

Newsletter – The School of Public Health University of Haifa

A Message from the Head of the School of Public Health – Prof. Shira Zelber-Sagi



The new academic year has started with a sign of development and regeneration. *Firstly*, we moved to the new Faculty of Social Welfare and Health Sciences building. Our new home has plenty of room for everyone, sitting area, eco-friendly kitchen and breathtaking views. *Secondly*, we opened the new Biostatistics program (MPH) that focuses on applied biostatistics. The program will accept the first class in the fall 2020 and will include thesis and no thesis tracks. Students will acquire knowledge in advanced statistics, designed to serve present-day demands, including machine learning and big data analysis.

The program will also encourage research in the Biostatistics field. The head of the program, Dr. Goldstein, is an investigator with a unique background in Biostatistics and Psychology. Dr. Goldstein's expertise is in pain research, in which he uses his Biostatistics knowledge to develop pain research in a way that promotes public health.

Thirdly, I entered my role as Head of the School of Public Health and replaced Professor Orna Baron-Epel after completing her 5-year term. This is a great opportunity to thank Professor Baron-Epel for years of leading and promoting the school forward into great accomplishments. Her work and vision have shaped the school of public health and left an impressive impact for many years to come.

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I am excited to enter the role after completing 8 years as the Head of Nutrition, Health and Behavior program. Thanks to the wonderful teamwork we have built over the years, I am certain that the school will continue to grow and to develop.

My research interests are in nutrition, physical activity and the relationships with chronic diseases in general and, more specifically, with Non-alcoholic Fatty Liver disease. I have been active for many years in committees aimed to promote healthy nutrition in Israel, as well as in Israeli and European Public Health committees aimed to promote liver health. Among my contribution in these committees are publications of nutritional guidelines in illness, position papers in health policies in Israel and Europe and health recommendations in Fatty Liver disease. I believe that nutritional and healthy lifestyle information should be accessible and un-biased. We, the public health experts, as well as the state and society, are responsible for creating the environment that will support healthy lifestyle choices.



Former Head of School of Public Health, Orna Baro-Epel, with Faculty Dean, Prof. Faisal Azaiza and Administrative Director, Ms. Racheli Belifante Afoota.



Head of School of Public Health, Shira Zelber-Sagi, with Faculty Dean, Prof. Faisal Azaiza and Administrative Director, Ms. Racheli Belifante Afoota.

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Fourthly, in 2019 the Haifa District Health Office became affiliated to the Faculty of Social Welfare and Health Sciences, after years of academic and research collaborations. The aims of the affiliation are to enable students and faculty members paths to gain knowledge and experience of policies of the Ministry of Health, implementation of policies and gain practical research experience related to Israeli population-based data (e.g. Infectious Diseases). The first *Faculty of Social Welfare and Health Sciences and Ministry of Health, Haifa unit* conference: "From knowledge to practice: when theory meet realty" will take place on the 5th on March 2020. Everyone is invited!

A few updates for the 2019-2020 academic year. This year, 134 new students joined our school. Among them, 17 new students from 12 different countries started our international program. Israeli students are welcome into the program as well. This is also a good opportunity to take classes in the English language. Courses are open to all students and there are several courses during the summer break. To date, the school has 24 doctoral students, 8 doctoral students completed their work in the past year and, until now 6 new students have applied to the doctoral program.

We have new courses at the school: *Short-term nutritional and behavioral treatment skills* by Dr. Sharon Nahmani in the Nutrition, Health and Behavior program, *Theories of family and family therapy in multigenerational aspects* by Prof. Michal Shamai, a world-class expert in this field and several courses by Dr. Pavel Goldstein.

We are proud of our honors students who have shown significant contribution to public health. This year, the rewards for cum laude doctoral student were given to Dr. Rola Hamood and Dr. Halaf Kridin (See the photo below). Dr. Rola Hamood wrote her dissertation on Adverse Health-Related Outcomes of Treatment in an Israeli Cohort of Breast Cancer Survivors, supervised by Prof. Lital Keinan- Boker, and Dr. Halaf Kridin wrote his dissertation on Pemphigus in Israel: Epidemiology, Mortality, Hematological Biomarkers, and association with autoimmune and neuropsychiatric comorbidities, supervised by Prof. Shira Zelber-Sagi, Prof. Reuven Bergman and Prof. Arnon D. Cohen.

I wish everyone a wonderful and productive year. The school's staff wishes all the students a year of growth, achievement and enjoyment.



**Awarding outstanding Ph.D. dissertation to Rola Hamood, PhD and Khalaf Kridin, PhD.
In the photo (from left to right): Prof. Manfred Green, Prof. Shira Zelber-Sagi, Prof. Orna Baron-Epel, Khalaf Kridin, PhD, Galit Weinstein, PhD and Rola Hamood, PhD.**

Health systems Management and Health Systems Policy and Administration Programs Conference, June 2019:

Management tools for change in rigid systems

Senior individuals in the health system in Israel attended a conference held by the Health Systems Management and Administration program at the School of Public Health last June, which dealt with the issue of “management tools for change in rigid systems.” Miss Sigal Regev, CEO of Meuhedet Health Management Organization delivered the opening remarks of the conference and discussed management as a profession and stated that “people want to be meaningful and relevant, including the secretary, cleaner, pharmacist, and nurse.” “An organization is people in your immediate environment,” “proper management is to train, to teach the workers,” “usually people manage to complete 20% of the work plans. We must invest 20% of each day in the management of items that must be completed according to the work plan, to invest in tomorrow, to advance and implement the work plan.” “The work must be reasonable, relevant, and place-appropriate.” Later, Professor Yoram Weiss, manager of Hadassah Ein Kerem Medical Center, talked about how administrative changes saved the hospital from bankruptcy.

Several people also talked about their experience in managing rigid systems, including Professor Faisal Azaiza, Dean of the Faculty of Welfare and Health Sciences at the University of Haifa, Professor Gil Ziv from the Rambam Medical Center. Mr. Reuven Kaplan presented on the angle of medical hi-tech. Representatives from the School of Public Health who hold a range of senior positions in the health system in Israel, Professor Lital Keinan-Boker, manager of the Israeli Center for Disease Control (ICDC), Dr. Shmuel Kelong from Meuchdet Health Management Organization, and Mr. Carmel Harish, a student finishing his studies in Health System Administration, presented on reforms he implemented in the area of mental health pharmaceuticals.



Conference attendees, June 2019



Prof. Yoram Weiss
Director Hadassah Ein
Kerem Medical center



Prof. Lital Keinan- Boker
Director at Israel Center for Disease Control

How do we know if what we are doing is having a positive effect in public health?

- Prof. Orna Baron-Epel



As public health experts and health promoters, we are constantly working to develop new intervention methods aimed at changing behaviors and improving health. Such interventions must be cost-effective. That is, the financial efforts and resources that are invested in the implantation of a new program must be worthwhile. Establishing new intervention without an in depth evaluation is not in line with public health principles of evidence-based medicine. Our public responsibly is to strive for a healthy social and physical environment, while making sure that the changes we encourage are indeed promoting health.

For this reason, the Center for Evaluation of Health Promotion Interventions was established. Our expertise is in evaluating health promotion interventions run by organizations, such as healthcare services, government ministries and nonprofit organizations.

As an example of our work, I will present the evaluation of Maccabi Healthcare Services program “Call to read” or in its American version “Reach out and Read”.

The “Call to read” intervention was conducted a few years ago. In the intervention, pediatricians and “Tipat Halav” nurses counseled parents of infants, mainly mothers, on the importance of reading books to their small children from a young age and handed out a book suitable for the child’s age. The program took place in Maccabi’s “Tipot Halav” and in 70 pediatric clinics nationwide. Our goal was to assess the program’s success and effectiveness among parents of infants in their first year, by examining the change in the parent’s knowledge, perception and behaviors, following participation in the “Call read” program regarding reading to infants.

This evaluation study included three groups:

- 1) mothers of infants in their first-year of life, receiving care at the Maccabi “Tipot Halav” around the country (intervention group);
- 2) mothers of infants in their first-year (control group) receiving care from the “Tipot Halav” run by the Ministry of Health ;
- 3) nurses and pediatrics working at clinics in which the intervention program was implemented.

The evaluation of the intervention program included phone interviews with the mothers, who received care at the 20 "Tipot Halav" clinics, before and after the intervention. For the control group, mothers who were received their child's care at 8 clinics run by the Ministry of Health were sampled and interviewed. These Ministry of Health centers were not part of the "Call to read" intervention. Overall, 167 mothers were included in the evaluation program, from them 80 mothers from low to medium socioeconomic areas and 87 from high socioeconomic areas.

In addition, in-depth phone interviews with 10 "Tipat Halav" nurses and 10 pediatricians from the clinics that took part in the intervention were performed by researchers from the University of Haifa.

Result of evaluation

We found that participating in the program, as well as socioeconomic status was associated with the extent to which mothers read books to their infants. Following the intervention, mothers of lower socioeconomic status (1th-3th decile) were reading more books than mothers of medium (4th-6th decile) or high (7th-10th decile) socioeconomic status. That is, the intervention was more successful among vulnerable populations. This is a highly important finding in evaluation of an intervention program.

The results of the qualitative study showed that the nurses identify with the "call to read" goals, in both personal and professional aspects. Additionally, they acknowledge the importance of the intervention for development of cognitive ability, language skills and the bond between parents and children. The nurses felt that they are the most appropriate person for applying the intervention since they have trust and close relationships with parents.

Similar to the nurses, pediatricians also acknowledge the importance of reading books to infants by parents and its positive effect on child development and parent-child relationship. Therefore, they felt that the intervention program can play a role in increasing parents' awareness of the importance of reading books to their children, and even for prevention of future problems.

The pediatricians and nurses reported high and positive response rates of mothers to take part in the intervention and emphasized the need to execute the intervention in vulnerable populations. Additionally, they proposed ways to overcome challenges in the program implementation, including increasing the number and variety of books delivered to parents.

To conclude, we found that the intervention "Call to read" was effective for achievement of its goal and therefore recommend expending the intervention to other "Tipot Halav" centers across Israel, especially in areas of lower socioeconomic status. In addition, we recommend including a larger number of books to be given out during the intervention.



- When I was 4 years old my grandma looked at me and concluded: “this guy will become a professor”. So up to date, I don’t know whether that was my own decision regarding my future profession or I’m just trying to appease my grandma through all these years...
- I’m practicing mindfulness meditation and my kids help me in the development of mindfulness skills by increasing the challenge level. Did you try to meditate when someone sits, jumps and piss on you?
- In my professional journey, I try to connect things that thought to be unconnected. In other words, I’m doing multidisciplinary research. Did you hear about the relationship between ice cream consumption and murder rate? This time someone was ahead of me...

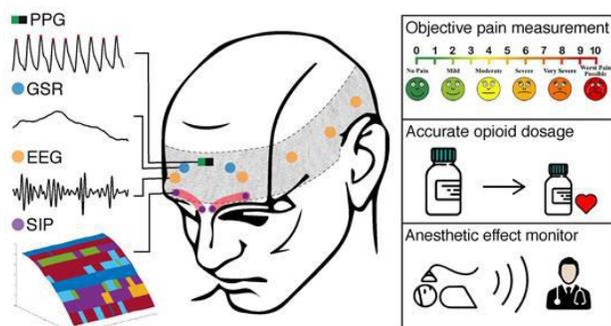
- I was searching for my postdoc position with google maps to find a place with great hiking opportunities. Isn’t that the most important?

I have completed all my academic degrees at the University of Haifa: BA in Psychology and Statistics, Master in Biostatistics and PhD in Neuroscience. During my PhD studies, I was exposed to the field of pain research that is still overflowed with endless debates about basic questions: how we measure pain? What causes pain? How we treat pain?

From the research perspective, that was a great opportunity to contribute to the field. Thus, completing my PhD I found myself for 2.5 years in one of the best labs for pain research worldwide, located in Boulder, Colorado. There I was exposed to the opioid crisis - where opioid misuse results in 112 deaths/day only in the US. That was partly a result of an unsuccessful attempt to help 30% of the population who live with pain, chronic pain. Chronic pain’s unremitting presence can lead to a variety of mental health issues, depression above all, which often intensifies pain. Such a sad picture motivated me to focus almost all my research on the problem of chronic pain.

Despite the immense body of research dedicated to the investigation of pain, studies generally measure pain expression unidimensionally, isolating the sufferer from any relevant social contexts. However, pain is a complex phenomenon, and therefore the research of it requires new integrative perspectives. I am thrilled to establish CPPH lab (Chronic Pain and Public Health laboratory) at the School of Public Health, University of Haifa, directing my research towards understanding the interaction between biological, psychological, and social mechanisms that underlie pain perception. Here is a short description of my recent projects:

Painometry. One of the main challenges to treat chronic pain is an absence of objective ways to quantify pain. Self-reported pain is a reliable but simplistic measure of the complex pain experience and it does not inform about brain mechanisms and pathophysiology of pain.



We propose a wearable system, named Painometry, which objectively quantifies user's pain perception based on multiple physiological and neural signals, including novel sweep impedance profiling (SIP) sensor, developed by our group. Painometry, a multimodality sensing system, can accurately quantify 3 levels of pain with 89.5% accuracy.



Mobile platform for chronic pain. In addition, we are developing a unique mobile platform that 1) allows patients to record and track interactions between pain, emotion, and bodily experiences; 2) delivers information about these experiences to clinicians in order to personalize prevention and treatment; 3) provides insurance companies with feedback about the status and health trajectories of patient populations. The application allows patients to report their experiences in an effortless and engaging way, and also captures patterns of speech and facial expressions, which deliver a readout of patients' emotional and pain behaviors.

[PainStory.science](#): pain detection based on facial expressions, voice, and language content. The main goals of the PainStory project are 1) to reduce the stigma associated with chronic pain conditions; 2) to increase general awareness about pain; 3) to create better measurements of pain than the traditional 1-10 scale commonly used in clinics. We have developed a digital platform, [PainStory.science](#), that allows people with chronic pain to share their pain-related stories to develop a patient-centered understanding of what pain is, and what helps. Applying machine learning algorithms we are developing an automatic online pain detector based on chronic pain patients' facial expressions, voice characteristics, and language content. Latter this pain detectors will be converted to artificial intelligence tools in order to help clinicians and patients to classify their pain levels.

A PhD student is wanted!

Psychoeducation. Pain is very confusing: it feels in our body but produced by our brain. I realized that psychoeducation helps people better understand chronic pain conditions and some cases even to treat it by changing their perception and attitudes regarding their pain condition. Collaborating with pain therapists and life coaches we are developing educational materials about pain production, diagnosis, and treatment.

In this initiative, we integrated the knowledge about chronic pain based on medical, public health and neuroscience research. **A PhD student is wanted!**

Psychotherapy for chronic pain. In addition, I'm promoting a novel psychotherapeutic approach for chronic pain that demonstrated a unique efficacy in our recent study. Our pain clinicians Dr. Howard Schubiner and Dr. Yoni Ashar run certified workshops for clinicians or psychotherapists who are interested in treating chronic pain. We are organizing the same workshop in Israel in December 2020. Please, ping me if you are interested!

Pain chronification. How is pain progressing into persistent pain? How we can prevent it? Early intervention plays an important role in preventing pain chronification and, as key influencers in the management of patients with acute pain. I'm analyzing the followup data of people with acute pain to understand better the risk factors of pain chronification.

My research is essential for more than pure knowledge. Ultimately, it is driven by the need to integrate between the academy and the industry. Providing data science consultations for medical device companies, academic researchers from multiple fields and doctors helped us to acquire a "common ground" between academic investigators, business representatives, and healthcare providers. When all parties see the advantage of combining the industrial drive to 'get things done' with the academic urge to 'understand how it works', the final outcomes improve significantly.

Finally, I'm intrigued to announce a new MPH track in Biostatistics at the School of Public Health that will be led by me starting the Fall of 2020. The track will be based on a novel program with the main focus on the application of computational methods designed for the analysis of health-related data. As a goal, we are planning to assist in the growth of a new generation of bio-data scientists that will get expertise in the implementation of traditional biostatistician methods and the novel data science approaches.

Developing strategies based on the Positive Deviance Approach for behavior change for following infection control protocols and reducing HAI's in Israel: an applied model

Prof. Anat Gesser-Edelsburg



On a personal note: How the idea for this research came about

A few years ago, in a correspondence with my colleague, Prof. Arvind Singhal, one of the leading researchers in the world in my field, health communication, we were talking about the difficulty of our research: that we study human behavior in order to motivate people to change their health behavior, but it is really hard to change behavior because it is comprised of so many psychological, sociological, cultural and environmental factors. As researchers, we often run into walls and barriers to understanding the complexity of the research problem. This is especially true in organizational cultures that think behavior can be changed simply by telling people that there are guidelines and they have to apply them. But that is not really how the world works!

While we were talking, Prof. Singhal invited me to a workshop of researchers from all over the world on a unique approach called Positive Deviance (PD). I had heard of the approach and it picqued my curiosity, so I went to Oxford University, and there, at the workshop, I got inspired. The workshop was not about evidence-based research, randomized controlled trials, statistics or control groups. It was about positive behaviors of human beings. I came back to Israel with new insights from this approach, with which few people in this country were familiar. I organized a workshop with students from the school of public health, to which we invited professional from a range of fields: health promotion, administration and management, social work, and art therapy. After the workshop I thought it would be a good idea to begin applying the approach in an area that seemed to be far from it, namely preventing Hospital Acquired Infections (HAI's).

The phenomenon of nosocomial infections acquired in hospitals in Israel and around the world is considered one of the most critical and studied problems in public health. But despite the accumulated knowledge and implementation of diverse strategies, compliance with infection-preventing actions remains low, infection rates are high, and there is still a gap between recommendations and implementation on the ground. The literature on the prevention of HAIs shows many attempts to disseminate and accommodate the hygiene guidelines currently given to hospital staff. Paradoxically, the health organizations' guidelines are in many cases incompatible with what happens on the ground. Sometimes medical personnel have only a passing knowledge of the existing guidelines. Furthermore, the guidelines do not always cover all of the situations on the care continuum medical personnel encounter in their daily practice. To bridge that gap I initiated a study with research students Ricki Cohen and Adva Mir Halabi, with the consultation of Dr. Mina Zemach and Prof. Arvind Singhal, with the Hadassah, Bnei Zion and Rambam hospitals. It was an innovative behavioral-social research project based on the Positive Deviance (PD) approach to prevent HAIs in Israel. The study was funded by the Isreal National Institute for Health Police Research¹.

What is the Positive Deviance Approach?

The basic assumption of the PD approach is that in every community there are individuals who behave in an exceptionally positive way. These people find a way to solve problems more effectively than their colleagues, using the same resources. They are “deviants” because their behavior is not within the norm; and they are positive, because they have found effective and successful ways to solve the problem without additional resources.

The project objectives

- (1) To identify, map and classify unique infection prevention practices of individual PD staff members in specific areas and sectors in three hospitals: Hadassah Ein Kerem, Bnei Zion and Rambam, and through them to find solutions for “gray areas;”
- (2) To estimate and validate the proposed PD practices using the infection control units;
- (3) To disseminate and integrate the PD practices among hospital staff;
- (4) To check the impact of the PD practices on behavior change of hospital staff to maintain infection prevention rules;
- (5) To check the impact of the PD practices on the reduction of HAI rates from durable bacteria and central line-associated bloodstream infection (CLABSI).

Methodology

Using mixed research methods, we mapped the practices and documented them. Assessment of the effectiveness of the PD practices of behavior change to maintain infection control rules and the reduction of HAI rates were undertaken using qualitative instruments in a quasi-experiment with control groups (Category B2). Results from five different time points are compared, from preintervention through postintervention. At Hadassah Hospital two intensive care units, internal and general departments participated, and they served as their own controls (unique hospital units). At Bnei Zion and Rambam hospitals two internal and two orthopedic departments participated, served as the controls for each other.

Results

132 personal interviews, observations and videos were made with staff members from different sectors in the hospitals. They yielded 50 unique practices that do not exist in the accepted HAI prevention guidelines. These practices target different situations on the care continuum and include: taking and sending blood samples, inserting a catheter into a central bloodline, washing patients, sterilizing personal equipment, changing bandages, respiratory section, sterilizing stethoscopes, mixing IV drugs, the order of removing protective gear, restocking medical equipment and so on. The initial results of the project were published in four articles in scientific journals²⁻⁵.

Conclusions

The unique PD approach identifies creative solutions by hospital staff based on existing resources, and can overcome barriers and motivate the entire staff to cooperate. Staff from HAI prevention units in all three hospitals who participated in the study can use this approach in order to create across-the-board change in other departments, while sharing and disseminating the knowledge and PD practices between the different hospitals.

Epilogue

This research project was selected as an outstanding project by the Health Ministry Directorate and the National Infection Control and Antibiotic Resistance Center, at the conference “Innovation and Initiatives in Infection Control” in Ramat Gan in November, 2019.



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Cannabis use among elderly: the effect on brain health

-Galit Weinstein, PhD and Sharon Sznitman, PhD.



Sharon Sznitman, PhD.



Galit Weinstein, PhD.

In recent years, changes in cannabis policy has increased use of medical cannabis in the general population, including the elderly. In fact, about a quarter of medical cannabis patients in Israel are above 66 years of age and almost half of them are between 41-65 years of age. Yet, most of the research regarding the health effect of cannabis use has been done in youth and therefore, the health outcomes in elderly are still unknown to a large degree.

Cognitive decline, which in some cases may lead to dementia, is a major health concern related to aging. In the young population research has shown that cannabis use can cause long-term cognitive dysfunction, even beyond the immediate impact of cannabis use. However, effects of cannabis may be different in older populations due to brain differences. Additionally, as demonstrated in in-vivo and animal studies, cannabis can have

beneficial effects. Additionally, as demonstrated in in-vivo and animal studies, cannabis can have beneficial effects.

Dr. Galit Weinstein and Dr. Sharon Sznitman from the School of Public Health along with Dr Simon Vulfsons, the director of the Pain clinic at Rambam Medical Center, have studied the relationship between medical cannabis use and cognitive function in elderly people. A total of 63 medical cannabis chronic pain patients and 62 non-cannabis chronic pain patients were enrolled into the study. Participants completed a computerized cognitive test named Cogstate, which examined several cognition aspects, including memory, attention and motor-skills.

In this study, no significant difference was found between the cognitive function of medical cannabis patients and non-medical cannabis patients. These results imply that, among elderly patients, medical cannabis may not cause cognitive decline. However, additional studies, with longer follow up and larger sample sizes, are warranted to determine the cognitive outcomes associated with different doses, frequencies and types of medical cannabis. A better understanding of the effect of cannabis on brain health will lead to a better clinical care plan, medical recommendation and cognitive decline prevention in elderly with high risk.

Vitamin E and C intake is inversely associated with liver damage in patients with non-alcoholic fatty liver disease

-Dana Ivancovsky-Wajcman



Non-alcoholic fatty liver disease (NAFLD) is the most common liver disease in the world and the leading cause for chronic liver disease. The prevalence of NAFLD is about 30% of the general population. NAFLD is characterized by the accumulation of fat in the liver that induces inflammatory response and may lead to the more advanced stage of the disease named non-alcoholic steatohepatitis (NASH), and the formation of liver fibrosis up to liver cirrhosis. The treatment of NAFLD focuses on lifestyle modification. The dietary research mainly focuses in macronutrient role in NAFLD etiology, and little is known about micronutrient role. There is limited evidence on the benefit of dietary intake of antioxidants. The major antioxidants studies in human health are vitamin E (fat soluble) and vitamin C (water soluble).

The aim of this study was to test the association between dietary vitamins E and C intake and NAFLD, NASH and fibrosis markers.

This was a cross-sectional analysis of NAFLD-lifestyle screening study. NAFLD was evaluated by abdominal ultrasonography. NASH and fibrosis non-invasive markers were measured by commercially available tests (NASH-test and FibroTest, Biopredictive France). Nutritional intake was measured by food frequency questionnaire (FFQ). High intake of vitamins was defined as consumption above the sample upper tertile per 1000 kcal or above consumption the nutritional recommendations (15 mg/day for vitamin E and above 75 mg / day for women and 90 mg / day for men regard to vitamin C). A total of 789 subjects were included (52.6% men, age 58.83 ± 6.58 years). Adjusting for age, gender, BMI, dietary and lifestyle factors, the upper tertile of vitamin E intake per 1000 Kcal was associated with lower odds of NASH (OR= 0.64, 0.43-0.94, P= 0.024). There was also an inverse association between reaching the recommended vitamin E intake and NASH (OR= 0.48, 0.30-0.77, P= 0.002).

The upper tertile of vitamin C intake per 1000 Kcal was associated with lower odds of NAFLD and NASH (OR = 0.68, 0.47-0.99, P= 0.045; OR= 0.57, 0.38-0.84, P= 0.004; respectively). None of the vitamins was associated with fibrosis markers.

The present study highlights the importance of proper intake of vitamins in a healthy, balanced diet. Vitamin E can be found mainly in nuts, vegetable oils and green leaves and vitamin C is found mainly in vegetables like cabbage and tomato or fruits like melon, strawberry and citrus fruits. In addition, the study shows that higher vitamin E and C intake may be protective from NAFLD related liver damage.



The Role of Non-Medical Factors in Doctors' Decision-Making Process in Pediatric Telemedicine Setting- a Mixed Methods Study

- Motti Haimi, MD



Background

Although the complex process of medical decision making was traditionally considered a matter of symptoms, signs, and probabilities- many reports suggested that it is in fact prone to medically extraneous influences, or "non- medical" factors.

Aim

We wanted to investigate the possible role of non-medical factors in doctors' decision-making process in telemedicine setting.

Methods

The study included interviews with 15 physicians who work in a pediatric telemedicine service. We conducted qualitative interviews, in which the physicians were mainly asked about the role of non-medical factors in their decisions.

Their responses to three clinical scenarios were also analyzed. In an additional quantitative section, a random sample of 339 parent-physician consultations, held during 2014-2017, were analyzed retrospectively.

Various non-medical factors were identified with respect to their possible effect on the primary health care decision [Emergency Department (ED) referral or not], secondary health care decisions (cases not referred to ED), and also on the accuracy of diagnosis, and "reasonability" of the decisions.

Findings

Various non-medical factors were found to influence the physicians' decisions in all 3 sections of the study: factors related to the child, the parent, the physician, the interaction between the doctor and parents (making shared decisions), the shift, and demographic considerations.

Conclusions

The findings clearly show that non-medical factors are important and taken into consideration in the decision-making process of the physicians, not only at the "regular" encounter, but also in the telemedicine setting.

These non-medical factors have an impact not only on the primary decision (and sub-decisions), but also on the ability to achieve an accurate diagnosis (as shown in the qualitative section), and getting to the "reasonable" or appropriate treatment-decision.



Dr. Yonah Amster

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Prof. Orna Baron-Epel

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Haimi M., Brammli-Greenberg, S., Waisman, Y., **Baron-Epel, O.** (2019). The Role of Non-Medical Factors in Physicians' Decision-Making Process in a Pediatric Telemedicine service. *Health Informatics Journal*. <https://doi.org/10.1177/1460458219870660>

Hayek, S., Tessler, R., Bord, S., Endevelt, R., Satran, C., Livne, I., Khatib, M., Harel-Fish, Y., **Baron-Epel, O.** (2019). Do Israeli Health Promoting Schools Contribute to Students' Healthy Eating and Physical Activity Habits?. *Health Promotion International*. 34(1), 102-112.
<https://doi.org/10.1093/heapro/dax066>

Levin-Zamir D., **Baron-Epel, O.** (2019). Health Literacy in Israel – From Measurement to Intervention: Two Case Studies. In: R. Logan (Ed.), *Health literacy in clinical practice and public health: new initiatives and lessons learned at the intersection with other disciplines.*(Accepted).

Levin-Zamir D., **Baron-Epel, O.** (2019). Health literacy in Israel - from measurement to intervention: two case studies. *Information Services and Use*. (Accepted).

Schor, A., Bergovoy-Yellin, L., Landsberger, D., Kolobov, T., **Baron-Epel, O.** (2019). Multidisciplinary Work Promotes Preventive Medicine and Health Education in Primary Care- A Cross-Sectional Survey. *Israel Journal of Health Policy Research*, 8,50. <https://doi.org/10.1186/s13584-019-0318-4>

Prof. Orna Baron-Epel (continue)

Recent and active Grants:

Baron- Epel, O. Evaluation of nutritional intervention at Mikve Israel. Funded by Ministry of Health.

Baron-Epel, O., & Key, C. Characterization of the factors that influence using online services and their impact on the control of diabetes. Funded by The National Institute for Health Policy Research.

Baron-Epel, O., Obid, S., Bord, S., & Kabaya, D. Development of interventions to prevent brucellosis via community participations. Funded by Ministry of Agriculture.

Baron-Epel, O., & Tesker, R. Participation in a net ball league increases social capital and promotes health and wellbeing- MamaNet. Funded by MOST.

Baron-Epel, O., Tor Sinai, A., et. Attitudes and Changes in Lifestyle, Nutrition, and Physical Activity Patterns among Adolescents: The Role of Social, Economic, Family, and Peer Factors. Funded by MOST.

Dr. Nili Borochoy-Greenberg

Publications:

Greenberg, N., Carel, R.S., Derazne, E., Tiktinsky, A., Tzur, D., & Potnov, B.A. (2019). Assessing Individual Asthma Risk among Young Residing in proximity Petrochemical industrial Area. *Journal of Toxicology and Environmental Health*. (accepted).

Greenberg, N., Carel, R. S., Dubnov, J., Derazne, E., & Portnov, B. A. (2019). Prevalence of Asthma Among Young Men Residing in Urban Areas with Different Sources of Air Pollution. *The Israel Medical Association journal: IMAJ*, 12(21), 785-789.

Recent and active Grants:

Chreuer, N., (PI) & **Greenberg, N.**, (Co-PI). Ergonomic and hygiene intervention for cleaning workers at University of Haifa. Funded by Manof, at the Israel National Insurance Institute.

Prof. Rafael Carel

Publications:

Dahar A., **Carel R. S.**, & Dar G. (2019). Effectiveness of aerobic exercise program of neck pain patients in short and long term follow up: A prospective double blind randomized control trial. *Physical Med Rehab* (accepted).

Greenberg, N., **Carel, R.S.**, Derazne, E., Tiktinsky, A., Tzur, D., & Potnov, B.A. (2019). Assessing Individual Asthma Risk among Young Residing in proximity Petrochemical industrial Area. *Journal of Toxicology and Environmental Health*. (accepted).

Greenberg, N., **Carel, R. S.**, Dubnov, J., Derazne, E., & Portnov, B. A. (2019). Prevalence of Asthma Among Young Men Residing in Urban Areas with Different Sources of Air Pollution. *The Israel Medical Association journal: IMAJ*, 12(21), 785-789.

Marom, B., **Carel, R.S.**, Razon, N., & Sarabi M (2019). Return to work post injury: does ethnicity matters?. *Ethnicity and Health*. (accepted).

Sosna, J., Kettanie, A., Fraifeld, S., Bar-Ziv, J., & **Carel, R. S.** (2019). Prevalence of polyps \geq 6 mm on follow-up CT colonography in a cohort with no significant colon polyps at baseline. *Clinical imaging*, 55, 1-7. <https://doi.org/10.1016/j.clinimag.2019.01.010>

Dr. Yaron Denekamp

Publications:

Gefen, D., Ben-Assuli, O., Stehr, M., Rosen, B., & **Denekamp, Y.** (2019). Governmental intervention in Hospital Information Exchange (HIE) diffusion: a quasi-experimental ARIMA interrupted time series analysis of monthly HIE patient penetration rates. *European Journal of Information Systems*, 1-19.

Topaz, M., Bar-Bachar, O., Admi, H., **Denekamp, Y.**, & Zimlichman, E. (2019). Patient-centered care via health information technology: a qualitative study with experts from Israel and the US. *Informatics for Health and Social Care*, 1-12.

Dr. Jonathan Dubnov

Publications:

Flugelman A.A., **Dubnov J.**, Jacob L., Stein N., Habib S., Rishpon S. (2019). Epidemiologic Surveillance in Israel of Cryptosporidium, a Unique Waterborne Notifiable Pathogen, and Public Health Policy. *Israel Medical Association Journal*, 21(9):589-594.

Greenberg, N., Carel, R. S., **Dubnov, J.**, Derazne, E., & Portnov, B. A. (2019). Prevalence of Asthma Among Young Men Residing in Urban Areas with Different Sources of Air Pollution. *The Israel Medical Association journal: IMAJ*, 12(21), 785-789.

Dr. Roni Elran-Barak

Publications:

Elran-Barak, R., Weinstein G., Beeri, M & Ravona, R. (2019). The associations between objective and subjective health among older adults with type 2 diabetes: The moderating role of personality. *Journal of Psychosomatic Research*, 117, 41-47. <https://doi.org/10.1016/j.jpsychores.2018.12.011>

Elran-Barak, R. (2019). The associations of healthful weight-control behaviors with psychological distress and changes in BMI among young adults (2019). *Journal of Health Psychology (in press)*.

Elran-Barak, R. (2019). Self-esteem, weight status, and trying to lose weight during young adulthood: The roles of gender and ethnicity/race. *Ethnicity and disease* 29(3), 485-494. <https://doi.org/10.18865/ed.29.3.485>

Recent and active Grants:

Elran-Barak, R. Examination of the application process for social security disability among recipients of mental disability benefits: Perceptions of clients and workers. Funded by National Insurance.

Elran-Barak, R. Providing mental support to people with physical or mental illness: The role of online health communities. Funded by The Israel National Institute for Health Policy Research.

Prof. Ronit Endevelt

Publications:

Abu-Saad, K., **Endevelt, R.**, Goldsmith, R., Shimony, T., Nitsan, L., Shahar, D. R. et al. (2019). Adaptation and predictive utility of a Mediterranean diet screener score. *Clinical Nutrition*, 38 (6), 2928-2935. <https://doi.org/10.1016/j.clnu.2018.12.034>

HaGani, N., Moran, M. R., Caspi, O., Plaut, P., **Endevelt, R.**, & Baron-Epel, O. (2019). The Relationships between Adolescents' Obesity and the Built Environment: Are They City Dependent?. *International journal of environmental research and public health*, 16(9), 1579. <https://doi.org/10.3390/ijerph16091579>

Tesler, R., Plaut, P., & **Endvelt, R.** (2018). The effects of an Urban Forest Health Intervention Program on physical activity, substance abuse, psychosomatic symptoms, and life satisfaction among adolescents. *International journal of environmental research and public health*, 15(10), 2134. <https://doi.org/10.3390/ijerph15102134>

Prof. Anat Gesser-Edelsburg

Publications:

Abed Elhadi Shahbari, N., **Gesser-Edelsburg, A.**, Mesch, G. S. (2019). Case of paradoxical cultural sensitivity: Mixed method study of Web-Based health informational materials about the Human Papillomavirus Vaccine in Israel. *Journal of Medical Internet Research*. Vol. 21(5):e13373.

Abed Elhadi Shahbari, N., **Gesser-Edelsburg, A.**, Mesch, G. S. (Epub October 11, 2019). Perceived trust in the health system among mothers and nurses and its relationship to the issue of vaccinations among the Arab population of Israel: A qualitative research study. *Vaccine*.

Cohen, R., **Gesser-Edelsburg, A.**, Singhal, A., Benenson, S., Moses, A. E. (2019). Deconstruction of central line insertion guidelines based on the positive deviance approach - reducing gaps between guidelines and implementation: A qualitative ethnographic research. *PLOS ONE*, 14(9): e0222608.

Gesser -Edelsburg, A. (2019). Risk communication and infectious diseases in an age of digital media. *International Journal of Infectious Disease*. Vol 79 (Suppl. 1): 130-131.

Gesser-Edelsburg, A., Abed Elhadi Shahbari, N., Cohen, R., Mir Halavi, A., Hijazi, R., Paz-Yaakovovitch, G., Birman, Y. (2019). Differences in perceptions of health information between the public and health care professionals: A non-probability sampling questionnaire survey. *Journal of Medical Internet Research*. Vol. 21(7):e14105.

Gesser-Edelsburg, A., Cohen, R., Diamant, A. (Epub November 29, 2019). Experts' views on the gaps in public health emergency preparedness in Israel: a qualitative case study. *Disaster Medicine and Public Health Preparedness*.

Gesser-Edelsburg, A., Cohen, R., Zemach, M., Mir Halavi, A. (2019, Epub July 27, 2019). Discourse on hygiene between hospitalized patients and healthcare workers as an accepted norm: Making it legitimate to remind healthcare workers about hand hygiene. *American Journal of Infection Control*.

Gesser-Edelsburg, A., Hamade Boukai, R. (2019). Does the education system serve as a persuasion agent for recommending ADHD diagnosis and medication uptake? A qualitative case study to identify and characterize the persuasion strategies of Israeli teachers and school counselors. *BMC Psychiatry*. Vol. 19:153.

Keisari, S., Yaniv, D., Palgi, Y., **Gesser-Edelsburg, A.** (2019). Conducting playback theatre with older adults – A therapist's perspective. *Journal of Psychotherapy*. Vol 34/19. (In Hebrew).

Prof. Anat Gesser-Edelsburg (continue)

Recent and active Grants:

Ben-Haim, Y., Avni, R., **Gesser-Edelsburg, A.**, Ben-Eliyahu, A., & Yahav, R. A surprise resistant readiness in extreme events: Multi-focus fires and earthquakes. Funded by The National Knowledge Center for Disaster and Emergency Management.

Gesser-Edelsburg, A. Locating positive behaviors by the Positive Deviance Approach at the Bedouin Society in the Negev, to Promote a safe world to the Israeli Bedouin Children. Funded by Beterem - Safe Kids Israel.

Gesser-Edelsburg, A., Lowenstein, L., Salmon, A., & Shteinberg, D. Developing a model based on the Positive Deviance strategy, to prevent hospital-acquired infections in Israel. Funded by The Israel National Institute for Health Policy Research.

Gesser-Edelsburg, A., Negev, M. Mesch, G., & Miron-Shatz, T. Earthquake preparedness experiment for developing strategies to motivate the Israeli public's Seismic adjustment behavior. Funded by State of Israel, Ministry of Science and Technology (MOST).

Levin, H., Golan, R., Kloog, I., Koren, G., Almog, R., **Gesser-Edelsburg, A.** Environmental Exposures and Fetal Growth: The Haifa Pregnancy Cohort Study. Funded by State of Israel, The Ministry of Environmental Protection.

Dr. Pavel Goldstein

Publications:

Josef, L*, **Goldstein, P***, Maysless, N., Ayalon, L., & Shamay-Tsoory, S. G. (2019). The oxytocinergic system mediates synchronized interpersonal movement during dance. *Scientific Reports*, 9(1), 1-8. <https://doi.org/10.1038/s41598-018-37141-1>

Pan, Y., Dikker, S., **Goldstein, P.**, Zhu, Y., Yang, C., & Hu, Y. (2019). Instructor-learner brain coupling discriminates between instructional approaches and predicts learning. *bioRxiv* 704239. <https://doi.org/10.1101/704239>

Weiner, A., **Goldstein, P.**, Alkoby, O., Doenyas, K., & Okon-Singer, H. (2019). Blood pressure reaction to negative stimuli: Insights from continuous recording and analysis. *Psychophysiology* (accepted).

Zheng, W., Woo, C. W., Yao, Z., **Goldstein, P.**, Atlas, L. Y., Roy, M., et al. (2019). Pain-Evoked Reorganization in Functional Brain Networks. *Cerebral Cortex*. <https://doi.org/10.1093/cercor/bhz276>

*Equal contribution

Prof. Manfred Green

Publications:

Burstein R, Henry NJ, Collison ML, et al. (**Green MS** is one of the authors listed). (2019). Global Burden of Disease Collaboration. Mapping 123 million neonatal, infant and child deaths between 2000 and 2017. *Nature*, 574, 353-358. <https://doi.org/10.1038/s41586-019-1545-0>

Green, M. S., LeDuc, J., Cohen, D., & Franz, D. R. (2019). Confronting the threat of bioterrorism: realities, challenges, and defensive strategies. *The Lancet Infectious Diseases*, 19(1), e2-e13. [https://doi.org/10.1016/S1473-3099\(18\)30298-6](https://doi.org/10.1016/S1473-3099(18)30298-6)

Hagani, N. S., Hayek, S., **Green, M. S.**, Tarabeia, J., & Yehia, M. (2019). Fear of catastrophic health expenditures and unrealistic expectations from supplementary health insurance: Ethnic differences. *International Health*, 11(4), 283-289. <https://doi.org/10.1093/inthealth/ihy089>

Low, M., Neuberger, A., Hooton, T. M., **Green, M. S.**, Raz, R., Balicer, R. D., & Almog, R. (2019). Association between urinary community-acquired fluoroquinolone-resistant *Escherichia coli* and neighbourhood antibiotic consumption: a population-based case-control study. *The Lancet Infectious Diseases*, 19(4), 419-428. [https://doi.org/10.1016/S1473-3099\(18\)30676-5](https://doi.org/10.1016/S1473-3099(18)30676-5)

Peer, V. S., Schwartz, N., & **Green, M. S.** (2019). Consistent, Excess Viral Meningitis Incidence Rates in Young Males: A Multi-country, Multi-year, Meta-analysis of National Data. The Importance of Sex as a Biological Variable. *EClinicalMedicine*, 15, 62-71. <https://doi.org/10.1016/j.eclinm.2019.08.006>

Recent and active Grants:

Green, M. S. (PI). A study of the perceived effects of medical cannabis. Funded by Israel Institute for Health Policy Research.

Green, M. S. (PI). Supplementary health insurance literacy. Funded by Israel Institute for Health Policy Research.

Prof. Lital Keinan-Boker

Publications:

Abu-Saad, K., Endevelt, R., Goldsmith, R., Shimony, T., Nitsan, L., Shahar, D.R, **Keinan-Boker, L.**, et al. (2019). Adaptation and predictive utility of a Mediterranean diet screener score. *Clinical Nutrition* 38, 6, 2928–2935. <https://doi.org/10.1016/j.clnu.2018.12.034>

Attias, S., Schiff, E., Arnon, Z., Nae, B., Somri, M., Avneri, O., Gross, Y., **Keinan Boker, L.** (2019). Using a Delphi consensus process to develop a structured reflexology treatment protocol to reduce preoperative anxiety. *Complementary Therapies in Clinical Practice*, 35, 353–360. <https://doi.org/10.1016/j.ctcp.2019.03.016>

Bixby, H., Bentham, J., Zhou, B., Di Cesare, M., Paciorek, C. J., & NCD Risk Factor Collaboration. (2019). Rising rural body-mass index is the main driver of the global obesity epidemic. *Nature*, (569), 260-264. <https://doi.org/10.1038/s41586-019-1171-x>

Brenner, R., Kivity, S., Peker, M., Reinhorn, D., **Keinan-Boker, L.**, Silverman, B., et al., (2019). "Increased risk for cancer in young patients with severe obstructive sleep apnea. *Respiration*, 97(1), 15-23. <https://doi.org/10.1159/000486577>

Buch, A#, Eldor, R., Kis, O., **Keinan-Boker, L.**, Dunsky, A., Rubin, A., et al. (2019). The effect of circuit resistance training, empagliflozin or "vegeterranean diet" on physical and metabolic function in older subjects with type 2 diabetes: A study protocol for a randomized control trial (CEV-65 trial). *BMC Geriatrics* 19, 1, 1–12. <https://doi.org/10.1186/s12877-019-1219-7>

Cohen-Castel O#, Shadmy E, **Keinan Boker, L.**, Dagan E. (2019). The association between patients' perceived continuity of care and beliefs about oral anticancer treatment. *Supportive Care in Cancer* 27, 9, 3545–3553. <https://doi.org/10.1007/s00520-019-04668-6>

Dankner, R., Agay, N., Olmer, L., Murad, H., **Keinan Boker, L.**, Balicer, R. D., & Freedman, L. S. (2019). Metformin Treatment and Cancer Risk: Cox Regression Analysis, With Time-Dependent Covariates, of 320,000 Persons With Incident Diabetes Mellitus. *American journal of epidemiology*, 188(10), 1794-1800. <https://doi.org/10.1093/aje/kwz157>

Flugelman, A. A., Stein, N., Segol, O., Lavi, I., & **Keinan-Boker, L.** (2019). Delayed Colonoscopy Following a Positive Fecal Test Result and Cancer Mortality. *JNCI Cancer Spectrum*, 3(2), pkz024. <https://doi.org/10.1093/jncics/pkz024>

Goshen, A., Goldbourt, U., Shohat, T., Shimony, T., **Keinan-Boker, L.**, & Gerber, Y. (2019). Diet quality in relation to healthy ageing: the Israeli Longitudinal Study on Aging (ILSA)—a study protocol. *BMJ open*, 9(4), e024673. <https://doi.org/10.1136/bmjopen-2018-024673>

Prof. Lital Keinan-Boker (continue)

Publications (continue):

Hamood, R., Hamood, H., Merhasin, I., & **Keinan-Boker, L.** (2019). Risk of cardiovascular disease after radiotherapy in survivors of breast cancer: A case-cohort study. *Journal of cardiology*, 73(4), 280-291. <https://doi.org/10.1016/j.jjcc.2018.10.009>

Hamood, R., Hamood, H., Merhasin, I., & **Keinan-Boker, L.** (2019). Hormone therapy and osteoporosis in breast cancer survivors: assessment of risk and adherence to screening recommendations. *Osteoporosis International*, 30(1), 187-200. <https://doi.org/10.1007/s00198-018-4758-4>

Hamood, R., Hamood, H., Merhasin, I., & **Keinan-Boker, L.** (2019). Work Transitions in Breast Cancer Survivors and Effects on Quality of Life. *Journal of occupational rehabilitation*, 29(2), 336-349. <https://doi.org/10.1007/s10926-018-9789-3>

Izkhakov, E., Meyerovitch, J., Barchana, M., Shacham, Y., Stern, N., & **Keinan-Boker, L.** (2019). Long-term cardiovascular and cerebrovascular morbidity in Israeli thyroid cancer survivors. *Endocrine connections*, 8(4), 398-406. <https://doi.org/10.1530/EC-19-0038>

Izkhakov, E., Vaisman, N., Barnes, S., Barchana, M., Stern, N., & **Keinan-Boker, L.** (2019). Body composition, resting energy expenditure and metabolic changes in women diagnosed with differentiated thyroid carcinoma. *Thyroid*, 29, 8, 144–1051. <https://doi.org/10.1089/thy.2018.0483>

Laitman, Y., Michaelson-Cohen, R., Levi, E., Chen-Shtoyerman, R., Reish, O., Josefsberg Ben-Yehoshua, S., Bernstein-Molho, R. **Keinan-Boker, L.**, et al.. (2019). Uterine cancer in Jewish Israeli BRCA1/2 mutation carriers. *Cancer*, 125(5), 698-703. <https://doi.org/10.1002/cncr.31842>

Levi, Z., Rottenberg, Y., Twig, G., Katz, L., Leiba, A., Derazne, E., Tzur, D., Eizenstein, S., **Keinan-Boker, L.**, et al. (2019). Adolescent overweight and obesity and the risk for pancreatic cancer among men and women: a nationwide study of 1.79 million Israeli adolescents. *Cancer*, 125(1), 118-126. <https://doi.org/10.1002/cncr.31764>

Raz, Y., **Keinan-Boker, L.**, Goren, S., Cohen, D., Grisaru, D. (2019). The effect of age at migration on cervical cancer incidence: a population-based cohort study of 1,486,438 Israeli women. *International Journal of Gynecological Cancer* 29(3),492-496. <https://doi.org/10.1136/ijgc-2018-000053>

Prof. Lital Keinan-Boker (continue)

Recent and active Grants:

Berman, T., (PI) & **Keinan-Boker, L.** Biomonitoring in Israel. Funded by Environment and Health Fund (EHF).

Keinan-Boker, L., PIs- Kark, J.D., Ben-Dov, I., & Klotstein, M. The association of exposure in adolescence to environmental pollution in the Haifa Bay Area with health outcomes at age 17, DNA/RNA markers of risk at age 18-22 and cancer incidence in adulthood. Funded by Ministry of Environment Protection.

Keinan-Boker, L., Shasha, S., & Offer, M. (Co-PIs). Long-term health outcomes in offspring of Holocaust survivors. Funded by Israeli Ministry of Science.

Prof. Yael Latzer

Publications:

Dor-Ham, M., Yaruslavsky, A., Lev Azolay, T., Dascal, T., Toledano, A., **Latzer, Y.**, Stein, D. (2019). A Dyadic Group Movement Therapy with Adolescent Girls with Eating Disorders. *Journal of Clinical Psychology*, 75 (8), 1429-1443. <https://doi.org/10.1002/jclp.22785>

Enten-Vissoker, R.E, **Latzer Y.**, Stolar, O, Rabenbach, A. & Gal, E. (2019). Eating problems and patterns among toddlers and young children with and without autism spectrum disorders. *Research in Autism Spectrum Disorders*. 59, 1-9. <https://doi.org/10.1016/j.rasd.2018.12.001>

Latzer, Y. (2019). Stopping the Revolving Door: “Zeida Laderech,” A Unique Rehabilitation House for Young Adults with Severe and Enduring Eating Disorders. *Journal of Clinical Psychology*, 75 (8), 1469-1481. <https://doi.org/10.1002/jclp.22791>

Latzer, Y., & Stein, D. (2019). Introduction: Novel perspectives on the psychology and psychotherapy of eating disorders. *Journal of Clinical Psychology*, 75(8), 1369–1379. <https://doi.org/10.1002/jclp.22786>

Latzer, Y., Stein, D., & Witztum, E. (2019). Treating ultra-orthodox adolescents with eating disorders in Israel: Culturally-sensitive interventions, difficulties, and dilemmas. *Journal of Clinical Psychology*, 75(8), 1455–1468. <https://doi.org/10.1002/jclp.22790>

Latzer, L., Weinberger-Litman., S., Spivak-Lavi, Z., & Tzischinsky, O. (2019) The relationship between disordered eating pathology, Sense of coherence and Body Image among Adolescent Girls in Israel. *Community mental health journal*, 55(7), 1246-1252.

Recent and active Grants:

Latzer, L., Ron, P., & Lin, S. (Co-PIs). Don't cast me off in my old age: Privatization of health services, its implications on the elderly and their families in Israel. Funded by National Institution for Health Services and Policy, Gertner.

Prof. Diane Levin-Zamir

Publications:

Levin-Zamir, D., Bertschi, I. (2019). Media Health Literacy, e-mHealth literacy and health behaviour across the lifespan – current progress and future challenges. In: O. Okan, U. Bauer, **D. Levin-Zamir**, P. Pinheiro, K. Sorensen (Eds.), *International Handbook on Health Literacy* (pp. 275-290). Great Britain: Policy Press.

Levin-Zamir, D., Nutbeam, D., Sorensen, K., Rowlands, G., Van den Broucke, S., Pelikan, J. for the International Union for Health Promotion and Education Global Working Group on Health Literacy (2019) Brief report on the International Union for Health Promotion and Education (IUHPE) position statement on health literacy: a practical vision for a health literate world. *Panorama for Public Health*, World Health Organization, European Region, 5 (2–3), 206-208.

Levin-Zamir D., Baron-Epel, O. (2019). Health Literacy in Israel – From Measurement to Intervention: Two Case Studies. In: R. Logan (Ed.), *Health literacy in clinical practice and public health: new initiatives and lessons learned at the intersection with other disciplines.*(Accepted).

Levin-Zamir, D., Leung, A. Digital Health *Encyclopedia of Gerontology and Population Aging.* (Accepted)

Okan, O., Bauer, U., **Levin-Zamir, D.** Pinheiro, P Sorensen, K. (Eds.). (2019). *International Handbook on Health Literacy.* Great Britain: Policy Press.

Rowlands, G., Protheroe, J., Saboga Nunes, L.,, Van den Broucke, S., **Levin-Zamir, D.**, & Okan, O. (2019). Health literacy and chronic illness. In: O. Okan, U. Bauer, **D. Levin-Zamir**, P. Pinheiro, K. Sorensen (Eds.), *International Handbook on Health Literacy* (pp. 183-197). Great Britain: Policy Press.

Sorensen, K. **Levin-Zamir, D.**, Trezona, A., Kosir, U., Nutbeam, D. (2019). Transforming health systems and societies by investing in health literacy policy and strategy. *Panorama for Public Health*, World Health Organization, European Region; 5 (2–3), 259-263.

Recent and active Grants:

Paños, J.P, Moreno, I.R.S, **Levin-Zamir, D**, et al. International Consortium: IT Solutions for promoting well-being among elderly with cognitive decline. Funded by: European Commission, EU, Horizon.

Prof. Shai Linn

Publications:

Feeney, O., Werner-Felmayer, G., Siipi, H., Frischhut, M., Zullo, S., Barteczko, U., Øystein Ursin, L., **Linn, S.**, Felzmann, H., et al. (2019). European Electronic Personal Health Records initiatives and vulnerable migrants: A need for greater ethical, legal and social safeguards. *Developing world bioethics*. DOI: 10.1111/dewb.12240

Feeney, O., Werner-Felmayer, G., Siipi, H., Frischhut, M., Zullo, S., Barteczko, U., Øystein Ursin, L., **Linn, S.**, et al. (2019). eHealth responses to crisis migration: some ELSI considerations. In: Eduardo Rueda, Juan Jorge Michel Fariña and Andrea Hellemeyer (eds) *Bioethics and Human Rights – accepted and forthcoming [in Spanish]*

Feigin, V. L., Nichols, E., Alam, T., Bannick, M. S., Beghi, E., Blake, N., **Linn, S.**, et al. (2019). Global, regional, and national burden of neurological disorders, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet Neurology*, 18(5), 459-480.
[https://doi.org/10.1016/S1474-4422\(19\)30034-1](https://doi.org/10.1016/S1474-4422(19)30034-1)

GBD 2017 Population and Fertility Collaborators . Salahshoor, M. R., & Yasin, Y. J. (2019). Population and Fertility Collaborators. Population and fertility by age and sex for 195 countries and territories, 1950-2017: a systematic analysis for the Global Burden of Disease Study. *LANCET*, 393(10190), E44-E44.

GBD 2017 Risk Factor Collaborators. Yasin, Y. J., Banoub, J. A. M., & Kanchan, T. (2019). Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017 (vol 392, pg 1923, 2017). *LANCET*, 393(10190), E44-E44.

Dr. Maya Negev

Publications:

Goulden, S., Negev, M., Reicher, S., & Berman, T. (2019). Implications of standards in setting environmental policy. *Environmental Science & Policy*, 98, 39-46.
<https://doi.org/10.1016/j.envsci.2019.05.002>

Negev M. (2019). The impact of public policy on public health: health impact assessment as a tool for integrating health considerations in decision-making. *Ecology and Environment*, 10(3), 16-21. In Hebrew.

Negev, M., Sagie, H., Orenstein, D. E., Shamir, S. Z., Hassan, Y., Amasha, H., et al. (2019). Using the ecosystem services framework for defining diverse human-nature relationships in a multi-ethnic biosphere reserve. *Ecosystem Services*, 39. <https://doi.org/10.1016/j.ecoser.2019.100989>

Negev, M., Teschner, N. A., Rosenthal, A., Levine, H., Lew-Levy, C., & Davidovitch, N. (2019). Adaptation of health systems to climate-related migration in Sub-Saharan Africa: Closing the gap. *International journal of hygiene and environmental health*, 222(2), 311-314.
<https://doi.org/10.1016/j.ijheh.2018.10.004>

Raviv, O., Shamir, S. Z., Izhaki, I., Sagie, H., Negev, M., Mazor-Tregerman, M., et al. (2020). The socioeconomic value of multiple ecosystem types at a biosphere reserve as a baseline for one holistic conservation plan. *Ecosystem Services*, 41. <https://doi.org/10.1016/j.ecoser.2019.101043>

Zarhin, D., Negev, M., Vulfsons, S., & Sznitman, S. R. (2019). “Medical Cannabis” as a Contested Medicine: Fighting Over Epistemology and Morality. *Science, Technology, & Human Values*.
<https://doi.org/10.1177/0162243919862866>

Recent and active Grants:

Negev, M. Chemicals in flooring surfaces: Quantitative Analysis and Regulatory Assessment. Funded by Environment and Health Fund.

Negev, M., Feitelson, E., Razin, E., & Segal, E. (Co-PIs). Policy Packages for Preparedness to Earthquakes. Funded by Ministry of Science and Technology.

Negev, M., Gesser-Edelsburg, A., Mesch, G., & Miron-Shatz, T. (Co-PIs). Earthquake Preparedness Experiment for Developing Strategies to Motivate the Israeli Public’s Seismic Adjustment Behavior. Funded by Ministry of Science and Technology.

Dr. Maya Negev (continue)

Recent and Grants (continue):

Negev, M., & Kaphzan, H. (Co-PI). Delphi study of telepsychiatry policy. Funded by Israel National Institute for Health Policy Research.

Negev, M., Paz, S., Nouman, H., Zohar, M., & Levine, H. Developing urban community resilience and spatial planning schemes for emergency readiness. Funded by National Knowledge Center for Disaster and Emergency Management.

Negev, M., & Nouman, H. (Co-PI). Involvement of street-level-bureaucrats in designing emergency policy in Arab towns. Funded by Research Committee, Faculty of Social Welfare and Health Sciences, University of Haifa.

Dr. Maya Peled-Raz

Publications:

Peled-Raz, M., Willner, N., Shteinberg, D., Or-Chen, K., & Rainis, T. (2019). Digital recording and documentation of endoscopic procedures: physicians' practice and perspectives. *Israel journal of health policy research*, 8(1), 1-12. <https://doi.org/10.1186/s13584-019-0332-6>

Prof. Shmuel Rishpon

Publications:

Aharon, A. A., Nehama, H., **Rishpon, S.**, & Baron-Epel, O. (2019). Different Reasons for Not Completing Routine Vaccinations Among Jewish and Arab Children in Israel. *Journal of Racial and Ethnic Health Disparities*, 1-7. <http://doi.org/10.1007/s40615-019-00658-w>

Flugelman, A. A., Dubnov, J., Jacob, L., Stein, N., Habib, S., & **Rishpon, S.** (2019). Epidemiologic Surveillance in Israel of Cryptosporidium, a Unique Waterborne Notifiable Pathogen, and Public Health Policy. *The Israel Medical Association journal: IMAJ*, 21(9), 589-594.
<https://www.ima.org.il/FilesUpload/IMAJ/0/381/190918.pdf>

Shibli, R., & **Rishpon, S.** (2019). The factors associated with maternal consent to human papillomavirus vaccination among adolescents in Israel. *Human vaccines & immunotherapeutics*, 1-7.
<https://doi.org/10.1080/21645515.2019.1631139>
<https://www.tandfonline.com/eprint/QM39N7JTWJVHIAPX4HYF/full?target=10.1080/21645515.2019.1631139>

Dr. Rana Shibli

Publications:

Shibli, R., & Rishpon, S. (2019). The factors associated with maternal consent to human papillomavirus vaccination among adolescents in Israel. *Human vaccines & immunotherapeutics*, 15 (12), 3009-3015.
<https://doi.org/10.1080/21645515.2019.1631139>

Prof. Kerem Shuval

Publications:

GBD Working Group (including **Shuval K**). (2019). Mapping 132 million neonatal, infant, and child deaths between 2000 and 2017. *Nature*, 574, 353-358. <https://doi.org/10.1038/s41586-019-1545-0>

Knell, G., Brown, H. S., Gabriel, K. P., Durand, C. P., **Shuval, K.**, Salvo, D., & Kohl III, H. W. (2019). Cost-Effectiveness of Improvements to the Built Environment Intended to Increase Physical Activity. *Journal of Physical Activity and Health*, 16(5), 308-317. <https://doi.org/10.1123/jpah.2018-0329>

Knell, G., Salvo, D., **Shuval, K.**, Durand, C.P, Kohl, W., Gabriel, K.P. (2019). A methodological approach to predict return rates of self-administered data collection instruments: minimizing loss and missing data while optimizing study resources. *Journal for the Measurement of Physical Behaviour*. In Press.

Shuval, K., Fennis, B. M., Li, Q., Grinstein, A., Morren, M., & Drope, J. (2019). Health & Wealth: is weight loss success related to monetary savings in US adults of low-income? Findings from a National Study. *BMC public health*, 19(1), 1-7. <https://doi.org/10.1186/s12889-019-7711-3>

Sung, H., Siegel, R.L., Torre, L.A., Pearson-Stuttard, J., Islami, F., Fedewa, S., Sauer, A.G., **Shuval, K.** et al. (2019). Global patterns in excess body weight and the associated cancer burden. *CA: A Cancer Journal for Clinicians* 69, 2, 88–112. <https://doi.org/10.3322/caac.21499>

Tesler, R., Kolobov, T., Ng, K. W., Shapiro, E., Walsh, S. D., **Shuval, K.**, & Harel-Fisch, Y. (2019). Ethnic Disparities in Physical Activity among Adolescents in Israel. *American journal of health behavior*, 43(2), 337-348. <https://doi.org/10.5993/AJHB.43.2.10>

Vainshelboim, B., Lima, R. M., **Shuval, K.**, Pettee, K. G., & Myers, J. (2019). Precancer diagnosis cardiorespiratory fitness, physical activity and cancer mortality in men. *The Journal of sports medicine and physical fitness*, 59(8), 1405-1412. [10.23736/s0022-4707.18.08989-2](https://doi.org/10.23736/s0022-4707.18.08989-2)

Recent and Grants (continue):

Shuval, K. (PI) .Tobacco Economics & Smoking Behavior in Israel. Funded by American Cancer Society.

Dr. Sharon Sznitman

Publications:

Decorte, T., Malm, A., **Sznitman, S. R.**, Hakkarainen, P., Barratt, M. J., Potter, G. R. et al. (2019). The challenges and benefits of analyzing feedback comments in surveys: Lessons from a cross-national online survey of small-scale cannabis growers. *Methodological Innovations*, 12(1), 2059799119825606. <https://doi.org/10.1177/2059799119825606>

Lewis, N., & **Sznitman, S. R.** (2019). Engagement with medical cannabis information from online and mass media sources: Is it related to medical cannabis attitudes and support for legalization?. *International Journal of Drug Policy*. <https://doi.org/10.1016/j.drugpo.2019.01.005>

Sznitman, S. R., Barratt, M. J., Decorte, T., Hakkarainen, P., Lenton, S., Potter, G., Et al. (2019). Do medical cannabis growers attempt to produce cannabis with different cannabinoid concentrations than recreational growers?. *Drugs and Alcohol Today*, 19(4), 251–256. <https://doi.org/10.1108/DAT-06-2019-0021>

Sznitman, S. R., Goldberg, V., Sheinman-Yuffe, H., Zolotov, Y., Flechter, E., & Bar-Sela, G. (2019). Long-term medical cannabis use and risk factors for diversion: report on physician's guidance and patients' behaviour. *Palliative & supportive care*, 1-6. <https://doi.org/10.1017/S1478951519000348>

Tandowski, A., Zolotov, Y., & **Sznitman, S. R.** (2019). Do users of diverted medical cannabis differ from other cannabis users?. *Journal of studies on alcohol and drugs*, 80(1), 42-45. <https://doi.org/10.15288/jsad.2019.80.42>

Zarhin, D., Negev, M., Vulfsons, S., & **Sznitman, S. R.** (2019). “Medical Cannabis” as a Contested Medicine: Fighting Over Epistemology and Morality. *Science, Technology, & Human Values*. <https://doi.org/10.1177/0162243919862866>

Zolotov, Y., **Sznitman, S.**, & Vulfsons, S. (2019). Validation of Clinical Vignettes to Explore Medical Cannabis Practices. *The Israel Medical Association journal: IMAJ*, 21(11), 710-715.

Zolotov, Y., Vulfsons, S., & **Sznitman, S.** (2019). Predicting Physicians' Intentions to Recommend Medical Cannabis. *Journal of pain and symptom management*, 58(3), 400-407. <https://doi.org/10.1016/j.jpainsymman.2019.05.010>

Dr. Sharon Sznitman

Recent and active Grants:

Sznitman, S., & Greene, T. (Co-PI). Sleep, cannabis and emotional regulation. Funded by Faculty of Social Welfare and Health Sciences.

Sznitman, S. & Lewis, N. (Co-PI). Developing and testing media campaign messages to reduce the risk of cannabis-impaired driving. Funded by Israeli Insurance Funds.

Negev, M (PI), Kafzan, H. (PI), Zarfati, M. (PI), **Sznitman, S.**, (co-investigator) Identifying perceptions and barriers to the implementation of telepsychiatry among decision makers, physicians and patients in mental health services in Israel, for the purpose of formulating strategic and logistical planning recommendations. Funded by The Israeli National Institute for Health Policy Research.

Sznitman, S., & Greene, T. (Co-PI). Sleep, cannabis and emotional regulation. Funded by Faculty of Social Welfare and Health Sciences.

Sznitman, S. & Lewis, N. (Co-PI). Developing and testing media campaign messages to reduce the risk of cannabis-impaired driving. Funded by Israeli Insurance Funds.

Dr. Galit Weinstein

Publications:

Elran-Barak, R., **Weinstein, G.**, Beerli, M. S., & Ravona-Springer, R. (2019). The associations between objective and subjective health among older adults with type 2 diabetes: The moderating role of personality. *Journal of psychosomatic research*, 117, 41-47.

<https://doi.org/10.1016/j.jpsychores.2018.12.011>

Lutski, M., **Weinstein, G.**, Goldbourt, U., & Tanne, D. (2019). Plasma Lipids, Apolipoproteins, and Subsequent Cognitive Decline in Men with Coronary Heart Disease. *Journal of Alzheimer's disease: JAD*, 67(3), 827-837. <https://doi.org/10.3233/JAD-180849>

Lutski, M., **Weinstein, G.**, Tanne, D., & Goldbourt, U. (2019). Angina pectoris severity and late-life frailty among men with cardiovascular disease. *The Aging Male*, 1-8.

<https://doi.org/10.1080/13685538.2019.1657082>

Weinstein, G., Davis-Plourde, K. L., Conner, S., Himali, J. J., Beiser, A. S., Lee, A., & Van Duijn, C. M. (2019). Association of metformin, sulfonylurea and insulin use with brain structure and function and risk of dementia and Alzheimer's disease: Pooled analysis from 5 cohorts. *PloS one*, 14(2), e0212293.

<https://doi.org/10.1371/journal.pone.0212293>

Weinstein, G., Davis-Plourde, K., Himali, J.J., Zelber-Sagi, S., Beiser, A.S., and Seshadri, S. (2019). Non-alcoholic fatty liver disease, liver fibrosis score and cognitive function in middle-aged adults: The Framingham Study. *Liver International* 39(9), 1713–1721. <https://doi.org/10.1111/liv.14161>

Weinstein, G., Elran Barak, R., Schnaider Beerli, M., & Ravona-Springer, R. (2019). Personality traits and cognitive function in old-adults with type-2 diabetes. *Aging & mental health*, 23(10), 1317-1325.

<https://doi.org/10.1080/13607863.2018.1493720>

Weinstein, G., Lutski, M., Goldbourt, U., & Tanne, D. (2019). Midlife resting heart rate, but not its visit-to-visit variability, is associated with late-life frailty status in men with coronary heart disease. *The Aging Male*, 1-7. <https://doi.org/10.1080/13685538.2019.1664456>

Prof. Shira Zelber-Sagi

Publications:

Azar, S., Sherf-Dagan, S., Nemirovski, A., Webb, M., Raziell, A., Keidar, A.,... & **Zelber-Sagi, S.** (2019). Circulating Endocannabinoids Are Reduced Following Bariatric Surgery and Associated with Improved Metabolic Homeostasis in Humans. *Obesity surgery*, 29(1), 268-276. <https://doi.org/10.1007/s11695-018-3517-0>

Fliss-Isakov, N., Grosso, G., Salomone, F., Godos, J., Gavalno, F., Ivancovsky-Wajcman, D., ... & **Zelber-Sagi, S.** (2019). High Intake of Phenolic Acid Is Associated With Reduced Risk of Colorectal Adenomas Among Smokers. *Clinical Gastroenterology and Hepatology*. <https://doi.org/10.1016/j.cgh.2019.08.038>

Fliss-Isakov, N., Kariv, R., Webb, M., Ivancovsky-Wajcman, D., Zaslavsky, O., Margalit, D., ... & **Zelber-Sagi, S.** (2019). A healthy lifestyle pattern has a protective association with colorectal polyps. *European journal of clinical nutrition*, 1-10. <https://doi.org/10.1038/s41430-019-0481-2>

Ivancovsky-Wajcman, D., Fliss-Isakov, N., Salomone, F., Webb, M., Shibolet, O., Kariv, R., & **Zelber-Sagi, S.** (2019). Dietary vitamin E and C intake is inversely associated with the severity of nonalcoholic fatty liver disease. *Digestive and Liver Disease* , 51(12), 1698–1705. <https://doi.org/10.1016/j.dld.2019.06.005>

Ivancovsky-Wajcman, D., **Zelber-Sagi, S.**, Isakov, N. F., Webb, M., Zemel, M., Shibolet, O., & Kariv, R. (2019). Serum Soluble Receptor for AGE (sRAGE) Levels Are Associated With Unhealthy Lifestyle and Nonalcoholic Fatty Liver Disease. *Clinical and translational gastroenterology*, 10(5), 1-10. <https://doi.org/10.14309/ctg.0000000000000040>

Merli, M., Berzigotti, A., **Zelber-Sagi, S.**, Dasarathy, S., Montagnese, S., Genton, L., Plauth, M., Parés, A. (2019). EASL Clinical Practice Guidelines on nutrition in chronic liver disease. *Journal of Hepatology*, 70(1), 172-193. <https://doi.org/10.1016/j.jhep.2018.06.024>

Policy statement of the European Association for the Study of Liver Disease (EASL). Obesity is feeding the rise in Non-Alcoholic Fatty Liver Disease (NAFLD) across Europe. 2019.

Ryan, M.C., **Zelber-Sagi, S.** (2019). Hepatic fat: Pathogenic trigger or passenger? *Journal of Hepatology*, 71(2), 249-251. <https://doi.org/10.1016/j.jhep.2019.05.016>

Sherf-Dagan, S., **Zelber-Sagi, S.**, Buch, A., Bar, N., Webb, M., Sakran, N., et al. (2019). Prospective Longitudinal Trends in Body Composition and Clinical Outcomes 3 Years Following Sleeve Gastrectomy. *Obesity surgery*, 1-9. <https://doi.org/10.1007/s11695-019-04057-2>

Prof. Shira Zelber-Sagi (continue)

Publications (continue):

Weinstein, G., Davis-Plourde, K., Himali, J. J., **Zelber-Sagi, S.**, Beiser, A. S., & Seshadri, S. (2019). Non-Alcoholic Fatty Liver Disease, Liver Fibrosis Score and Cognitive Function in Middle-Aged Adults: The Framingham Study. *Liver International: official journal of the International Association for the Study of the Liver*, 1713-1721. <https://doi.org/10.1111/liv.14161>

Zelber-Sagi, S. (2019). Minding the gap between clinical trials and treatment with the Mediterranean dietary pattern for patients with nonalcoholic fatty Liver disease. *Clinical Gastroenterology Hepatology*, 17(7), 1248-1250. <https://doi.org/10.1016/j.cgh.2019.01.010>

Zelber-Sagi, S., Zur, R., Thurm, T., Goldstein, A., Ben-Assuli, O., Chodick, G., Shibolet, O. (2019). Low serum vitamin D is independently associated with unexplained elevated ALT only among non-obese men in the general population. *Annals of Hepatology*. 18 (4), 578-584. <https://doi.org/10.1016/j.aohep.2019.03.006>

Zelber-Sagi, S., Yeshua, C., Margalit, M., Shibolet, O. (2019). The fatty liver: association with type 2 Diabetes and methods of treatment. In: A. Choen. & I. Raz (Eds.), *The Guide for the treatment of diabetes* (pp.). Medical Group, The National Council of Diabetes and The Ministry of Health: Tel – Aviv.

Zelber Sagi S. Assessment and relevance of sarcopenia and frailty. In: EASL postgraduate course international liver congress. Vienna: *European Association for the Study of the Liver* 2019.

Recent and active Grants:

Zelber Sagi, S., Ben- Assuli, O., & Shenhar- Tsarfaty (Co- PIs). Prediction of fatty liver and fibrosis by advanced data mining. Funded by National institute for health policy research.