

Introduction

The experience of contemporary adolescents is one that differs profoundly from that of earlier generations. Research on adolescence has also endured substantial change, and the concept of change is central to the topics addressed in this handbook. Change, for example, is key to the very definition of adolescence as a developmental time period marked by rapid physical, social, and psychological transformation. Accumulating evidence in developmental neuroscience over the past decades reveals a complexity of change not previously understood. Mental health is also an evolving concept – both in definition and in practice – with our understanding of what constitutes “good” mental health subject to fluctuating societal norms and stigmas, emerging diagnostic categories and dimensions, and increasing prevalence rates. Yet perhaps most closely tied to the concept of change is digital media – inextricably linked with evolution, adaptation, and transformation. To understand digital media is to recognize and wrestle with a constantly evolving phenomenon – an entity that changes within a world that changes around it, both as a cause and a consequence of it.

Research on digital media must enter into this complex exchange. As researchers aim to make sense of digital media, to describe its usage and effects, to catalogue where it is, where it was, and where it will be, scientists must themselves become embedded in this changing context. In this volume, we strive to embrace the complexities brought on by phenomena that are so closely tied to change. We bring together the foremost experts in digital media and adolescent mental health, to work toward an understanding of what we currently do and do not, can and cannot, know; what prior research has taught us; and, perhaps most importantly, how to approach the future of this field.

Digital Media: Defining an Evolving Concept

It is challenging to define a concept for which change is such a central component. Attempts at characterizing digital media often become quickly outdated, seeming alternatively to rely on classifications that are either so narrow as to preclude the inevitable arrival of new technologies, or so broad as

to miss the essence of the term itself. Adding complexity to this endeavor is a variety of terms often used interchangeably – new media, interactive media, social media, screen media, social technologies, interactive communication technologies. Although it seems clear what digital media are *not* – that is, they stand in stark contrast to *mass* media tools that rely on “one-to-many” communication (see Subrahmanyam & Michikyan, Chapter 1 in this volume; Valkenburg, Chapter 2 in this volume) – what digital media *are* remains somewhat elusive, and there has been much confusion in the literature regarding the use of these terms. For the purposes of this handbook, we define digital media broadly to include the range of tools used to store and share information in a digital (i.e., computer-readable) format, including hardware (e.g., computers, mobile devices), software (e.g., operating systems, smartphone applications), and online platforms. We have chosen to use the term “digital media” in this volume’s title, so as to promote a broad consideration of the many electronic tools that may influence the mental health of contemporary adolescents, including smartphones, mobile applications, and social media. Most authors have adopted this terminology in their chapters.

However, when it comes to understanding the effects of digital media on adolescents’ mental health, and vice versa, we are interested not only in the *what* of digital media, but also in the *how*. That is, we are interested both in the smartphone’s operating system itself and also in how adolescents use that system. And when it comes to adolescents, that means a key area of focus must be on the *social*. It has long been recognized that adolescence is a period of increased interest and engagement in social interactions, particularly with peers, and is accompanied by heightened biological sensitivity to peer evaluation and social rewards. It is perhaps no surprise, then, that the vast majority of digital media tools adopted by adolescents are social or interactive in nature. Thus, for the purposes of this handbook, we devote considerable attention to *social media*, or “Internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others” (Carr & Hayes, 2015, p. 51). We define this to include social networking sites (e.g., Instagram, Snapchat, WeChat, and Facebook), messaging tools (e.g., text messaging and messaging apps), online forums and communities, video- and image-sharing platforms (e.g., YouTube and TikTok), and video games with a social component.

Of course, the challenge of defining what digital and social media *are* is complicated by the constantly – and quickly – evolving nature of the technical landscape. From MySpace to TikTok, desktop computer to iPhone, video games to virtual reality, the tools that encompass digital media change frequently and often drastically. While it is important to recognize the specific affordances of platforms that may influence their use and effects, research efforts that focus on a single platform often become quickly outdated and can

lack generalizability to future work. In this volume, we strive to unify prior research from a perspective that is agnostic to specific platforms or tools; in doing so, our goal is to provide a reference and guide for future scholarship that remains relevant beyond the existence of a given site or app. We recognize that, by necessity, we can only capture the state of this research at a very specific snapshot in time. Yet it is our hope that by approaching the topic with both historical and forward-looking lenses, we may integrate the idea of an evolving digital media into our very definition of this concept moving forward.

Theoretical Foundations: A Developmental Psychopathology Perspective

Understanding the role of digital media in adolescent mental health requires a revisiting of prior frameworks, models, and theories. For several decades, developmental psychopathology has been the predominant framework for examining the onset and course of youth mental illness, and we draw on this framework for defining and understanding “mental health” in the context of this volume. Developmental psychopathology perspectives emphasize both typical and atypical trajectories of development at the multiple levels (e.g., biological, psychological, social, and cultural) at which developmental processes take place (Cicchetti, 1993), suggesting that mutually reciprocal transactions between youth and their environments continuously shape pathways toward adaptation and maladaptation (Sameroff, 2000). The developmental psychopathology perspective encapsulates ideas about evolution and change – of individuals, their external environments, and the interactions between them – and it is essential to return to such seminal theories as we consider the intersection of digital media and adolescent mental health.

Yet digital media represents a paradigm shift of magnitude not previously encountered since the introduction of the developmental psychopathology approach. Digital media challenges our traditional ideas about environmental contexts (Nesi et al., 2018a, 2018b). Social media, for example, may be considered a unique social-developmental context within which adolescents are embedded. Yet given the nature of social media, prior work suggests that youth also co-construct this context, designing it in such a way as to meet their needs, values, and desires (Subrahmanyam & Greenfield, 2008; Subrahmanyam et al., 2006). Furthermore, digital media integrates aspects of many other external contexts – from the macro (i.e., cultural and mass media influences) to the micro (i.e., dyadic social interactions), and often represents a melding of various contexts. The degree to which these overlapping contexts are influencing youth during a given use of digital media – and the degree to which youth themselves are alternatively shaping these contexts – is not always clear. As research progresses in the area of digital media use and adolescent mental health, investigators must aim to draw on existing theoretical frameworks that

may inform this work, while also working to build on and adapt these frameworks to account for the changing digital world in which contemporary adolescents are living. In this handbook, we aim to strike this balance, using the developmental psychopathology perspective as our guiding framework.

Part I of the volume begins with a consideration of theoretical perspectives from the fields of developmental psychology, media effects, and communications, with Chapter 1 (Subrahmanyam & Michikyan) and Chapter 2 (Valkenburg) each building on these historical perspectives to offer innovative new theoretical approaches that begin to account for the complexity of the digital media environment. In line with developmental psychopathology perspectives, Part II examines relevant developmental processes and mechanisms at various levels of analysis, including cultural, systemic, biological, and social factors. Part III examines potential risks and benefits of digital media for a range of adolescent mental disorders, and examines factors that may mitigate or exacerbate these influences. Finally, Part IV concludes with a brief consideration of mental health intervention and prevention efforts in the digital age.

Developmental psychopathology is an interdisciplinary approach, and to thoroughly understand the role of digital media in adolescent mental health requires integrating perspectives from multiple fields. In this volume, we bring together experts from a range of disciplines, including clinical, developmental and social psychology, neuroscience, medicine, communications, and media studies. As such, the volume aims to synthesize and advance research on this topic, appealing to scholars, educators, and students across a range of fields.

Research in the Digital Age

Change has characterized not only the topics of consideration in this handbook, but also the larger research landscape surrounding the investigation of these topics. The body of research on the topic of adolescent digital media use and mental health has grown exponentially in recent years. A search of the key term “social media” in APA PsycInfo in June of 2021 reveals 20,551 academic journal articles. Remarkably, nearly one-quarter of these have been published since 2019, nearly one-half in the last five years, and over 85% in just the past ten years. As the digital media landscape has transformed youths’ lives rapidly and dramatically, the topic has evoked intense emotions among the general public, the media, and the research community. As change often does, the topic has alternatively engendered excitement, curiosity, and fear. Heated debates have arisen over the risks – or lack thereof – of youths’ “screen time.” Researchers have both urgently warned against the dangers of the digital world and have lauded the potential for digital media to solve a variety of societal ills.

At the same time, the methods and tools that research has brought to bear on this topic have also evolved. From retrospective self-reports, to daily

ecological momentary assessments, to passive sensing technologies, to innovative experimental paradigms, numerous tools are now readily available to researchers aiming to answer questions about digital media and youth mental health. Investigators themselves increasingly turn to social media – Twitter, ResearchGate, even TikTok – to share their recent findings and connect with the scientific community, no doubt a factor in increasing calls for scientific transparency and public accessibility. And as the field progresses, the newest generation of scientists can themselves be considered “digital natives.”

There has never been a more urgent need to synthesize what is known about digital media and adolescent mental health – to make sense of an evolving landscape and provide a roadmap for the future of the field. The authors of the chapters of this handbook – representing the leading voices on this topic – do just that. Despite the challenges inherent in such a rapidly changing field, so too does such challenge offer an opportunity for growth. The message of the authors in this handbook is one of progress – toward identifying the mechanisms by which digital media use impacts youths’ well-being, toward innovation in research methodology to understand these mechanisms, and, ultimately, toward supporting and improving the mental health of youth living in the digital age.

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