



Health policies and interventions: promoting positive development

Professor Diana Fishbein is Director of the Bennett Pierce Prevention Research Center at Pennsylvania State University in the US. Her research focuses on understanding the effects of environmental influences on brain development and, in turn, behavioural health. She discusses her background, the life experiences that motivate her and some exciting projects she is leading



NPSC Board of Directors retreat

How did you develop an interest in mental health, emotional and behavioural problems and what motivates you in your research?

My professional interests and motivations began with my childhood experiences. I was raised in a disadvantaged neighbourhood just outside of Washington, DC with a high rate of crime, alcoholism, domestic violence and child abuse. I was one of the fortunate individuals with a healthy home life, but I had friends whose mothers were prostitutes, who were left outside on a cold night for minor misbehaviours, who were beaten and exposed to alcoholism, violence and other atrocities.

I realised early on that despite our similar neighbourhood-level experiences, a tremendous amount of individual variation contributes to ultimate outcomes. In fact, most of my peers did not become dysregulated or maladaptive, despite their experiential history. By fifth grade, I knew what I wanted to do when I grew up – devote my life to shedding light on the circumstances and conditions that lead to individual differences beyond what the environment confers. I needed to know what set apart individuals who were resilient from those who were unable to resist maladaptive trajectories. Ultimately, the goal of my research is to apply this knowledge to design interventions and policies that more effectively prevent the development of behavioural problems.

You are the Director of the Bennett Pierce Prevention Research Center for the Promotion of Human Development (PRC). Can you provide some details about the Center?

The PRC has an international reputation as a leading-edge centre for prevention research. It was established in 1998 by Dr Mark Greenberg – and endowed by Edna Bennett Pierce – to



Congressional briefing of US Capitol Hill

engage community, university and government colleagues in the development of research and outreach initiatives focusing on the risk and protective factors that affect child and family functioning. The Center's mission is to conduct cross-cutting research, train new investigators, disseminate knowledge and provide technical assistance to policy makers and communities on the prevention of human problems – spanning behavioural, academic, mental health and physical health – and to promote positive development in children, adolescents, families and communities.

What are some of the main achievements of the Center to date and its aims for the future?

Important to its many initiatives and activities is the PRC's strategy of recruiting national experts with a diverse skill set directed toward various questions that are still outstanding in prevention science. The PRC, in turn, provides the resources and the 'learning community' that is needed to advance the science and contribute to the overall body of work, as well as exert a positive impact on the phenomenon under study. Areas of particular interest currently include childhood and adolescent development, emerging adulthood, family science, compassion and mindfulness, and education, among others. Studies are inherently translational, starting with discovery science – such as neurobiology, genetics and behavioural science – and translating those findings to guide intervention development, implementation, evaluation and dissemination. Then, scaling and institutionalising evidence-based practices (EBP) for sustainable and large-scale impact. Researchers at the PRC are providing leadership on outstanding prevention science questions, thereby positively influencing both the scientific field and, in turn, the quality of people's lives throughout the US and around the world.

Are there any particularly innovative or exciting projects and initiatives being conducted at the PRC that you would like to highlight?

The work conducted by PRC investigators is both innovative and impactful. PROMoting School-community-university Partnerships to Enhance Resilience (PROSPER) advances the development of sustainable partnerships among schools, communities and universities to facilitate the delivery of evidence-based interventions designed to reduce adolescent substance use and problem behaviours and to promote youth competence. This project exemplifies the PRC's translational breadth in its focus on genetics and neuroscience, prevention trials work, dissemination and cost analysis. In the 28 communities that participate, findings reveal significant improvements in youth outcomes.

And as the new Director of the PRC, my strategic plan includes the incorporation of neuroscience into prevention research and practice. We will explore mechanisms

of behavioural change in response to intervention to address the question: what works best, for whom, why and under what circumstances? This programme of research will ultimately inform the development of novel interventions that benefit more recipients.

In what ways has the PRC set the stage for translation and innovation in the scientific arena and community in general?

The PRC has long been a world leader in the advancement of prevention science relating to the translation and dissemination of effective preventive interventions. In 1999, the PRC hosted a scientific meeting of the country's leading prevention researchers. The aim was to begin to develop some of the first conceptual models for studying intervention implementation to facilitate the

movement of evidence-based programmes to widespread practice. At the same time, PRC researchers conducted one of the first comprehensive research reviews to identify model programmes for the prevention of children's mental health and behavioural health problems.

The PRC's portfolio of research related to translation, dissemination, implementation and sustainability has grown tremendously. Work in this area includes large, multi-state and multi-site randomised trials of new models for disseminating evidence-based programmes, large-scale studies of the replication of EBPs under natural conditions to examine barriers and predictors of implementation quality and sustainability, the study of coalition models to promote and support going to scale, and developmental and comparative trials of EBP adaptations.

Making prevention a priority

Behavioural, mental and physical health problems are a significant burden on individuals and societies around the world. Treatment is one solution – but an enterprising team of researchers from **Pennsylvania State University** believes that prevention is the key to driving positive change in families and communities and for informing effective governmental policies

IN 1895, THE temperance activist Joseph Malins wrote a poem entitled 'The Ambulance Down in the Valley', in which he describes a town engaged in a bitter dispute about the best way to deal with the problem of people falling off a cliff. For many of the townsfolk, the tried and tested method of parking an ambulance at the bottom of the valley was seen as a sufficient means of dealing with this problem.

However, midway through the poem, one man suddenly stands up and suggests to his peers that they erect a fence at the top of the cliff, preventing people from falling in the first place and thereby doing away with the need for an ambulance. Thus, the poem emphasises the value of prevention over cure – and over 120 years later, it is still quoted and referenced in modern-day health resources.

The importance of prevention in the field of healthcare is the cornerstone of the activities of researchers at the Bennett Pierce Prevention Research Center (PRC) at the Pennsylvania State University in the USA. The aim of the Center is to conduct research that examines how community residents and organisations can work together to promote healthy lifestyles for all members of society and to develop and implement innovative interventions that prevent children and adolescents from developing behavioural

health problems and foster positive outcomes for families.

FOUR FACTORS FOR PREVENTION

The Director of the Center, Professor Diana Fishbein, is a passionate advocate for the benefits associated with preventive measures that address individual and societal problems before they develop. "Using analytics developed by statisticians and economists, the scientific method of evaluating outcomes gives us unbiased evidence of what works for whom, why and under what circumstances," explains Fishbein. "Policy makers and practitioners can use the evidence generated by scientific research and evaluation to effectuate positive change for individuals, families and communities."

Basing decisions on rigorous scientific evidence ensures that solutions to many of our social problems can be systematically and effectively applied, irrespective of ideological or political leanings. Indeed, an objective, science-based approach is vital for solving some of the most taxing and persistent problems facing society today.

Importantly, successful and well thought out preventive policies adhere to four conditions. First, they aim to recognise early warning signs that predict or lead to poor outcomes. Second, they are developmentally and culturally appropriate and accessible to the communities they serve. Third, they focus on reducing exposure to detrimental conditions, or address the effects of such conditions. And fourth, they demonstrate the cost savings of prevention. In considering these factors, the concepts and strategies of prevention science are upheld and improve young people's chances of growing up as healthy and well-rounded individuals.

IDENTIFYING MALLEABLE MECHANISMS OF BEHAVIOURAL CHANGE

Alongside her role as Center Director, Fishbein also founded and directs the Program of Translational Research on Neurodevelopment and Adversity (P-TRAN) within the PRC. P-TRAN is an innovative, transdisciplinary programme of research that focuses on ways in which environmental conditions influence the developing brain and, in turn, behaviour. "Our working model proposes that risk for behavioural problems varies between individuals and can only truly be understood by recognising that our orientation to and processing of environmental inputs rely integrally upon genetic and neurobiological mechanisms," explains Fishbein.

Crucially, the programme recognises that such underlying mechanisms interact with various psychosocial and environmental factors that affect the way individuals develop – in either a positive or negative trajectory. Research suggests that neurodevelopment is not fixed, suggesting that there is always the potential for evidence-based interventions to

successfully improve development and overall behavioural health outcomes if programmes are appropriately targeted. Accordingly, nothing is considered beyond the scope of hope – where prevention science aims to stop the problems from developing in the first place, intervention strategies are able to ameliorate problems that are emerging.

As such, the team at P-TRAN works on integrating theoretical perspectives and empirical methods from multiple disciplines. Importantly, their ambitions for the future revolve around tailoring interventions to mechanisms that underlie behavioural problems and individual-level characteristics. "The premise behind our research is that tailored, targeted interventions will be most effective when psychosocial and pharmacologic manipulations are mapped to an individual's unique constellation of social, psychological and biological attributes," explains Fishbein. "This reinforces more adaptive and normative phenotypes."

To exert a sustainable impact on the phenomenon under study, the ultimate aim of P-TRAN is to transfer scientific findings for use in communities and for use by policy makers.

TRANSLATING AND TRANSFERRING FINDINGS TO ACTION

Fishbein also spearheads the National Prevention Science Coalition to Improve Lives (NPSC). This organisation is comprised of scientists, educators, community stakeholders, practitioners and clinicians, policy makers, and foundation representatives. The aim of the NPSC is to improve the chances for children and adolescents to lead healthy, successful lives, and for families and communities to thrive by facilitating the transfer of knowledge to practice and policy.

"NPSC has convened national experts to present findings from prevention science to federal decision makers," explains Fishbein.

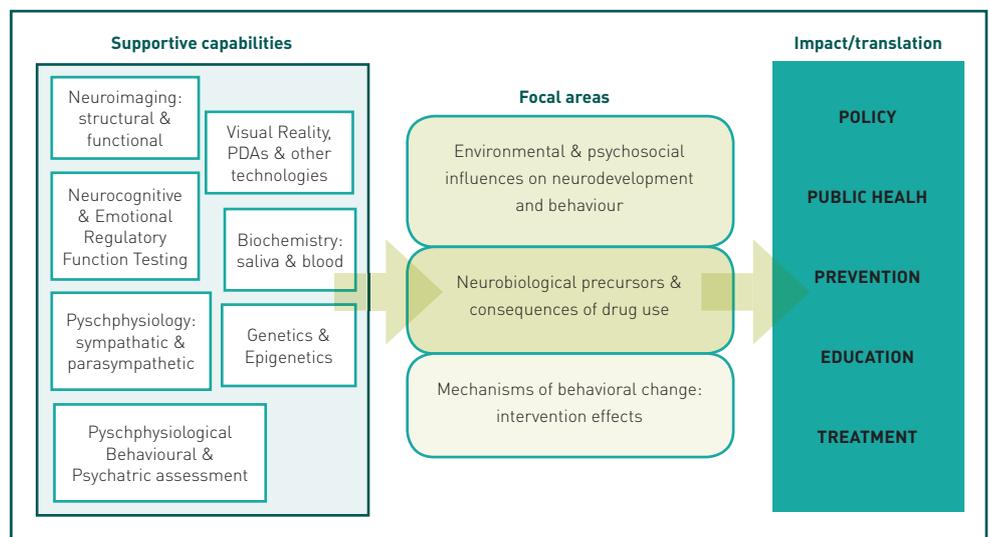
"More broadly, we routinely engage in a bipartisan manner with US Congressional offices and Congressional Caucuses, where some are incorporating the evidence-based knowledge we convey in proposed legislation." Encouraging uptake is an extremely important aspect of Fishbein's research activities. Not considering the potential for impact is akin to suggesting that fences should be erected on the cliffedge to prevent people falling off – but never actually getting around to building them. The research underway is of vital importance – but unless it leads to action, it merely exists as an idea, albeit one that is backed up by solid scientific evidence.

Thus, NPSC also collaborates with US federal agency administrators interested in incorporating prevention science in their strategic plans. In addition, members continuously write and publish opinion editorials, white papers, policy statements and fact sheets to help inform decision makers and constituents.

PREVENTION IS BETTER THAN CURE

Despite the fact NPSC is still a relatively new organisation, it has 450 members to date and continues to grow. It has also formed numerous affiliations with national organisations, institutions and universities. Ultimately, its aim is to infuse a prevention mentality into the public and private sectors, where the emphasis is on proactively preventing problems, rather than reactively responding to them.

In short, Fishbein and her colleagues are doing away with the ambulance at the bottom of the valley and are instead erecting a fence at the top of the cliff. To rescue those affected by adversity is a worthy feat, but preventing the causes of adversity in the first place is an even more important endeavour.



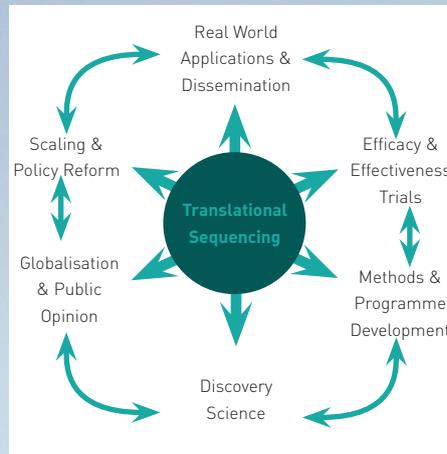
TRANSLATING RESEARCH TO MAKE IT MATTER

Pennsylvania State University's Prevention Research Center (PRC) is a pioneer in implementing and disseminating its findings into interventions with measurable benefits to individuals, families and communities. The Director of the Center, Professor Diana Fishbein, works tirelessly on a range of activities with various researchers at different locations to oversee and facilitate the continuing development of prevention and intervention strategies.

"It has repeatedly been shown that evidence-based programmes can only impact population-level public health if they are effectively taken to scale, implemented with high quality, and sustained over time," explains Fishbein. "PRC faculty engage in rigorous research to improve understanding of the mechanisms that impact the diffusion of innovations for the improvement of health."

In total, the PRC has five distinct translation and dissemination goals:

- Advance the science, policy making, and practice of utilising evidence-based prevention to improve public health
- Conduct rigorous research aimed at identifying the resources and processes necessary to effectively take evidence-based programmes to scale
- Identify and promote practices that lead to high-quality implementation and sustainability of evidence-based programmes
- Develop a model infrastructure for the dissemination, implementation, and sustainability of effective prevention programmes and practices
- Foster networks of researchers, policy makers, and practitioners engaged in efforts to improve public health through evidence-based prevention



PREVENTION RESEARCH FOR INFORMING THE DEVELOPMENT OF EFFECTIVE INTERVENTIONS AND POLICIES

OBJECTIVES

To promote child and family wellbeing by facilitating the design, dissemination and scaling of effective prevention policies and interventions.

KEY COLLABORATORS

Dr John VanMeter, Georgetown University, USA
 • **Dr Ralph Tarter**, University of Pittsburgh, USA
 • **Dr Emma Rose**; **Dr Mark Greenberg**; **Dr Lisa Gatzke-Kopp**, Pennsylvania State University, USA •
Dr William Aldridge; **Dr Aysenil Belger**, University of North Carolina, USA • **Dr Neil Wollman**, Bentley University, USA • **Dr Scott Novak**; **Dr Ty Ridenour**; **Dr Jason Williams**, RTI International, USA • **Dr Howard Dubowitz**; **Dr Elliot Hong**, University of Maryland School of Medicine, USA • **Dr Elliot Stein**, NIDA Intramural Research Program, USA • **Dr Tony Biglan**, Oregon Research Institute, USA • **Dr Ronald Prinz**, University of South Carolina, USA • **Dr Steven Porges**, Kinsey Institute, Indiana University, USA

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Development and Family Studies and the Director of the Program of Translational Research on Adversity and Neurodevelopment. She is also an adjunct professor at the University of Maryland School of Medicine and Johns Hopkins University, a faculty subcontractor at Georgetown University and a guest researcher at the National Institute on Drug Abuse Intramural Research Program. Studies conducted by Dr Fishbein utilise transdisciplinary methods and a developmental approach to understanding interactions between neurobiological processes and environmental factors and their effects on behavioural health.

