

2014 RESEARCH ABSTRACT OVERVIEWS

COMMUNITY/ENVIRONMENT

Voluntary Smoke-Free Outdoor Dining Policies: Best Practices and Barriers/Challenges to Adoption and Implementation

Over the past several years, numerous cities in California have adopted smoke-free outdoor dining ordinances. Restaurants with smoke-free outdoor dining establish a healthier environment where diners can have a more enjoyable experience without worrying about the exposure of secondhand smoke.

With the passage of outdoor smoke-free ordinances, there has been much literature on the topic of outdoor smoke-free policy enactment and legislation. However, little information exists on the adoption and implementation of local, voluntary smoke-free outdoor dining policies. The intent of the abstract is to discuss the issues related to the adoption and implementation of voluntary smoke-free outdoor dining policies, including lessons learned, what worked well and barriers and challenges to implementation.

An objective of the Tobacco Control Project at the Riverside County Department of Public Health is to have a minimum of 150 restaurants to adopt and implement a voluntary policy, by June 2013, which designates outdoor dining areas as smoke-free for the Cities of Riverside, Moreno Valley, and Corona.

The process for the policy adoption encompassed the following steps. TCP staff compiled a database of all target area restaurants with outdoor dining patios. Then, pre-observational surveys were conducted. Next, Smoke-free Outdoor Dining packets were mailed out and face-to-face meetings were conducted with restaurant owners/managers to encourage the adoption of the policies. Finally, the certificates of appreciation were presented to restaurants that adopted the policies as well as placement of their names on a paid advertisement and the program website.

Lessons learned include: 1) importance of persistency with owners/managers (required on average 2-3 face-to face follow-up meetings); 2) importance of establishing a rapport with owners/managers; 3) effectiveness of incentives on adoption and implementation of the policies (certificate of appreciation and paid advertisement to congratulate restaurants adopting the policies); 4) follow-up visits to monitor compliance and for technical assistance.

Barriers/challenges include: 1) the fear of losing business by banning smoking; 2) perception by the owner/managers that individuals have choice to smoke or not to smoke; 3) the feasibility of enforcement by the owners/managers.

Results of a Free Community Lifestyle Program

Purpose: To compare the effectiveness of a free lifestyle intervention program with other similar programs that required payment or were provided by the workplace.

Background: Chronic diseases affect nearly half of all adults in the United States, accounting for approximately 85% of total healthcare spending. Lifestyle intervention programs have potential to reverse these chronic diseases, yet they can be too costly for many needing the treatment. We hypothesized that offering a free lifestyle intervention program to participants in a small town would achieve similar results to other lifestyle intervention programs.

Methods: We obtained baseline and end of course biometrics for 31 participants of the twelve-session program. The participants were encouraged to maintain a plant-based diet and to exercise for 30 minutes each day. During each session the individuals received instruction along with a nutritious meal. The mean age of the participants was 53 years, 77 percent were women, and the mean body-mass index was 32.8.

Results: The 31 patients that attended the majority of sessions saw a reduction in many of their anthropometric and metabolic levels. BMI levels dropped by 3.68% ($p < 0.001$), and systolic and diastolic blood pressures significantly fell 3.78% ($p = 0.038$) and 9.06% ($p < 0.001$), respectively. Total cholesterol fell 6.26% ($p = 0.003$). The participants also had an improvement in their Rand 36-Item Health Survey and Beck Depression Inventory of 15.3% ($p = 0.006$) and 33% ($p = 0.001$), respectively. Changes in triglycerides and fasting blood sugars, although improved, were not significant.

Conclusions: The free lifestyle intervention program used in this study reduced many of the risk factors associated with chronic disease. The results obtained in this study are comparable to other lifestyle intervention programs, but were offered at no cost to the participants. If these results can be repeated in other communities, this program may be effective at improving the health status of individuals that otherwise lack access to affordable care.

Lifestyle Pattern of Medical Students in South India

Aim: To study the lifestyle pattern of final year medical students who in a Medical College in South India.

Background: Currently, there are no studies which describe the lifestyle pattern of medical students in India. Understanding their lifestyle pattern will yield insights into their beliefs and practice. This can help in planning intervention during the college years which will benefit not just them but their future patients as well.

Methods: We administered an anonymous, self-administered questionnaire to assess the lifestyle pattern of final year medical students. The questionnaire was administered on three consecutive years (2012 -2014) and covered demographic details, vegetable and meat consumption, exercise, sleep time, beverage and substance use, belief in God, television use and adoption of safety measures.

Summary of results: Of the 203 participants, 47.8% were males. 99% were single. 77.5% had three meals per day. 65.2% had more than one snack per day. 8.9% were vegetarians. 80.6% of the non vegetarians had more than 2 non-vegetarian meals per week. Vegetables were consumed less than 5 times a week by 38%. Only 12.8% consumed fruits more than 5 times a week and 5.5% consumed salads more than 5 times a week. 70.6% consumed less than 2 L of water per day. 29.1% never exercised. Only 32% of those who exercised did so for more than 30 minutes per day. 26.6% went to bed after 12 am. 60.7% woke up between 6 and 7 am. 92% frequently or always trusted in God. 97.5% never smoked and 93.5% never consumed alcohol. 74.4% took coffee and of them 20.9% took more than 2 cups per day. 52.3% of them took tea and of them 13% took more than 2 cups per day. 15.7% always or frequently experienced stress. 98.5% had good social support. 17.9% got involved in social work. 3.5% always wore a helmet on a bike ride and only 40.9% always wore seat belt in a car.

Conclusion: The lifestyle pattern of medical students in South India appears to be far from satisfactory. It is marred by poor vegetable and fruit intake, inadequate exercise, erratic sleep pattern and poor adherence to safety norms. Though smoking and alcohol consumption are considerably less, intake of coffee and tea appear to be significantly high. Intervention in the form of education and training will go a long way in impacting not just their lives but their future patients as well.

Healthy University: Lifestyle Practices among River Plate Adventist University Students in Argentina, 2012

BACKGROUND: The World Health Organization estimated that by 2020, 75% of global deaths are due to NCDs. In Argentina, the projection of the risk factors for 2016 estimates an increase in the prevalence of obesity, diabetes and physical inactivity. The Healthy Argentina National Plan has among its objectives the establishment of Healthy Universities, institutions that promote holistic health through education, research and outreach activities. **PURPOSE:** To assess lifestyle practices of students at the River Plate Adventist University in 2012.

METHODS: 852 students enrolled in 2012 responded to the on-line questionnaire form on College Students Lifestyle (CEVJU-R), which explores the practices, motivations and resources that youngsters have regarding to health related habits. The score obtained from the answers categorize students as Healthy or Unhealthy. The results were analyzed with the Statistical Package for Social Sciences (SPSS) software.

RESULTS: In all the categories, over 50% were classified as healthy, getting higher percentage the categories: use of substances (99.4%), nutrition (97.7%) and personal relationships (91%). However, lower values corresponded to exercise (55.2%) and leisure activities (54.6%). The main reasons to perform exercise involved physical appearance: to improve ones figure (35%) and emotional: to improve ones mood (31.5%). However, despite having resources such as sports equipment (66.1%), company (50.4%), good health (50.4%), and facilities for sporting activities on campus (45, 4%), 56.6% claimed lack of time and convenience (53.1%) as the main reasons for not exercising. On the other hand, participation in leisure activities is largely motivated by the desire to change the academic/work routine (40.6%) and to feel better (22.5%). Nevertheless, students failed to perform these activities and continued studying or working (27.8%), arguing that time is a resource allegedly unavailable (58.6%).

CONCLUSION: Although the results were favorable, it is necessary to intensify the established university management policies and to implement new ones that promote healthy lifestyles among the academic community: students, staff and community in general.

“Frustrated,” “Depressed,” and “Devastated” Trainees: Academic Medical Centers Fail to Provide Adequate Workplace Breastfeeding Support

Purpose

Exclusive breastfeeding is strongly recommended as the ideal method of feeding infants for about six months of age. Pediatricians are at the forefront of encouraging mothers to achieve this goal. But they face substantial barriers to achieving this goal with their own children. We conducted a survey with the following objectives: 1) To measure knowledge, attitudes and practices regarding breastfeeding among members of the American Academy of Pediatrics (AAP) Section on Medical Students, Residents, and Fellowship Trainees (SOMSRFT). 2) To assess workplace support available to physicians who breastfeed during training, and the effect of their personal experiences on their attitude towards breastfeeding.

Methods

An online survey that asked about demographics, breastfeeding knowledge, personal experiences with breastfeeding, and support provided by residency programs was emailed to SOMSRFT members in June 2013. Data were downloaded from the survey website and analyzed using Microsoft Excel for Mac 2011 and SPSS version 20. Open-ended responses were analyzed by extraction of themes by the authors (AD, LFW, KAS).

Results

There were 927 respondents. Almost 80% agreed that 6 months is the ideal duration for exclusive breastfeeding. Four hundred and twenty one respondents had one or more children; 66% of the respondents' children were fed with breastfeeding at breast in combination with expressed breast milk from bottle for first 6 months. A majority cited work demands as a reason for being unable to breastfeed, and 84% of women who breastfed during medical training reported feeling stressed about it. One in four did not have access to or were not aware of a private room (not a restroom) to express milk or breastfeed. One in 4 did not meet their breastfeeding duration goal, and 1 in 3 did not meet their goal for exclusive breastfeeding. Negative emotions like “devastated,” “distressed,” “frustrated,” “guilty,” “failure,” or “resentful of residency” were common among those not meeting breastfeeding goals. Ninety two percent felt that their or their partner’s experience with breastfeeding affected their clinical interaction with patients’ mothers. While personal difficulty increased one’s ability to empathize when patients’ mothers had difficulty, it also reduced how much encouragement one offered (“I no longer push working mothers to breastfeed”). Only one out of seven respondents thought that a vegan diet is nutritionally adequate once complementary foods are introduced.

Conclusion

Pediatric trainees face significant challenges when breastfeeding their children during training. These not only affect the trainees negatively but have a profound impact on their interaction with breastfeeding mothers. If we cannot even support our own medical professionals, how can we support our patients?

EDUCATION/CURRICULUM

Walk with a Doc: Moving Medicine Forward One Step at a Time

PURPOSE: To examine the effect of a physician led walking program to increase physical activity, health knowledge, and well-being of a community.

BACKGROUND: Recent data indicate less than a quarter of Americans meet the recommended physical activity guidelines for exercise. Furthermore, 2012 data have shown over a quarter of adults performed no physical activity outside of their job in the prior month. Physical inactivity increases the risk of developing multiple chronic diseases and premature death and is a significant cost burden on the medical system. Walking is the most popular form of aerobic exercise and is arguably one of the most inviting forms of physical activity. Walk With A Doc (WWAD) is a unique approach that recognizes the importance of physical activity, simplicity of walking as exercise, and value of providers modeling healthy behaviors. It aims to address physical inactivity within a community while simultaneously breaking down the barriers of a traditional clinic visit.

METHODS: 383 WWAD participants completed voluntary surveys. The survey was performed in February 2013. It was offered nationwide to all WWAD participants (4,418) with a registered email address.

RESULTS: 91% of participants increased their health knowledge, >75% increased their weekly physical activity, >70% felt more comfortable speaking to their provider, and 91.5% were highly or somewhat satisfied with the program. Over 75% of participants rated the benefits of exercise as important, while 63% felt education from providers was important, and 45% recognized camaraderie as an asset.

CONCLUSION: WWAD is a novel program that can increase physical activity, expand health knowledge, and improve relationships between healthcare providers and the community. The simplicity and effectiveness make it an ideal approach for physicians to literally "walk the walk" of Lifestyle Medicine.

Physical Activity Counseling In Medical School Education: A Systematic Review

PURPOSE & BACKGROUND: Despite a large evidence-base to demonstrate the health benefits of regular physical activity, few physicians incorporate physical activity (PA) counseling into office visits. Inadequate medical training has been cited as a cause for this. This review describes and assesses the effectiveness of programs that have reported outcomes of PA counseling education in medical schools.

METHODS: The authors systematically searched MEDLINE, EMBASE, PsychINFO, and ERIC databases for articles published in English from 2000 through 2012 that met PICOS inclusion criteria of medical school programs with PA counseling skill development and evaluation of outcomes. An initial search yielded 1944 citations, and eleven studies representing ten unique programs met criteria for this review. These studies were analyzed for study quality. Strength of evidence for six measured outcomes shared by multiple studies was also evaluated, i.e. students' awareness of benefits of PA, change in attitudes toward PA and personal PA behaviors, improvements in PA counseling skills, self-efficacy to conduct PA counseling.

RESULTS: Considerable heterogeneity of teaching methods, duration, and placement within the curriculum was noted. Weak research designs limited evaluation of effectiveness, i.e. few provided pre-/ post-intervention assessments, and/or included control comparisons, or met criteria for intervention transparency and control for risk of bias. The programs with the most evidence of improvement indicated positive changes in students' attitudes toward PA, their PA counseling knowledge and skills, and their self-efficacy to conduct PA counseling. These programs were most likely to include experiential learning, theoretically based frameworks and students' personal PA behaviors.

CONCLUSIONS: While results provide some support for previous recommendations, evidence of improvements in physician practices and patient outcomes is lacking. Recommendations include future directions for curriculum development and more rigorous research designs

“Learn one, cook one, eat one” a Nutrition Education Program

Background: Fewer than 25% of physicians believe they have sufficient training to talk to patients about diet and the number of hours devoted to teaching future physicians about nutrition in medical school has actually declined. Thus, the need for health care providers to be equipped to offer nutritional support to patients is clear; the means of doing so is not. Our objective was to assess the reasons why residents at Lenox Hill Hospital chose to enroll in a nutrition education program.

Methods: We utilized a NYC culinary school for our workshop, during the kitchen session; chef-instructors used recipes from *The Mediterranean Prescription*. Participants were selected after an email was sent to all residents at Lenox Hill Hospital, upon selection they attended a six part lecture series throughout the year, as well as a monthly nutrition talk given by a nutritionist. For consideration, we asked them to submit an essay, emphasizing the following: why you are interested in this program? how you will utilize what you learn from this course to change your own approach to nutrition and eating? and how you will apply this knowledge to the care of your patients. A theme analysis was applied to assess reasons why residents chose to apply to the program.

Results: 16 residents of varying training programs wrote essays to apply to the nutrition education program. Seven themes emerged; top three were, 56% alluded to a lack of nutrition education, 44% listed diseases with relation to diet, and 44% wrote about a desire to make changes to their own lives.

Conclusions: Residents applied to our program to enhance nutritional education—both for themselves and their patients, with the hopes of improving health and their ability to facilitate that goal.

A Theory-Informed Lifestyle Medicine Curriculum for Patients and Providers

PURPOSE: To describe the process of developing a theory-informed physician-led curriculum designed to transfer Lifestyle Medicine skills to patients.

BACKGROUND: Lifestyle Medicine can be delivered to patients individually or in a group setting, known as Shared Medical Appointments. Shared Medical Appointments offer the unique opportunity to discuss, share, and practice Lifestyle Medicine skills, and there is often time for brief workshops or teaching sessions. Emory Preventive Medicine Residency Program began providing Lifestyle Medicine Shared Medical Appointments in fall 2013. A structured, theory-driven, skill-based and physician-led curriculum for patients was needed. A search revealed few curricula that were broadly focused on Lifestyle Medicine and allowed for patients with differing and multiple diagnoses. Additionally, few curricula were physician-led and many were designed for lengthy sessions impractical in this case. We developed this curriculum for our Lifestyle Medicine practice.

METHODS: The Lifestyle Medicine team at Emory Preventive Medicine worked with residents and public health students to develop a curriculum. The curriculum incorporates health promotion and adult-learning theory so that the curriculum would be relevant, engaging, retained, and practiced at home. Theories used to guide the curriculum included the Transtheoretical Model, Social Cognitive Theory, the Theory of Empowerment Education, Transformational Learning Theory, and the Cone of Learning.

RESULTS: The final curriculum is a 10-session curriculum comprised of five domains: Lifestyle and Chronic Disease, Lifestyle Skills, Nutrition, Physical Activity and Mental Wellness. Each session is designed to be delivered by a physician, including residents, in less than 20 minutes within the context of a 90 to 120 minute Shared Medical Appointment. It includes a Facilitator Guide and a Patient Workbook. The Facilitator Guide gives general instructions on its use and lesson plans for each session. Slides, audios, videos, lists of resources, and evaluation materials also accompany the Facilitator Guide. The Patient Workbook provides a brief introduction to Lifestyle Medicine and Shared Medical Appointments. Each session is presented in a visually pleasing manner with achievable goals and objectives. The sessions are presented to engage patients and provide quick retention by offering a variety of learning modalities. Additional resources, including apps, books, websites, organizations, and take-home materials, are presented to patients in the session materials.

CONCLUSIONS: Structured, theory-driven, physician-led Lifestyle curricula for Lifestyle Medicine practices can be developed utilizing collaborations between academic medical departments and schools of public health.

The Integration of Lifestyle Medicine Curricula into Undergraduate Medical Education: Design and Implementation

Purpose: By 2020, the World Health Organization predicts that two-thirds of all disease worldwide will be the result of poor lifestyle choices. Fewer than 50% of U.S. primary care physicians routinely provide specific guidance on nutrition, physical activity, or weight control. Physicians should better adhere to well-established practice guidelines which uniformly call for lifestyle change as first line of therapy.

Background: Currently, there is no structured implementation model for the discipline of lifestyle medicine (LM) into undergraduate medical education, prompting multiple institutions to create individual agendas for integration of LM. There are also no guidelines, validated assessment tools, or evaluation or implementation plans in place.

Methods: We are establishing a plan to integrate LM into medical school education in collaboration with invested stakeholders, including medical school deans and students, medical curriculum developers and researchers, medical societies, governing bodies, and policy institutes. Three planning and strategy meetings are being held to address key areas of focus - with a particular interest in nutrition, physical activity, student self-care and behavior change - to develop specific implementation guidelines and landmarks.

Results: After the first meeting, the proposed areas of focus were determined to be:

- Establish support of deans of medical schools to advocate for and implement LM curricula in undergraduate medical education;
- Create federal (especially congressional) and state policy commitments to increase support for a transition of (public) medical school education, and identify potential areas of health care cost savings;
- Use assessment as a driver not inhibitor of lifestyle medicine, in order to identify, modify and/or add questions to the board examinations to represent the importance of lifestyle medicine in medical practice;
- Provide high-quality curricular material on an easily-navigated site where faculty and physicians-in-training can obtain competency-based LM knowledge and skills, and to organize their peer and mentored activities and other components of their learning and teaching portfolios;
- Engage student interest to promote LM's acceptance and dissemination.

Further implementation strategies for each focus area will be addressed in two upcoming planning meetings (Summer 2014, Spring 2015).

Conclusion: This initiative is expected to have important public health implications by efficiently promoting the prevention and treatment of non-communicable chronic disease with a scalable and sustainable model to educate physicians in training and practice.

Leading Healthy Lives – Lifestyle Medicine Teaching for Medical Students

Background

Lifestyle medicine is not part of the curriculum in most medical schools, even though lifestyle related diseases are epidemic. A lifestyle programme was incorporated into our Public Health course to teach students and encourage them to develop healthy behaviors from the start. The programme was driven by the principle that doctors who lead a healthy lifestyle themselves are more effective at influencing their patients.

Aim

To evaluate the influence of lifestyle teaching on students' health behaviors and any impact on medical school life.

Methods

Lectures and workshops (8 hours) were delivered to 140 students in the second week of medical studies:

Start with a healthy walk	demonstration
Healthy lifestyle: Introduction	Stress and wellbeing + yoga session
Exercise is medicine + exercise session	Motivation for lifestyle change
Eating Healthy Foods + healthy cooking...	

A questionnaire with quantitative (scale of 1 to 5) components and comments, was administered 2 weeks after completion of the program. 20 students were questioned 6 months later about student lifestyle change and initiatives in the medical school.

Results

Students rated the course well (mean±sd for 2012, 2013): the course was 'of value professionally' (4.2±1.1, 3.73±1.0); 'of value personally' (4.31±0.9, 3.88±1.1); 'a positive experience' ((4.31±0.8, 4.06±1.0). Comments included: *The lifestyle teaching was excellent, should be extended.....The lifestyle sessions combined with practical experience was enriching and fascinating.....The healthy lifestyle teaching gave motivation to personal practice and a desire to include activities in the framework of the Faculty.* Six months later students described a number of changes made in their own and their peers' lifestyle which they connected to the course, namely smoking cessation, regular physical activity, eating less junk food and more healthy food. They highlighted the following initiatives underway in the medical school:

- A medical student with dietetic training is providing guidance so the cafeteria offers healthier foods
- Regular walking and running groups were introduced by students for students
- Physical activity and yoga classes are being delivered by students
- A 'fun run' is organized for Safed city
- Students have been trained to provide lifestyle coaching for complex patients

Conclusions

Guidance in the area of healthy lifestyle for students at the start of medical studies encourages personal lifestyle change and has fostered the introduction of healthy initiatives into medical school life. Hopefully this will lead our students to be more credible when they practice lifestyle medicine in the future, although reinforcement will be needed to sustain the effect.

Establishing an academic Lifestyle Medicine Practice guided by Organizational Theory

PURPOSE: We describe the implementation of a Lifestyle Medicine practice within an academic health care system guided by organizational theories of change

BACKGROUND: There is a need to institute Lifestyle Medicine practice into healthcare systems; however current resources and climates present challenges. Despite this, the trend of adopting new models of care to improve health is promising. We describe the setup of a Lifestyle Medicine practice within Emory Healthcare in Atlanta, Georgia.

METHODS: Emory Preventive Medicine department, guided by the stage theory of organizational change, strategically analyzed the key factors driving the Affordable Care Act changes by raising awareness of possible solutions. We then adopted and implemented the Lifestyle Medicine competencies into the clinical setting. We have also developed strategies to institutionalize Lifestyle Medicine practice embedded within various clinical sites. We use the Organizational Development Theory's to develop strategies that address the organizational climate, culture and capacity. Finally, we describe collaborations with other organizations and entities using the Interorganizational Relations Theory.

RESULTS: With Stage Theory, we defined the need for a Lifestyle Medicine practice at Emory Healthcare with key stakeholders including patients, providers, and department and healthcare leaders. We developed a proposal and business proforma based on Lifestyle Medicine competencies and established the practice within a primary care clinic. We receive referrals from the primary care clinic and provide both individual and shared medical appointments. The practice was formalized in November 2013 and has enrolled about 100 patients. It is in a constant process of reactions to change with constant feedback from all stakeholders. To institutionalize lifestyle medicine practice across the system, we plan to replicate across various clinical sites, accommodating the uniqueness of each site while utilizing a standardized structure, processes and tools.

Developmentally, the institutional climate and culture is open to the idea of change, but slow to adopt new measures. There is organizational capacity to collaborate, but motivation and time are barriers.

Interorganizationally, the department and others at Emory Healthcare are at the awareness stage and conceptual biases will need to be overcome before moving to a collaborative action stage. Outside of Emory Healthcare, the field and practice of Lifestyle Medicine is still in development and opportunities for collaboration have been limited.

CONCLUSIONS: By analyzing Emory Preventive Medicine's experience in establishing a Lifestyle Medicine practice from an organizational change theory perspective, we demonstrate to others a process to guide the establishment of similar programs.

Public Health Nurses Promoting Healthy Lifestyles (PHeeL-PHiNe) Empowerment Course - 18 Month Follow-up

Background: Mother and Child Health Clinics have provided pregnancy and infant preventive health services in Israel for nearly a century. They are considered to be ideal settings for health promotion. The "Public Health Nurses Promoting Healthy Lifestyles" program was developed to be part of the national initiative, "Healthy Israel 2020" with the goal of broadening the role of those clinics to assist families in adopting healthy behaviors.

Purpose: Evaluating the long term effectiveness of the program empowerment course on the nurses' self-behavior and practice.

Methods: The program ran in Israel's Jerusalem District from 2009 to 2012. One hundred and seventeen public health nurses received training. Interventions took place in 45 clinics serving parents of 131,482 babies and toddlers. Long term nurses' self-behavior and practice were evaluated by a 15 item questionnaire.

Results: One hundred and four (88%) nurses completed the questionnaire in December 2012, an average 18 month after completing the training. Nurses reported better nutritional consumption ($P=0.006$) and more often checking food labels regarding sodium ($p=0.01$), saturated fat ($P=0.07$) but not calories ($P=0.22$). Sixty five percent of the nurses reported being active in comparison to 74% before ($P=0.374$).

While 103 (99%) incorporated nutritional counseling, 88% reported doing it on a daily basis. Seventy-two nurses (69%) incorporate exercise counseling and 31% on a daily basis.

Conclusions: Lifestyle medicine empowerment training for public health nurses might have a long-term effectiveness on nurses' self-behavior and counseling. When evaluation of the counseling effectiveness will be completed, our hope is to incorporate the program into Mother and Child Health Clinic services regularly provided nationwide, thereby becoming an integral part of the national initiative, "Healthy Israel 2020".

Needs Assessment for an Integrative Medicine Curriculum in Primary Care Residency Programs

Background:

Integrative Medicine (IM) is a system of care that considers the whole person (bio-psycho-socio-spiritual dimensions) through a therapeutic relationship with the provider and draws on conventional and alternative approaches to achieve optimal outcomes. The purpose of this project was to identify an optimal IM curriculum for Loma Linda University primary care residency programs.

Methods:

Key informant interviews of eight experts and stakeholders in graduate medical education, IM, preventive medicine (PM), and lifestyle medicine were conducted. A focus group was conducted with twelve preventive medicine and primary care Loma Linda residents. Interview and focus group data was analyzed for common themes. An online survey of residents quantified current versus desired level of IM competence via paired t-tests as well as differences in desired competence for four subcategories via MANOVA with bonferroni adjustments.

Results:

Qualitative: Identified key themes in both the interviews and focus group included: 1) personal physician wellness highly valued, 2) need for dedicated time to develop competence in physician wellness during residency, 3) lifestyle medicine (especially nutrition) as a core part of IM training, and 4) availability to rotate through an IM/lifestyle clinical practice essential.

Quantitative: Significant differences were noted between current and desired competence levels for all IM behaviors ($p < 0.05$) and interventions ($p < 0.05$). Residents desired advanced knowledge in all IM behaviors with the highest rating in patient centered care. Residents also desired advanced knowledge in many IM interventions with the highest ratings in descending order as: whole person care, motivational interviewing, physical activity, nutrition, and spiritual history. The desired IM intervention subcategory analysis revealed significant differences between lifestyle, procedure, CAM, and psychosocial categories with the lifestyle category most desired ($p < 0.001$).

Conclusion:

Both qualitative and quantitative data support widespread interest in and the need for incorporation of IM training into primary care residency curricula at Loma Linda University, yet the current curricula fall short of the advanced knowledge desired.

The highest level of desired competence in IM interventions was within “lifestyle medicine” areas, thus representing an ideal starting point to improve IM curricular design and implementation.

Training Teachers as Lifestyle Coaches

PURPOSE: To train school teachers as health coaches for school students in the principles and practice of healthy lifestyle.

BACKGROUND: India accounts for 53% of all deaths and 44% of disability-adjusted life-years (DALYs) lost in 2005 due to chronic diseases. The prevalence of metabolic syndrome among school students ranges from 3-4% which are largely due to lack of knowledge regarding healthy lifestyle. Hence, we wanted to explore the role of school teachers as lifestyle coaches.

METHODS: As a pilot project, we selected 8 school teachers and a batch of 40 students of class IX. The teachers underwent a baseline evaluation of their lifestyle practices and a training on the module of "Physical fitness and exercise". The teachers then conducted the baseline lifestyle evaluation of the students followed by the training session on physical fitness and exercise. Both the teachers and students underwent a pre-test and post-test evaluation.

RESULTS: There were 8 teachers (male=3 and female=5). The baseline lifestyle evaluation of the teachers revealed that 7 out of 8 were non-vegetarians, mean fruit consumption was 1.5 days a week, mean salad consumption was 0.6 days a week and mean water consumption was 3.3 litres per day. The mean physical activity was 8.5 hours of standing and 60 min of walking per day. The mean GHQ-12 score was 12.3. There was improvement in the knowledge regarding physical fitness and exercise as assessed by the pre-test and post test scores. The baseline lifestyle evaluation of the students revealed that 39 out of 40 were non-vegetarians, mean fruit consumption was 4.3 days per week, mean salad consumption was 1.8 days per week and mean water consumption was 1.6 litres per day. The mean duration of physical activity was 69 min per day. There was improvement in the knowledge regarding physical fitness and exercise as assessed by the pre-test and post test scores. The teachers and the students were highly motivated to learn more about healthy lifestyle and were willing to change for better.

CONCLUSION: Training of teachers as lifestyle coaches is an effective way of impacting the lifestyle of students and teachers and thereby preventing the morbidity and mortality due to non-communicable diseases in future.

LIFESTYLE / LIFESTYLE TREATMENT

Psychological Mood State and Biochemical Balance are Improved with Modest Lifestyle Interventions

PURPOSE: Our objective was to assess changes in Psychological Mood State (vigor, depression, fatigue, irritability, and tension) and Biochemical Profile (oxidative stress, inflammation, glucose, cortisol, and testosterone) in response to a modest lifestyle intervention including a diet, exercise, and herbal supplementation based on traditional Chinese and Indian medicine (TCM and Ayurveda).

BACKGROUND: Chronic stress plays a major role in the pathophysiology of many disease states, particularly psychological disorders including depression, chronic fatigue syndrome, anxiety, fibromyalgia, and burnout. These stress-related changes in psychology may be due to both endocrine and behavioral factors – and may be mediated or attenuated by lifestyle factors including nutrition, exercise, and dietary supplements. Vigor is defined as a 3-tiered sustained mood-state that is characterized by (1) physical energy, (2) mental focus, and (3) cognitive liveliness. Vigor can also be described as the opposite of "Burnout" (physical fatigue, mental exhaustion, cognitive weariness).

METHODS: We report on 153 subjects (103 women/50 men) – displaying moderate levels of psychological stress. We measured endocrine parameters (salivary cortisol to testosterone (C:T) ratio) and Vigor (V, using the Profile of Mood States (POMS) psychological survey) before and after the supplementation intervention. Depending on the cohort, subjects followed one of several different lifestyle intervention periods conducted at different times of the year (January, May, November) and lasting varying amounts of time (24-hour, 6-wks, 8-wks, or 12-wks). Each lifestyle intervention included recommendations for balanced diet (moderate carbohydrate/protein/fat), regular exercise (3-5 d/wk of interval walking), and herbal TCM/Ayurvedic supplements (adaptogens including cordyceps, ashwagandha, rhodiola, ginseng, magnolia bark, red seaweed, licorice root).

RESULTS: Compared to pre-intervention values, post-intervention measurements indicated significant positive changes for a variety of mood state and biochemical parameters. For example, significant changes ($p < 0.05$) were found for Cortisol:Testosterone ratio (-15-19%), hsCRP (-20-60%), glucose (-9-15%), Global Mood State (+20-22%), Vigor (+27-29%), Fatigue (-41-48%), Tension (-20-34%), and Depression (-40-52%).

CONCLUSION: These data indicate that factors that are typically disrupted during periods of chronic stress (biochemical profile and psychological mood state) may be positively and significantly impacted by modest changes in diet, exercise and supplementation patterns.

Impact of a Lifestyle Education Program on the Quality of Life of Brazilian Female Adults

PURPOSE:

This study was conducted to assess the impact of a 6-day, medically-supervised inpatient lifestyle education program in anthropometric, clinical and health-related quality of life (HRQoL) measurements in Brazilian adults.

BACKGROUND:

HRQoL relates to physical, mental, emotional and social functioning, and is negatively affected by non-communicable diseases (cancer, diabetes, cardiovascular and respiratory diseases) and their risk factors (poor diet, physical inactivity, obesity and smoking). Since lifestyle modification is linked to improvements in clinical and biochemical markers of noncommunicable diseases and their risk factors, we hypothesized that a lifestyle education program would also improve HRQoL.

METHODS:

Twenty-one women (mean age 50.8 ± 12.7) self-selected to participate in an intensive, 6-day inpatient lifestyle modification program, focusing on dietary modification (vegan diet), moderate exercise, stress management (hydrotherapy and massage therapy), spiritual (daily devotionals) and social (group recreation) support, and health education (lectures and cooking demonstrations). Socio-demographic, anthropometric and clinical data were collected by trained personnel, following standardized procedures, at baseline and immediately after the program (day 6). HRQoL measurements were obtained at baseline and 45 days after the program, through the Medical Outcome Study 36-Item Short-Form Health Survey (SF-36v2®) questionnaire (developed by QualityMetric Incorporated, Lincoln, RI).

RESULTS:

There were significant reductions in body weight, BMI, waist circumference, systolic and diastolic blood pressure, when comparing baseline and after the program (day 6) measurements. Mean weight loss was 1.7 kg ($p < 0.001$, 1.18 to 2.20, 95% CI). Mean BMI decreased by 0.68 (0.47 to 0.88, 95% CI) and waist circumference decreased by 1.64 cm (0.54 to 2.74, 95% CI). Systolic blood pressure decreased 7.6 mmHg (2.8 to 12.4, 95% CI), whereas Diastolic blood pressure decreased 4 mmHg (1.9 to 6.2, 95% CI), both highly statistically significant ($p < 0.01$). Fifteen subjects completed the follow-up HRQoL questionnaire at day 45 over the phone. Results from statistical analysis showed significant improvements in all 8 domains of HRQoL. The domains with greater improvement were role-physical and social functioning. Physical summary measures improved by 8.8 points (3.9 to 13.6, 95% CI, $p = 0.002$), and Mental summary measures improved by 7.6 points (3.6 to 11.6, 95% CI, $p = 0.001$).

CONCLUSION:

A 6-day, medically-supervised inpatient lifestyle education program with an interdisciplinary approach induced improvements in health-related Quality of Life parallel to benefits on cardiometabolic profile in Brazilian female adults.

MINDFULNESS/MEDITATION

Yoga and Meditation Intervention Improves Residents' Stress and Maladaptive Coping Skills: a Pilot Study

BACKGROUND: “Medicine is facing a crisis, but it’s not just about money; it’s about meaning.” In the past year, three NY Times articles have painted a bleak picture of the mental health challenges facing stressed-out medical students, residents and doctors. In fact, JAMA stated that the students' malaise could end up hurting the patients they treat. Residents often feel stressed about situations they can't control--schedules (rotations), work hours, sleep deprivation, time pressure, excessive workload, burdensome clerical and administrative responsibilities and pages, information overload, and ward teams they are assigned. Our objective was to help medical residents better manage work-related stressors, positively impact employee health, and increase academic and clinical performance.

METHODS: A four-week yoga and meditation intervention single-armed pilot study. Ten medical residents participated in bi-weekly 45 minute Hatha yoga and meditation sessions. The sessions included both physical postures and breathing exercises, encouraging the elicitation of the relaxation response. The classes did not require the residents to change their clothing, or even work-up a sweat. Yoga postures and breathing techniques were completed in sitting and standing positions. The efficacy of intervention was assessed by comparing the Perceived Stress Scale (PSS) questionnaire scores at baseline, after two-weeks, and finally after completing four weeks. Results were analyzed using the SPSS version 16. Paired T test was applied for analysis.

RESULTS: The mean PSS score at baseline and end of study did not differ significantly. However, sub scale analysis revealed significant reduction ($p = .009$) in the question, “How often have you been angered because of things that were outside of your control?”

CONCLUSION: Despite a small sample size and short duration of study we found significant reduction in residents' stress when "things that were outside of their control." The results indicate yoga and meditation may be a promising intervention to help residents cope with stress; however, future research is needed in order to assess and improve their overall wellness.

NUTRITION

Plant-Based Diets hold promise for Treatment of Diabetic Neuropathy: A Broad Review of the Evidence

PURPOSE: To review the use of plant-based diets in the treatment of diabetic peripheral neuropathy (DPN).

BACKGROUND: Diabetes is the leading cause of neuropathy in the Western world. About half of diabetes patients will eventually develop neuropathy, which has a major impact on quality of life, morbidity, and healthcare costs. DPN and its complications cost 4.6 to 13.7 billion dollars each year in the United States, and are responsible for up to 27% of the direct medical cost of diabetes.

Treatments for DPN are available, but many have side effects and limited usefulness. With the rising prevalence of DPN, new approaches to medical management are needed. Considering that the link between diabetes and diet has been long established, studying the relationship between DPN and diet could lead to new standards of care that may help to alleviate the social and financial burden of DPN.

Low-fat plant-based diets are associated with reduced weight and improved insulin sensitivity and reduce the need for insulin and oral medications in type 2 diabetes patients.

METHODS: A literature review was performed on Pubmed to investigate the use of plant-based diets as an intervention to treat DPN and associated comorbidities, including hyperglycemia, metabolic syndrome, cardiovascular disease, dyslipidemia, and peripheral artery disease. Meta-analyses, population studies, and observational studies were reviewed in sequence, with no restriction to publishing date or origin of study. A second literature search was performed to review the mechanisms by which plant-based diets are able to alleviate DPN and each of its associated conditions.

RESULTS: A total of 141 studies were reviewed. DPN was linked to hyperglycemia in six studies, metabolic syndrome in six studies, dyslipidemia in five studies, cardiovascular disease in eight studies, and peripheral artery disease in five studies. The use of plant-based diets to alleviate DPN was discussed in only two studies, whereas 21 studies were found for hyperglycemia, 17 for dyslipidemia, 15 for overweight and obesity, and 18 for hypertension.

CONCLUSION: DPN is associated with a variety of disease states, including hyperglycemia, metabolic syndrome, cardiovascular disease, dyslipidemia, and peripheral artery disease, and these have been shown to improve with a plant-based diet. Although the mechanisms behind the health-promoting power of a plant-based diet are not fully understood in these disease states, common pathways in their pathogenesis and treatment are apparent. Thus, plant-based diets may be effective in the treatment of DPN, and this relationship deserves further scientific study.

PHYSICAL ACTIVITY/EXERCISE

The Effect of a Seven-Week Exercise Program for Teenagers

Background and Purpose: Obesity is rapidly becoming an epidemic all over the country and in the local community affecting people of all ages. A recent study conducted by the University of Rochester's Medical Center revealed that 39% of Rochester's youth are overweight or obese. Minimal efforts have been made to address this ever-growing issue. To address this issue a program called "Extreme Teen" was developed. The purpose of this program is to determine the effect of a seven-week self-management program on self-efficacy, BMI, participant and parent satisfaction.

Program Description: Four female teenagers (mean age 15.5) participated in Extreme Teen twice a week for seven weeks with each session lasting an hour. The program focused on developing self-management skills in nutrition and exercise. Nutrition included education by a nutritionist, a healthy cooking class and cookbook. Participants were educated on group and individual exercise, which included: how to use exercise equipment, circuit training, kickboxing and yoga. Each participant was also provided a home exercise program and journal. Outcome measures included: self-efficacy, satisfaction survey, and BMI.

Outcomes: BMI decreased in three of the four participants (average weight loss was 6lbs) with the fourth one remaining the same. Each of the four participants improved their self-efficacy towards being more confident in having a healthier lifestyle. Additionally, all the participants and parents reported being extremely satisfied with the program using a self-reported survey.

Conclusion: A self-management program that includes exercise and nutrition is beneficial for improving lifestyle changes for teenagers who are overweight. Recommendations include adding a food journal, establishing weekly goals and using a Fitbit to monitor and encourage exercise adherence.

Risk Factors Associated with Sedentary Activity in Adults with Chronic Stroke

Purpose. To examine risk factors associated with sedentary activity in adults with chronic stroke.

Background. Sedentary activity is a risk factor for stroke, and increases the risk of experiencing a subsequent stroke in people with a prior stroke. Many risk factors associated with sedentary activity are shared between adults with and without stroke. The relationship between sedentary activity and *stroke-specific* risk factors (e.g. independence in activities of daily living, if the dominant arm was affected by stroke, and severity of motor dysfunction of the affected arm), however, have not been explored.

Methods. Forty-nine, community-dwelling adults with chronic stroke (i.e. >6 months) participated in this study. Time spent in sedentary activity during a typical weekday was quantified using the Physical Activity Scale. Independence in activities of daily living and whether the dominant arm was affected were obtained via self-report. Motor dysfunction was assessed using the Action Research Arm Test. Common risk factors were also assessed, and included: cognitive impairment (Short Blessed Test), depressive symptomatology (Center for Epidemiological Studies-Depression Scale), multiple comorbidities (checklist of common conditions), age, and living arrangement (living with others versus alone). Correlations analyses and independent t-tests were used to examine associations between risk factors and sedentary activity.

Results. Adults with chronic stroke spent 15.9 ± 4.0 hours in sedentary activity. Duration of sedentary activity was greater in adults whose dominant arm was affected (17.2 ± 3.4 hours) than in adults whose nondominant arm was affected (14.3 ± 4.2 hours, $p < 0.03$). No other risk factors were associated with sedentary activity.

Conclusions. Community-dwelling adults with chronic stroke spent more than two-thirds of a 24-hour day in sedentary activity, and sedentary activity was greater in adults whose dominant arm was affected than in adults whose nondominant arm was affected. Because increased sedentary activity is a risk factor for subsequent stroke, interventions to decrease sedentary activity in adults with stroke are needed. Other risk factors were not associated with sedentary activity, possibly because we studied adults with chronic stroke while other studies may have examined adults with acute or subacute (i.e. <6 months) stroke.

PROFESSIONALISM/PRACTICE

Interprofessional Teams: A Foundation for Lifestyle Medicine

1) Purpose: Advance the discussion involving Lifestyle Medicine teams and the best approach to care in the management of non-communicable chronic conditions.

2) Background: Interprofessional education (IPE) is an important step in advancing health professional education endorsed by, among others, the World Health Organization (WHO) and the Institute of Medicine as a mechanism to improve the overall quality of health care especially as related to chronic diseases. Lifestyle Medicine is best practiced in inter-professional teams. Inter-disciplinary team practice is number twelve of fifteen Lifestyle Medicine competencies developed by the Lifestyle Medicine taskforce and published by Lianov and Johnson in the Journal of the American Medical Association in 2010.

Evidence supports a lifestyle medicine approach to effective management of chronic disease. Progress is most effective when conditions are managed by interprofessional teams. Resistance among medical students and healthcare practitioners is natural and expected, based on the evidence. This poster will connect the evidence to the experience of delivering medical student education through an interdisciplinary team of physicians and non-physician members supporting the proposed action items. Thoughtful development of IP teams will support the goals and mission of ACLM to best treat patients with lifestyle-related diseases

3) Methods: Using the WHO's Framework for Action on Interprofessional Education and Collaborative Practice and the Center for the Advancement of Interprofessional Educations' (CAIPE) definition of IPE as a backdrop, this poster will present items for consideration by ACLM membership as they work towards advancing the field for best-practice standards in the management of chronic conditions. Action items are included.

4) Results: For lifestyle medicine to meet its mission and goals, effective working with a variety of health care professionals is critical. Changing traditional models requires deliberate and planned approaches in the education of existing practitioners as well as those currently pursuing medical education. It is imperative that physicians, as leaders of the team, understand how to best utilize the expertise at their disposal to accomplish desired patient outcomes such that societal needs are met and burden minimized.

1. Competencies for effective IP care delivery (Action item)
2. Identifying the core team members in LM and their roles (Action item)
3. Determining strategies for interprofessional education (Action item)
 - uniprofessional learning
 - multidisciplinary learning (working in parallel)
 - interprofessional learning (working in synergy)
 - hybrid

5) Conclusions: The importance of intentionally building an IP team cannot be understated. IPE, although gaining momentum and expected to become integral to mainstream healthcare practices, requires a paradigm shift in both educational preparedness and organization implementation that requires thoughtful coordination across practice specialties and involving multiple types of healthcare practitioners. Resistance among providers accustomed to solo or multidisciplinary practice is predictable, underscoring the importance of creating a clear foundational base for the most efficacious delivery of lifestyle medicine. Intentional consideration of IPE and IP care is important to the advancement of lifestyle medicine in the changing healthcare environment.

SLEEP

Assessment and Treatment of Sleep Problems in Patients with Lifestyle Illnesses

Lifestyle illnesses are the top five causes of death in the United States. Many researchers agree that lifestyle illnesses are greatly affected by sleep. Still, this author believes that sleep is inadequately diagnosed and, therefore, inadequately treated. This ultimately leads to greater health expenditure and risk of early death. Therefore, this research project is necessary to help determine to what extent physicians are assessing sleep in patients with lifestyle illnesses. Also, this author is hoping that this study brings increased awareness and action related to the importance of sleep on lifestyle illnesses to the physicians treating these illnesses who participated in the survey. The hypothesis was that physicians are aware of the extent to which sleep affects these illnesses to a great degree, but as sleep is not most physicians' area of specialty, they do not address sleep concerns unless patients complain about sleep problems. The results indicate that although over 80% of physicians surveyed said that sleep is somewhat to extremely important to each of the lifestyle illnesses assessed for: cardiovascular disease, metabolic syndrome, stroke and obesity, only 44.49 % of these physicians are assessing for sleep in their respective patient populations. Additionally, 11% of the physicians surveyed reported personally sleeping less than the minimum of six hours per night themselves.