Changing behavior throughout the life-course: Translating the success of aging research

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Despite the plethora of evidence-based guidelines for improving health and quality of life across the life-course [1, 2], less is known about the translation of evidence-based programs specifically serving older adults. This is partially attributed to the recalcitrant belief that older adults—especially the oldest old—are frail and set in their ways, and thus not proper targets for behavioral medicine interventions [3]. Such beliefs are slowly being countered by the expanding body of research about aging and behavior, which demonstrates the resilience of older adults [4] and the positive impact of health promotion/disease prevention intervention efforts on this subgroup of the population [5, 6]. Secondly, there has been a general lag in translational research, which is documented by several eloquent reviews about the barriers associated with translating research into practice [7–9].

Amid the rapid aging of the worldwide population [10], there is growing recognition of the need to fundamentally shift our thinking about aging from a societal problem to an opportunity for advancing knowledge about strategies for promoting health in later life. Moreover, helping the large number of baby boomers age optimally and successfully is critical to managing skyrocketing health care costs [11]. Fortunately, efforts to close the gap between research and practice are being heeded by behavioral medicine researchers and practitioners. This call to action has resulted in a greater understanding of the role evidence-based behavioral medicine can play in designing effective interventions that can be brought “to scale,” maintain positive benefits over time, and be sustained by existing community and clinical infrastructures [12, 13].

This special section on “Aging and Behavior: Translating Evidence-Based Interventions into Policy and Practice” provides a much-needed critical focus on how to translate and disseminate evidence-based programs, interventions, and guidelines designed for aging adults across the care continuum and in real-world settings. Toward this goal, we offer a conceptual schema illustrating the essential components in understanding a life-course perspective to translational behavioral medicine research.

Not only does the social and environmental context influence basic risk factors and intervention research for the aging population, it also sets a

framework for understanding translational research efforts and how these “play out” across different settings and life-course transitions. The overall goal of a life-course perspective on translational behavioral medicine research is to emphasize that each life transition presents a unique opportunity for interventions to inform policy and practice that can improve health and quality of life. Given the relative lack of translational research about later life issues, despite the fact that there will be more octogenarians, nonagenarians, and centenarians in the decades to come, this special section focuses on what is known and what still needs to be learned about behavior change in the second 50 years. The articles in this section reflect several common themes in aging and behavior research [14] that are critical for understanding the challenges associated with translational intervention efforts and guide us to consider important factors when promoting behavior change:

- The aging population is heterogeneous in terms of demographic characteristics (e.g., race/ethnicity, gender, education, and geographic location); health factors (e.g., functional status and comorbidities including cognitive and mental health); and psychosocial factors that often are mediators to programmatic success (e.g., resilience, self-efficacy, and social support).
- Health is malleable and behavior change is a lifelong process that can prevent or slow down the deleterious effects of age-related diseases and disabilities.
- There are opportunities for planned and natural interventions at every point in the life course, and especially around life transitions.
- It is important to understand the context in which aging adults live, seek health care, and participate in spiritual and recreational activities.
- This context is essential to understanding the clinical, workplace, and community delivery infrastructures needed for bringing evidence-based programs to scale and sustaining them over time.

The systematic review, original articles, case studies, practice guidelines, and tool reports also shed light on key translational research issues

Fig 1 | A life-course perspective on translational behavioral medicine research

related to program dissemination and sustainability of programs designed to improve the health and functioning of aging adults with chronic conditions and illnesses. Despite the call for more multiple behavioral intervention programs and multilevel interventions [15–17], the current science base is still characterized by “single behavior change interventions” primarily focused at the individual or interpersonal level [16]. Although multilevel interventions that reflect a social–ecological approach are being widely promoted [15, 18], for widespread adoption into the intervention armamentarium, dedicated research support is needed to advance the conceptualization, measurement, and implementation of multilevel approaches [19].

While both internal and external validity are important in translational research, translational research differs from efficacy studies which focus more on internal validity. In contrast, translational research focuses equally, if not more so, on external validity to assure the ability to translate findings to other settings [8]. There is always a delicate balance between program adaptation and fidelity, but tailoring to specific populations and settings is essential for widespread adoption [20]. Whereas initial research studies are often restricted to one or two sites which are organizationally similar, translational research and practice recognizes the importance of multiple delivery sites with a menu of options that can support consumer demand and preference [21]. Furthermore, creative academic and commercial partnerships can be utilized to further dissemination of evidence-based programs [22]. Future research efforts are needed to better identify minimal intervention dosages that harmonize administrative capacity with the maintenance of essential evidence-based intervention. The promotion of translational

research can be self-sustaining as organizations in the public health and aging services network continue to value and choose evidence-based programs [23]. This is particularly important as translational research is geared toward long-term sustainability and must fit with, or be altered to fit with, the setting in which it occurs [24].

Despite the substantial investment in clinical guidelines, these are often not fully adopted in practice given the plethora of guidelines and competing demands. Guidelines for averting falls in long-term care facilities have the potential for sustained uptake, especially when accompanied by strong institutional and professional backing [25–27]. When implementing general public health guidelines such as those related to physical activity, the availability and free access to practical tools, such as the Exercise and Screening for You, provide a critical first step to the dissemination of information to all older adults [28, 29]. Moving from research to real-life settings often requires easy-to-use tools as also demonstrated by the value of creating an evidence-based consumer-friendly caregiving tool kit for helping practitioners teach families to manage caregiving stresses associated with Alzheimer’s disease [30].

Sustainability is possible [31–34] but often difficult especially for grant-funded programs. Institutional buy-in, community leadership, and opportunities for booster sessions can help sustain programmatic efforts as well as the benefits participants receive from the intervention [35, 36]. Behavioral interventions can have longer staying power when embedded within a multi-interventional approach that has supporting evidence-based policy and environmental strategies.

The passage of the Affordable Care Act (ACA) [37] gives priority to addressing the health care

implications of the ever-growing number of older adults in our country [38]. Although the ACA has generated much debate among the American public [39], it reflects a shift in the American health care system toward giving greater emphasis to the health and well-being of the aging population. Our health promotion goals for older adults, and our dedication to disseminating and translating effective behavior change interventions, are not focused on lengthening life or using mortality as an outcome. Rather, our goals in this work are to optimize the management of chronic illness and improve the years that aging adults can spend at their highest level of physical and cognitive function and ensure their optimal quality of life.

Policy initiatives such as Medicare, our major health care reimbursement system for older adults, are likewise moving in a direction that focuses on the promotion of health, the optimization of healthy behaviors, and the provision of important opportunities to translate health initiatives for aging adults. The Welcome to Medicare Visit and the more recent passage of the ongoing Wellness visits are timely examples of such initiatives. A patient is eligible for a wellness visit if she has been enrolled in Medicare for longer than 12 months and has not received a Welcome to Medicare visit in the past 12 months. These visits include basic medical history and screening with regard to preventive care practices; functional, cognitive, and psychosocial assessments; and the development of a plan of personalized health advice and referral as appropriate. This kind of policy initiative thus encourages health care providers to engage aging patients in community programs or activities in their sites of care or institutional living settings. Likewise, there is a growing movement toward environmentally based policies to build healthy communities for active aging that facilitate recommended physical activity by having safe bike paths, walking routes and green areas within communities, or pleasant outdoor areas to stimulate walking for institutionally based aging adults [40, 41]. Older adults themselves are helping to drive policy initiatives around creating more healthful food and physical environments [42].

This is an exciting time for translational research, and by working together policy makers, health care providers, behavioral researchers, and older adults can make it happen! Building off of national initiatives such as the NIH-funded Behavioral Change Consortium [15, 16] and the Health Maintenance Consortium [17], the papers in this issue of *Translational Behavioral Medicine* were compiled to provide the latest behavior and aging research, practice models of dissemination and sustainability, and easy-to-use tools for fostering behavioral translational research across the life-course. We hope this compilation provides you with a greater understanding of the current state of research and practice about changing behaviors throughout the life-course and encourages you to join in the translation of

healthy behavior research to facilitate successful aging both professionally and personally.

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