolai; Marseille, Elliot; Kahn, James G
Source International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; Nov 2011; vol. 115
Publication Date Nov 2011
Publication Type(s) Research Support, Non-u.s. Gov't Journal Article
PubMedID 22099435
Database Medline
Available at International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics from Wiley Online Library Medicine and Nursing Collection 2019
Available at International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics from ScienceDirect
Available at International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics from Ovid (Journals @ Ovid)
Abstract Gestational diabetes mellitus (GDM) is increasingly recognized as an opportunity for early prevention of diabetes and other diseases over the lifespan, and may be responsible for up to 30% of cases of type 2 diabetes. A newly developed mathematical model (the GDModel) provides provisional estimates of the cost and health impact of various GDM screening and management choices, and calculates averted disability-adjusted life-years (DALYs). The model was piloted in 5 different healthcare facilities in India and Israel. Universal screening of pregnant women followed by postpartum lifestyle management yielded net savings of US$78 per woman with GDM in India and US$1945 per woman in Israel. The estimated DALYs averted were 2.33 in India and 3.10 in Israel. With lower GDM prevalence, intervention efficacy, and type 2 diabetes incidence, the intervention had a net cost in India, with a cost per DALY averted of US$11.32. This was far below the WHO definition of "very cost-effective," set at annual GDP per capita. The intervention in Israel remained cost-saving. GDM screening and postpartum lifestyle management are either cost-saving or have a net cost but an attractive cost-effectiveness ratio. Some input values are currently being refined. Nevertheless, the current findings of cost-savings or favorable cost-effectiveness are robust to a wide range of plausible input values, including highly unfavorable values. The GDModel will be further developed into a user-friendly tool that can guide policy-makers on decisions regarding GDM screening strategies and guidelines.

100. The effectiveness of physical activity interventions for the treatment of overweight and obesity and type 2 diabetes.

Authors Miller, Y D; Dunstan, D W

Source Journal of science and medicine in sport; Apr 2004; vol. 7 (no. 1)
Publication Date Apr 2004
Publication Type(s) Journal Article Review
PubMedID 15214602
Database Medline
Available at Journal of science and medicine in sport from ScienceDirect Available to PHE and Local Authority staff

Abstract This review summarises current evidence relating to the effectiveness of physical activity (PA) interventions for treating overweight and obesity and type 2 diabetes. Interventions to increase PA for the treatment of overweight and obesity in both children and adults have primarily consisted of health education and behaviour modification strategies in clinical settings or with selected families or individuals. Although evidence is limited, strategies to reduce sedentary behaviours appear to have potential for reducing obesity among children and adolescents. Among adults, strategies that combine diet and PA are more effective than PA strategies alone. Combined lifestyle strategies are most successful for maintained weight loss, although most programs are unsuccessful in producing long-term changes. There is little evidence about compliance to prescribed behaviour changes or the factors that promote or hinder compliance to lifestyle changes. Limited evidence suggests that continued professional contact and self-help groups can help sustain weight loss. Most of the interventions for the treatment of type 2 diabetes have been conducted in clinical settings and have typically required the use of extensive resources. Evidence suggests that interventions can lead to small but clinically meaningful improvements in glycaemic control, even in the absence of weight loss. A recent study demonstrated that a multifactorial intervention (diet, PA and pharmaceutical) can reduce the risk of diabetes complications in individuals with type 2 diabetes. Nevertheless, there is little evidence about the effectiveness of community-based interventions in producing long-term changes in glycaemic control and reduced mortality in people with type 2 diabetes.

101. Dietary interventions, lifestyle changes, and dietary supplements in preventing gestational diabetes mellitus: a literature review.

Authors Facchinetti, Fabio; Dante, Giulia; Petrella, Elisabetta; Neri, Isabella
Source Obstetrical & gynecological survey; Nov 2014; vol. 69 (no. 11); p. 669-680
Publication Date Nov 2014
Publication Type(s) Journal Article Review
PubMedID 25409159
Database Medline
Available at Obstetrical & gynecological survey from Ovid (Journals @ Ovid)
Available at Obstetrical & gynecological survey from Unpaywall

Abstract Gestational diabetes mellitus (GDM) is associated with increased rates of fetal morbidity and mortality, both during the pregnancy and in the postnatal life. Current treatment of GDM includes diet with or without medications, but this management is expensive and poorly cost-effective for the health care systems. Strategies to prevent such condition would be preferable with respect to its treatment. The aim of this literature review was to evaluate studies reporting the efficacy of the most used approaches to prevent GDM as well as evidences of efficacy and safety of dietary supplementations. Systematic literature searches were performed in electronic databases, covering the period January 1983 to April 2014. Randomized controlled clinical trials were included. Quality of the articles was evaluated with the Jadad scale. We did not evaluate those articles that were already entered in the most recent systematic reviews, and we completed the research with the trials published thereafter. Of 55 articles identified, 15 randomized controlled trials were eligible. Quality and heterogeneity of the studies cannot allow firm conclusions. Anyway, trials in which only intake or expenditure has been targeted mostly reported negative results. On the contrary, combined lifestyle programs including diet control (orienting food intake, restricting energy intake) associated with moderate but continuous physical activity exhibit better efficacy in reducing GDM prevalence. The results from dietary supplements with myoinositol or probiotics are promising. The actual evidences provide enough arguments for implementing large-scale, high-quality randomized controlled trials looking at the possible benefits of these new approaches for preventing GDM.

102. Behavioral strategies in diabetes prevention programs: a systematic review of randomized controlled trials.

Authors Baker, Michael K; Simpson, Kylie; Lloyd, Bradley; Bauman, Adrian E; Singh, Maria A Fiatarone
Source Diabetes research and clinical practice; Jan 2011; vol. 91 (no. 1); p. 1-12
Publication Date Jan 2011
Publication Type(s) Journal Article Review Systematic Review
PubMedID 20655610
Database Medline
Available at Diabetes research and clinical practice from ScienceDirect Available to PHE and Local Authority staff

Abstract UNLABELLEDThe worldwide epidemic of type 2 diabetes (T2D) emphasizes the need for guidelines regarding community implementation of lifestyle modification prevention programs. An understanding of effective behavioral strategies is needed if evidence translation is to be realized. The aim of this paper is to systematically review the behavioral change strategies for lifestyle T2D prevention programs.METHODSrandomized controlled trials (RCTs) of lifestyle interventions for the prevention of T2D were reviewed with a systematic literature search. Data relating to the behavioral strategies and trial outcomes were extracted.RESULTSoverall, lifestyle interventions were successful in reducing the incidence of T2D. The behavioral strategies utilized in these interventions were drawn from a variety of theoretical backgrounds. All RCTs utilized intensive modes of delivery and were associated with low dropout rates of 5.5-13.4%.CONCLUSIONSthe available evidence shows that a robust behavioral change strategy is an essential part of an effective lifestyle modification program, as the absence of intensive individualized advice or "information only" more closely resembles the control group interventions used in these RCTs.

103. Does the theory of planned behavior identify diabetes-related cognitions for intention to be physically active and eat a healthy diet?

Authors Blue, Carolyn L
Source Public health nursing (Boston, Mass.); 2007; vol. 24 (no. 2); p. 141-150
Publication Date 2007
Publication Type(s) Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Journal Article
PubMedID 17319886
Database Medline
Available at Public health nursing (Boston, Mass.) from Wiley Online Library Medicine and Nursing Collection 2019
Available at Public health nursing (Boston, Mass.) from Ovid (Journals @ Ovid)
Available at Public health nursing (Boston, Mass.) from Unpaywall

Abstract UNLABELLEDDiabetes, a major public health problem, can be prevented or delayed with physical activity and diet modifications, but this requires changing behavior. Understanding the beliefs of persons at risk for diabetes may result in more effective and efficient behavior change interventions.OBJECTIVETo explore the utility of the Theory of Planned Behavior (TPB) and perceived diabetes risk for identifying modifiable diabetes-related beliefs for behavior change.DESIGNDescriptive survey based on the TPB and perceived risk.SAMPLEConvenience sample included 106 adults at risk for diabetes.MEASUREMENTSMailed questionnaire with scales to measure TPB variables.RESULTSSubjective norm and perceived behavioral control were related to intention to be physically active, and attitude, subjective norm, and perceived behavioral control were related to intention to eat a healthy diet. Perceived diabetes risk was not related to intention to be physically active or eat a healthy diet.CONCLUSIONSThe TPB is a useful theory in explaining physical activity and healthy eating intentions in persons at risk for diabetes. The relationship of perceived diabetes risk and intentions to be physically active and eat a healthy diet needs further investigation.

104. An integrative literature review of lifestyle interventions for the prevention of type II diabetes mellitus.

Authors Madden, Suzanne G; Loeb, Susan J; Smith, Carol A
Source Journal of clinical nursing; Sep 2008; vol. 17 (no. 17); p. 2243-2256
Publication Date Sep 2008
Publication Type(s) Journal Article Review
PubMedID 18705701
Database Medline
Available at Journal of clinical nursing from Wiley Online Library Medicine and Nursing Collection 2019
Available at Journal of clinical nursing from Ovid (Journals @ Ovid)

Abstract AIMS AND OBJECTIVESAn integrative literature review was undertaken to determine what type II diabetes prevention programmes have been evaluated, what type of programme is the most effective and how adherent to lifestyle changes adults are after participating in a prevention programme.BACKGROUNDType II diabetes is important because the disease is affecting millions of people worldwide. Obesity and sedentary lifestyles are preventable risk factors for type II diabetes, leading many researchers from around the world to examine different programmes that are focussed on prevention of the disease.DESIGNIntegrative literature review.METHODSearch of electronic databases.RESULTSDiet, exercise, counselling and diet plus exercise were the types of prevention programmes, with the diet plus exercise being the most efficacious. Although many studies demonstrated excellent results initially, maintaining the effects of the lifestyle behaviour change proved to be difficult for participants, with only one study demonstrating the persistence of results after six years.CONCLUSIONFuture research should focus on long-term maintenance programmes, rather than just short-term prevention programmes to determine the need for booster interventions or other means to ultimately decrease the incidence of type II diabetes.RELEVANCE TO CLINICAL PRACTICEAs front-line healthcare providers working across a broad array of settings, nurses are particularly well-suited to play an integral part in future applications of diabetes prevention programmes. Lifestyle interventions are being delivered in a variety of settings and venues such as the workplace, the Internet and places of worship. In addition, at-risk populations also can be targeted, particularly overweight and obese persons, with at least one parent having type II diabetes or persons with gestational diabetes.

105. Are Behavioural Interventions Doomed to Fail? Challenges to Self-Management Support in Chronic Diseases.

Authors Vallis, Michael
Source Canadian journal of diabetes; Aug 2015; vol. 39 (no. 4); p. 330-334
Publication Date Aug 2015
Publication Type(s) Journal Article Review
PubMedID 25837809
Database Medline
Available at Canadian journal of diabetes from ScienceDirect

Abstract Self-management and self-management support are concepts very familiar to those of us in diabetes care. These concepts require openness to understanding the behaviours of persons with diabetes broadly, not only behaviours restricted to the biomedical perspective. Understanding the importance of health behaviour change and working within the Expanded Chronic Care Model define the context within which self-management support should occur. The purpose of this perspective is to identify a potential limitation in existing self-management support initiatives. This potential limitation reflects provider issues, not patient issues; that is, true self-management support might require changes by healthcare providers. Specifically, although behavioural interventions within the context of academic research studies are evidence based, behaviour change interventions implemented in general practice settings might prove less effective unless healthcare providers are able to shift from a practice based on the biomedical model to a practice based on the self-management support model. The purpose of this article is to facilitate effective self-management support by encouraging providers to switch from a model of care based on the expert clinician encountering the uninformed help seeker (the biomedical model) to one guided by collaboration grounded in the principles of description, prediction and choice. Key to understanding the value of making this shift are patient-centered communication principles and the tenets of complexity theory.

106. Process evaluation of a lifestyle intervention to prevent diabetes and cardiovascular diseases in primary care.

Authors Lakerveld, Jeroen; Bot, Sandra; Chinapaw, Mai; van Tulder, Maurits; Kingo, Lise; Nijpels, Giel
Source Health promotion practice; Sep 2012; vol. 13 (no. 5); p. 696-706
Publication Date Sep 2012
Publication Type(s) Research Support, Non-u.s. Gov't Clinical Trial Multicenter Study Journal Article
PubMedID 22773615
Database Medline
Available at Health promotion practice from SAGE Journals (Premier Health Sciences 2019)
Available at Health promotion practice from Ovid (Journals @ Ovid)

Abstract Effective, cost-effective, safe, and feasible interventions to improve lifestyle behavior in at-risk populations are needed in primary care. In the Hoorn Prevention Study, the authors implemented a theory-based lifestyle intervention in which trained practice nurses used an innovative combination of motivational interviewing (MI) and problem-solving treatment (PST). This article presents the intervention's reach, effectiveness in terms of process outcomes, adoption, and implementation. Recruitment strategy and participant flow were documented accurately. The effectiveness in terms of determinants of behavioral change was measured using a validated questionnaire. Questionnaires were also used to assess participant satisfaction and compliance, as well as practice nurses' confidence in providing the intervention. Counseling sessions were tape recorded to assess MI, PST, and general counseling competence. The findings indicate that the recruitment strategy was adequate and resulted in a reasonably extensive reach of the target population. Practice nurses were competent and confident in their provision of MI and PST, and participant satisfaction was high. Nevertheless, the number of sessions attended was low, and almost no effects were seen on determinants of behavioral change. The authors conclude that implementing this type of intervention in primary care is feasible, but more is needed to effectively facilitate changes in determinants of lifestyle behavior in this population.

107. Study protocol: Using peer support to aid in prevention and treatment in prediabetes (UPSTART).

Authors Heisler, Michele; Kullgren, Jeffrey; Richardson, Caroline; Stoll, Shelley; Alvarado Nieves, Cristina; Wiley, Deanne; Sedgwick, Tali; Adams, Alyce; Hedderson, Monique; Kim, Eileen; Rao, Megan; Schmittdiel, Julie A
Source Contemporary clinical trials; Aug 2020; vol. 95 ; p. 106048
Publication Date Aug 2020
Publication Type(s) Research Support, N.i.h., Extramural Research Support, U.s. Gov't, Non-p.h.s. Journal Article
PubMedID 32497783
Database Medline
Available at Contemporary clinical trials from ScienceDirect Available to PHE and Local Authority staff
Available at Contemporary clinical trials from Unpaywall

Abstract BACKGROUNDThere is an urgent need to develop and evaluate effective and scalable interventions to prevent or delay the onset of type 2 diabetes mellitus (T2DM).METHODSIn this randomized controlled pragmatic trial, 296 adults with prediabetes will be randomized to either a peer support arm or enhanced usual care. Participants in the peer support arm meet face-to-face initially with a trained peer coach who also is a patient at the same health center to receive information on locally available wellness and diabetes prevention programs, discuss behavioral goals related to diabetes prevention, and develop an action plan for the next week to meet their goals. Over six months, peer coaches call their assigned participants weekly to provide support for weekly action steps. In the final 6 months, coaches call participants at least once monthly. Participants in the enhanced usual care arm receive information on local resources and periodic updates on available diabetes prevention programs and resources. Changes in A1c, weight, waist circumference and other patient-centered outcomes and mediators and moderators of intervention effects will be assessed.RESULTSAt least 296 participants and approximately 75 peer supporters will be enrolled.DISCUSSIONDespite evidence that healthy lifestyle interventions can improve health behaviors and reduce risk for T2DM, engagement in recommended behavior change is low. This is especially true among racial and ethnic minority and low-income adults. Regular outreach and ongoing support from a peer coach may help participants to initiate and sustain healthy behavior changes to reduce their risk of diabetes.TRIAL REGISTRATIONThe ClinicalTrials.gov registration number is NCT03689530.

108. A randomised-controlled feasibility study of the REgulate your SItting Time (RESIT) intervention for reducing sitting time in individuals with type 2 diabetes: study protocol.

Authors Bailey, Daniel P; Edwardson, Charlotte L; Pappas, Yannis; Dong, Feng; Hewson, David J; Biddle, Stuart J H; Brierley, Marsha L; Chater, Angel M
Source Pilot and feasibility studies; Mar 2021; vol. 7 (no. 1); p. 76
Publication Date Mar 2021
Publication Type(s) Journal Article
PubMedID 33741077
Database Medline
Available at Pilot and feasibility studies from BioMed Central
Available at Pilot and feasibility studies from Europe PubMed Central - Open Access
Available at Pilot and feasibility studies from SpringerLink
Available at Pilot and feasibility studies from ProQuest (Health Research Premium) - NHS Version
Available at Pilot and feasibility studies from Unpaywall

Abstract BACKGROUNDPeople with type 2 diabetes mellitus (T2DM) generally spend a large amount of time sitting. This increases their risk of cardiovascular disease, premature mortality, diabetes-related complications and mental health problems. There is a paucity of research that has evaluated interventions aimed at reducing and breaking up sitting in people with T2DM. The primary aim of this study is to assess the feasibility of delivering and evaluating a tailored intervention to reduce and break up sitting in ambulatory adults with T2DM.METHODSThis is a mixed-methods randomised controlled feasibility trial. Participants (n=70) with T2DM aged 18-85 years who sit ≥7 h/day and are able to ambulate independently will be randomly allocated to receive the REgulate your SItting Time (RESIT) intervention or usual care (control group) for 24 weeks. RESIT is a person-focused intervention that delivers a standardised set of behaviour change techniques to the participants, but the mode through which they are delivered can vary depending on the tools selected by each participant. The intervention includes an online education programme, health coach support, and a range of self-selected tools (smartphone apps, computer-prompt software, and wearable devices) that deliver behaviour change techniques such as self-monitoring of sitting and providing prompts to break up sitting. Measures will be taken at baseline, 12 and 24 weeks. Eligibility, recruitment, retention and data completion rates will be used to assess trial feasibility. Sitting, standing and stepping will be measured using a thigh-worn activity monitor. Cardiometabolic health, physical function, psychological well-being, sleep and musculoskeletal symptoms will also be assessed. A process evaluation will be conducted including evaluation of intervention acceptability and fidelity.DISCUSSIONThis study will identify the feasibility of delivering a tailored intervention to reduce and break up sitting in ambulatory adults with T2DM and evaluating it through a randomised controlled trial (RCT) design. The findings will inform a fully powered RCT to evaluate the effectiveness of the intervention.TRIAL REGISTRATIONISRCTN, ISRCTN14832389 ; Registered 6 August 2020.

109. Comparative effectiveness of lifestyle intervention efforts in the community: results of the Rethinking Eating and ACTivity (REACT) study.

Authors Piatt, Gretchen A; Seidel, Miriam C; Powell, Robert O; Zgibor, Janice C
Source Diabetes care; Feb 2013; vol. 36 (no. 2); p. 202-209
Publication Date Feb 2013
Publication Type(s) Research Support, U.s. Gov't, Non-p.h.s. Journal Article
PubMedID 22966092
Database Medline
Available at Diabetes care from HighWire - Free Full Text
Available at Diabetes care from ProQuest (Health Research Premium) - NHS Version
Available at Diabetes care from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Diabetes care from Ovid (Journals @ Ovid)
Available at Diabetes care from Unpaywall

Abstract OBJECTIVETo determine the comparative effectiveness of three lifestyle intervention modalities in decreasing risk for diabetes.RESEARCH DESIGN AND METHODSFive hundred and fifty-five individuals (86.1% female, 95.1% white, and 55.8% obese) from eight rural communities were screened for BMI ≥25 kg/m(2) and waist circumference >40 inches in men and >35 inches in women. Communities with their eligible participants (n = 493; mean age 51 years, 87.6% female, 94.1% Caucasian) were assigned to four Group Lifestyle Balance (GLB) intervention groups: face to face (FF) (n = 119), DVD (n = 113), internet (INT) (n = 101), and self-selection (SS) (n = 101). SS participants chose the GLB modality. GLB is a comprehensive lifestyle behavior-change program.RESULTSA marked decline was observed in weight after the intervention in all groups (FF -12.5 lbs, P = 0.01; DVD -12.2 lbs, P < 0.0001; INT -13.7 lbs, P < 0.0001; and SS -14 lbs, P < 0.0001). Participants in SS experienced the largest average weight loss. Weight loss was sustained in >90% of participants in each group at 6 months (FF 90.7%, DVD 90.9%, INT 92.1%, and SS 100%). All groups experienced improvements in the proportion of participants with CVD risk factors. The proportion of individuals with CVD risk factors remained steady between 3 and 6 months in all groups and never returned back to baseline. All associations remained after multivariate adjustment.CONCLUSIONSDespite the modality, the GLB intervention was effective at decreasing weight and improving CVD risk factor control. SS and FF participants experienced greater improvements in outcomes compared with other groups, establishing the importance of patient-centered decision making and a support network for successful behavior change.

110. Acceptance-based therapy: the potential to augment behavioral interventions in the treatment of type 2 diabetes.

Authors Cardel, Michelle I; Ross, Kathryn M; Butryn, Meghan; Donahoo, W Troy; Eastman, Abraham; Dillard, Jackson R; Grummon, Anna; Hopkins, Patrick; Whigham, Leah D; Janicke, David
Source Nutrition & diabetes; Jan 2020; vol. 10 (no. 1); p. 3
Publication Date Jan 2020
Publication Type(s) Research Support, N.i.h., Extramural Journal Article Review
PubMedID 32066659
Database Medline
Available at Nutrition & diabetes from Europe PubMed Central - Open Access
Available at Nutrition & diabetes from Nature (Open Access)

Available at Nutrition & diabetes from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Nutrition & diabetes from ProQuest (Health Research Premium) - NHS Version
Available at Nutrition & diabetes from Unpaywall

Abstract Diabetes is a complex and multifactorial disease affecting more than 415 million people worldwide. Excess adiposity and modifiable lifestyle factors, such as unhealthy dietary patterns and physical inactivity, can play a significant role in the development of type 2 diabetes. Interventions that implement changes to lifestyle behaviors, in addition to pharmacological treatment, may attenuate the development and worsening of diabetes. This narrative review delineates how standard behavioral interventions (SBTs), based in "first wave" behavioral therapies and "second wave" cognitive behavioral therapies, serve as the foundation of diabetes treatment by supporting effective lifestyle changes, including improving adherence to healthful behaviors, medication, and self-monitoring regimens. Moreover, "third wave" "acceptance-based therapies" (ABTs), which integrate techniques from acceptance and commitment therapy, are proposed as a potential novel treatment option for diabetes management. Further research and long-term, randomized controlled trials will clarify the feasibility, acceptability, and effectiveness of ABT for improving glucose control via enhancing medication adherence and promoting effective lifestyle changes in people with diabetes.

111. Evaluation of a Behavioral Mobile Phone App Intervention for the Self-Management of Type 2 Diabetes: Randomized Controlled Trial Protocol.

Authors Goyal, Shivani; Lewis, Gary; Yu, Catherine; Rotondi, Michael; Seto, Emily; Cafazzo, Joseph A
Source JMIR research protocols; Aug 2016; vol. 5 (no. 3); p. e174
Publication Date Aug 2016
Publication Type(s) Journal Article
PubMedID 27542325
Database Medline
Available at JMIR research protocols from Europe PubMed Central - Open Access
Available at JMIR research protocols from ProQuest (Health Research Premium) - NHS Version
Available at JMIR research protocols from Unpaywall

Abstract BACKGROUNDPatients with type 2 diabetes mellitus (T2DM) struggle with the management of their condition due to difficulty relating lifestyle behaviors with glycemic control. While self-monitoring of blood glucose (SMBG) has proven to be effective for those treated with insulin, it has been shown to be less beneficial for those only treated with oral medications or lifestyle modification. We hypothesized that the effective self-management of non-insulin treated T2DM requires a behavioral intervention that empowers patients with the ability to self-monitor, understand the impact of lifestyle behaviors on glycemic control, and adjust their self-care based on contextualized SMBG data.OBJECTIVEThe primary objective of this randomized controlled trial (RCT) is to determine the impact of bant2, an evidence-based, patient-centered, behavioral mobile app intervention, on the self-management of T2DM. Our second postulation is that automated feedback delivered through the mobile app will be as effective, less resource intensive, and more scalable than interventions involving additional health care provider feedback.METHODSThis study is a 12-month, prospective, multicenter RCT in which 150 participants will be randomly assigned to one of two groups: the control group will receive current standard of care, and the intervention group will receive the mobile phone app system in addition to standard of care. The primary outcome measure is change in glycated hemoglobin A1c from baseline to 12 months.RESULTSThe first patient was enrolled on July 28, 2015, and we anticipate completing this study by September, 2018.CONCLUSIONSThis RCT is one of the first to evaluate an evidence-based mobile app that focuses on facilitating lifestyle behavior change driven by contextualized and structured SMBG. The results of this trial will provide insights regarding the usage of mobile tools and consumer-grade devices for diabetes self-care, the economic model of using incentives to motivate behavior change, and the consumption of test strips when following a rigorously structured approach for SMBG.TRIAL REGISTRATIONClinicalTrials.gov NCT02370719; https://clinicaltrials.gov/ct2/show/NCT02370719 (Archived at http://www.webcitation.org/6jpyjfVRs).

112. Developing behavior change interventions for self-management in chronic illness: An integrative overview

Authors Araújo-Soares, Vera; Hankonen, Nelli; Presseau, Justin; Rodrigues, Angela; Sniehotta, Falko F.
Source European Psychologist; 2019; vol. 24 (no. 1); p. 7-25
Publication Date 2019
Publication Type(s) Journal Peer Reviewed Journal Journal Article
PubMedID 31496632
Database PsycINFO
Available at European psychologist from ProQuest PsycARTICLES - NHS
Available at European psychologist from Ovid (Journals @ Ovid)
Available at European psychologist from Unpaywall

Abstract More people than ever are living longer with chronic conditions such as obesity, type 2 diabetes, and heart disease. Behavior change for effective self-management can improve health outcomes and quality of life in people living with such chronic illnesses. The science of developing behavior change interventions with impact for patients aims to optimize the reach, effectiveness, adoption, implementation, and maintenance of interventions and rigorous evaluation of outcomes and processes of behavior change. The development of new services and technologies offers opportunities to enhance the scope of delivery of interventions to support behavior change and self-management at scale. Herein, we review key contemporary approaches to intervention development, provide a critical overview, and integrate these approaches into a pragmatic, user-friendly framework to rigorously guide decision-making in behavior change intervention development. Moreover, we highlight novel emerging methods for rapid and agile intervention development. On-going progress in the science of intervention development is needed to remain in step with such new developments and to continue to leverage behavioral science's capacity to contribute to optimizing interventions, modify behavior, and facilitate self-management in individuals living with chronic illness. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

113. Behavior change in diabetes practitioners: An intervention using motivation, action planning and prompts

Authors Maltinsky, Wendy; Swanson, Vivien
Source Patient Education and Counseling; Apr 2020
Publication Date Apr 2020
Publication Type(s) Journal Peer Reviewed Journal
PubMedID 32402490
Database PsycINFO
Available at Patient education and counseling from ScienceDirect Available to PHE and Local Authority staff
Available at Patient education and counseling from Unpaywall
Abstract OBJECTIVES: It is important for health professionals to have behavior change skills to empower people to manage long-term-conditions. Theoretically derived, competency-based training can be particularly effective where it considers reflective and automatic routes to behavior change. The aim of this study was to develop, deliver and evaluate a motivational, action and prompting behavior change skills intervention for diabetes health practitioners in Scotland, UK. METHODS: This was a longitudinal intervention study. A 2-day intervention was delivered to 99 health professionals. Participants set behavioral goals to change practice, completing action and coping plans post-training. Motivation and plan quality were evaluated in relation to goal achievement at 6-week follow-up. RESULTS: Post-training, practitioners could develop high quality work-related action and coping plans, which they were motivated to enact. Although under half responded at follow-up, most reported successful goal achievement. There was no difference in plan quality for goal achievers, non-achievers and non-responders. Barriers and facilitators of behavior change included institutional, service-user and individual factors. CONCLUSIONS: The intervention successfully used planning to implement participants' behaviour change goals. PRACTICE IMPLICATIONS: Planning interventions are helpful to support clinicians to change their practice to help people self-manage diabetes care but may not fit demands of day-to-day clinical practice. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

114. Effects of a brief tailored intervention on the process and predictors of lifestyle behaviour change in patients with type 2 diabetes

Authors Clark, Marie; Hampson, Sarah E.; Avery, Lorraine; Simpson, Robert
Source Psychology, Health & Medicine; Nov 2004; vol. 9 (no. 4); p. 440-449
Publication Date Nov 2004
Publication Type(s) Journal Peer Reviewed Journal Journal Article
Database PsycINFO
Available at Psychology, Health & Medicine from Taylor and Francis Online - Medical Library
Available at Psychology, Health & Medicine from EBSCO (Psychology and Behavioral Sciences Collection)
Abstract The process and predictors of lifestyle behaviour change for dietary and physical activity behaviours in response to a brief, tailored, lifestyle self-management intervention for patients with type 2 diabetes was examined in a randomized controlled trial (n=100). Participants (aged 40-70 years) completed stage of change, barriers to change and self-efficacy for change measures at three time points: baseline, 3 months and 1 year. Participants were allocated to either an intervention group who received the brief tailored intervention including follow-up telephone calls, or a usual care control group. Results indicate that participants in the intervention group but not the control group perceived themselves to have changed from contemplation to action for dietary fat reduction and lifestyle physical activity levels. This was associated with a trend towards decreased barriers to change but not with increased self-efficacy. No single predictor variable was consistently associated with outcome for intervention participants. These results provide further evidence of the effectiveness of tailored interventions for lifestyle change. An increased understanding of the change process over time for multiple behaviours will allow behavioural and preventive medicine to have a more significant impact when targeting behaviour change in individuals with multiple risk behaviours such as high fat diets and sedentary lifestyles. (PsycINFO Database Record (c) 2019 APA, all rights reserved) (Source: journal abstract)

115. Facilitating Health Behavior Change

Authors Arechiga, Adam
Source Behavior & medicine (4th ed.); 2006 ; p. 145-533
Publication Date 2006
Publication Type(s) Book Edited Book Textbook/Study Guide Chapter
Database PsycINFO
Abstract With improvements in medical care, and the resultant aging of the population, chronic-care models have become an increasingly important component of medical care. Long-term problems affecting multiple organ systems, such as diabetes, hypertension, and obesity, are widespread and account for much of the utilization of health-care resources. Successful treatment and management of these problems require lifestyle modification on the part of the patient. Physicians are responsible for the diagnosis and treatment of such chronic illnesses. They can also play a crucial role in facilitating behavior change on the part of the patient. Unfortunately, physicians often fail to take advantage of opportunities for effective interventions when they arise. The purpose of this chapter is to provide a basic understanding of effective ways to help patients begin the process of lifestyle change. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: chapter)

116. Strategies for lifestyle behavior change in diabetes prevention: A review of the evidence

Authors Baker, M. K.; Simpson, K.; Lloyd, B.; Bauman, A. E.; Fiatarone, Singh M. A.
Source Journal of Sport & Exercise Psychology; Oct 2011; vol. 33 (no. 5); p. 744-745
Publication Date Oct 2011
Publication Type(s) Journal Peer Reviewed Journal Comment/Reply
Database PsycINFO
Abstract Comments on an article "Behavioral strategies in diabetes prevention programs: A systematic review of randomized controlled trials" by M. K. Baker et al. (2011). The authors systematically reviewed the evidence within randomized controlled trials (RCTs) regarding strategies for lifestyle modification aimed at preventing the development of type 2 diabetes (T2D) in adults with impaired glucose tolerance. The interventions were shown to have clinically meaningful effects in reducing the incidence of T2D, with relative risk reduction values ranging from 29 to 75%. The evidence suggests that intensive programs targeting physical activity and dietary change that include multiple behavior change strategies have been successful in preventing the onset of T2D. The authors do, however, point out that despite this strong RCT evidence, the challenge of replicating these findings and delivering effective behavior change interventions to prevent T2D in community settings remains. (PsycINFO Database Record (c) 2016 APA, all rights reserved)

117. Partnering with community-dwelling individuals with diabetes for health behavior change using action plans: An innovation in health professionals education and practice

Authors Hultquist, Teresa Barry; Brown, Sara Goomis; Geske, Jenenne; Kaiser, Katherine Laux; Waibel-Rycek, Denise
Source Health Promotion Practice; Nov 2015; vol. 16 (no. 6); p. 906-915
Publication Date Nov 2015
Publication Type(s) Journal Peer Reviewed Journal Journal Article
Database PsycINFO
Available at Health promotion practice from SAGE Journals (Premier Health Sciences 2019)
Available at Health promotion practice from Ovid (Journals @ Ovid)
Abstract Health care practitioners support or hinder an individual's attempts to self-manage health behavior. Practitioners must understand an individual's health needs and goals to effectively partner for behavior change. Self-management support (SMS) promote efforts toward positive health behavior change. Practitioners need training to provide effective SMS, beginning with their formal education. The purpose of this educational practice project was to integrate an evidence-based intervention (SMS using action plans) into a nursing curriculum. Three sequential steps included (1) providing foundational SMS education, (2) SMS application with students' personal action plans, and (3) implementing SMS with community-dwelling individuals with diabetes. Students (n = 130) partnered with participants (n = 85), developing short- (n = 240) and long-term (n = 99) action plans during home visits. The average baseline Diabetes Empowerment Scale score measuring participant's perceived psychosocial diabetes management self-efficacy was 4.3 (1-5 scale, SD = 0.51, n = 83). Most common short-term actions related to physical activity (n = 100, 42%) and healthy eating (n = 61, 25%). Average participant confidence level was 7.7 (SD = 1.9, 0-10 scale). Short-term goal evaluation (n = 209) revealed 66% (n = 137) were met more than 50% of the time. Both participants (99%) and students (99%) expressed satisfaction with home visit and action plan experiences. This teaching–learning experience is replicable and applicable to any professional health care student. (PsycInfo Database Record (c) 2021 APA, all rights reserved) (Source: journal abstract)

118. Assessment of the transtheoretical model as used by dietitians in promoting physical activity in people with type 2 diabetes

Authors Jackson, R.; Asimakopoulou, K.; Scammell, A.

Source Journal of Human Nutrition and Dietetics; Feb 2007; vol. 20 (no. 1); p. 27-36
Publication Date Feb 2007
Publication Type(s) Journal Peer Reviewed Journal Journal Article
PubMedID 17241190
Database PsycINFO
Available at Journal of human nutrition and dietetics : the official journal of the British Dietetic Association from Wiley Online Library Medicine and Nursing Collection 2019
Available at Journal of human nutrition and dietetics : the official journal of the British Dietetic Association from Ovid (Journals @ Ovid)
Abstract Background: The transtheoretical model of change (TTM) is an approach to behaviour change, which has been successful in increasing physical activity levels. This study examined the application of a TTM approach to increase physical activity in people with type 2 diabetes by a specialist dietitian. Methods: Forty participants were recruited to either an exercise consultation interview (ECI) or a control group. All participants received a physical activity leaflet and those in the ECI group also received a one-to-one interview with a dietitian a week after their routine appointment. Both self-reported physical activity levels and stage of change were measured at baseline and after 6 weeks. Results: Thirty-four participants (17 in each group) completed the study. Both groups showed an increase in physical activity levels. However, there was a significant difference in change of physical activity levels in the ECI group alone [F(1,32) = 15.99; P ≤ 0.01]. In the ECI group, eight participants increased their stage of change compared with just one in the control group. There was a highly significant difference between the ECI and control group for success rates of stage progression (P = 0.007). Conclusions: A specialist dietitian with motivational interviewing and behavioural change training can successfully deliver a TTM intervention to people with diabetes that results in an increase in physical activity and stage of change. Dietitians with behavioural change skills may wish to include this approach within their practice. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

119. Participant experiences in a smartphone-based health coaching intervention for type 2 diabetes: A qualitative inquiry

Authors Pludwinski, Sarah; Ahmad, Farah; Wayne, Noah; Ritvo, Paul
Source Journal of Telemedicine and Telecare; Apr 2016; vol. 22 (no. 3); p. 172-178
Publication Date Apr 2016
Publication Type(s) Journal Peer Reviewed Journal Journal Article
Database PsycINFO
Available at Journal of Telemedicine and Telecare from SAGE Journals (Premier Health Sciences 2019)
Available at Journal of Telemedicine and Telecare from Unpaywall
Abstract Introduction: We investigated the experience of individuals diagnosed with type 2 diabetes mellitus (T2DM) who participated in an intervention in which the key elements were the provision of a smartphone and self-monitoring software. The interviews focused on use of a smartphone and the effects on motivation for health behavior change. Methods: This was a qualitative evaluation of participants in a larger T2DM self-management randomized controlled trial (RCT) conducted at the Black Creek Community Health Centre (BCCHC) in Toronto, Canada (ClinicalTrials.gov Identifier: NCT02036892). The study is based on semi-structured interviews (n = 11) that were audio taped and analyzed with a thematic analytic approach. The RCT compared the effectiveness of six months of smartphone-based self-monitoring and health coaching with a control group who received health coaching without internet or smartphone-based assistance. Results: Qualitative data analyses resulted in derivation of four major themes that describe participant experience: (a) 'smartphone and software', describes smartphone use in relation to health behavior change; (b) 'health coach' describes how client/health coach relationships were assisted by smartphone use; (c) 'overall experience' describes perceptions of the overall intervention; and (d) 'frustrations in managing chronic conditions' describes difficulties with the complexities of T2DM management from a patient perspective. Discussion: Findings suggest that interventions with T2DM assisted by smartphone software and health coaches actively engage individuals in improved hemoglobin A1c (HbA1c) control. (PsycINFO Database Record (c) 2019 APA, all rights reserved) (Source: journal abstract)

120. Testing mediator variables in a physical activity intervention for women with type 2 diabetes

Authors Plotnikoff, Ronald C.; Lubans, David R.; Penfold, Chris M.; Courneya, Kerry S.
Source Psychology of Sport and Exercise; Jan 2014; vol. 15 (no. 1); p. 1-8
Publication Date Jan 2014
Publication Type(s) Journal Peer Reviewed Journal Journal Article
Database PsycINFO
Available at Psychology of Sport and Exercise from ScienceDirect Available to PHE and Local Authority staff
Available at Psychology of Sport and Exercise from Ovid (Journals @ Ovid)

Abstract Objectives: A limited understanding of the mechanisms of behavior change has hindered the development of more effective interventions. The aim of this study was to identify potential mediators of objectively measured physical activity (PA) behavior change in women with type 2 diabetes (T2DM). Design: Mediation test of a randomized controlled trial. Method: Women with T2DM (n = 93) from the control group (standard PA materials, n = 44) and the full intervention group (control + stage-matched printed material and telephone counseling, n = 49) of a larger PA intervention trial were included. PA outcomes were minutes of MET weighted moderate and vigorous PA/week (self-report) and steps/3-days (objective) recorded at baseline and 12-months. Socialcognitive constructs were measured and tested in a mediating variable framework. Results: Perceived behavioral control and barrier self-efficacy mediated intervention effects on objective PA (proportion of intervention effect mediated = 18% and 24% respectively). Intention was a mediator of objective PA (23%). (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

121. Efficacy of a theory-based behavioural intervention to increase physical activity in an at-risk group in primary care (ProActive UK): A randomised trial

Authors Kinmonth, Ann-Louise; Wareham, Nicholas J.; Hardeman, Wendy; Sutton, Stephen; Prevost, A. Toby; Fanshawe, Tom; Williams, Kate M.; Ekelund, Ulf; Spiegelhalter, David; Griffin, Simon J.
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Abstract Background--Declining physical activity is associated with a rising burden of global disease. Efforts to reverse this trend have not been successful. We aimed to assess the efficacy of a facilitated behavioural intervention to increase the physical activity of sedentary individuals at familial risk of diabetes. Methods--We enrolled 365 sedentary adults who had a parental history of type 2 diabetes. They were recruited from either diabetes or family history registers at 20 general practice clinics in the UK. Eligible participants were randomly assigned to one of two intervention groups, or to a comparison group. All participants were posted a brief advice leaflet. One intervention group was offered a 1-year behaviour-change programme, to be delivered by trained facilitators in participants' homes, and the other the same programme by telephone. The programme was designed to alter behavioural determinants, as defined by the theory of planned behaviour, and to teach behaviour-change strategies. The principal outcome at 1 year was daytime physical activity, which was objectively measured as a ratio to resting energy expenditure. Analysis was by intention to treat. This study is registered as ISRCTN61323766. Findings--Of 365 patients, we analysed primary endpoints for 321 (88%) for whom we had data after 1 year of follow-up. At 1 year, the physical-activity ratio of participants who received the intervention, by either delivery route, did not differ from the ratio in those who were given a brief advice leaflet. The mean difference in daytime physical-activity ratio, adjusted for baseline, was -0.04 (95% CI -.16 to 0.08). The physical-activity ratio did not differ between participants who were delivered the intervention face-to-face or by telephone (mean difference -0.05; 95% CI -0.19 to 0.10). Interpretation--A facilitated theory-based behavioural intervention was no more effective than an advice leaflet for promotion of physical activity in an at-risk group; therefore health-care providers should remain cautious about commissioning behavioural programmes into individual preventive health-care services. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

122. Social-cognitive predictors of physical activity initiation in type 2 diabetes following diabetes self-management education: Application of the health action process approach

Authors Bonner, Jason E.
Source Dissertation Abstracts International: Section B: The Sciences and Engineering; 2011; vol. 72 (no. 6-B); p. 3725
Publication Date 2011
Publication Type(s) Dissertation Abstract Dissertation
Database PsycINFO

Abstract Type 2 diabetes presents a public health crisis and a global pandemic. Successful management of diabetes requires engagement in a daily regimen of self-care behaviors to achieve optimal glycemic control and to reduce the severity of diabetes-related complications. Regular engagement in physical activity has been demonstrated to improve glycemic control and overall quality of life among patients with diabetes. Diabetes self-management education (DSME) has become the hallmark for instructing patients with diabetes to engage in physical activity, yet physical activity patterns of DSME patients remains largely unknown. Further, it is unclear what factors could account for such behavior change in the DSME setting. Social-cognitive models of health behavior have attempted to explain behavior change such as physical activity initiation. One model, the Health Action Process Approach (HAPA), provides a parsimonious framework for understanding this process. The HAPA organizes key social-cognitive factors into a motivational stage, where a behavioral intention is formed, and a volitional stage, where self-regulatory processes such as action planning mediate the intention-behavior relationship, thereby translating intention into action. Using the HAPA as a theoretical framework, the present study sought to examine the key social-cognitive determinants of physical activity initiation among patients with type 2 diabetes after they participated in DSME. A longitudinal, multi-site prospective study design utilized written and telephone-based surveys to assess HAPA constructs and physical activity in a DSME population. Participants were 152 adults with type 2 diabetes attending DSME classes in a mid-west metropolitan city. Results of this study revealed that several key social-cognitive factors, as conceptualized by the HAPA's motivational stage, predicted the formation of a behavioral intention to engage in physical activity. Findings on the HAPA volitional stage constructs indicated that only behavioral intention predicted which participants met the minimum amounts of physical activity promoted in DSME. Additionally, the present study revealed physical activity initiation remains a problem among DSME participants. Future research is recommended to clarify the causal role and pathways of social-cognitive factors in the HAPA model to better understand physical activity initiation within the DSME population. (PsycINFO Database Record (c) 2016 APA, all rights reserved)

123. Effectiveness of motivational interviewing for improving physical activity self-management for adults with type 2 diabetes: A review

Authors Soderlund, Patricia Davern
Source Chronic Illness; Mar 2018; vol. 14 (no. 1); p. 54-68
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PubMedID 29226694
Database PsycINFO
Available at Chronic illness from SAGE Journals (Premier Health Sciences 2019)

Abstract Objectives: This review examines the effectiveness of motivational interviewing for physical activity self-management for adults diagnosed with diabetes mellitus type 2. Motivational interviewing is a patient centered individually tailored counseling intervention that aims to elicit a patient's own motivation for health behavior change. Review questions include (a) How have motivational interviewing methods been applied to physical activity interventions for adults with diabetes mellitus type 2? (b) What motivational interviewing approaches are associated with successful physical activity outcomes with diabetes mellitus 2?. Methods: Database searches used PubMed, CINAHL, and PsycINFO for the years 2000 to 2016. Criteria for inclusion was motivational interviewing used as the principal intervention in the tradition of Miller and Rollnick, measurement of physical activity, statistical significance reported for physical activity outcomes, quantitative research, and articles written in English. Results: A total of nine studies met review criteria and four included motivational interviewing interventions associated with significant physical activity outcomes. Discussion: Findings suggest motivational interviewing sessions should target a minimal number of self-management behaviors, be delivered by counselors proficient in motivational interviewing, and use motivational interviewing protocols with an emphasis placed either on duration or frequency of sessions. (PsycINFO Database Record (c) 2019 APA, all rights reserved) (Source: journal abstract)

124. Testing mediator variables in a resistance training intervention for obese adults with type 2 diabetes

Authors Lubans, David R.; Plotnikoff, Ronald C.; Jung, Mary; Eves, Neil; Sigal, Ron
Source Psychology & Health; Dec 2012; vol. 27 (no. 12); p. 1388-1404
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Publication Type(s) Journal Peer Reviewed Journal Journal Article
PubMedID 21895462
Database PsycINFO
Available at Psychology & health from EBSCO (Psychology and Behavioral Sciences Collection)
Available at Psychology & health from Unpaywall

Abstract A poor understanding of behaviour change mechanisms has hindered the development of effective physical activity interventions. The aim of this study was to identify potential mediators of change in a home-based resistance training (RT) program for obese individuals with type 2 diabetes. Obese individuals with type 2 diabetes (N = 48) were randomly allocated to either an RT intervention (n = 27) or a control group (n = 21) for the 16-week study period. The study sample included 16 men and 32 women and the mean age of participants was 54.4 (± 11.7) years. Participants in the RT group received a multi-gym and dumbbells and home supervision from a certified personal trainer. RT behaviour was measured using a modified Godin Leisure Time Questionnaire. Social-cognitive constructs were measured and tested in a mediating variable framework using a product-of-coefficients test. The intervention had a significant effect on RT behaviour (p < 0.001) and muscular strength (p < 0.001). The intervention had a significant effect on RT planning strategies (p < 0.01), which mediated the effect of the intervention on RT behaviour. The home-based RT program successfully targeted participants' RT planning strategies which contributed to their exercise adherence. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

125. The effects of a supplemental, theory-based physical activity counseling intervention for adults with type 2 diabetes

Authors Plotnikoff, Ronald C.; Pickering, Michael A.; Glenn, Nicole; Doze, Sandra L.; Reinbold-Matthews, Melissa L.; McLeod, Laura J.; Lau, David C. W.; Fick, Gordon H.; Johnson, Steven T.; Flaman, Laura
Source Journal of Physical Activity & Health; Sep 2011; vol. 8 (no. 7); p. 944-954
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PubMedID 21885885
Database PsycINFO
Abstract Background: Physical activity (PA) is a cornerstone in the management of type 2 diabetes (T2DM). This pilot investigation explores the effects of a standard diabetes education program compared with a supplemental PA intervention on diabetes-related health outcomes. Methods: Using a prospective 2-armed design, 96 adults with T2DM were randomly assigned to either standard care (diabetes education program; n = 49) or standard care supplemented with an 8-week, individualized-counseling and community-based PA component (n = 47). Measurements were taken at baseline, 3, 6, and 12 months. Primary outcomes were changes in PA (self-report) and HbA1c. Between group changes were compared using analysis of covariance (ANCOVA) and changes over time using repeated-measures ANOVA. Results: In comparison with standard care, the supplemental group demonstrated an increase in PA (Ps < 0.01) and cardiorespiratory fitness (Ps < 0.05) from baseline to all follow-up time-points. HbA1c levels declined (P < .05) from baseline to all time points in the standard care group. Reduction in cholesterol-ratio (P < .01), increase in HDL (P < .05), and reductions in blood pressure, resting heart rate and BMI (approaching statistical significance Ps < 0.10) were also reported for both groups. Conclusions: PA counseling in addition to standard care is effective for promoting PA behavior change and positive health-related outcomes among individuals with T2DM. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

126. Behavior-analytic approaches to the management of diabetes mellitus: Current status and future directions

Authors Raiff, Bethany R.; Burrows, Connor; Dwyer, Matthew
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Abstract Diabetes mellitus is the seventh leading cause of death in the United States, requiring a series of complex behavior changes that must be sustained for a lifetime (e.g., counting carbohydrates, self-monitoring blood glucose, adjusting insulin). Although complex, all of these tasks involve behavior, making them amenable targets for behavior analysts. In this article, the authors describe interventions that have focused on antecedent, consequent, multicomponent, and alternate procedures for the management of diabetes, highlighting ways in which technology has been used to overcome common barriers to the use of these intensive, evidence-based interventions. Additional variables relevant to poorly managed diabetes (e.g., delay discounting) are also discussed. Future research and practice should focus on harnessing continued advances in information technology while also considering underexplored behavioral technologies for the effective treatment of diabetes, with a focus on identifying sustainable, long-term solutions for maintaining proper diabetes management. Practical implementation of these interventions will depend on having qualified behavior analysts working in integrated primary care settings where the interventions are most likely to be used, which will require interdisciplinary training and collaboration. (PsycInfo Database Record (c) 2021 APA, all rights reserved) (Source: journal abstract)

127. A community based primary prevention programme for type 2 diabetes integrating identification and lifestyle intervention for prevention: The Let's Prevent Diabetes cluster randomised controlled trial

Authors Davies, Melanie J.; Gray, Laura J.; Troughton, Jacqui; Gray, Alastair; Tuomilehto, Jaakko; Farooqi, Azhar; Khunti, Kamlesh; Yates, Thomas
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Publication Date Mar 2016
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PubMedID 26740346
Database PsycINFO
Available at Preventive medicine from ScienceDirect Available to PHE and Local Authority staff
Available at Preventive medicine from Unpaywall
Abstract Objectives: Prevention of type 2 diabetes (T2DM) is a priority in healthcare, but there is a lack of evidence investigating how to effectively translate prevention research into a UK primary care setting. We assessed whether a structured education programme targeting lifestyle and behaviour change was effective at preventing progression to T2DM in people with pre-diabetes. Materials and methods: Forty-four general practices were randomised to receive either standard care or a 6 hour group structured education programme with an annual refresher course, and regular phone contact. Participants were followed up for 3 years. The primary outcome was progression to T2DM. Results: Eight hundred and eighty participants were included (36% female, mean age 64 years, 16% ethnic minority group); 131 participants developed T2DM. There was a non-significant 26% reduced risk of developing T2DM in the intervention arm compared to standard care (HR 0.74, 95% CI 0.48, 1.14, p = 0.18). The reduction in T2DM risk when excluding those who did not attend the initial education session was also non-significant (HR 0.65, 0.41, 1.03, p = 0.07). There were statistically significant improvements in HbA1c (−0.06, −0.11, −0.01), LDL cholesterol (−0.08, −0.15, −0.01), sedentary time (−26.29, −45.26, −7.32) and step count (498.15, 162.10, 834.20) when data were analysed across all time points. Conclusions: This study suggests that a relatively low resource, pragmatic diabetes prevention programme resulted in modest benefits to biomedical, lifestyle and psychosocial outcomes, however the reduction to the risk of T2DM did not reach significance. The findings have important implications for future research and primary care. (PsycINFO Database Record (c) 2017 APA, all rights reserved) (Source: journal abstract)

128. Impact of a physical activity intervention program on cognitive predictors of behavior among adults at risk of Type 2 diabetes (ProActive randomised controlled trial)

Authors Hardeman, Wendy; Kinmonth, Ann Louise; Michie, Susan; Sutton, Stephen
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Available at The international journal of behavioral nutrition and physical activity from BioMed Central
Available at The international journal of behavioral nutrition and physical activity from Europe PubMed Central - Open Access
Available at The international journal of behavioral nutrition and physical activity from SpringerLink
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Available at The international journal of behavioral nutrition and physical activity from ProQuest (Health Research Premium) - NHS Version
Available at The international journal of behavioral nutrition and physical activity from Unpaywall

Abstract Background: In the ProActive Trial an intensive theory-based intervention program was no more effective than theory-based brief advice in increasing objectively measured physical activity among adults at risk of Type 2 diabetes. We aimed to illuminate these findings by assessing whether the intervention program changed cognitions about increasing activity, defined by the Theory of Planned Behavior, in ways consistent with the theory. Methods: N = 365 sedentary participants aged 30–50 years with a parental history of Type 2 diabetes were randomized to brief advice alone or to brief advice plus the intervention program delivered face-to-face or by telephone. Questionnaires at baseline, 6 and 12 months assessed cognitions about becoming more physically active. Analysis of covariance was used to test intervention impact. Bootstrapping was used to test multiple mediation of intervention impact. Results: At 6 months, combined intervention groups (face-to-face and telephone) reported that they found increasing activity more enjoyable (affective attitude, d = .25), and they perceived more instrumental benefits (e.g., improving health) (d = .23) and more control (d = .32) over increasing activity than participants receiving brief advice alone. Stronger intentions (d = .50) in the intervention groups than the brief advice group at 6 months were partially explained by affective attitude and perceived control. At 12 months, intervention groups perceived more positive instrumental (d = .21) and affective benefits (d = .29) than brief advice participants. The intervention did not change perceived social pressure to increase activity. Conclusion: Lack of effect of the intervention program on physical activity over and above brief advice was consistent with limited and mostly small short-term effects on cognitions. Targeting affective benefits (e.g., enjoyment, social interaction) and addressing barriers to physical activity may strengthen intentions, but stronger intentions did not result in more behavior change. More powerful interventions which induce large changes in TPB cognitions may be needed. Other interventions deserving further evaluation include theory-based brief advice, intensive measurement of physical and psychological factors, and monitoring of physical activity. Future research should consider a wider range of mediators of physical activity change, assess participants' use of self-regulatory strategies taught in the intervention, and conduct experimental studies or statistical modeling prior to trial evaluation. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

129. Lifestyle intervention in prevention of type 2 diabetes in women with a history of gestational diabetes mellitus: One-year results of the FIN-D2D Project

Authors Rautio, Nina; Jokelainen, Jari; Korpi-Hyövälti, Eeva; Oksa, Heikki; Saaristo, Timo; Peltonen, Markku; Moilanen, Leena; Vanhala, Mauno; Uusitupa, Matti; Tuomilehto, Jaakko; Keinänen-Kiukaanniemi, Sirkka
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Available at Journal of women's health (2002) from Unpaywall
Abstract Background: Lifestyle interventions are effective in preventing type 2 diabetes (T2D). Women with history of gestational diabetes mellitus (GDM) may have barriers to lifestyle changes, and the previous results of lifestyle interventions are contradictory reporting either favorable outcomes or no significant beneficial effects. Our aim was to compare cardio-metabolic risk profile and responses to a 1-year lifestyle intervention program in women with and without history of GDM. Methods: The Implementation Project of the Program for Prevention of Type 2 Diabetes (FIN-D2D) was conducted in Finland in five hospital districts. Altogether 1,661 women aged £ 45 years participated in the program. One-year follow-up was available for 393 women who did not have screen-detected T2D at baseline, and 265 of them had at least one intervention visit [115 (43.4%) women with history of GDM and 150 (56.6%) without history of GDM]. Results: At baseline, women with GDM had similar baseline glucose tolerance but better anthropometric characteristics, blood pressure, and lipid profile than women without GDM after adjustment for age. Beneficial changes in cardiovascular risk profile existed among women with and without GDM during follow-up and the effect of lifestyle intervention was similar between the groups, except that low-density lipoprotein cholesterol improved only in women with GDM. Altogether, 4.0% of those with GDM and 5.0% of those without GDM developed T2D (p = 0.959 adjustment for age). Conclusions: The effect of a 1-year lifestyle intervention in primary healthcare setting was similar regardless of history of GDM, both women with and without GDM benefitted from participation in the lifestyle intervention. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

130. Development and efficacy of an electronic, culturally adaptedlifestyle counseling tool for improving diabetes-related dietary knowledge: Randomized controlled trial among ethnic minority adults with type 2 diabetes mellitus

Authors Abu-Saad, Kathleen; Murad, Havi; Barid, Rivka; Olmer, Liraz; Ziv, Arnona; Younis-Zeidan, Nuha; Kaufman-Shriqui, Vered; Gillon-Keren, Michal; Rigler, Shmuel; Berchenko, Yakir; Kalter-Leibovici, Ofra
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Available at Journal of medical Internet research from Unpaywall

Abstract Background: Ethnic minority populations exhibit disproportionately high rates of type 2 diabetes mellitus (T2DM). Electronic health tools have the potential to facilitate the cultural adaptation and tailoring of T2DM education to improve the knowledge and management of diabetes mellitus (DM).Objective: This study aimed (1) to develop an adaptable Interactive Lifestyle Assessment, Counseling, and Education (I-ACE)software to support dietitian-delivered lifestyle counseling among low-socioeconomic status (SES) ethnic minority patients withT2DM and (2) to evaluate its effect on DM-related dietary knowledge and management compared with standard lifestyle advice (SLA) in a randomized controlled trial (RCT).Methods: The I-ACE software, developed in consultation with clinical dieticians, incorporates evidence-based dietary and physical activity (PA) recommendations and educational materials. The features and behavioral change techniques include quantitative lifestyle (dietary intake and PA) assessment and simulation, individually tailored education and recommendations,motivational interviewing, and goal setting. For the unblinded pilot RCT, 50 overweight or obese Arab adults (aged 40-62 years)with poorly controlled T2DM were recruited from primary care clinics and randomly assigned to receive 4 in-person,dietician-delivered counseling sessions over 6 months using either (1) the I-ACE tool (experimental arm) or (2) the SLA methods(comparison arm). All outcome assessments were face-to-face. DM-related dietary knowledge (primary outcome) was measured at baseline, 3, 6, and 12 months. Lifestyle and other parameters were measured before, during, and after the intervention. Multiple linear regression and repeated measures linear mixed models were used to compare the changes in study outcomes and explore time trends in between-group and within-group changes.Results: A total of 25 participants were enrolled in each arm, of whom 24 and 21 completed the final assessment of the primary outcome in the I-ACE and SLA arms, respectively. DM-related lifestyle knowledge increased more rapidly in the I-ACE arm than in the SLA arm (P value for study arm×time interaction=.02). Within the I-ACE arm, the mean (SE) differences in added sugar and dietary fiber intakes from baseline to 12 months were −2.6% (SE 1.0%) of total energy (P=.03) and 2.7 (SE 0.0) g/1000kcal (P=.003), respectively. The odds of engaging in any leisure PA at 12 months tended to be higher in the I-ACE arm versus SLA arm, but did not reach statistical significance (odds ratio 2.8; 95% CI 0.7-11.6; P=.16). Both arms exhibited significant reductions in HbA1c (P value for change over time <.001). Conclusions: The use of the I-ACE software in a 6-month, 4-session dietician-delivered lifestyle counseling intervention improved the efficiency of lifestyle education, compared with SLA, among low-SES, ethnic minority patients with T2DM. This pilot trial provides justification for conducting a large-scale trial to evaluate its effectiveness and applicability in routine clinical care among ethnically diverse populations. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

131. Effects of a lifestyle intervention on cardiovascular risk among high-risk individuals for diabetes in a low- and middle-income setting: Secondary analysis of the Kerala Diabetes Prevention Program

Authors Lotfaliany, Mojtaba; Sathish, Thirunavukkarasu; Shaw, Jonathan; Thomas, Emma; Tapp, Robyn Jennifer; Kapoor, Nitin; Thankappan, Kavumpurathu Raman; Oldenburg, Brian
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Abstract We aimed to examine whether a lifestyle intervention was effective in reducing cardiovascular disease (CVD) risk in individuals at high-risk of developing diabetes in a low- and middle-income setting. The Kerala Diabetes Prevention Program was evaluated by a cluster-randomized controlled trial (2013–2016) of 1007 individuals (aged 30–60 years) at high-risk for diabetes (Indian Diabetes Risk Score ≥ 60 and without diabetes) in Kerala state, India. Sixty polling areas in Kerala were randomized to intervention or control groups by an independent statistician using a computer-generated randomization sequence. Participants from 30 intervention communities received a 12-month structured peer-support lifestyle intervention program involving 15 group sessions and linked community activities, aimed at supporting and maintaining lifestyle change. The primary outcome for this analysis was the predicted 10-year CVD risk at two years, assessed using the Framingham Risk Score. The mean age at baseline was 46.0 (SD: 7.5) years, and 47.2% were women. Baseline 10-year CVD risk was similar between study groups. The follow-up rate at two years was 95.7%. The absolute risk reduction in predicted 10-year CVD risk between study groups was 0.69% (95% CI: 0.09% to 1.29%, p=0.024) at one year and 0.69% (95% CI: 0.10% to 1.29%, p=0.023) at two years. The favorable change in CVD risk with the intervention condition was mainly due to the reduction in tobacco use (change index: −0.25, 95% CI: −0.42 to −0.09). Our findings suggest that a community-based peer-support lifestyle intervention could reduce CVD risk in individuals at high-risk of developing diabetes in India. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

132. The effectiveness of theory- and model-based lifestyle interventions on HbA1c among patients with type 2 diabetes: A systematic review and meta-analysis

Authors Doshmangir, P.; Jahangiry, L.; Farhangi, M. A.; Doshmangir, L.; Faraji, L.
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Database PsycINFO
Available at Public health from ScienceDirect Available to PHE and Local Authority staff
Abstract Objectives: The prevalence of type 2 diabetes is rising rapidly around the world. A number of systematic reviews have provided evidence for the effectiveness of lifestyle interventions on diabetic patients. The effectiveness of theory- and model-based education-lifestyle interventions for diabetic patients are unclear. The systematic review and meta-analysis aimed to evaluate and quantify the impact of theory-based lifestyle interventions on type 2 diabetes. Study design: A literature search of authentic electronic resources including PubMed, Scopus, and Cochrane collaboration was performed to identify published papers between January 2002 and July 2016. Methods: The PICOs (participants, intervention, comparison, and outcomes) elements were used for the selection of studies to meet the inclusion and exclusion criteria. Mean differences and standard deviations of hemoglobin A1c (HbA1c [mmol/mol]) level in baseline and follow-up measures of studies in intervention and control groups were considered for data synthesis. A random-effects model was used for estimating pooled effect sizes. To investigate the source of heterogeneity, predefined subgroup analyses were performed using trial duration, baseline HbA1c (mmol/mol) level, and the age of participants. Meta-regression was performed to examine the contribution of trial duration, baseline HbA1c (mmol/mol) level, the age of participants, and mean differences of HbA1c (mmol/mol) level. The significant level was considered P < 0.05. Results: Eighteen studies with 2384 participants met the inclusion criteria. The pooled main outcomes by random-effects model showed significant improvements in HbA1c (mmol/mol) −5.35% (95% confidence interval = −6.3, −4.40; P < 0.001) with the evidence of heterogeneity across studies. Conclusion: The findings of this meta-analysis suggest that theory- and model-based lifestyle interventions have positive effects on HbA1c (mmol/mol) indices in patients with type 2 diabetes. Health education theories have been applied as a useful tool for lifestyle change among people with type 2 diabetes. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

133. The effects of a pedometer-based behavioral modification program with telephone support on physical activity and sedentary behavior in type 2 diabetes patients

Authors De Greef, Karlijn P.; Deforche, Benedicte I.; Ruige, Johannes B.; Bouckaert, Jacques J.; Tudor-Locke, Catrine E.; Kaufman, Jean-Marc; De Bourdeaudhuij, Ilse M.
Source Patient Education and Counseling; Aug 2011; vol. 84 (no. 2); p. 275-279
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PubMedID 20732776
Database PsycINFO
Available at Patient education and counseling from ScienceDirect Available to PHE and Local Authority staff
Abstract Objective: Effectiveness of a behavioral modification program on physical activity (PA) and sedentary behavior in diabetes patients. Methods: Ninety-two patients were randomly assigned to an intervention or control group. The 24-weeks intervention consisted of a face-to-face session, pedometer and seven telephone follow-ups. Mean selection criteria were 35–75 years; 25–35 kg/m²; ≤12% HbA1c, treated for type 2 diabetes; no PA limitations. PA and sedentary behavior were measured by pedometer, accelerometer and questionnaire over the short- (24 weeks) and intermediate- (1 year) term. Results: The intervention group increased their steps/day by 2744, their total PA by 23 min/day (p < 0.001) and decreased their sedentary behavior by 23 min/day (p < 0.05) post-intervention. After 1 year the intervention group still had an increase of 1872 steps/day, 11 min/day total PA and a decrease of 12 min/day in sedentary behavior (p < 0.001). Conclusion: This pedometer-based behavioral modification program with telephone support showed lasting positive effects on steps/day, PA and sedentary behavior. Practice implications: This study tested a convenient way to increase PA among type 2 diabetes patients. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

134. The effectiveness of smartphone apps for lifestyle improvement in noncommunicable diseases: Systematic review and meta-analyses

Authors Lunde, Pernille; Nilsson, Birgitta Blakstad; Bergland, Astrid; Kværner, Kari Jorunn; Bye, Asta
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Abstract Background: Noncommunicable diseases (NCDs) account for 70% of all deaths in a year globally. The four main NCDs are cardiovascular diseases, cancers, chronic pulmonary diseases, and diabetes mellitus. Fifty percent of persons with NCD do not adhere to prescribed treatment; in fact, adherence to lifestyle interventions is especially considered as a major challenge. Smartphone apps permit structured monitoring of health parameters, as well as the opportunity to receive feedback. Objective: The aim of this study was to review and assess the effectiveness of app-based interventions, lasting at least 3 months, to promote lifestyle changes in patients with NCDs. Methods: In February 2017, a literature search in five databases (EMBASE, MEDLINE, CINAHL, Academic Research Premier, and Cochrane Reviews and Trials) was conducted. Inclusion criteria was quantitative study designs including randomized and nonrandomized controlled trials that included patients aged 18 years and older diagnosed with any of the four main NCDs. Lifestyle outcomes were physical activity, physical fitness, modification of dietary habits, and quality of life. All included studies were assessed for risk of bias using the Cochrane Collaboration`s risk of bias tool. Meta-analyses were conducted for one of the outcomes (glycated hemoglobin, HbA 1c) by using the estimate of effect of mean post treatment with SD or CI. Heterogeneity was tested using the I^2 test. All studies included in the meta-analyses were graded. Results: Of the 1588 records examined, 9 met the predefined criteria. Seven studies included diabetes patients only, one study included heart patients only, and another study included both diabetes and heart patients. Statistical significant effect was shown in HbA 1c in 5 of 8 studies, as well in body weight in one of 5 studies and in waist circumference in one of 3 studies evaluating these outcomes. Seven of the included studies were included in the meta-analyses and demonstrated significantly overall effect on HbA 1c on a short term (3-6 months; P = .02) with low heterogeneity (I^2 = 41%). In the long term (10-12 months), the overall effect on HbA1c was statistical significant (P = .009) and without heterogeneity (I^2 = 0%). The quality of evidence according to Grading of Recommendations Assessment, Development and Evaluation was low for short term and moderate for long term. Conclusions: Our review demonstrated limited research of the use of smartphone apps for NCDs other than diabetes with a follow-up of at least 3 months. For diabetes, the use of apps seems to improve lifestyle factors, especially to decrease HbA 1c. More research with long-term follow-up should be performed to assess the effect of smartphone apps for NCDs other than diabetes. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

135. Effectiveness of a behavior modification program for older people with uncontrolled type 2 diabetes

Authors Ounnapiruk, Liwan; Wirojratana, Virapun; Meehatchai, Nitaya; Turale, Sue
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Available at Nursing & health sciences from Wiley Online Library Medicine and Nursing Collection 2019
Available at Nursing & health sciences from Ovid (Journals @ Ovid)

Abstract This quasi-experimental study examined the effectiveness of a behavior modification program for diabetic control in Thai elders with uncontrolled Type 2 Diabetes. Purposive sampling was used to select 30 elders from one community as an intervention group, and 30 from a neighboring community as a control group. The intervention group participated in a program of 12 weeks' duration involving activities related to group counseling, group discussion, and an empowerment process that enhanced appropriate consumption of healthy diet, medication taking, and exercise. Data were collected by interviews using a questionnaire to assess knowledge of diabetes, perceived self-efficacy, and diabetes control behavior, including fasting blood glucose and glycosylated hemoglobin, were examined at the baseline and three months thereafter. At program completion, the intervention group had significantly higher scores of knowledge, self-efficacy, and health behaviors than those in the control group, but blood glucose and glycosylated hemoglobin were not significantly different. Although nurses can use aspects of this program to benefit elders with diabetes who require support and education, further research is required to provide improved health outcomes such as better glycemic control. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

136. Effect of an intensive metabolic control lifestyle intervention in type-2 diabetes patients

Authors Gamiochipi, Mireya; Cruz, Miguel; Kumate, Jesús; Wacher, Niels H.
Source Patient Education and Counseling; Jul 2016; vol. 99 (no. 7); p. 1184-1189
Publication Date Jul 2016
Publication Type(s) Journal Peer Reviewed Journal Journal Article
PubMedID 26947102
Database PsycINFO
Available at Patient education and counseling from ScienceDirect Available to PHE and Local Authority staff

Abstract Objective: To evaluate the effectiveness of an intensive lifestyle intervention on metabolic control in patients with type 2 diabetes. Methods: 199 patients recently diagnosed with type 2 diabetes, with lack of metabolic control and overweight/obesity, were randomly assigned to intensive lifestyle intervention or collaborative educational program alone, with 6 months of follow-up. Intervention included 150min of physical activity a week to reduce body weight by 7%. Both groups received 16 sessions on behavior modification over the course of the 6 months. Measurements were taken at baseline, 3 and 6 months. Results were analyzed and compared. Results: Significant weight loss was achieved by both groups, with greater loss in the intervention group. Those with lower baseline A1c appeared to benefit more from the educational program than intensive intervention over time. Conclusions: Both interventions produced positive if modest changes in metabolic control. These results suggest that, for weight loss and control of A1c, an intensive intervention may be more effective. Practice Implications: The current study demonstrates the value of a systematic application of behavior modification and self-care techniques in the treatment of type 2 diabetes. It demonstrates the importance of intensive, all-inclusive treatment, and of attention to individual concerns. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract)

137. Evaluation of a package of risk-based pharmaceutical and lifestyle interventions in patients with hypertension and/or diabetes in rural China: A pragmatic cluster randomised controlled trial.

Authors Wei X; Zhang Z; Chong MKC; Hicks JP; Gong W; Zou G; Zhong J; Walley JD; Upshur REG; Yu M
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Available at PLoS medicine from ProQuest (Health Research Premium) - NHS Version
Available at PLoS medicine from Unpaywall

Abstract BACKGROUND: Primary prevention of cardiovascular disease (CVD) requires adequate control of hypertension and diabetes. We designed and implemented pharmaceutical and healthy lifestyle interventions for patients with diabetes and/or hypertension in rural primary care, and assessed their effectiveness at reducing severe CVD events.
METHODS AND FINDINGS: We used a pragmatic, parallel group, 2-arm, controlled, superiority, cluster trial design. We randomised 67 township hospitals in Zhejiang Province, China, to intervention (34) or control (33). A total of 31,326 participants were recruited, with 15,380 in the intervention arm and 15,946 in the control arm. Participants had no known CVD and were either patients with hypertension and a 10-year CVD risk of 20% or higher, or patients with type 2 diabetes regardless of their CVD risk. The intervention included prescription of a standardised package of medicines, individual advice on lifestyle change, and adherence support. Control was usual hypertension and diabetes care. In both arms, as usual in China, most outpatient drug costs were out of pocket. The primary outcome was severe CVD events, including coronary heart disease and stroke, during 36 months of follow-up, as recorded by the CVD surveillance system. The study was implemented between December 2013 and May 2017. A total of 13,385 (87%) and 14,745 (92%) participated in the intervention and control arms, respectively. Their mean age was 64 years, 51% were women, and 90% were farmers. Of all participants, 64% were diagnosed with hypertension with or without diabetes, and 36% were diagnosed with diabetes only. All township hospitals and participants completed the 36-month follow-up. At 36 months, there were 762 and 874 severe CVD events in the intervention and control arms, respectively, yielding a non-significant effect on CVD incidence rate (1.92 and 2.01 per 100 person-years, respectively; crude incidence rate ratio = 0.90 [95% CI: 0.74, 1.08; P = 0.259]). We observed significant, but small, differences in the change from baseline to follow-up for systolic blood pressure (-1.44 mm Hg [95% CI: -2.26, -0.62; P < 0.001]) and diastolic blood pressure (-1.29 mm Hg [95% CI: -1.77, -0.80; P < 0.001]) in the intervention arm compared to the control arm. Self-reported adherence to recommended medicines was significantly higher in the intervention arm compared with the control arm at 36 months. No safety concerns were identified. Main study limitations include all participants being informed about their high CVD risk at baseline, non-blinding of participants, and the relatively short follow-up period available for judging potential changes in rates of CVD events.
CONCLUSIONS: The comprehensive package of pharmaceutical and healthy lifestyle interventions did not reduce severe CVD events over 36 months. Improving health system factors such as universal coverage for the cost of essential medicines is required for successful risk-based CVD prevention programmes.
TRIAL REGISTRATION: ISRCTN registry ISRCTN58988083.

138. The effects of financial incentives on diabetes prevention program attendance and weight loss among low-income patients: the We Can Prevent Diabetes cluster-randomized controlled trial.

Authors Desai JR; Vazquez-Benitez G; Taylor G; Johnson S; Anderson J; Garrett JE; Gilmer T; Vue-Her H; Rinn S; Engel K; Schiff J; O'Connor PJ
Source BMC public health; Oct 2020; vol. 20 (no. 1); p. 1587
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Abstract BACKGROUND: Penetration and participation of real life implementation of lifestyle change programs to prevent type 2 diabetes has been challenging. This is particularly so among low income individuals in the United States. The purpose of this study is to examine the effectiveness of financial incentives on attendance and weight loss among Medicaid beneficiaries participating in the 12-month Diabetes Prevention Program (DPP).
METHODS: This is a cluster-randomized controlled trial with two financial incentive study arms and an attention control study arm. Medicaid beneficiaries with prediabetes from 13 primary care clinics were randomly assigned to individually earned incentives (IND; 33 groups; n = 309), a hybrid of individual- and group-earned incentives (GRP; 30 groups; n = 259), and an attention control (AC; 30 groups; n = 279). Up to $520 in incentives could be earned for attaining attendance and weight loss goals over 12 months. Outcomes are percent weight loss from baseline, achieving 5% weight loss from baseline, and attending 75% of core and 75% of maintenance DPP sessions. Linear mixed models were used to examine weight change and attendance rates over the 16 weeks and 12 months.
RESULTS: The percent weight change at 16 weeks for the IND, GRP, and AC participants were similar, at - 2.6, - 3.1%, and - 3.4%, respectively. However, participants achieving 5% weight loss in the IND, GRP, and AC groups was 21.5, 24.0% (GRP vs AC, P < 0.05), and 15.2%. Attendance at 75% of the DPP core sessions was significantly higher among IND (60.8%, P < 0.001) and GRP (64.0%, P < 0.001) participants than among AC (38.6%) participants. Despite substantial attrition over time, attendance at 75% of the DPP maintenance sessions was also significantly higher among IND (23.0%, P < 0.001) and GRP (26.1%, P < 0.001) participants than among AC (11.0%) participants.
CONCLUSIONS: Financial incentives can improve the proportion of Medicaid beneficiaries attending the 12-month DPP and achieving at least 5% weight loss.
TRIAL REGISTRATION: ClinicalTrials.gov NCT02422420 ; retrospectively registered April 21, 2015.

139. Weight maintenance interventions for people with type 2 diabetes mellitus: a systematic review protocol.

Authors Sauchelli S; Bradley J; Cox J; England C; Perry R
Source Systematic reviews; ; vol. 9 (no. 1); p. 210
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Available at Systematic reviews from Unpaywall

Abstract BACKGROUND: Weight loss maintenance is a challenge for people with type 2 diabetes mellitus (T2DM), which attenuates the long-term benefits of weight loss for diabetes management. Medication, specific dietary requirements and the psychosocial burden of T2DM signify that weight loss maintenance designed for obesity may not suit people with T2DM. The primary objective of this review is to comprehensively evaluate existing weight maintenance interventions for people with or at high risk of T2DM.
METHODS: We registered a protocol for the systematic review and meta-analysis of randomised and non-randomised weight maintenance interventions for T2DM. Studies included will have been carried out in adults with clinical diagnosis of T2DM or pre-diabetes. All intervention types will be accepted (e.g. behavioural/lifestyle change and pharmacological). The primary outcomes will be weight control, glycaemic control and adverse effects. Secondary outcomes will include cardiovascular risk factors (e.g. total cholesterol, LDL-cholesterol, blood pressure control), psychological wellbeing (including health-related quality of life), change in glucose medication and waist circumference. Multiple electronic databases will be searched such as MEDLINE, EMBASE, Web of Science, PsychINFO and international registers (e.g. Cochrane Central Register of Controlled Trials, WHO ICTRP). OpenGrey will be searched for grey literature. Two researchers will screen all citations and abstracts. This process will also be conducted by an additional researcher using a semi-automated tool to reduce human error. Full-text articles will be further examined by the researchers to select a final set for further analysis, and a narrative synthesis of the evidence will be presented. Potential sources of heterogeneity will be assessed, and a meta-analysis will be conducted if feasible. Risk of bias will be evaluated using the Cochrane risk of bias tool and the certainty of evidence using the GRADE (grading of recommendations, assessment, development and evaluation) approach.
DISCUSSION: This review will critically appraise existing weight maintenance interventions targeting T2DM. Findings will inform future intervention development to support people with T2DM delay weight regain and prolong successful diabetes management.
SYSTEMATIC REVIEW REGISTRATION: PROSPERO CRD42020168032.

140. Current Perspectives on the Impact of the National Diabetes Prevention Program: Building on Successes and Overcoming Challenges.

Authors Ritchie ND; Baucom KJW; Sauder KA
Source Diabetes, metabolic syndrome and obesity : targets and therapy; 2020; vol. 13 ; p. 2949-2957
Publication Date 2020
Publication Type(s) Journal Article; Review
PubMedID 32903871
Database PubMed
Available at Diabetes, metabolic syndrome and obesity : targets and therapy from Europe PubMed Central - Open Access
Available at Diabetes, metabolic syndrome and obesity : targets and therapy from Unpaywall

Abstract To address the public health and economic burden of type 2 diabetes, the Centers for Disease Control and Prevention (CDC) began dissemination of the National Diabetes Prevention Program (NDPP) in the United States in 2010. Based on the intensive lifestyle intervention from a large efficacy trial, the NDPP aims to reduce incidence through lifestyle change and weight loss. This narrative review summarizes evidence on reach, effectiveness, and sustainability of the NDPP, while highlighting opportunities to overcome challenges in these areas. Major successes include reaching hundreds of thousands of at-risk individuals across the nation, with notable effectiveness upon full participation and widespread insurance coverage. Yet, more work is needed to ensure greater public health impact, particularly among priority populations at heightened risk who also experience disparities in program outcomes. Preliminary evidence suggests a number of strategies may improve reach and effectiveness of the NDPP, often with more rigorous study needed prior to widespread uptake. Updating the NDPP to better match the current evidence-base may also be important, such as directly targeting glycemia with a patient-centered approach and promoting metformin as an adjunct or second-line treatment. Finally, revisiting pay-for-performance reimbursement models may be critical to sustainability by ensuring adequate availability of suppliers and ultimately reducing diabetes prevalence.

141. Cost-effectiveness of a lifestyle intervention in high-risk individuals for diabetes in a low- and middle-income setting: Trial-based analysis of the Kerala Diabetes Prevention Program.

Authors Sathish T; Oldenburg B; Thankappan KR; Absetz P; Shaw JE; Tapp RJ; Zimmet PZ; Balachandran S; Shetty SS; Aziz Z; Mahal A
Source BMC medicine; ; vol. 18 (no. 1); p. 251
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Available at BMC medicine from Unpaywall

Abstract BACKGROUND: Data on the cost-effectiveness of lifestyle-based diabetes prevention programs are mostly from high-income countries, which cannot be extrapolated to low- and middle-income countries. We performed a trial-based cost-effectiveness analysis of a lifestyle intervention targeted at preventing diabetes in India.
METHODS: The Kerala Diabetes Prevention Program was a cluster-randomized controlled trial of 1007 individuals conducted in 60 polling areas (electoral divisions) in Kerala state. Participants (30-60 years) were those with a high diabetes risk score and without diabetes on an oral glucose tolerance test. The intervention group received a 12-month peer-support lifestyle intervention involving 15 group sessions delivered in community settings by trained lay peer leaders. There were also linked community activities to sustain behavior change. The control group received a booklet on lifestyle change. Costs were estimated from the health system and societal perspectives, with 2018 as the reference year. Effectiveness was measured in terms of the number of diabetes cases prevented and quality-adjusted life years (QALYs). Three times India's gross domestic product per capita (US$6108) was used as the cost-effectiveness threshold. The analyses were conducted with a 2-year time horizon. Costs and effects were discounted at 3% per annum. One-way and multi-way sensitivity analyses were performed.
RESULTS: Baseline characteristics were similar in the two study groups. Over 2 years, the intervention resulted in an incremental health system cost of US$2.0 (intervention group: US$303.6; control group: US$301.6), incremental societal cost of US$6.2 (intervention group: US$367.8; control group: US$361.5), absolute risk reduction of 2.1%, and incremental QALYs of 0.04 per person. From a health system perspective, the cost per diabetes case prevented was US$95.2, and the cost per QALY gained was US$50.0. From a societal perspective, the corresponding figures were US$295.1 and US$155.0. For the number of diabetes cases prevented, the probability for the intervention to be cost-effective was 84.0% and 83.1% from the health system and societal perspectives, respectively. The corresponding figures for QALY gained were 99.1% and 97.8%. The results were robust to discounting and sensitivity analyses.
CONCLUSIONS: A community-based peer-support lifestyle intervention was cost-effective in individuals at high risk of developing diabetes in India over 2 years.
TRIAL REGISTRATION: The trial was registered with Australia and New Zealand Clinical Trials Registry (ACTRN12611000262909). Registered 10 March 2011.

142. Assessing the Impact of Telemonitoring-Facilitated Lifestyle Modifications on Diabetes Outcomes: A Systematic Review and Meta-Analysis.

Authors Michaud TL; Ern J; Scoggins D; Su D
Source Telemedicine journal and e-health : the official journal of the American Telemedicine Association; 2021; vol. 27 (no. 2); p. 124-136
Publication Date 2021
Publication Type(s) Journal Article; Meta-Analysis; Research Support, Non-U.S. Gov't; Systematic Review
PubMedID 32397845
Database PubMed
Abstract Introduction: Lifestyle modification to promote regular physical activity and healthy eating is a key element of diabetes management. We aimed at evaluating randomized controlled trials that assess the impact of telemonitoring on diabetes outcomes with the inclusion of lifestyle change components. Methods: A systematic review search in relevant databases was conducted for studies published from January 2000 to October 2018. The search was restricted to studies published in English and included adult patients with type 2 diabetes. Study selection criteria included telehealth programs with remote monitoring of physiological data and feedback features. We further performed meta-analyses to summarize the pooled effect size (presented by the mean difference [MD]) of hemoglobin A1c (HbA1c) and weight loss outcomes. Results: Seventeen studies were included in the data synthesis (15 of them were included in the meta-analysis), with the sample size ranging from 18 to 484 and the study period ranging from 3 to 12 months. Telemonitoring achieved a significant but modest reduction in HbA1c (MD = -0.30%; 95% confidence interval [CI]: -0.31% to -0.29%) and weight loss (kg) outcomes (MD = -0.62; 95% CI: -0.78 to -0.45) compared with usual care. In the subgroup analyses, it was suggested that telemonitoring with automatic mobile transmission or with real-time feedback modality led to a greater improvement in HbA1c outcomes (MD = -0.61% and -0.77%, respectively) when compared with telemonitoring without these features. Conclusions: Telemonitoring has a great potential to further enhance diabetes management with the inclusion of a system approach for supporting patients' lifestyle changes. Features such as automatic mobile transmission and real-time feedback show promise to boost effectiveness of telemonitoring in diabetes management in the future.

143. Benefit of lifestyle-based T2DM prevention is influenced by prediabetes phenotype.

Authors Campbell MD; Sathish T; Zimmet PZ; Thankappan KR; Oldenburg B; Owens DR; Shaw JE; Tapp RJ
Source Nature reviews. Endocrinology; 2020; vol. 16 (no. 7); p. 395-400
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Available at Nature reviews. Endocrinology from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Nature reviews. Endocrinology from ProQuest (Health Research Premium) - NHS Version
Abstract The prevention of type 2 diabetes mellitus (T2DM) is a target priority for the WHO and the United Nations and is a key priority in the 2018 Berlin Declaration, which is a global call for early actions related to T2DM. Health-care policies advocate that individuals at high risk of developing T2DM undertake lifestyle modification, irrespective of whether the prediabetes phenotype is defined by hyperglycaemia in the postprandial state (impaired glucose tolerance) and/or fasting state (impaired fasting glucose) or by intermediate HbA1c levels. However, current evidence indicates that diabetes prevention programmes based on lifestyle change have not been successful in preventing T2DM in individuals with isolated impaired fasting glucose. We propose that further research is needed to identify effective lifestyle interventions for individuals with isolated impaired fasting glucose. Furthermore, we call for the identification of innovative approaches that better identify people with impaired glucose tolerance, who benefit from the currently available lifestyle-based diabetes prevention programmes.

144. Effectiveness of Lifestyle Intervention Using the Internet of Things System for Individuals with Early Type 2 Diabetes Mellitus.

Authors Kato S; Ando M; Honda H; Yoshida Y; Imaizumi T; Yamamoto N; Maruyama S
Source Internal medicine (Tokyo, Japan); 2020; vol. 59 (no. 1); p. 45-53
Publication Date 2020
Publication Type(s) Journal Article
PubMedID 31902908
Database PubMed
Available at Internal medicine (Tokyo, Japan) from Europe PubMed Central - Open Access
Available at Internal medicine (Tokyo, Japan) from Unpaywall
Abstract Objective Exercise therapy is used for glycemic control in type 2 diabetes mellitus (T2DM). We evaluated the effects of intensive health guidance using the Internet of things (IoT) among Japanese company workers with early T2DM. Methods Fifty-three men (mean age: 54 years) with glycated hemoglobin (HbA1c) levels of >6.5% were enrolled in a 6-month exercise therapy program between August 2016 and January 2017. They used activity meters, scales, and sphygmomanometers connected to the Internet by Bluetooth. These devices automatically and continuously recorded daily information, and the participants simultaneously received health guidance from a public health nurse twice a month. Results The number of daily steps significantly increased, whereas the amount of physical activity increased but was not significant. The mean decrease (±SD) in HbA1c levels after 3 and 6 months was estimated to be -0.40% (±0.45, p<0.0001) and -0.19% (±0.55, p=0.033), respectively, by a linear mixed model that included baseline HbA1c levels and age as covariates. The program failed to improve the body mass index and blood pressure of the participants. The percentage of active stage (action and maintenance stage) in stage of health behavior significantly increased from 48% to 68% (p=0.011). Conclusion Intensive lifestyle intervention using a wearable monitoring system and remote health guidance improved diabetic control in middle-aged company workers.

145. Recruitment, retention, and training of people with type 2 diabetes as diabetes prevention mentors (DPM) to support a healthcare professional-delivered diabetes prevention program: the Norfolk Diabetes Prevention Study (NDPS).

Authors Garner NJ; Pascale M; France K; Ferns C; Clark A; Auckland S; Sampson M; NDPS Group
Source BMJ open diabetes research & care; 2019; vol. 7 (no. 1); p. e000619
Publication Date 2019
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Available at BMJ open diabetes research & care from ProQuest (Health Research Premium) - NHS Version
Available at BMJ open diabetes research & care from Unpaywall

Abstract **Objective:** Intensive lifestyle interventions reduce the risk of type 2 diabetes in populations at highest risk, but staffing levels are usually unable to meet the challenge of delivering effective prevention strategies to a very large at-risk population. Training volunteers with existing type 2 diabetes to support healthcare professionals deliver lifestyle interventions is an attractive option.
Methods: We identified 141 973 people at highest risk of diabetes in the East of England, screened 12 778, and randomized 1764 into a suite of type 2 diabetes prevention and screen detected type 2 diabetes management trials. A key element of the program tested the value of volunteers with type 2 diabetes, trained to act as diabetes prevention mentors (DPM) when added to an intervention arm delivered by healthcare professionals trained to support participant lifestyle change.
Results: We invited 9951 people with type 2 diabetes to become DPM and 427 responded (4.3%). Of these, 356 (83.3%) were interviewed by phone, and of these 131 (36.8%) were interviewed in person. We then appointed 104 of these 131 interviewed applicants (79%) to the role (mean age 62 years, 55% (n=57) male). All DPMs volunteered for a total of 2895 months, and made 6879 telephone calls to 461 randomized participants. Seventy-six (73%) DPMs volunteered for at least 6 months and 66 (73%) for at least 1 year.
Discussion: Individuals with type 2 diabetes can be recruited, trained and retained as DPM in large numbers to support a group-based diabetes prevention program delivered by healthcare professionals. This volunteer model is low cost, and accesses the large type 2 diabetes population that shares a lifestyle experience with the target population. This is an attractive model for supporting diabetes prevention efforts.

146. A peer-support lifestyle intervention for preventing type 2 diabetes in India: A cluster-randomized controlled trial of the Kerala Diabetes Prevention Program.

Authors Thankappan KR; Sathish T; Tapp RJ; Shaw JE; Lotfaliany M; Wolfe R; Absetz P; Mathews E; Aziz Z; Williams ED; Fisher EB; Zimmet PZ; Mahal A; Balachandran S; D'Esposito F; Sajeev P; Thomas E; Oldenburg B
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Available at PLoS medicine from Public Library of Science (PLoS)
Available at PLoS medicine from ProQuest (MEDLINE with Full Text) - NHS Version
Available at PLoS medicine from ProQuest (Health Research Premium) - NHS Version

Abstract **BACKGROUND:** The major efficacy trials on diabetes prevention have used resource-intensive approaches to identify high-risk individuals and deliver lifestyle interventions. Such strategies are not feasible for wider implementation in low- and middle-income countries (LMICs). We aimed to evaluate the effectiveness of a peer-support lifestyle intervention in preventing type 2 diabetes among high-risk individuals identified on the basis of a simple diabetes risk score.
METHODS AND FINDINGS: The Kerala Diabetes Prevention Program was a cluster-randomized controlled trial conducted in 60 polling areas (clusters) of Neyyattinkara taluk (subdistrict) in Trivandrum district, Kerala state, India. Participants (age 30-60 years) were those with an Indian Diabetes Risk Score (IDRS) ≥60 and were free of diabetes on an oral glucose tolerance test (OGTT). A total of 1,007 participants (47.2% female) were enrolled (507 in the control group and 500 in the intervention group). Participants from intervention clusters participated in a 12-month community-based peer-support program comprising 15 group sessions (12 of which were led by trained lay peer leaders) and a range of community activities to support lifestyle change. Participants from control clusters received an education booklet with lifestyle change advice. The primary outcome was the incidence of diabetes at 24 months, diagnosed by an annual OGTT. Secondary outcomes were behavioral, clinical, and biochemical characteristics and health-related quality of life (HRQoL). A total of 964 (95.7%) participants were followed up at 24 months. Baseline characteristics of clusters and participants were similar between the study groups. After a median follow-up of 24 months, diabetes developed in 17.1% (79/463) of control participants and 14.9% (68/456) of intervention participants (relative risk [RR] 0.88, 95% CI 0.66-1.16, p = 0.36). At 24 months, compared with the control group, intervention participants had a greater reduction in IDRS score (mean difference: -1.50 points, p = 0.022) and alcohol use (RR 0.77, p = 0.018) and a greater increase in fruit and vegetable intake (≥5 servings/day) (RR 1.83, p = 0.008) and physical functioning score of the HRQoL scale (mean difference: 3.9 score, p = 0.016). The cost of delivering the peer-support intervention was US$22.5 per participant. There were no adverse events related to the intervention. We did not adjust for multiple comparisons, which may have increased the overall type I error rate.
CONCLUSIONS: A low-cost community-based peer-support lifestyle intervention resulted in a nonsignificant reduction in diabetes incidence in this high-risk population at 24 months. However, there were significant improvements in some cardiovascular risk factors and physical functioning score of the HRQoL scale.
TRIAL REGISTRATION: Australia and New Zealand Clinical Trials Registry ACTRN12611000262909.

147. Basic lifestyle advice to individuals at high risk of type 2 diabetes: a 2-year population-based diabetes prevention study. The DE-PLAN intervention in the HUNT Study, Norway.

Authors Jølle A; Åsvold BO; Holmen J; Carlsen SM; Tuomilehto J; Bjørngaard JH; Midthjell K
Source BMJ open diabetes research & care; 2018; vol. 6 (no. 1); p. e000509
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Database PubMed
Available at BMJ open diabetes research & care from Europe PubMed Central - Open Access
Available at BMJ open diabetes research & care from HighWire - Free Full Text
Available at BMJ open diabetes research & care from ProQuest (Health Research Premium) - NHS Version
Available at BMJ open diabetes research & care from Unpaywall

Abstract **Objective:** Among individuals at high risk for diabetes identified through a population survey, we performed an intervention study with basic lifestyle advice aiming to prevent diabetes.
Research design and methods: Among 50 806 participants in the HUNT3 Survey (2006-2008), 5297 individuals with Finnish Diabetes Risc Score (FINDRISC ≥15 were invited to an oral glucose tolerance test (OGTT) and an education session with lifestyle advice, and 2634 (49.7%) attended. Among them, 2380 people without diabetes were included in the prevention study with repeated examinations and education sessions after 6, 12, and 24 months. We examined participation, diabetes incidence, glycemia, and adiposity during follow-up.
Results: Of 2380 participants, 1212 (50.9%) participated in ≥3 of the four examinations. Diabetes was detected in 3.5%, 3.1%, and 4.0% of individuals at the 6-month, 12-month, and 24-month examinations, respectively, indicating a 10.3% 2-year diabetes incidence. Mean (95% CI) increases from baseline to 2-year follow-up were 0.30 (0.29 to 0.32) percentage points (3.3 (3.2 to 3.5) mmol/mol) for Hemoglobin A1c, 0.13 (0.10 to 0.16) mmol/L for fasting serum-glucose, 0.46 (0.36 to 0.56) mmol/L for 2-hour OGTT s-glucose, 0.30 (0.19 to 0.40) kg/m2 forbody mass index (BMI) (all p<0.001) and -0.5 (-0.9 to -0.2) cm for waist circumference (p=0.004), with broadly similar estimates by baseline age, sex, education, depressive symptoms, BMI, physical activity, and family history of diabetes. Only 206 (8.7%) participants had evidence of >5% weight loss during follow-up; their fasting and 2-hour s-glucose did not increase, and HbA1c increased less than in other participants.
Conclusion: Basic lifestyle advice given to high-risk individuals during three group sessions with 6-month intervals was not effective in reducing 2-year diabetes risk.

148. Cultural adaptation of a peer-led lifestyle intervention program for diabetes prevention in India: the Kerala diabetes prevention program (K-DPP).

Authors Mathews E; Thomas E; Absetz P; D'Esposito F; Aziz Z; Balachandran S; Daivadanam M; Thankappan KR; Oldenburg B
Source BMC public health; ; vol. 17 (no. 1); p. 974
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Abstract BACKGROUND: Type 2 diabetes mellitus (T2DM) is now one of the leading causes of disease-related deaths globally. India has the world's second largest number of individuals living with diabetes. Lifestyle change has been proven to be an effective means by which to reduce risk of T2DM and a number of "real world" diabetes prevention trials have been undertaken in high income countries. However, systematic efforts to adapt such interventions for T2DM prevention in low- and middle-income countries have been very limited to date. This research-to-action gap is now widely recognised as a major challenge to the prevention and control of diabetes. Reducing the gap is associated with reductions in morbidity and mortality and reduced health care costs. The aim of this article is to describe the adaptation, development and refinement of diabetes prevention programs from the USA, Finland and Australia to the State of Kerala, India.
METHODS: The Kerala Diabetes Prevention Program (K-DPP) was adapted to Kerala, India from evidence-based lifestyle interventions implemented in high income countries, namely, Finland, United States and Australia. The adaptation process was undertaken in five phases: 1) needs assessment; 2) formulation of program objectives; 3) program adaptation and development; 4) piloting of the program and its delivery; and 5) program refinement and active implementation.
RESULTS: The resulting program, K-DPP, includes four key components: 1) a group-based peer support program for participants; 2) a peer-leader training and support program for lay people to lead the groups; 3) resource materials; and 4) strategies to stimulate broader community engagement. The systematic approach to adaptation was underpinned by evidence-based behavior change techniques.
CONCLUSION: K-DPP is the first well evaluated community-based, peer-led diabetes prevention program in India. Future refinement and utilization of this approach will promote translation of K-DPP to other contexts and population groups within India as well as other low- and middle-income countries. This same approach could also be applied more broadly to enable the translation of effective non-communicable disease prevention programs developed in high-income settings to create context-specific evidence in rapidly developing low- and middle-income countries.
TRIAL REGISTRATION: Australia and New Zealand Clinical Trials Registry: ACTRN12611000262909 . Registered 10 March 2011.

149. Intensive lifestyle intervention is particularly advantageous in poorly controlled type 2 diabetes.

Authors Sbroma Tomaro E; Pippi R; Reginato E; Aiello C; Buratta L; Mazzeschi C; Perrone C; Ranucci C; Tirimagni A; Russo A; Fatone C; Fanelli C; De Feo P
Source Nutrition, metabolism, and cardiovascular diseases : NMCD; Aug 2017; vol. 27 (no. 8); p. 688-694
Publication Date Aug 2017
Publication Type(s) Clinical Trial; Journal Article
PubMedID 28735815
Database PubMed
Available at Nutrition, metabolism, and cardiovascular diseases : NMCD from ScienceDirect Available to PHE and Local Authority staff

Abstract BACKGROUND AND AIMS: It is unknown whether lifestyle change is effective in people with type 2 diabetes with inadequate glucose control. The aim of this study was to asses, in a group of people with type 2 diabetes, the impact of baseline values of glycosylated haemoglobin (HbA1c) on the effects of an intensive lifestyle intervention on metabolic, clinical and strength parameters.
METHODS AND RESULTS: 222 people with type 2 diabetes with mean ± standard deviation baseline HBA1c of 7.50% ± 1.27 (range 5.1-12.7%), were enrolled in a 3-month structured multidisciplinary lifestyle intervention. Anthropometric, biochemical, clinical and fitness measurements were collected at baseline, at the end of the lifestyle intervention program and at two-year follow-up visit. Significant improvements in glycometabolic control (HbA1c: $p \leq 0.0001$); anthropometric parameters (BMI $p \leq 0.0001$; waist circumference: $p \leq 0.0001$); and systemic blood pressure ($p \leq 0.0001$) were observed both at the end of the three month intensive lifestyle program and at the two-year follow up visit. In addition, defined daily doses of hypoglycaemic treatment significantly decreased ($p = 0.001$). Fitness measures exhibited significant increments in the whole sample at the end of the intensive intervention program ($p \leq 0.0001$). When patients were divided into tertiles considering the baseline value of HbA1c, the most marked improvements in HbA1c, blood glucose and triglycerides were observed in the group with inadequate glucose control (Hba1c ≥ 7.71%), both at the three-month and two-year follow-ups.
CONCLUSION: These results demonstrate that an intensive lifestyle intervention should be recommended for people with type 2 diabetes, particularly those with the most inadequate glycaemic control.
REGISTRATION NUMBER: CURIAMO trial was registered in the Australian New Zealand Clinical Trials Registry, (ACTRN12611000255987).

150. Diabetes prevention in the real world: effectiveness of pragmatic lifestyle interventions for the prevention of type 2 diabetes and of the impact of adherence to guideline recommendations: a systematic review and meta-analysis.

Authors Dunkley AJ; Bodicoat DH; Greaves CJ; Russell C; Yates T; Davies MJ; Khunti K
Source Diabetes care; Apr 2014; vol. 37 (no. 4); p. 922-933
Publication Date Apr 2014

Publication Type(s) Evaluation Study; Journal Article; Meta-Analysis; Research Support, Non-U.S. Gov't; Review; Systematic Review
PubMedID 24652723
Database PubMed
Available at Diabetes care from HighWire - Free Full Text
Available at Diabetes care from Ovid (Journals @ Ovid)
Available at Diabetes care from Unpaywall

Abstract OBJECTIVE To summarize the evidence on effectiveness of translational diabetes prevention programs, based on promoting lifestyle change to prevent type 2 diabetes in real-world settings and to examine whether adherence to international guideline recommendations is associated with effectiveness. RESEARCH DESIGN AND METHODS Bibliographic databases were searched up to July 2012. Included studies had a follow-up of ≥12 months and outcomes comparing change in body composition, glycemic control, or progression to diabetes. Lifestyle interventions aimed to translate evidence from previous efficacy trials of diabetes prevention into real-world intervention programs. Data were combined using random-effects meta-analysis and meta-regression considering the relationship between intervention effectiveness and adherence to guidelines. RESULTS Twenty-five studies met the inclusion criteria. The primary meta-analysis included 22 studies (24 study groups) with outcome data for weight loss at 12 months. The pooled result of the direct pairwise meta-analysis shows that lifestyle interventions resulted in a mean weight loss of 2.12 kg (95% CI -2.61 to -1.63; I(2) = 91.4%). Adherence to guidelines was significantly associated with a greater weight loss (an increase of 0.3 kg per point increase on a 12-point guideline-adherence scale). CONCLUSIONS Evidence suggests that pragmatic diabetes prevention programs are effective. Effectiveness varies substantially between programs but can be improved by maximizing guideline adherence. However, more research is needed to establish optimal strategies for maximizing both cost-effectiveness and longer-term maintenance of weight loss and diabetes prevention effects.

151. Effectiveness of mobile phone messaging in prevention of type 2 diabetes by lifestyle modification in men in India: a prospective, parallel-group, randomised controlled trial.

Authors Ramachandran A; Snehalatha C; Ram J; Selvam S; Simon M; Nanditha A; Shetty AS; Godsland IF; Chaturvedi N; Majeed A; Oliver N; Toumazou C; Alberti KG; Johnston DG
Source The lancet. Diabetes & endocrinology; Nov 2013; vol. 1 (no. 3); p. 191-198
Publication Date Nov 2013
Publication Type(s) Journal Article; Randomized Controlled Trial; Research Support, Non-U.S. Gov't
PubMedID 24622367
Database PubMed
Available at The lancet. Diabetes & endocrinology from ScienceDirect Available to PHE and Local Authority staff

Abstract BACKGROUND: Type 2 diabetes can often be prevented by lifestyle modification; however, successful lifestyle intervention programmes are labour intensive. Mobile phone messaging is an inexpensive alternative way to deliver educational and motivational advice about lifestyle modification. We aimed to assess whether mobile phone messaging that encouraged lifestyle change could reduce incident type 2 diabetes in Indian Asian men with impaired glucose tolerance.
METHODS: We did a prospective, parallel-group, randomised controlled trial between Aug 10, 2009, and Nov 30, 2012, at ten sites in southeast India. Working Indian men (aged 35-55 years) with impaired glucose tolerance were randomly assigned (1:1) with a computer-generated randomisation sequence to a mobile phone messaging intervention or standard care (control group). Participants in the intervention group received frequent mobile phone messages compared with controls who received standard lifestyle modification advice at baseline only. Field staff and participants were, by necessity, not masked to study group assignment, but allocation was concealed from laboratory personnel as well as principal and co-investigators. The primary outcome was incidence of type 2 diabetes, analysed by intention to treat. This trial is registered with ClinicalTrials.gov, number NCT00819455.
RESULTS: We assessed 8741 participants for eligibility. 537 patients were randomly assigned to either the mobile phone messaging intervention (n=271) or standard care (n=266). The cumulative incidence of type 2 diabetes was lower in those who received mobile phone messages than in controls: 50 (18%) participants in the intervention group developed type 2 diabetes compared with 73 (27%) in the control group (hazard ratio 0·64, 95% CI 0·45-0·92; p=0·015). The number needed to treat to prevent one case of type 2 diabetes was 11 (95% CI 6-55). One patient in the control group died suddenly at the end of the first year. We recorded no other serious adverse events.
INTERPRETATION: Mobile phone messaging is an effective and acceptable method to deliver advice and support towards lifestyle modification to prevent type 2 diabetes in men at high risk.
FUNDING: The UK India Education and Research Initiative, the World Diabetes Foundation.

152. Impact of a novel community-based lifestyle intervention program on type 2 diabetes and cardiovascular risk in a resource-poor setting in the Dominican Republic.

Authors West-Pollak A; Then EP; Podesta C; Hedelt A; Perry ML; Izarnotegui WV; Perez M; Villegas A; Baez NI; Bassa R; Mendez G; Hernandez K; Lim DS; Urena P; Taylor AM
Source International health; Jun 2014; vol. 6 (no. 2); p. 118-124
Publication Date Jun 2014
Publication Type(s) Journal Article; Research Support, Non-U.S. Gov't
PubMedID 24497608
Database PubMed
Available at International health from Oxford Journals - Open Access

Abstract **BACKGROUND:** The prevalence of type 2 diabetes is increasing at an alarming rate in Latin America and in the Caribbean. We present evidence that a cost-effective and sustainable approach to lifestyle modification in underdeveloped countries can be implemented using community members as healthcare champions.
METHODS: Of 222 community members screened in the impoverished community of Villa Juana, Santo Domingo, 69% had prediabetes or diabetes and 79 of these were enrolled. In a 1-day session, trained lifestyle educators from the USA trained ten lay community members to lead groups oriented to lifestyle change. Community leaders met with assigned patient groups monthly for 1 year. Glycated hemoglobin (HbA1c; average plasma glucose concentration), blood pressure, weight and waist circumference were measured at baseline, 6 months and 1 year.
RESULTS: 59 individuals completed follow-up. Patients showed significant improvements after 6 months in systolic blood pressure (p=0.001), diastolic blood pressure (p=0.000002) and HbA1c (p=0.015). HbA1c improved further at 1 year (p=0.005).
CONCLUSION: Our pilot experience demonstrates the efficacy and feasibility of a novel, low-cost, community-based educational initiative to improve blood glucose control and reduce cardiovascular risk in individuals with type 2 diabetes or prediabetes. Replication of our model in other underserved areas could have a substantial impact on global health.

153. A cluster-randomized controlled trial to study the effectiveness of a protocol-based lifestyle program to prevent type 2 diabetes in people with impaired fasting glucose.

Authors Hesselink AE; Bilo HJ; Jonkers R; Martens M; de Weerdt I; Rutten GE
Source BMC family practice; Dec 2013; vol. 14 ; p. 184
Publication Date Dec 2013
Publication Type(s) Journal Article; Randomized Controlled Trial; Research Support, Non-U.S. Gov't
PubMedID 24295397
Database PubMed
Available at BMC family practice from BioMed Central
Available at BMC family practice from Europe PubMed Central - Open Access
Available at BMC family practice from SpringerLink
Available at BMC family practice from ProQuest (Health Research Premium) - NHS Version
Available at BMC family practice from Unpaywall

Abstract **BACKGROUND:** Effective diabetes prevention strategies that can be implemented in daily practice, without huge amounts of money and a lot of personnel are needed. The Dutch Diabetes Federation developed a protocol for coaching people with impaired fasting glucose (IFG; according to WHO criteria: 6.1 to 6.9 mmol/l) to a sustainable healthy lifestyle change: 'the road map towards diabetes prevention' (abbreviated: Road Map: RM). This protocol is applied within a primary health care setting by a general practitioner and a practice nurse. The feasibility and (cost-) effectiveness of care provided according to the RM protocol will be evaluated.
METHODS/DESIGN: A cluster randomised clinical trial is performed, with randomisation at the level of the general practices. Both opportunistic screening and active case finding took place among clients with high risk factors for diabetes. After IFG is diagnosed, motivated people in the intervention practices receive 3-4 consultations by the practice nurse within one year. During these consultations they are coached to increase the level of physical activity and healthy dietary habits. If necessary, participants are referred to a dietician, physiotherapist, lifestyle programs and/or local sports activities. The control group receives care as usual. The primary outcome measure in this study is change in Body Mass Index (BMI). Secondary outcome measures are waist circumference, physical activity, total and saturated fat intake, systolic blood pressure, blood glucose, total cholesterol, HDL cholesterol, triglycerides and behaviour determinants like risk perception, perceived knowledge and motivation. Based on a sample size calculation 120 people in each group are needed. Measurements are performed at baseline, and after one (post-intervention) and two years follow up. Anthropometrics and biochemical parameters are assessed in the practices and physical activity, food intake and their determinants by a validated questionnaire. The cost-effectiveness is estimated by using the Chronic Disease Model (CDM). Feasibility will be tested by interviews among health care professionals.
DISCUSSION: The results of the study will provide valuable information for both health care professionals and policy makers. If this study shows the RM to be both effective and cost-effective the protocol can be implemented on a large scale.
TRIAL REGISTRATION: ISRCTN41209683. Ethical approval number: NL31342.075.10.

154. Translating the Diabetes Prevention Program lifestyle intervention for weight loss into primary care: a randomized trial.

Authors	Ma J; Yank V; Xiao L; Lavori PW; Wilson SR; Rosas LG; Stafford RS
Source	JAMA internal medicine; Jan 2013; vol. 173 (no. 2); p. 113-121
Publication Date	Jan 2013
Publication Type(s)	Journal Article; Randomized Controlled Trial; Research Support, N.I.H., Extramural; Research Support, Non-U.S. Gov't
PubMedID	23229846
Database	PubMed
	Available at JAMA internal medicine from American Medical Association Athens - NHS
	Available at JAMA internal medicine from Ovid (Journals @ Ovid)
	Available at JAMA internal medicine from Unpaywall
Abstract	BACKGROUND: The Diabetes Prevention Program (DPP) lifestyle intervention reduced the incidence of type 2 diabetes mellitus (DM) among high-risk adults by 58%, with weight loss as the dominant predictor. However, it has not been adequately translated into primary care. METHODS: We evaluated 2 adapted DPP lifestyle interventions among overweight or obese adults who were recruited from 1 primary care clinic and had pre-DM and/or metabolic syndrome. Participants were randomized to (1) a coach-led group intervention (n = 79), (2) a self-directed DVD intervention (n = 81), or (3) usual care (n = 81). During a 3-month intensive intervention phase, the DPP-based behavioral weight-loss curriculum was delivered by lifestyle coach-led small groups or home-based DVD. During the maintenance phase, participants in both interventions received lifestyle change coaching and support remotely-through secure email within an electronic health record system and the American Heart Association Heart360 website for weight and physical activity goal setting and self-monitoring. The primary outcome was change in body mass index (BMI) (calculated as weight in kilograms divided by height in meters squared) from baseline to 15 months. RESULTS: At baseline, participants had a mean (SD) age of 52.9 (10.6) years and a mean BMI of 32.0 (5.4); 47% were female; 78%, non-Hispanic white; and 17%, Asian/Pacific Islander. At month 15, the mean ± SE change in BMI from baseline was -2.2 ± 0.3 in the coach-led group vs -0.9 ± 0.3 in the usual care group (P < .001) and -1.6 ± 0.3 in the self-directed group vs usual care (P = .02). The percentages of participants who achieved the 7% DPP-based weight-loss goal were 37.0% (P = .003) and 35.9% (P = .004) in the coach-led and self-directed groups, respectively, vs 14.4% in the usual care group. Both interventions also achieved greater net improvements in waist circumference and fasting plasma glucose level. CONCLUSION: Proven effective in a primary care setting, the 2 DPP-based lifestyle interventions are readily scalable and exportable with potential for substantial clinical and public health impact. TRIAL REGISTRATION: clinicaltrials.gov Identifier: NCT00842426.

155. Effects of lifestyle intervention in persons at risk for type 2 diabetes mellitus - results from a randomised, controlled trial.

Authors	Nilsen V; Bakke PS; Gallefoss F
Source	BMC public health; Nov 2011; vol. 11 ; p. 893
Publication Date	Nov 2011
Publication Type(s)	Comparative Study; Journal Article; Randomized Controlled Trial; Research Support, Non-U.S. Gov't
PubMedID	22117618
Database	PubMed
	Available at BMC public health from BioMed Central
	Available at BMC public health from Europe PubMed Central - Open Access
	Available at BMC public health from SpringerLink
	Available at BMC public health from ProQuest (Health Research Premium) - NHS Version
	Available at BMC public health from Unpaywall

Abstract BACKGROUND: Lifestyle change is probably the most important single action to prevent type 2 diabetes mellitus. The purpose of this study was to assess the effects of a low-intensity individual lifestyle intervention by a physician and compare this to the same physician intervention combined with an interdisciplinary, group-based approach in a real-life setting.
METHODS: The "Finnish Diabetes Risk score" (FINDRISC) was used by GPs to identify individuals at high risk. A randomised, controlled design and an 18 month follow-up was used to assess the effect of individual lifestyle counselling by a physician (individual physician group, (IG)) every six months, with emphasis on diet and exercise, and compare this to the same individual lifestyle counselling combined with a group-based interdisciplinary program (individual and interdisciplinary group, (IIG)) provided over 16 weeks. Primary outcomes were changes in lifestyle indicated by weight reduction ≥ 5%, improvement in exercise capacity as assessed by VO2 max and diet improvements according to the Smart Diet Score (SDS).
RESULTS: 213 participants (104 in the IG and 109 in the IIG group, 50% women), with a mean age of 46 and mean body mass index 37, were included (inclusion rate > 91%) of whom 182 returned at follow-up (drop-out rate 15%). There were no significant differences in changes in lifestyle behaviours between the two groups. At baseline 57% (IG) and 53% (IIG) of participants had poor aerobic capacity and after intervention 35% and 33%, respectively, improved their aerobic capacity at least one metabolic equivalent. Unhealthy diets according to SDS were common in both groups at baseline, 61% (IG) and 60% (IIG), but uncommon at follow-up, 17% and 10%, respectively. At least 5% weight loss was achieved by 35% (IG) and 28% (IIG). In the combined IG and IIG group, at least one primary outcome was achieved by 93% while all primary outcomes were achieved by 6%. Most successful was the 78% reduction in the proportion of participants with unhealthy diet (almost 50% absolute reduction).
CONCLUSION: It is possible to achieve important lifestyle changes in persons at risk for type 2 diabetes with modest clinical efforts. Group intervention yields no additional effects. The design of the study, with high inclusion and low dropout rates, should make the results applicable to ordinary clinical settings.
TRIAL REGISTRATION: ClinicalTrials.gov: NCT00202748.

156. Assessing the cost-effectiveness of drug and lifestyle intervention following opportunistic screening for pre-diabetes in primary care.

Authors Bertram MY; Lim SS; Barendregt JJ; Vos T
Source Diabetologia; May 2010; vol. 53 (no. 5); p. 875-881
Publication Date May 2010
Publication Type(s) Journal Article; Research Support, Non-U.S. Gov't
PubMedID 20135088
Database PubMed
Available at Diabetologia from SpringerLink
Available at Diabetologia from ProQuest (Health Research Premium) - NHS Version
Available at Diabetologia from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Diabetologia from Ovid (Journals @ Ovid)
Available at Diabetologia from Unpaywall

Abstract AIMS/HYPOTHESIS: This study aims to evaluate the cost-effectiveness of a screening programme for pre-diabetes, which was followed up by treatment with pharmaceutical interventions (acarbose, metformin, orlistat) or lifestyle interventions (diet, exercise, diet and exercise) in order to prevent or slow the onset of diabetes in those at high risk.
METHODS: To approximate the experience of individuals with pre-diabetes in the Australian population, we used a microsimulation approach, following patient progression through diabetes, cardiovascular disease and renal failure. The model compares costs and disability-adjusted life years lived in people identified through an opportunistic screening programme for each intervention compared with a 'do nothing' scenario, which is representative of current practice. It is assumed that the effect of a lifestyle change will decay by 10% per year, while the effect of a pharmaceutical intervention remains constant throughout use.
RESULTS: The most cost-effective intervention options are diet and exercise combined, with a cost-effectiveness ratio of AUD 22,500 per disability-adjusted life year (DALY) averted, and metformin with a cost-effectiveness ratio of AUD 21,500 per DALY averted. The incremental addition of one intervention to the other is not cost-effective.
CONCLUSIONS/INTERPRETATION: Screening for pre-diabetes followed by diet and exercise, or metformin treatment is cost-effective and should be considered for incorporation into current practice. The number of dietitians and exercise physiologists needed to deliver such lifestyle change interventions will need to be increased to appropriately support the intervention.

157. Translating the diabetes prevention program to primary care: a pilot study.

Authors Whittemore R; Melkus G; Wagner J; Dziura J; Northrup V; Grey M
Source Nursing research; 2009; vol. 58 (no. 1); p. 2-12
Publication Date 2009
Publication Type(s) Journal Article; Multicenter Study; Randomized Controlled Trial; Research Support, N.I.H., Extramural

PubMedID 19092550
Database PubMed
Available at Nursing research from Ovid (Journals @ Ovid)
Available at Nursing research from Unpaywall
Abstract BACKGROUND: Research on the translation of efficacious lifestyle change programs to prevent type 2 diabetes into community or clinical settings is needed.
OBJECTIVE: The objective of this study was to examine the reach, implementation, and efficacy of a 6-month lifestyle program implemented in primary care by nurse practitioners (NPs) for adults at risk of type 2 diabetes.
METHODS: The NP sites (n = 4) were randomized to an enhanced standard care program (one NP and one nutrition session) or a lifestyle program (enhanced standard care and six NP sessions). These NPs recruited adults at risk of diabetes from their practice (n = 58), with an acceptance rate of 70%.
RESULTS: The program reached a diverse, obese, and moderately low income sample. The NPs were able to successfully implement the protocols. The average length of the program was 9.3 months. Attendance was high (98%), and attrition was low (12%). The NPs were able to adopt the educational, behavioral, and psychosocial strategies of the intervention easily. Motivational interviewing was more difficult for NPs. Mixed-model repeated-measures analysis indicated significant trends or improvement in both groups for nutrition and exercise behavior. Participants of the lifestyle program demonstrated trends for better high-density lipoprotein (HDL) and exercise behavior compared with the enhanced standard care participants. Twenty-five percent of lifestyle participants met treatment goals of 5% weight loss compared with 11% of standard care participants.
DISCUSSION: A lifestyle program can be implemented in primary care by NPs, reach the targeted population, and be modestly successful. Further research is indicated.

158. Lifestyle intervention strategies to prevent and control type 2 diabetes.

Authors Otto AD; Garcia DO; Jakicic JM
Source Current diabetes reports; Oct 2008; vol. 8 (no. 5); p. 407-412
Publication Date Oct 2008
Publication Type(s) Journal Article
PubMedID 18778591
Database PubMed
Available at Current diabetes reports from SpringerLink
Abstract The intensive lifestyle intervention of the DPP (Diabetes Prevention Program) showed weight loss to be a dominant predictor of reduced diabetes incidence for those at high risk for the disease. The intensive lifestyle intervention of Look AHEAD (Action for Health in Diabetes) has also shown that weight loss is associated with improved diabetes control and cardiovascular risk factors and reduced medicine for those with the disease. DPP and Look AHEAD implemented the use of motivational incentives and campaigns to assist participants in their commitment to lifestyle change. Other studies have also used incentives as effective strategies to engage individuals in weight loss and in making positive physical activity and dietary changes. Special consideration should be given to implementing various incentive strategies to assist overweight and obese individuals with weight loss. Using these motivational incentive strategies can be an effective means to help individuals succeed with their weight loss efforts.

159. Practical office strategies for weight management of the obese diabetic individual.

Authors Reynolds LR; Anderson JW
Source Endocrine practice : official journal of the American College of Endocrinology and the American Association of Clinical Endocrinologists; 2004; vol. 10 (no. 2); p. 153-159
Publication Date 2004
Publication Type(s) Journal Article; Review
PubMedID 15256334
Database PubMed
Available at Endocrine practice : official journal of the American College of Endocrinology and the American Association of Clinical Endocrinologists from ScienceDirect
Available at Endocrine practice : official journal of the American College of Endocrinology and the American Association of Clinical Endocrinologists from ProQuest (Health Research Premium) - NHS Version
Available at Endocrine practice : official journal of the American College of Endocrinology and the American Association of Clinical Endocrinologists from ProQuest (MEDLINE with Full Text) - NHS Version
Available at Endocrine practice : official journal of the American College of Endocrinology and the American Association of Clinical Endocrinologists from Ovid (Journals @ Ovid)

Abstract SUMMARY: Obesity is a key component of the insulin-resistance syndrome of type 2 diabetes, and intensifies comorbidities underlying the increased cardiovascular risk of individuals with type 2 diabetes. Weight loss leads to dramatic beneficial effects, with reductions in blood glucose levels and improvements in lipid profiles and blood pressure that often necessitate reductions in medications. Successful long-term weight loss is difficult to achieve in patients with diabetes, as standard dietary approaches often have minimal long-term impact, and intensive management strategies designed to improve glycemic control often contribute to further weight gain in these patients. This article offers a review of newer strategies for enhancing lifestyle change and weight loss in the obese diabetic individual. Use of meal replacements provides structure with portion control, and increased intake of fruits and vegetables promotes a healthier eating style for these patients. Encouraging physical activity such as walking, stair climbing, and gardening can significantly improve cardiorespiratory fitness and glycemic control, and helps patients maintain weight loss. Self-monitoring through lifestyle diaries can reinforce the healthy behaviors necessary for long-term management of obesity. Adjunctive antiobesity medication, medically-supervised intensive weight loss programs, and minimally invasive gastric bypass procedures are important options for patients unable to make significant progress with behavioral changes.

160. The prevention of type 2 diabetes--lifestyle change or pharmacotherapy? A challenge for the 21st century.

Authors Simpson RW; Shaw JE; Zimmet PZ
Source Diabetes research and clinical practice; Mar 2003; vol. 59 (no. 3); p. 165-180
Publication Date Mar 2003
Publication Type(s) Journal Article; Review
PubMedID 12590013
Database PubMed
Available at Diabetes research and clinical practice from ScienceDirect Available to PHE and Local Authority staff

Abstract Diabetes mellitus is occurring in epidemic proportions in many countries. In Australia 7.4% of people over 25 years of age have diabetes (mostly type 2) and comparable or higher prevalences have been reported in the United States and a number of Asian countries. The enormous economic and social cost of this disease makes a compelling case for prevention. Epidemiological studies have shown clearly that type 2 diabetes results from an interaction between a genetic predisposition and lifestyle factors including obesity, sedentary behaviour and both calorie excess and various dietary constituents. The natural history of type 2 diabetes includes a preceding period of impaired glucose tolerance (IGT)/impaired fasting glucose (IFG) which provides an opportunity for targeted intervention within large communities. Lifestyle intervention studies have consistently shown that quite modest changes can reduce the progression from IGT to diabetes by 50-60%. It may, however, not be possible to translate these successful findings to larger cohorts or maintain the lifestyle changes longer term. This has lead to consideration of pharmacotherapy. While small studies with sulphonylureas are inconclusive, benefits have been found for metformin, acarbose and troglitazone. Big intervention studies with ramipril, rosiglitazone, valsartan and nateglinide are underway. Pharmacological intervention raises a whole range of ethical, economic and practical issues not the least of which is the problem of long term therapy of the 'otherwise well'.

161. Long-term effects of a lifestyle-change obesity treatment program with minorities.

Authors Pleas J
Source Journal of the National Medical Association; Jul 1988; vol. 80 (no. 7); p. 747-752
Publication Date Jul 1988
Publication Type(s) Journal Article
PubMedID 3404555
Database PubMed
Available at Journal of the National Medical Association from PubMed
Available at Journal of the National Medical Association from PubMed Central

Abstract OBESITY AND A SEDENTARY LIFESTYLE PLACES AMERICANS IN GENERAL, AND MINORITIES IN PARTICULAR, AT RISK FOR A NUMBER OF CHRONIC HEALTH PROBLEMS: cardiovascular and cerebrovascular disease, diabetes, and hypertension, to name a few. It is therefore concluded that walking or other energy-expending activities and a sensible diet are not only an efficient weight-loss approach, but the most effective long-term weight maintenance approach available to date. Moreover, the potential for enhanced psychological well-being, increased health benefits, and reduced risk factors is also far greater with diet and exercise than with diet alone.Practitioners concerned with improving the overall health status of obese minorities would be well advised to remember that dieting is a depriving experience, while walking and other aerobic activities can be an exhilarating experience that gives the obese individual another degree of freedom.

Strategy 1076146

#	Database	Search term	Results
1	Medline	("behavio* change*").ti,ab	38969
2	Medline	("behavio* modification").ti,ab	3858
3	Medline	("lifestyle change*").ti,ab	8957
4	Medline	("lifestyle choice*").ti,ab	1508
5	Medline	(effective*).ti,ab	2156529
6	Medline	(successful).ti,ab	475168
7	Medline	(intervention*).ti,ab	1112033
8	Medline	(technique*).ti,ab	1614321
9	Medline	(approach*).ti,ab	1962422
10	Medline	(1 OR 2 OR 3 OR 4)	52301
11	Medline	(5 OR 6)	2553866
12	Medline	(7 OR 8 OR 9)	4234223
13	Medline	(10 AND 11 AND 12)	9616
14	Medline	(diabetes).ti,ab	562585
15	Medline	(13 AND 14)	1145
16	Medline	15 [DT 2000-2021] [Languages English]	1086
17	PsycINFO	("behavio* change*").ti,ab	26465
18	PsycINFO	("behavio* modification").ti,ab	5011
19	PsycINFO	("lifestyle change*").ti,ab	2293
20	PsycINFO	("lifestyle choice*").ti,ab	790
21	PsycINFO	(17 OR 18 OR 19 OR 20)	33909
22	PsycINFO	(effective*).ti,ab	448462
23	PsycINFO	(successful).ti,ab	109106

24	PsycINFO	(22 OR 23)	537226
25	PsycINFO	(intervention*).ti,ab	415431
26	PsycINFO	(technique*).ti,ab	193840
27	PsycINFO	(approach*).ti,ab	569488
28	PsycINFO	(25 OR 26 OR 27)	1045728
29	PsycINFO	(21 AND 24 AND 28)	5810
30	PsycINFO	(diabetes).ti,ab	30954
31	PsycINFO	(29 AND 30)	301
32	PsycINFO	31 [DT 2000-2021] [Languages English]	288
33	EMBASE	("behavio* change*").ti,ab	50241
34	EMBASE	("behavio* modification").ti,ab	5138
35	EMBASE	("lifestyle change*").ti,ab	13296
36	EMBASE	("lifestyle choice*").ti,ab	2161
37	EMBASE	(33 OR 34 OR 35 OR 36)	69356
38	EMBASE	(effective*).ti,ab	2843930
39	EMBASE	(successful).ti,ab	639384
40	EMBASE	(38 OR 39)	3369208
41	EMBASE	(intervention*).ti,ab	1552195
42	EMBASE	(technique*).ti,ab	1999115
43	EMBASE	(approach*).ti,ab	2467031
44	EMBASE	(41 OR 42 OR 43)	5400679
45	EMBASE	(37 AND 40 AND 44)	12681
46	EMBASE	(diabetes).ti,ab	860693
47	EMBASE	(45 AND 46)	1621
48	EMBASE	47 [DT 2000-2021] [Languages English]	1545
49	PubMed	("behavio* change*").ti,ab	0

50	PubMed	("behavio* modification").ti,ab	0
51	PubMed	("lifestyle change*").ti,ab	1922
52	PubMed	("lifestyle choice*").ti,ab	119
53	PubMed	(49 OR 50 OR 51 OR 52)	2041
54	PubMed	(effective*).ti,ab	2173477
55	PubMed	(successful).ti,ab	477932
56	PubMed	(54 OR 55)	2572673
57	PubMed	(intervention*).ti,ab	1127640
58	PubMed	(technique*).ti,ab	1623385
59	PubMed	(approach*).ti,ab	2006352
60	PubMed	(57 OR 58 OR 59)	0
61	PubMed	(53 AND 56 AND 60)	504
62	PubMed	(diabetes).ti,ab	581492
63	PubMed	(61 AND 62)	164