JLSB
Journal of Life Science and Biomedicine

J. Life Sci. Biomed. 6(3): 53-59, May, 2016

ISSN 2251-9939

An Adaptation of the Synectics Model for Effective Physician Counseling

Jessica J. Monk[1]✉, Adarsh K. Gupta[2] and Lucia Weiss[3]

[1]*Rowan University School of Osteopathic Medicine, Stratford, NJ, United States; 42 East Laurel Road, Stratford, NJ 08084, monkj5@rowan.edu*

[2]*Center for Medical Weight Loss & Metabolic Control, Rowan University, Stratford, NJ, United States; 42 East Laurel Road, Suite 2100, Stratford, NJ 08084, guptaad@rowan.edu*

[3]*Rowan Medicine, Stratford, NJ, United States; 42 East Laurel Road, Suite 2100, Stratford, NJ 08084, weisslb@rowan.edu*

*Corresponding author's e-mail: monkj5@rowan.edu

ABSTRACT: Introduction: Physician counseling can influence healthy behavior change in patients, but the rate of physician counseling for physical activity is inconsistent. Most studies focus on the patient-reported or physician-reported presence of counseling and physician attitudes that may act as barriers to counseling. Far less research has been directed at understanding the content of physician counseling and aiming to improve upon that content. Methods: A group of patients seeking medical treatment for weight loss participated in a group ideation with the task of constructing realistic and novel approaches to achieving 45 minutes of daily activity. Patients' approaches to achieving the recommended level of activity were recorded prior to the session and following the session in addition to other parameters. The ideation session was designed to reflect the Synectics model and guided by a trained facilitator. The study was both performed and the data analyzed in 2014. Results: The session yielded 52 patient-driven approaches to managing their physical activity. For example, popular strategies included photo and video diary progress tracking and incorporating physical activity into already planned tasks. Conclusions: The researchers conclude that use of the Synectics method may improve the quality and diversity of strategies used to achieve daily physical activity. Future research may explore the utility of these strategies as a supplement or adjunct to physician counseling in chronic disease management.

Key words: Synectics, Activity, Patient-Centered, Counseling

ORIGINAL ARTICLE
PII: S225199391600009-6
Received 01 Mar. 2016
Accepted 17 Mar. 2016
Revised 25 Apr. 2016

INTRODUCTION

Physical activity is a known modifiable risk factor for heart disease, diabetes, hypertension, stroke, obesity and certain types of cancer [1]. The Physical Activity Guidelines for Americans published in 2008 outlines the national guidelines for physical activity in adults based on a strong body of research supporting the health benefits of regular exercise. For substantial health benefits, adults should achieve at least 150 minutes a week of moderate intensity exercise. For extensive health benefits, adults should achieve 300 minutes a week of moderate intensity exercise [2]. Most Americans do not get the amount of physical activity that they need [3]. Fortunately, eighty-two percent of Americans have had contact with a health care professional in the last 12 months [4]. This provides a unique opportunity for primary care providers to provide counseling that can substantially impact public health. Despite this, the rate of exercise counseling by physicians is generally low [1]. Most research on this matter relies on physician-reported and patient-reported evidence of counseling and these studies tend to be inconsistent in their results [1]. One study used trained medical students to directly observe physician counseling practices and determined that physicians counsel patients on dietary habits and exercise 20-25% of the time [1].

The majority of research on physician counseling explores the frequency of counseling [1, 5-8], and the adoption of physical activity behavior changes as a result of counseling [9]. It is well known that a major deficit exists in the number of physicians taking advantage of the opportunity to counsel their patients, but research is needed to explore the quality of counseling where it does exist. Improvements in the quality of counseling may lead to better adoption of behavior changes in patients and subsequently increased frequency of physician counseling in primary care. One study used physical activity behavior change and aerobic capacity to measure the effectiveness of counseling interventions. The interventions employed in this study were developed by a coordination team consisting of individuals with healthcare backgrounds. The study included interventions under three categories: informational approach, behavioral skills management and environmental and policy approaches [9]. The development of intervention strategies by patients themselves is a unique opportunity that

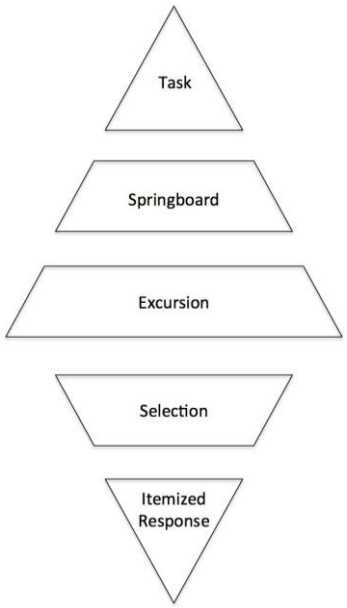
has yet to be fully explored. The Synectics concept provides a model to extract patient-driven activity strategies that are both unique and effective.

The Synectics model is a structured approach to brainstorming that constructs an environment for creative thinking and problem-solving. The model uses group idea construction in an organized system that aims to get participants to think broadly. It is often employed to tackle persistent challenges facing a group or organization. The Synectics model has been used to generate innovative solutions in a variety of industries, and has had much success in international business efforts. The Synectics Education Initiative, a registered charity, aims to use Synectics-based skills in the education system [10]. Much of the preparation of a Synectics session involves creating a collaborative environment and bringing together diverse groups of people who each have a stake in finding solutions. The goal of this research was to determine if the Synectics model could be effective in generating strategies for weight-management, specifically strategies for achieving the recommended daily levels of physical activity.

MATERIAL AND METHODS

The Synectics diamond model (Figure 1) is shaped to represent the notion that powerful ideation begins with a discrete task, followed by broad thinking, and then closing with a concrete, vetted solution.

Figure 1. Synectics Diamond Model



The specific task for this session was to construct realistic and yet novel tools and/or approaches to help patients achieve 45 minutes of activity every day. One of the investigators, a trained facilitator of the Synectics model, guided the session but did not participate in the ideation. The first stage of the model is the idea generation process, known as "springboarding". This stage seeks to have participants think creatively and without constraints. As one idea is generated and stated aloud by the participant the facilitator records it, and others use this idea as a platform, or springboard, to develop more ideas. An "excursion" can be used if necessary to broaden the list of ideas. An excursion is a creative exercise used during the session that allows participants to make connections to seemingly unrelated topics. For this session an excursion was not employed, but it is built into the model to use if needed. As ideas are generated during the springboarding process the facilitator groups the ideas into categories. After the allotted time for this idea generation, a group of ideas are selected by allowing each patient to place three votes on the list of ideas. The criteria for selecting an idea are that it is both thought-provoking and capable of being developed into a concrete solution. This stage is known as the selection phase. For this session, five ideas were selected to be developed further. At this point in the process the shape of the diamond model begins to narrow. This represents the process of building thought-provoking ideas into achievable solutions. The final step involves creating an itemized response, which encourages patients to outline the benefits and the concerns with each selected idea. This helps the group to elicit which ideas are more realistic to achieve.

The principal investigators received approval from the Institutional Review Board (IRB) of Rowan University for the study design. The design included the development and execution of a Synectics adapted session comprised of 6 patients. Informed consent was received from all patients included as study participants. Inclusion criteria consisted of several factors. Patients were recruited from those currently seeking treatment in the Rowan University Center for Weight Loss and Metabolic Control. This includes patients who are currently considered obese or who have struggled with obesity in the past, are of diverse socioeconomic backgrounds, are within the ages 18-89 years, and who maintain a positive outlook towards their health. The session occurred over 3 hours in the evening and included a brief orientation to the process. Much of the preparation for a session involves creating an environment for effective problem solving. Defining the inclusion criteria is an important part of ensuring open collaboration. Before beginning the session and immediately following the session, patients were asked to complete a survey developed by the researchers. The pre-session survey asked patients to describe their current approaches to maintaining daily activity, whether these approaches are effective and what, if any alternatives do they know exist. The post session survey similarly asked what new approaches exist for maintaining daily activity, and for the study participants' predictions of the effectiveness of these new

approaches. In addition, it asked patients to rate their experience with the model using a hedonic scale. Finally, investigators gathered data for classification purposes such as age, gender, ethnicity, education level, height and weight.

RESULTS AND DISCUSSION

Raw data was collected, capturing each patient's response and how those responses were grouped into categories. There were a total of 52 ideas generated in response to the task, and the categories developed from these ideas are provided in Table 1.

After the allotted time for springboarding, patients were asked to place three votes for the ideas that meet the selection criteria. The top five ideas as determined by the patients are provided with their respective categories.

The pre-session survey asked patients to list all current approaches to achieving 45 minutes of daily activity, and the effectiveness of those approaches. After the session, patients were asked to list any new approaches that they had learned, and how effective they predict those approaches would be. Patients included four to five approaches/tools and scored these from one to five, one representing an approach that would definitely not increase their physical activity, and five representing an approach that would definitely help them increase physical activity levels and ultimately achieve their weight loss goals. Responses are provided for each participant and the four to five scores were averaged for each patient (Figure 2). Figure 2 shows that patient-predicted effectiveness of the new approaches and/or tools varied in relation to the scores of their current strategies for achieving physical activity. Two patients predicted these new approaches would be more effective; three patients predicted they would be less effective, and one patient predicted the new approaches would be the same as what they are using currently.

Table 1. Idea Categories

Get More Active	Food	Replacing everyday activities with a more active version	Progress Tracking
Community Involvement	Mind/Body Connection	Reward Systems	Get Organized

Table 2. Top Five Ideas as Selected by Patients

Idea	Category
Mobile technology that visually captures goals	Progress Tracking
Wearable, audible or detectable reminders to stay active	Progress Tracking
The use of a food journal	Progress Tracking
Willingness to change the approach if lacking noticeable results	Mind/Body Connection
Keeping a schedule to document small intervals of exercise	Get Organized

Patients were also asked to rank their personal satisfaction with the session (Figure 3), the effectiveness of the session (Figure 4), and their level of personal motivation after having attended the session (Figure 5). All session participants ranked their experience with the Synectics model as very satisfying, either very effective or somewhat effective, and either very motivating or somewhat motivating. Based on the raw patient responses during the springboarding session, a word cloud was created that depicts words and terms that appear frequently in patient responses (Figure 6).

Patients generally felt the use of a Synectics model as a tool for idea generation was effective, however they did not always believe that new ideas generated would be any more effective than the ones they are already trying. Because this finding is based on a patient-recorded prediction and not on measureable patient behavior changes, additional research is needed to confirm if the strategies developed by patients would in time prove useful in increasing physical activity in a manageable and sustainable way.

The ideas generated during this case study were grouped by the patients into categories, and then the top ideas were voted by the patients based on the selection criteria. Three of the top five ideas came from the same category entitled, "Progress Tracking". This type of categorization can be useful in predicting trends in patient-centered strategies to lifestyle modification. In this session, the task was to generate ideas for achieving daily physical activity. However, it is clear that the role of food in patients' lives is an inextricable part of the

conversation, as this word was frequently used during the ideation. The use of the word cloud can be utilized in future research to better elucidate trends in patient ideation.

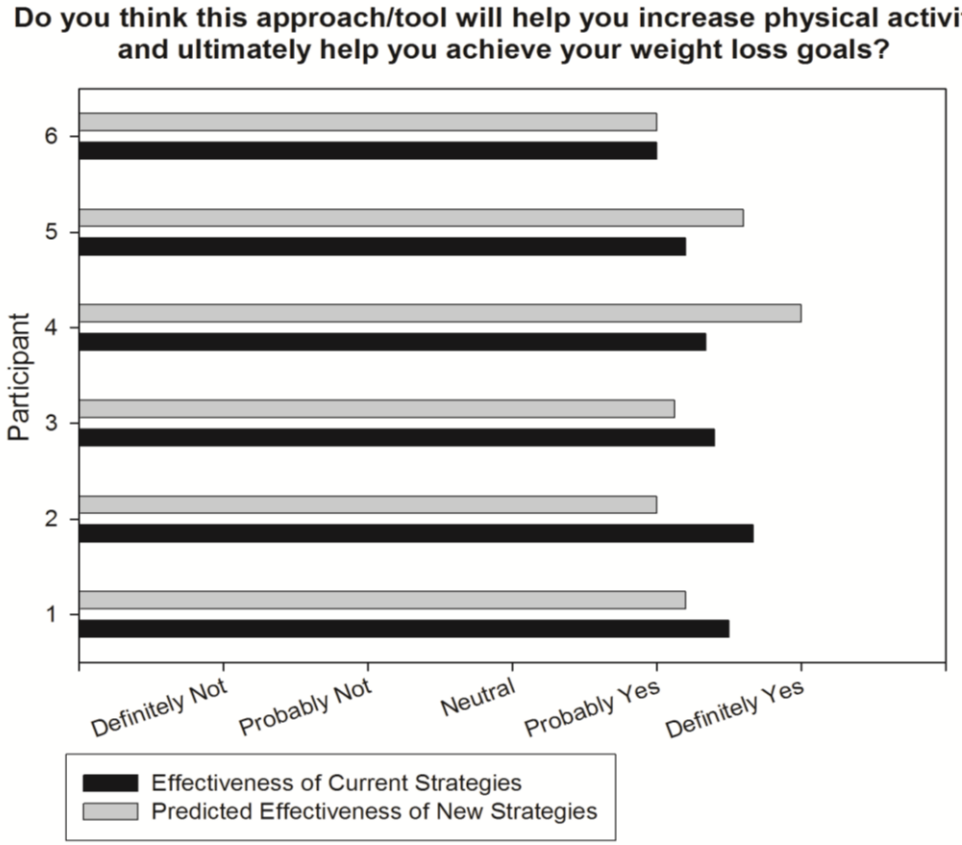


Figure 2. Before and after session responses to activity strategies

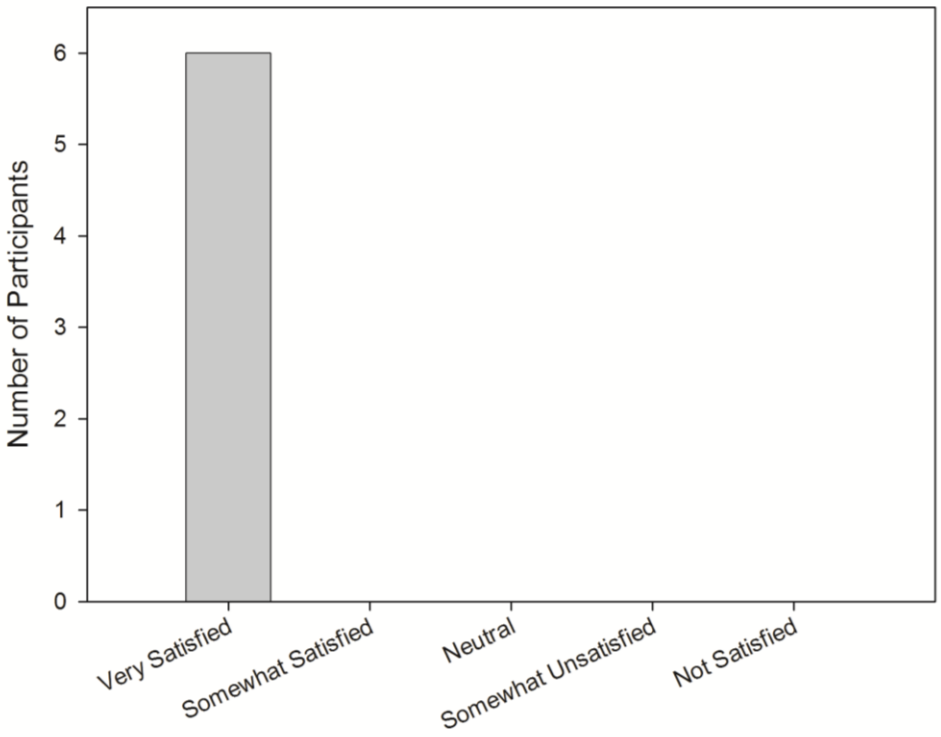


Figure 3. Personal satisfaction

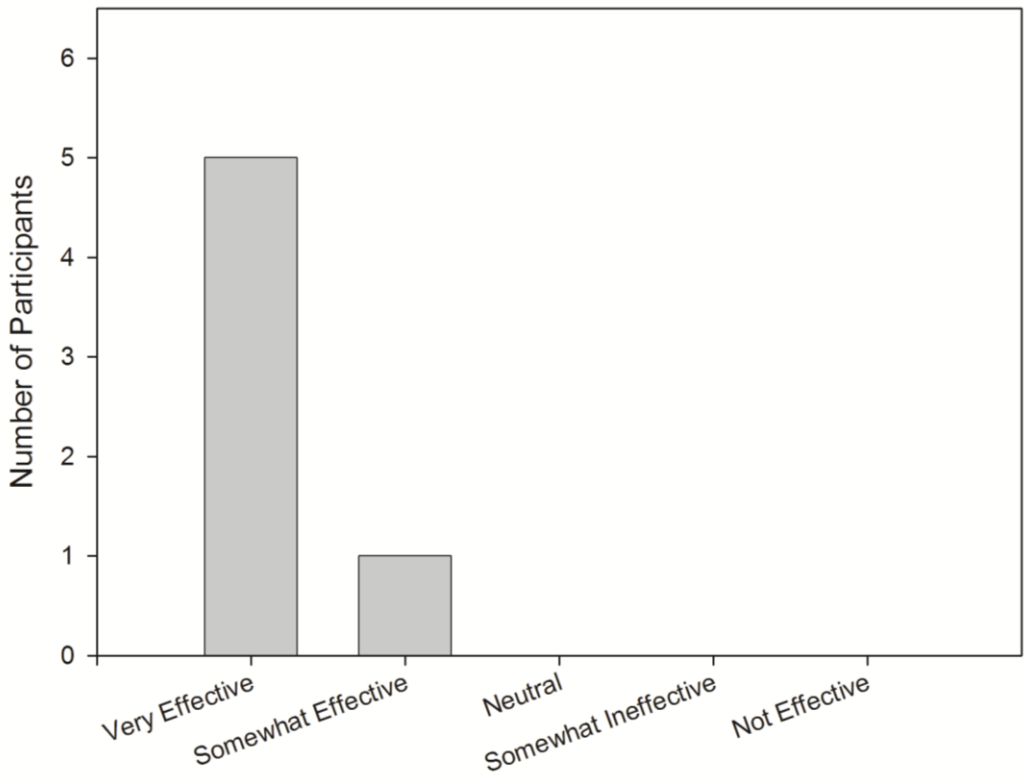


Figure 4. Effectiveness

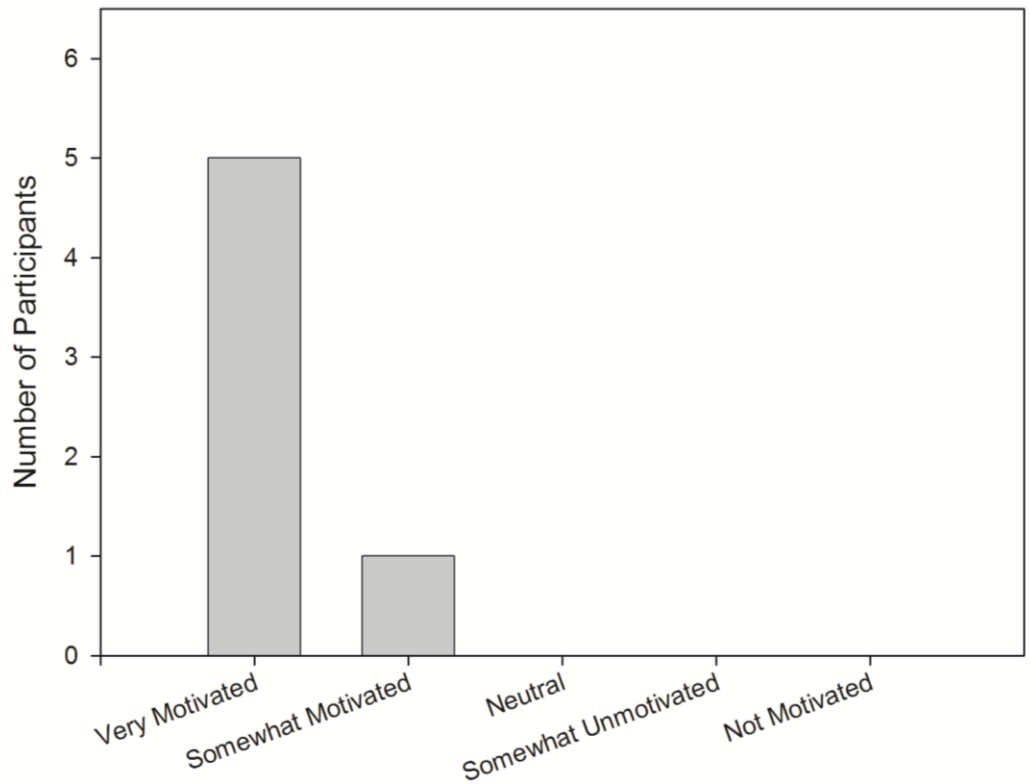


Figure 5. Motivation

Figure 6. Word Cloud Depicting Patient Responses

Prior research discusses the use of Synectics in education, business, marketing and invention [10]. However, in the medical community there is a need to utilize a type of intervention that can harness the patient perspective on chronic disease management. This study demonstrates it's utility specific to achieving physical activity. Future next steps include additional sessions, which will serve to generate larger data sets to support this initial pilot. Once larger data sets are acquired the researchers can evaluate trends in patient-centered strategies and measure the impact those strategies may have on behavior change over time and successful adoption of the recommended levels of daily activity. This model can be widely used to explore patients' management strategies of other chronic health conditions.

CONCLUSION

The disparity in physician counseling is multifactorial and challenging to measure. The potential benefits of improved counseling in primary care are significant, and it is imperative that research continues to seek answers. Developing strategies for patients is often a task prescribed to physicians, researchers and those in the public health sector. Using patients themselves to develop strategies is a unique opportunity. In addition, harnessing the power of a model like Synectics may be useful in extracting creativity and open collaboration from those who have a vested interest in achieving results. Those patient-centered strategies can then be transplanted to the hands of physicians who can exponentially magnify the usefulness of those strategies by integrating them as a part of their counseling in a primary care setting.

Acknowledgements

The authors would like to acknowledge Rose M. Rossiter for her help with coordination of the Synectics session.

Competing Interests

No conflicts of interest were reported by the authors of this paper.

No financial disclosures were reported by the authors of this paper.

REFERENCES

1. Anis N a., Lee RE, Ellerbeck EF, Nazir N, Greiner KA, Ahluwalia JS. 2004. Direct observation of physician counseling on dietary habits and exercise: Patient, physician, and office correlates. *Prev Med (Baltim)*. 38(2):198-202. doi:10.1016/j.ypmed.2003.09.046.

2. 2008 Physical Activity. *Heal (San Fr*. 2008.
3. U.S. Department of Health and Human Services. 1996. Physical activity and health: a report of the Surgeon General. 1-18. doi:10.1006/pmed.2000.0686.
4. Blackwell DL, Lucas JW, Clarke TC. 2014. Summary health statistics for u.s. Adults: national health interview survey, 2012. *Vital Health Stat 10*. (260):1-171. http://www.ncbi.nlm.nih.gov/pubmed/24819891.
5. Egede LE, Zheng D. 2002. Modifiable Cardiovascular Risk Factors in Adults With Diabetes. *Arch Intern Med*. 162(Dm):427-433. doi:10.1001/archinte.162.4.427.
6. Glasgow RE, Eakin EG, Fisher EB, Bacak SJ, Brownson RC. 2001. Physician advice and support for physical activity. Results from a national survey. *Am J Prev Med*. 21(3):189-196. doi:10.1016/S0749-3797(01)00350-6.
7. Nawaz H, Adams ML, Katz DL. 2000. Physician-patient interactions regarding diet, exercise, and smoking. *Prev Med (Baltim)*. 31(6):652-657. doi:10.1006/pmed.2000.0760.
8. Walsh JME, Swangard DM, Davis T, McPhee SJ. 1999. Exercise counseling by primary care physicians in the era of managed care. *Am J Prev Med*. 16(4):307-313. doi:10.1016/S0749-3797(99)00021-5.
9. Kahn E, Ramsey L, Brownson R, et al. 2002. The effectiveness of interventions to increase physical activity: A systematic review. *Am J Prev Med*. 22(4):73-107. doi:10.1016/S0749-3797(02)00434-8.
10. Ehrlich A. 1985. Whatever happened to...? *Dent Econ*.;75(3):99-100, 102-103. doi:10.1145/956733.956735.