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Expanding Our Horizons: Risk, Protection, and Intervention in Emerging Adulthood

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Abstract
Prevention science research has focused on early childhood and early school years, on the logic that addressing individual and contextual risk factors as early as possible would prevent the compounding of risk downstream. Methodological and technological advances have opened the door to an expanded exploration of risk, health promotion, and intervention in emerging adulthood and throughout the lifespan, but prevention science remains dominated by research on early childhood and adolescence. Articles in this special issue of *Prevention Science* showcase the use of new technologies to access young adult populations and to develop and deliver interventions as well as strategies to help account for developmental and cultural contexts in designing interventions. The issue represents an important step forward in applying the preventive research cycle to emerging adulthood, and it provides an opportunity to expand our horizons by building theories of development that are not tied solely to age progression.

Keywords Emerging adulthood · Young adult · Lifespan development · Prevention science

In the 1990s and through the 2000s, a majority of prevention science research focused on early childhood and the early school years, on the logic that addressing individual and contextual risk factors as early as possible would prevent the compounding of risk downstream—for example, aggressive children alienate peers and adults who then reject them, which results in social isolation, increased aggression, alienation, and so on in a downward spiral (Moilanen et al. 2010). As the years passed, our understanding of the interplay between developmental trajectories and environmental risks and affordances became more nuanced, and it became evident that whereas some risk factors were more or less fixed (e.g., parents' socioeconomic status), some were more malleable depending on developmental stage or came online at later developmental stages. Developmental cascade models and advances in statistical methods enabled researchers to show that timing of exposure to risk (or to mitigation of risk) affected the unfolding of outcomes (Masten and Cicchetti 2010). In turn, these advances have opened the door to an extended developmental exploration of risk, health promotion, and intervention in emerging adulthood and throughout the lifespan. To date, however, the field of prevention science remains dominated by research on early childhood and, to a lesser extent, adolescence. As shown in Fig. 1, articles referencing prevention science with a primary focus on each age group (children, adolescents, and young adults) have increased over time, but the slope of that increase is nearly flat for articles focused on young adults, and the number of articles for this age group is dwarfed by those for children and adolescents.

This special issue of *Prevention Science* on emerging adulthood is an important step forward, since the field has much to gain by expanding its scope upward through the life span. Considering prevention throughout the life course can help us refine and enrich how we think about development—for example, early childhood is marked by a series of developmental milestones, and then through adolescence, the vast majority of children and youths follow a trajectory that is highly constrained by expectations (progression through a series of grade levels, culminating in graduation) and circumstances (in school most of the day and living at home with parents). Because of this uniformity, it makes sense to use biological age as a primary measure of development, or grade level as a proxy for age. However, after age 18 in the USA, trajectories diverge, and the distinction between "development" and "context" becomes blurred. In fact, experiences are so divergent after this point that common milestones or categories of experience may become a better metric

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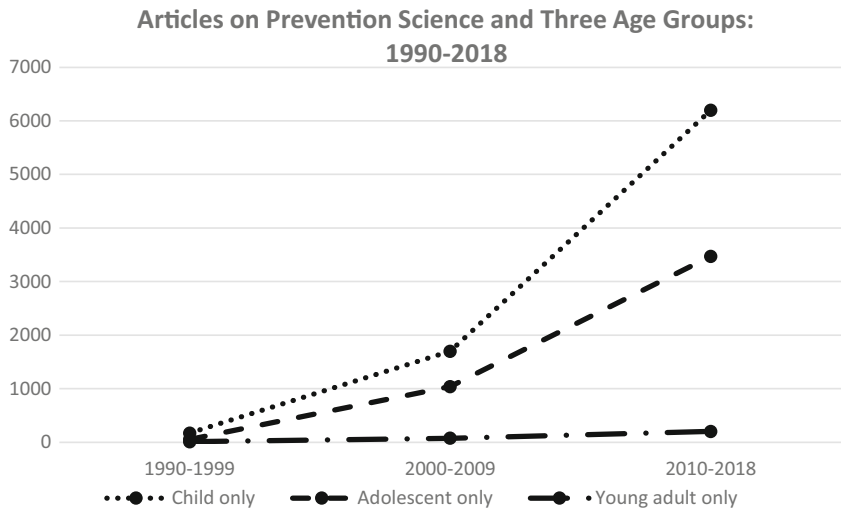

Fig. 1 Articles returned from Google Scholar search for "prevention science" and child* only, adolescen* only, and "young adult" only

of development than age: length of schooling post high school; type and extent of employment; type, timing, and duration of romantic relationships; caregiving for the next generation and for the previous one; life transitions; and traumatic experiences such as major illness—all experiences and stages with common elements that cut across ages but could be considered from a developmental perspective. Because preventive interventions are developmentally targeted, it is important that we understand more about how these different trajectories, and particularly the transitions from one set of circumstances to another, affect exposure to risk, the mechanisms of risk, and receptivity to intervention.

Below I discuss briefly several cross-cutting themes from the articles in this special issue on emerging adulthood and note how they advance not only our understanding of and ability to intervene with this age group but also provide guidance for taking interventions to scale generally and for extending prevention up through the lifespan.

Difficulty of Access

One reason for the lack of research on young adults is practical: access to participants for research and testing of interventions is easier and requires fewer resources when nearly everyone is still in school and living with parents. After age 18, about half the population remains accessible in college settings for a few years, but the other half has historically been hard to reach for survey or qualitative research and even harder to reach for interventions. The advent of social media, phone- and web-based applications, and interconnected administrative datasets have opened doors to studying and intervening with populations that were previously hard to access. The article by Lewis and colleagues (this issue) provides an example of the creative use of both traditional and newer methods: they recruited potential participants using Craigslist, Facebook, flyers, and participant referrals and used a brief online survey for screening. Then, they conducted in-depth telephone interviews to select their target high-risk sample for randomization and tested a web-based adaptation of existing evidence-based interventions. Using these methods, they achieved a good representation of the 18- to 25-year-old age group, with about 53% of the sample who were not college attendees. Their article also illustrates the difficulty of accessing a targeted sample in this age group, though: of the 10,242 respondents screened, only 860 (8.4%) met the eligibility criteria.

In two articles (Cadigan, Lee, and Larimer and Stormshak et al.), researchers made use of existing samples. This is a useful approach for studying young adults—the investment in recruiting and retaining participants for longitudinal studies is considerable, and expanding the original scope of a study is an efficient method of data collection and continued intervention, as long as the sample is appropriate to the research question. Cadigan, Lee, and Larimer (this issue) embedded questions about mental health service utilization at two timepoints in a monthly longitudinal study of substance use in young adults. As in the Lewis et al. study described above, participants in this study were recruited using print flyers, online venues, social media, and community outreach, but they were screened in person and followed monthly for two years. Stormshak and colleagues followed forward a group of students who were recruited in sixth grade, followed annually into high school, and then assessed in early adulthood at age 20 and again about 18 months later.

Different Developmental Trajectories

Following forward participants who have been recruited at school age provides a built-in mechanism for looking at the divergence of experience post high school, which represents a

second major reason for lack of prevention research among young adults and later age groups (Stormshak et al. this issue). The diversity of experience beginning in young adulthood means that extent and degree of exposure to risk varies tremendously depending on life paths and contexts, which makes it difficult to describe and quantify experience at a population level. Methodological advances, including the advent of sophisticated person-centered methods (Muthén and Muthén 2000; Singer and Ryff 2001), have made it easier to identify subgroups of people whose experiences differ and ways to describe and quantify the effects of those differences, as well as the differences in timing of exposure to risk and onset of problems (Lanza and Rhoades 2013). The article by Fish and colleagues (this issue) provides an excellent illustration of how life experience varies across time for well-defined groups. They used cross-sectional data from a nationally representative sample of adults aged 18 to 60 who identified as lesbian, gay, or bisexual (LGB) sexual minority, other sexual minority, or heterosexual. They showed differences in suicidal behavior across those subgroups, with LGB sexual minorities at highest risk, and further differences between males and females in each of those groups. Their article is especially interesting in that they examine trajectories from young adulthood through late middle age, describing different periods of increased exposure to risk (anti-LGB discrimination) as well as differences in suicidal behavior across different subgroups. Their work illustrates both the divergence of experience across groups and the value of extending developmental exploration through young adulthood and beyond.

Exposure to Risk in Emerging Adulthood

All articles described emerging adulthood as a transitional period in which young adults face increased exposure to risk because of some combination of new freedoms, decreased supervision, transitions in social networks and living situations, increased financial responsibility, and loss of earlier peer groups and social supports (Schulenberg et al. 2004). Stormshak et al. identified the transition out of high school as a critical time period and discuss the importance of young adult interventions at this time. Layland, Calhoun, Russell, and Maggs (this issue) demonstrated that even among young adults with a shared context (college), arriving at the age of legal drinking status is another important transition, as it moderated effects of their leisure-time intervention to reduce alcohol and other substance use among college students on weekends. Lewis and colleagues also identified the transition to legal age as a critical timepoint for young adult interventions and suggested that invitations to participate in web-based substance abuse interventions could coincide with young adults' 21st birthday.

Villanti, Niaura, Abrams, and Mermenstein (this issue) noted that for biological, psychosocial, and contextual reasons, young adults are particularly likely to escalate their use of substances, and that risk is magnified by marketing that targets their age group. They focused on innovative universal and targeted harm reduction strategies and introduced the concept of prevescalation (preventing escalation of risk behaviors), arguing that this is an especially important strategy for the developmental period of emerging adulthood when escalation, rather than initiation, is a hallmark of substance use.

Intervention Targets: Participants and Contexts

Because of the diversity of experience in emerging adulthood, several authors remarked on the importance of making sure that interventions address the needs of young adults generally, the specific populations targeted within that age group, and other contextual factors. Four articles targeted high-risk young adult subsamples: Fish et al. (this issue) studied sexual minorities from young adulthood through later adulthood. Lewis et al. (this issue) targeted participants who had engaged in risky sexual and drinking behaviors for their web-based intervention to decrease alcohol-related risky sexual behavior. Haffner and colleagues adapted two evidence-based interventions: Video Opportunities for Innovative Condom Education and Safer Sex (VOICES/VOCES) (O'Donnell et al. 1995) and Safe in the City (Warner et al. 2008), originally designed for heterosexual African American and Latinx adults visiting STI clinics. Using the well-regarded ADAPT-ITT process (which includes focus groups, expert feedback, and theater testing of an adaptation), they created Native VOICES, a video-based program to be delivered to adolescent and young adult Native Americans (ages 15–24) in multiple settings (e.g., clinics, schools, and community organizations by non-specialized support staff). However, the intervention did not have the expected effects, which they speculate may be because their focus groups were composed primarily of 15- to 18-year-old adolescents, not young adults. This null finding highlights the importance of ensuring that intervention content, or adaptations of existing interventions, accounts for both cultural and developmental contexts.

Stormshak and colleagues (this issue), emphasizing that parents continue to play an important role in emerging adulthood, adapted the well-researched Family Check-Up intervention to incorporate concerns relevant to young adults (Family Check-Up Young Adult, or FCU-YA) (Dishion et al. 2008). Optimally, their implementation of FCU-YA included parent participation; however, acknowledging that various circumstances may make it difficult for some to attend the family portion, they created a more flexible intervention that allowed participation without parents as well. The flexibility in both

Native VOICES and FCU-YA is innovative and likely an important feature for interventions targeting young adults, given the variety of life circumstances during this period.

Risk and Protective Factors Targeted by Interventions

The interventions described in this special issue target a spectrum of risk factors and risk behaviors: normative beliefs, risk perceptions, alcohol, tobacco, marijuana and illicit drug use, risky sexual behaviors resulting in sexual assault or sexually transmitted infections, and suicidal behaviors, and the content of most of the interventions specifically addresses those behaviors and their causal risk factors. The FCU-YA intervention (Stormshak et al.), however, also emphasized the enhancement of protective factors, such as strong parent-youth communication, autonomy development, goal attainment, and healthy peer and romantic relationships. Similarly, Villanti and colleagues recommended incorporating protective strategies such as decisional self-control, exploration of values to guide behavior, and external reinforcers for healthy behaviors into interventions with this age group. Cadigan, Lee, and Larimer (this issue) focused on the protective factor of health service utilization, finding that a quarter of young adult adults reported unmet needs in mental health services. Attention to these protective and promotive factors becomes especially important for this age group as young adults take on increased responsibility for their own lives and wellbeing.

Scaling Up

As noted earlier, new electronic methods of accessing and intervening with hard-to-reach populations have enabled us to extend the prevention research cycle into emerging adulthood. Social media and administrative data certainly provide opportunities to gather data from or about young adults on a scale and with a reach that was not previously possible. The ubiquity of computers and smart phones also provides opportunities for scaling up interventions to be delivered online, widely, with diverse universal, targeted, or at-risk participants. From several articles in this issue, we see the need to target multiple systems (colleges, clinics, community organizations) with multiple delivery methods (web-based, video, social media, text messages, apps, and flyers) in order to expand reach when scaling up interventions.

Villanti et al. highlighted the potential for providing micro-incentives through social media, including social rewards, competition, and cooperation in service of a goal, and they also discussed the possibility of precision intervention—for example, tailoring messages that are responsive to contextual influences (e.g., bars or parties) to deliver reminders, encouragement, or rewards. Stormshak and colleagues noted the need for interventions that are "brief, targeted, and tailored to young adults"; on the other hand, they also emphasized that there are no shortcuts: the FCU-YA study showed larger effect sizes as dosage increased, and higher dosage was associated with parent participation. Both Lewis et al. and Haffner et al. reported short-lived or null findings with video and web-based interventions. Thus, the access afforded by social media, apps, and other electronic means provides an important new tool but is not a panacea.

Conclusion

This special issue of *Prevention Science* represents an important step forward in applying the preventive research cycle to emerging adulthood, and it also provides an opportunity to expand the horizons of our field and to build theories of development that are not tied solely to age progression. An advantage to exploring this understudied age group is that it will help spur innovation: as we tackle problems of how to gather data, how to access participants for interventions, how to make best use of new technologies, and how to account for context and developmental affordances or constraints as we develop interventions for emerging adults, all that we learn has implications also for prevention science throughout the lifespan. Older adulthood is also understudied, and the field has begun slowly to apply prevention methods to gerontology (Weaver and Bolkan 2018). But we have barely scraped the surface of prevention science in later adulthood, and the territory between emerging adulthood and old age remains almost completely unexplored. The breakthroughs in access and intervention design described in these seven articles are exciting and need not be limited to emerging adulthood. In the meantime, they provide important information and methods to help develop preventive interventions for emerging adulthood, including for those young adults not captured by interventions delivered in the college context.

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Compliance with Ethical Standards

Conflict of Interest The author declares that she has no conflict of interest.

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