From Viral Content to Real-Life Cuisine and Beyond: Examining Teenagers' Interactions with TikTok Food Videos and the Influence on Their Food Practices

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TikTok has gained immense popularity among teenagers, offering access to numerous user-generated content. Notably, food videos have emerged as a prominent theme on this short-form video social platform. The casual and enjoyable nature of short food videos on TikTok belies their potential influence on one of teenagers' most immediate and regular health practices–eating. Understanding how teenagers interact with these videos, their subsequent actions, and the resulting impact on their food practices and eating habits have the potential to provide insight into their broader lifestyle choices and their interactions within their social circles, including parents, friends, and other people online. By examining how teenagers use TikTok food videos online and offline, we gain a deeper understanding of the intricate relationship between social media, teenage lifestyle, and social dynamics surrounding food practices.

In this research, we conducted 15 semi-structured interviews with teenagers aged 13 to 19, investigating their consumption of TikTok food videos and the actions inspired by them. By examining the multifaceted influence of TikTok food videos from a temporal perspective, this study contributes to the reflections of teens' use of TikTok food videos and their inspired food practices in the short and long term, online and offline. We propose design and theoretical implications to support teenagers' health. These insights have the potential to extend to various contexts, helping educators, policymakers, and designers in fostering healthy lifestyles among teenagers.

CCS Concepts: • **Human-centered computing → Collaborative and Social Computing**; *Empirical studies in collaborative and social computing*.

Additional Key Words and Phrases: health; social media; teenagers; healthy eating; food; TikTok

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1 INTRODUCTION

In recent years, social media platforms have revolutionized the way people consume and share content, opening up new opportunities for self-expression and social interaction. Among these platforms, TikTok has emerged as a global phenomenon, captivating millions of users worldwide with its short-form videos encompassing a wide range of topics. In particular, it has become a

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popular platform for creative food videos, giving rise to a flourishing food culture where individuals, particularly teenagers, engage in the creation and consumption of visually enticing and innovative content on food [96].

In the current era, teenagers have unprecedented access to technology, with 97% of them being online daily [94]. This surge calls attention to the need to examine how teenagers interact with online technologies. Erikson's Eight Stages of Development emphasizes adolescent peer relationships take on heightened importance and increased conflicts regarding identity and role confusion [31]. As social media platforms have become integral to teenagers' lives, these technologies significantly influence their online and offline identities [68, 73]. Existing research on teenagers and health concerning social media often explores issues such as cyberbullying [62], eating disorders [25, 55], and mental health [39, 77]. These areas focus on online risk and harm exposure in teens' daily lives.

Additionally, access to social media platforms influences teens' dietary health. The rapid growth and popularity of TikTok food videos have reshaped the way teenagers approach healthy cooking and eating [2]. As active users of TikTok, teenagers' food perceptions and eating practices are thus susceptible to influence. Therefore, it is important to understand their use of such information sources on their food-related behaviors, preferences, and attitudes. This paper aims to explore the intersection of teenagers, social media, and food culture. We take TikTok as rich grounds for this research not only because of its popularity but also because of the platform's ability to deliver short, easily digestible content that effectively captures the attention of teenage users. Food videos, in particular, have taken advantage of this format, employing unique aesthetics, creativity, and informative storytelling to captivate viewers [18]. By showcasing visually stunning recipes, cooking techniques, and food hacks, TikTok food videos inspire teenagers to explore culinary skills and diets as well as connect them with social groups partaking in food-related trends and challenges [96]. We frame this research around the core research question: *How do teenagers use TikTok for food videos, and how does that influence their food practices?*

Through interviewing 15 teenagers who frequently watch food videos on TikTok, we found a series of temporal-based actions teenagers took during and after they interacted with TikTok food content. Using a temporal model [96] as a guiding structure, we collected empirical evidence of how teens use food videos both online and offline and discussed design and theoretical implications to guide future research and design to support teenagers' healthy behavior.

It is important to keep in mind that while there is evidence to suggest that TikTok videos allow teenagers to explore healthy eating practices, their uses and perceptions of the content change over time. TikTok and associated technologies used by teenagers to support eating habit forming can shift depending on where users are in their development of eating habits. Specifically, our study shows how teenagers use TikTok in varied ways that are in sync with their exploration and planning for food. We also show how interactions with family and friends versus other TikTok users contribute differently to their food plans and ideas. We discuss the potential for short video-based social media to act as lightweight technology to support healthy behaviors in changing lifestyles and join emerging research advocating youth-centric design for health and well-being [6, 97].

2 BACKGROUND

2.1 Teenagers and Social Media

Individuals aged 10-19 are classified as teenagers in our study, as per the World Health Organization [69]. Also known as "digital natives," current teenagers were born into a world where digital technologies are ubiquitous[76]. Nearly 97% of teenagers have at least one social media account [4]. In 2022, 95% of US teens have reported using YouTube, 65% used TikTok, and 62% used Instagram [95].

Social scientists argue that media and technology have a direct impact on young people's lives and are now an integral part of their psychosocial experience [61]. Previous studies have shown that teenagers are highly influenced by information on social media about dieting, fitness, and body image [47]. While social support and health information can be beneficial for those seeking to improve their health, negative body image can be induced through social comparison and weight and appearance-related worries exacerbated by social media [19]. For example, even though body image on social media has shifted from a "thin ideal" to the rise of the more popular "athletic ideal" [89], studies have shown that it still has similar negative impacts to a person's body image [38]. Many researchers have examined the opportunities and challenges of addressing issues like eating disorders, bullying, stigma, and sexual health on social media [32, 81], highlighting the potential of social media campaigns to engage youth in promoting health knowledge, awareness, and attitudes [75].

Adolescents' eating habits are crucial to their physical growth, well-being, and sense of self. These habits are influenced by a variety of variables, including knowledge, attitudes, socio-demographic traits, behavioral, familial, and lifestyle factors [15, 79]. Dietary health, in particular, has been identified as one cornerstone of adolescent development since the overall amount of nutrients needed for growth and development throughout adolescence is more than at any other phase[27]. From a psychological development perspective, in this stage of life, teenagers exhibit sensation-seeking and novelty-seeking behavior that is heavily influenced by their peers. As a result, teenagers often exhibit emotion-driven decision-making and do not adequately consider long-term consequences [28]. These distinguishing behaviors cause them to take various stances when it comes to experimenting and developing habits. Furthermore, adolescence is a time when people start learning to take responsibility for health-related actions and attitudes in their lives [5, 93]. The formation of identity and increased independence happening during this period as well as subsequent changes in behavioral patterns are likely to have an impact on long-term habits into adulthood [35, 46, 92].

Prior studies have identified facilitators and barriers to teenager healthy eating lifestyles, including sensory properties of food, convenience, availability, cost, hunger, emotions related to food, and their understanding of healthy and unhealthy eating [27, 49, 65]. Existing research also closely examined the relationships between social media platforms and eating disorders. For instance, the likelihood of teenagers developing eating disorders is associated with their preference for using photo-based social media, such as Instagram and Snapchat [16, 25, 55]. Evidence suggests that social media photo sharing, investing in images, and photo manipulation are linked to a higher risk of eating disorders. Other studies on Facebook, Snapchat, Instagram, and Tumblr also showed that spending too much time on social media increases the likelihood of eating problems in middle school students [104].

In this study, we seek to provide an in-depth examination of how teenagers approach short-form video-based social media and how they adopt strategies for healthy eating decisions and habit forming. Building on prior research about social media influences on teenager health behaviors, we focus on *how* teenagers adopt and adapt these influences and how these reflect on their online and offline interactions around healthy eating activities.

2.2 Food Content and Healthy Eating on Social Media

The influence of social media on healthy eating is profound. Media and technology are considered to have played a role in altering attitudes and beliefs about nutrition over the past 50 years [36].

Since the rapid growth of social media, food content has remained one of the top popular topics on the platforms. The popularity of this content led to interesting discussions on how people use it and how it influences people's behavior. For example, viewing calorie-dense food on social media can stimulate the brain and release dopamine, which leads to positive engagement with the

food content on social media [70]. Viewing images of luxurious food promotes mental simulations and increases appetite [12, 90]. Viewing lots of food photos may cause fullness with a particular sensory focus [50]. The value of food content, including creativity, pleasure, nostalgia, gifting, family togetherness, trend-seeking, and relaxation has also been found to influence eating practices [37].

Creating food pictures can also impact eating behavior. People feel more accountable for their food choices if they make the effort to take a picture of it [28]. This action leads to better eating habits over time and greater momentary enjoyment. The increased attention brought on by food photography may enhance memory, which might help people maintain their weight over the long term [7].

People of all ages are turning to social media platforms like TikTok and Instagram for food content [29]. Instagram, a popular photo-based social media platform, has attracted many people to post and share their food photos. Many people with healthy eating goals appropriate Instagram to track and share food data and obtain social benefits from doing so [24]. People also shared food content on Instagram to express themselves, ritualize connections, and develop accountability for healthy eating practices [1]. These studies show how social technology has the potential to influence people's healthy behaviors while also providing social needs.

Many studies also design systems to leverage social potential and affordance to encourage users to eat healthily. For example, allowing users to share and positively evaluate each other's meals can casually encourage healthy eating habits [85]. Promoting healthy foods on young consumer social networks also has the potential to encourage them to adopt healthy lifestyles [78].

Our study on TikTok continues this ongoing conversation of modern, fast-paced social media's role in teens' food-related self-representation, rituals, and habits. We seek to understand teenagers' consumption of food content on short-video-based social media and their behaviors influenced by this content. Understanding the use and non-use of this content has the potential to inform future technology supporting teenagers' healthy eating habits.

2.3 Study Contexts

2.3.1 TikTok as an Example of Short-video-based Social Media. TikTok has established itself as the dominant social media, taking root in today's social media zeitgeist. Following the demise of Vine (2013–2017)[1], Musical.ly's popularity (2014–2018) stimulated the recent growth of short-video-based apps, including Byte[2], Triller[3], Zynn[4], and Likee[5]. To date, TikTok has the highest user numbers and engagement and is one of the fastest-growing social media applications in the United States [20]. TikTok is especially popular with younger populations, with people under 19 comprising 25% of the users as of 2023 [21]. The platform facilitates the spread of social and cultural content and has the potential to impact users and their behaviors online and offline [63, 111].

Video sharing platforms like TikTok are a distinct form of social media due to its being "content communities" where contributing video and establishing communities are central to platform culture [9, 43, 91]. Short-video mobile applications like TikTok differ from traditional social networking

[1]Vine was an American short-form video hosting site that allowed users to share six-second looping video clips. Its service was shut down in 2017 and discontinued after 2019 [102].

[2]Byte was a social networking platform for short-form videos that allowed users to make looping videos that lasted between 2 and 16 seconds. It was later combined with Clash and given the name Huddles in 2020 [99].

[3]Triller initially operated as a video editing app using artificial intelligence to automatically edit distinct clips into music videos. Later in 2020, Triller branched out into sports promotion, delivering pay-per-view boxing matches [101].

[4]Zynn is a Chinese video-sharing social networking service. It allows users to make and share quick videos and also compensates users for downloading and recommending the program [103].

[5]Likee is a short video social platform that allows users to easily create and edit videos using a variety of augmented reality effects [100].

services (i.e., Facebook and Instagram) since they are exclusively made for individuals to interact with user-generated video content rather than with each other on it [48]. The designs of TikTok are initially structured around promoting users' mimetic processes, rather than interpersonal connections [111]. For example, TikTok's default page, the "For You Page", presents videos selected by an algorithm that match the user's interests and engagement patterns, rather than videos from their friends. By precisely analyzing the user's preferences based on the user's preferred video type and viewing retention of a particular video, TikTok can increase user engagement by providing the user with certain video content [107].

TikTok users can record special moments and turn them into brief recordings that span a few seconds to a few minutes with the help of simple video editing tools. To gain "likes" and followers, users can also download and re-post these films on other social media platforms[110]. Centering around images and emotions, these short videos are easy to make and have the potential to become widespread quickly [98, 108]. TikTok's "15 seconds of fame" culture creates a unique space for self-presentation, encouraging users to condense their identities and talents into bite-sized performances, fostering both creativity and a heightened awareness of online image [58]. TikTok, being a part of the acceleration society, caters to the audience's habit of consuming short and fragmented content. It blurs the boundaries between production and consumption, distorting people's understandings of social norms, experiences, and time [26, 41]. Furthermore, unique elements on TikTok play a role in shaping authenticity as a norm for self-presentation on the platform, such as the potential for anonymity for both users and their audience, the connection between content and the For You Page, and the unique video format. These factors also make TikTok a suitable environment for the exchange of social support, and also staying updated on trends [8, 58].

On the other hand, there are also perceived harms that led to the non-use of TikTok, including a fear of addiction, perceived low-quality videos, fear of negative influence on their health, a "waste" of time, and dissatisfaction from the videos recommended on their For You Page [59].

With its rising popularity, TikTok has become an everyday product that teenagers use in their lives. We use this platform as an opportune context to investigate how these fast-paced and short-form videos inform teenagers' short- and long-term eating practices.

2.3.2 Temporal-Based Actions on TikTok. We structured our findings according to the four-stage model proposed by Wang and colleagues [96]. This model describes preliminary findings of how teenagers perceived TikTok food videos and the actions they took after engaging with the content. This temporal model allows us to closely examine how teenagers took immediate to long-term food-related actions both online (on TikTok and other systems) and offline, with and without specific health-related goal-reaching intentions. We see this model fit to analyze data in our study context (see section 4). The original model describes four different types of actions taken during and after teenagers watching food videos on TikTok:

- Immediate Actions: actions teenagers take directly after watching TikTok food videos.
- Planning Actions: the ongoing process of responding to TikTok food videos.
- Planned Actions: the process of executing food ideas from the planning actions stage.
- Reflective Actions: long-term actions that span beyond planning and planned action stages.

3 METHODS

3.1 Semi-Structured Interviews

With the institutional review board (IRB) approval, we conducted 15 semi-structured interviews [56] with English-speaking TikTok users aged 13 to 19 who watched food videos on the platform; our sample size falls within expected values for comparable interview studies [17]. We chose this age range because while teenagers are defined as people aged from 10 to 19 years old [69], TikTok

requires its users to be at least 13 years old [88]. We asked participants about their eating habits, their experience of using TikTok and watching food videos, and how the food content influenced their food practices.

3.1.1 Participants. We recruited participants by posting on social media (Reddit and TikTok), sharing recruitment emails to mailing lists, and putting up flyers in universities, libraries, restaurants, local organizations, and high schools. We interviewed 15 participants who (1) were between 13 to 19 years old, (2) used TikTok to watch food videos to some degree, and (3) spoke English. All of our participants under the age of 18 assented, and their parental consent was waived according to our university's IRB protocol. Participants above 18 provided consent. 86.7% of our participants identified as female (n=13), and the participants' mean age was 16.7 (*SD*=1.99). Detailed participant information can be found in Table 1. All participants were compensated with a $10 Amazon or Starbucks gift card of their choice for their time.

Table 1. Overview of Study Participants

Participant	Age	Gender	Frequency of Using TikTok
P1	15	Female	every day
P2	13	Female	once a day. She set a limit of 30 minutes a day
P3	14	Female	a few times a week, depending on how busy she was
P4	16	Female	every day
P5	18	Female	every day, less than an hour a day
P6	14	Female	every day
P7	18	Female	once or twice a week
P8	15	Male	a few times a week
P9	18	Female	every day
P10	18	Male	every day, 1.5 hours a day
P11	18	Female	every day
P12	18	Female	every day, mostly on weekends. She limited TikTok screen time on weekdays.
P13	19	Female	every day
P14	19	Female	every day before bed
P15	17	Female	every day

3.1.2 Interview Protocol. Our interview protocol consisted of two parts. We first asked participants about their current eating habits, including what they had for regular meals, their cooking experiences, what they thought about healthy eating, and whether they had healthy eating goals. Focusing on how using TikTok influenced their eating habits, we then asked what type of food content they typically watched on the platform, how they interacted with food-related videos and the creators, and what they did during and after watching a food-related video. Interviews lasted between 40 to 60 minutes (*Mean*=50:43, *SD*=0.35). All interviews were recorded, anonymized, and transcribed using an online transcription service.

3.1.3 Analysis. The research team used a mix of inductive and deductive approaches to analyze the data. Building on Wang and colleagues' Temporal-Based Actions [96], we first looked for actions participants adopted after watching TikTok food videos. As the interview progressed, we used the new data to iterate and refine the definitions and names of these temporal-based actions as

"immediate actions", "planning", "executing actions", and "developing long-term reflective changes". Specifically, in the "planning" stage, we expanded the inclusion of social collaborative actions, such as teenagers actively "sharing" recipe videos they intended to try out with friends and family. This addition highlights the significance of social engagement and collaboration in the planning process. We renamed "reflective actions" to "developing long-term reflective changes" to emphasize the temporal differences of this stage. We note that during this stage, teenagers were actively engaged in cultivating and sustaining long-term changes in their attitudes, behaviors, and habits related to healthy eating. Therefore, by emphasizing the "developmental" nature of this stage, we highlight the importance of continued reflection and the gradual integration of healthy eating practices into teenagers' daily lives. The research team met regularly to discuss and reorganize data, create subcategories, and expand existing categories with new themes emerging through the process.

4 FINDINGS

In this section, we first describe what participants thought healthy eating meant and their healthy eating goals. We then introduce the actions that teenagers in our study took after they watched TikTok videos in the structure of the temporal model (See Table 2).

Table 2. Participant Temporal-based Actions of TikTok Food Video Interactions

	Immediate Actions	Planning	Executing Actions	Developing Long-Term Reflective Changes
Definition	Actions that are taken immediately during and after watching a TikTok food video	Specific ideas that participants decided to try out in the future after exploring food videos on TikTok	Actions that are executed after plans inspired by TikTok videos	Long-term diet regime or habits influenced by TikTok content. As teenagers tried out several recipes and diet regimens in the "Executing Actions" stage, they developed their own healthy eating attitudes and practices.
Time	Immediate and short exploration	Immediate or stretched out longer depending on the form of saving and/or note-taking	Depending on the type of activities/ideas, the required preparation and duration differ (e.g., a snack purchase vs. a week-long juice cleanse).	Often include iterations over time. Repeating executed actions, deciding what works, and developing habits that stick
Examples	Liking, reading comments, sharing entertaining TikTok food content with others	Saving recipes from TikTok using the "add to favorite" function or sharing food ideas with family members to try them out later	Making food from recipes saved from TikTok, trying out certain food ideas with others, or purchasing food planned beforehand	Becoming a vegan, having a balanced diet, or doing intermittent fasting regularly

4.1 Teenagers and Healthy Eating

A few participants in our study established their sense of healthy eating from their family, and most thought they ate healthily at home. When they reflected on what they would consider healthy, many mentioned home-cooked meals. For example, P10 shared how he always had what he considered healthy food at home but needed to establish new goals after he moved out:

> My mom would make only healthy foods. ... So I never had that problem of thinking about a healthy diet because it was mostly healthy, but when I came here [college dorm], Mom was not here suddenly. So I have to adjust to the dining hall food. And that's why I feel that I changed my goal when I came here. (P10)

P09 also relied on her mom for healthy meals as she *"would make [her] a lot of meals... she would always make sure that [they] had vegetables."* Others also shared that their parents would make sure they had enough vegetables (P11 and P12), meat (P3), and protein (P14). P3 and P14 especially

mentioned how their parents wanted to ensure their nutrition intake when they cut down meat to become vegetarian or vegan.

Similar to P10, some of the teenagers in our study were in the stage of leaving home for college and had to adapt to a different lifestyle, which included drastic changes to their original eating habits. For example, P1 reported that her family ate very organic food, but when she first gained control over what she got to eat, she spent it on less healthy food. On the contrary, different from P1 and P10 who came from families that value healthy food at home, P2 found herself eating "healthier" according to her definition of healthy eating. Before she moved out for college, her family always had meals that she considered "*typical American*", consisting of meal kits and frozen food. After she started college, she found herself having access to more varieties of food and was able to eat healthier than when she lived at home.

Many teenagers in our study were also influenced by their peers when it came to food choices. P14, who grew up as a vegetarian, tried meat in high school because of peer pressure.

> Everyone at school made fun of me. And they were like, 'You don't eat meat? What do you eat? Do you need substance and stuff like that?' So I started eating meat. (P14)

Peer influence was especially emphasized by teenagers in college. P5 and her friends often had meals together, and she found herself adapting to her friends' eating habits, such as going to restaurants that she would not consider a healthy choice. P13 was constantly inspired by the meals that her roommates and friends had and was encouraged to try new food items.

> Sometimes I see my roommates cooking different things. ... Or like I went to my friend's house and I saw they had Panera broccoli and cheddar soup. And I was like, 'Oh my God, I need that.' So I got it. (P13)

Some teenagers developed a healthy eating mindset from social media influences. P5 learned from TikTok that healthy eating is "*eating intuitively without worrying too much*". Instead of getting obsessed with her eating habits, she focused on being more aware of her body and her energy throughout the day.

Many teenagers treated TikTok as a window to explore more food choices and learn about healthy eating. Information on TikTok also made them aware of healthy eating practices. From TikTok videos, P3 learned about a divided plate method of everyday nutrition and emphasized the importance of getting enough nutrition from all groups. P6 discovered on TikTok that healthy food contains *"a lot of stuff of avocados"*, and would try to include avocados in her meals.

4.2 Accumulative Quick Actions on TikTok to Curate Preferred Food Content

Teenagers in our study took "immediate actions" right after they came across a TikTok video about food. Upon opening their TikTok application, teenagers started to scroll through the videos on their For You Page. Participants reported several levels of engagement with the TikTok food videos: purely enjoying the video but not with others, such as "liking" and not "following"; further engaging with the video, such as "reading comments" and "sharing"; and facing challenges of curating and engaging with the desired content on their For You Page, such as "reporting" and clicking "not interested" on videos.

4.2.1 Simply Enjoying Food Videos with "Likes" and "Follows". Sometimes teenagers in our study just wanted to enjoy the food videos without thinking about future actions or plans. They appreciated the ephemeral aspects of TikTok food content and used the "like" button generously as it was designed—to like food videos they enjoyed watching but had no intentions of interacting with these videos in the future.

> Likes are given out really generously. You don't 'like' specific videos that you 'really, really like'. If you just kind of like it, or appreciate it, you'd 'like' it. And so you can't really flip through your liked videos because there's just way too many. (P2)

For the same reasons, participants used "follow" to encourage TikTok algorithms to show interesting food content on the For You Page. For example, P2 shared that she did not spend much time watching the content on her "Following" page but knew that TikTok would suggest similar videos based on who she followed:

> I don't even look at my followings anymore. I am mainly on the For You Page because it's interesting enough that I don't have to follow people, but they could still give me videos that suit me based on my following. (P2)

4.2.2 Further Interactions with Food Videos in the Comment Section and Sharing. When teenage participants did want to adopt ideas from food videos, they considered it important to read the comments in conjunction with or supplement the food videos. P15 emphasized how she made sure to read the comments, especially for videos she was very interested in: *"I always went through the first 10 to 15 comments (of a TikTok video) ... if it's something I'm really interested in, I'll flip through [the comments] a lot more."* P2 similarly emphasized the importance of the comments, sometimes focusing on them more than the video itself:

> A lot of the time you're not really paying attention to the video itself. Because the comments take half a page, most of the time I'm listening to the voice-over or music and reading the comments while also paying attention to the top half of the video. (P2)

Participants often used these comments to gauge the accuracy or reliability of a food video. P7 remembered using comments as a way to determine if a recipe is worth their time. *"If the comments are saying that [a recipe] is really bad"*, then P7 would *"look into it"* with more scrutiny, whereas if the comments that echoed a recipe being *"really good... influences [their perspective] a lot,"* it would prompt them to *"do more research afterward."* P15 also shared how she identified paid promotional content by reading the comment section. In this case, she noted how *"the comment section influences [her] more than the video itself... because sometimes the actual video might be promoting something, and [she] might not know."* Comments often directly tell viewers *"what is good and what isn't (paid promotion)."*

Participants in our study also used the comment section in search of useful information beyond what was presented in the original video. P4 shared how she often looked for unit conversions in the comments:

> [The content creator] does recipes in cups, which is kind of annoying. I usually scroll through comments and there's someone who puts in grams for me. (P4)

Others paid attention to comments that included failed attempts or alternative approaches to the same recipe:

> The comments are like, 'I tried making this and it didn't turn out good'... and somebody else added a comment that offered alternatives and stuff to the main video. (P11)

Participants also used the sharing function with friends and family. Participants sometimes would immediately share food videos that simply "looked good" with friends and family. The intent for sharing ranges between making suggestions for food they plan to eat at a later date, or simply sharing the visual appeal or entertainment of the food content:

> Those are the videos that I'm like, 'Oh, this looks so good. But I know I will be in a food coma afterward.' Or I will be really not feeling good afterward. It just looks good. (P9)

In summary, we found that teenagers used the immediate actions of reading comments and sharing on TikTok to engage with the food content they found agreeable or entertaining. These low-commitment interactions allowed them to express and share their outlook on food as they prioritized its use efficiency, as summarized aptly by P9's sentiment of wanting to *"just go on with [their] life"* (P9).

4.2.3 Curating and Engaging with Desired Food Content. Teenage participants were aware that their immediate interactions with food videos influenced what TikTok algorithms would show them. Therefore, many of them chose to interact with the food videos in intentional ways to curate future food content that might show up on their For You Page. For example, to avoid seeing food content that made her crave food at night, P12 avoided "liking" videos as seeing *"too much food content [would cause her to] get too hungry and... [subsequently] 'hangry' (portmanteau of 'hungry' and 'angry')."* Instead, P12 would "save" food content for later viewing as she is aware if she eats at night she would *"just be up all night and just be super energized."*

To more proactively curate the TikTok recommended food content, teenagers used the "report" and "not interested" buttons to avoid videos that they did not like, whether it be content or *"how [the video] is being presented"* (P7).

Participants also explained using "report" or "not interested" with restraint because they were afraid to lose all the food content on their For You Page. P8 worried that clicking "not interested" would show him less food content in general.

Similarly, P4 mentioned that her dislike of bananas made watching food videos with bananas uncomfortable for her, but she was afraid that clicking "not interested" would limit all healthy food video recommendations. P4 explained how the lack of ability to single out the banana in *"bananas in pancakes"*, *"banana muffins"*, or *"[banana] in smoothies"* caused annoyance and frustration in their attempt to still receive healthy recipe videos.

Teenagers also saw the act of ignoring videos as a means to curate their video recommendations and avoid harmful content. P5 explained how they found *"health coaches... [to be] weirdly aggressive,"* *"disingenuous,"* and *"weird"* and would simply *"scroll right past it"* in an attempt to indicate to the app that they were not interested.

4.3 Using TikTok Videos to Plan as a Negotiation and a Social Activity

There were several ways teenagers used TikTok to *plan* their diet, such as saving videos using the Add to Favorite function, sharing food ideas with others to try together, taking notes from TikTok food videos, and directly searching for food-related things on TikTok. Participants revisited the items added to their "favorites" when they prepared a meal or bought food.

> If I'm hungry and I'm like, "Oh no, what should I eat?" I go to the [TikTok] collection and I just see what catches my eye. If I have any ingredients for it I make that. (P11)

4.3.1 Saving Food Videos for Later Use. Teenagers in our study used "Add to Favorites" to save videos that they wanted to revisit and follow the recipes. Before May of 2022, this function would only appear when users long hold on a post. Now it appeared in plain sight on the left of the screen, along with "like", "comment", and "share". None of the participants in our study reported differences in use between the changes.

Some participants used "Add to Favorites" to plan for a particular eating style. For example, P11, a college student, saved videos that emphasized *"healthy,"* *"easy [to cook]"*, and *"cheap"* options, acquiring *"a whole collection... of new recipes"* they want to learn.

Other participants saved recipes to try later. For example, P15 saved videos about grocery items that she wanted to buy. P6 shared how she saved recipes for "viral foods" on TikTok, such as *"cloud dough"* and *"chocolate bomb"*, to recreate once she got the ingredients.

Deciding whether and what to save in the favorites was not always easy. Without saving these videos, users would not be able to find them again among the enormous corpus of videos:

> You end up getting them mixed up. Their @ could be incredibly similar to someone else's. If you get one digit off, you will never find them again, unless you favorite the video, or save it to your photos. (P2)

On the other hand, saving too many videos made it harder for participants to find specific videos. P4 explained how they intentionally *"don't have many 'favorited' videos"* to keep these videos *"very much near the top,"*, thus only needing to simply *"scroll down maybe once [to find them]."*

Even though TikTok had introduced the function of categorizing posts in the "favorite" section, only one of the participants used the function to group food videos together.

Some of the participants downloaded the videos to their phones to bypass the issue of having their favorites section overloaded. P14 differentiated recipes she downloaded to be ones she *"might actually cook"* and recipes she saved on TikTok as simply *" 'oh this is cool.' "*

Other participants downloaded videos to their phones because they were worried the posts might be retroactively deleted. P2 explained how they felt *"a lot of [her] favorited videos... end up getting deleted"* and downloading videos avoided her *"[taking her] chances"* of losing videos.

4.3.2 Searching for Alternative Ideas or Options on TikTok. In addition to watching recommended videos from the For You Page, teenagers in our study also searched for specific food content on TikTok. Many participants reported this was their preferred method of researching food ideas as it was quicker and easier compared to other means. P6 explained they preferred *"looking things up on TikTok more than Safari because it's a lot easier"*, and by simply *"[scrolling] through videos, they [immediately] show you how to do it."* P15 elaborated on this by explaining how having *"someone [on TikTok] telling [them] the information through a video"* afforded easy research compared to *"looking up [the same information] online and reading an article."*

For example, P4 shared her experience of searching for *konjac noodles* recipes on TikTok after she bought them.

> I searched (them) up to see what people said about them. And I was kind of freaked out because people will say, 'Don't eat them. I had such bad stomach problems after.' And all comments were like, 'It's because you didn't drink water. The packet specifically says drink water with this.' (P4)

Here, P4 quickly found TikTok videos that shared concerns regarding konjac noodles, but she was able to just as easily cross-reference other people's experiences in the comment section as a quick additional step of the inquiry. Importantly here, P4's description of this experience portrayed both the TikTok video and the comment section as entities she was having conversations with.

4.3.3 Sharing Videos to Plan for or Negotiate What to Eat. Teenagers in our study "shared" food ideas with others as a way to plan for future meals. Since most teenagers in our study still relied on their parents to provide meals, they often shared these videos to express or negotiate what they wanted to eat.

Some participants looked for and shared videos about food that they could enjoy with their parents. For example, P9 mentioned asking her mom for Korean dishes that they both enjoyed as a way to bond and celebrate their cultural heritage:

> I might look for Korean meals I've never heard before that I would want to see if she knows how to make or that she could try... And I'm like, 'Oh, this looks nice'. And she likes doing that, too. (P9)

For others, sharing food videos prompted conversation and helped make plans for future family gatherings. P5, who was away from home for college, exchanged TikTok food videos with her mom as an evening ritual to keep in touch and plan meals to cook together when she returned home.

> I usually send my mom TikToks every night. And she sends them to me too. ... I like to send that to my mom because we usually cook together. I can't cook here, so I like to send it to her and say like, 'Hey, we could do this when I come back.' (P5)

Sometimes participants shared food videos in an attempt to help their parents' meal prep despite knowing their parents might not like the content. The parents often refused the video's ideas due to health concerns, but teenagers still found value in sharing the videos as a means of continued negotiation and conversation about food and health. Importantly, the participants reported their parents not outright refusing without reason, but always attributes it to a health conversation:

> 'Look at this Mom, doesn't this look so good?' And sometimes she'll watch it and be like, 'I can try that' or she'll be like, 'No, I don't want to make that, that's really bad for you.' But usually, when I send her something like that, it's when she doesn't really know what to make. So, like, 'maybe this helps.' (P5)
>
> It'll be something that's super duper cheesy and salty or whatever. And she doesn't really like salt that much. So she's like, 'No, I can't make you that. That's so bad for you, you're gonna get heart disease.' (P9)

Some participants also shared food ideas with friends to see if they would like to make or enjoy the food together. P4 enjoyed baking and sharing her baked products with her friends. When she finds *"a recipe [she] really likes"* on TikTok, P4 would share it with her friends and poll their opinion by additionally asking *"Do you want me to make this?"*

4.3.4 Leveraging Other Tools to Help with Planning. Participants also used external tools to help with their planning process in conjunction with the TikTok videos. Some participants wrote down recipes or took notes of ideas they saw in videos. P7 expressed how writing down notes on paper was particularly helpful for her memory as it provided direct learning reinforcement and alleviated issues she had with the small real estate of phones:

> I personally like writing stuff down a lot better. And my phone is really tiny, so it just gets annoying if I have to type a lot of stuff and I can't read fast enough. But they (teachers) said if you write stuff down, then it's easier for you to remember. (P7)

Some participants took recipe notes to make up for the lack of information on TikTok videos. For example, P11 took notes of the ingredients she saw in a chicken recipe video. Since the video did not *"list the [ingredients]"*, she had to take note of the ingredients and the *"list [of] steps [in a] way that makes sense."* Additionally, P11 noted how documenting these ingredients and steps manually also avoided the trouble of needing to find the same video when it inevitably got lost, expressing the particular frustration that *"it would be so hard to go through [the videos just] to find it again."*

Some participants used other systems to note down specific action items for future reference. For example, P15 kept and updated a grocery shopping list on her Notes application whenever she saw things she wanted to buy on TikTok. Similarly, P7 used a planner to make plans on specific days she would like to execute her plan inspired by TikTok. For example, when she was trying a *"week of juice cleanse"* challenge that she learned from TikTok, she noted down specific dates and steps on a *"spiral notebook"* she kept specifically to *"plan ahead [for] what days [she] would like to try [new food ideas."*

Sometimes teenagers found TikTok's short-form videos provided insufficient details and would defer to the creator's longer videos on other video platforms. P2, P5, P8, P9, and P10 all reported to have needed to visit YouTube for additional recipe details as it *"has more time to give a detailed description about the recipes"* (P2). In these use cases, YouTube was perceived as a more authoritative platform due to being *"more informative [than]... a 30-second video on TikTok"* (P10). However, our participants still reported finding value in TikTok's shorter, less informative videos. P2 explained how they used TikToks as a *"pretty helpful... trailer"* even though it's not always feasible to *"follow a TikTok video to make something, but it gives you a [starting] idea."* Similarly, P8 would *"remember the technique they (TikTok creators) used [for steak grilling]"* and follow up by *"[looking] up how to do [the techniques in more detail] on YouTube."*

4.3.5 "Planned but Never Acted". Teenagers in our study also reflected on how sometimes they *planned but never acted* after being inspired by TikTok videos. P10 described the frustration of having *"so many things [they] want to do with food, but [they] can never seem to take [any] action"* on these ideas.

This difficulty could be attributed to various factors, such as limited access to ingredients or cooking tools or the aforementioned parental refusal to make unhealthy recipes. Other times the actual effort required to make a recipe from an inspiring *"trailer"* turned out to be too time- or resource-intensive. However, participants would still save the videos for later reference despite knowing there was very little possibility of actually following through:

> They put a lot of time into making this fancy-looking meal, or this little lunchbox. And I was like, 'Yeah, this looks awesome.' But I don't know if we had that stuff. And I don't have a certain box for it. I just don't really have that much time either. It was fun to watch. I would always save them. So I'll do it later, maybe. (P9)

4.4 Experimenting and Making New Food Experiences Seeded from TikTok

When teenage participants did decide to act upon ideas inspired by TikTok videos, they took action in the forms of purchasing ingredients, buying specific food items, making new dishes or baked goods, and experimenting with diet regimens. While they did not always succeed, they did find enjoyment in the new experiences, leading some to create their own TikTok content.

4.4.1 Purchasing Food and Ingredients inspired by TikTok. Seeking specific food items or ingredients was the most common form of TikTok-inspired action. P4 shared a particular TikTok food experience when she learned that dumplings were nutritiously balanced food and sought out the opportunity to purchase dumplings. P15 kept a grocery list of items inspired by food reviews and made sure to buy everything on the list when she went shopping, as she did with *"a really famous tomato sauce that people [used] for pasta."* When asked to reflect upon how often this happens, she explained that she went through different phases of inspiration, such as *"going through a spaghetti phase... [that] probably would go away a little bit when [she] gets tired of it."*

After teenagers acquired ingredients for specific TikTok dishes, they sought out more recipes with those ingredients on their For You Page. For instance, P4 bought chocolate chips for a TikTok recipe for a buttercream-based recipe. After realizing how much less work it was to use chocolate chips compared to *"hand-chopping [chocolate]"*, she watched more related videos and *"ended up with so many recipes with chocolate chips."*

4.4.2 Cooking and Baking Following TikTok Recipes. Many teenagers in our study followed recipes they found on TikTok to learn to make food they enjoyed. When participants planned to make food from recipes off TikTok, they revisited saved videos, checked notes, or relied on memory. P12 shared how she re-watched videos on TikTok by using *"the little [video progress] scroll on the bottom*

of my phone to skip to the part [of the instructions]... or look through the comment section and see if someone wrote [the recipe] down." Other strategies include using handwritten notes (P10) and re-watching the same video multiple times to commit the recipe to memory (P8).

P3, a baking hobbyist, used TikTok videos as a source of inspiration instead of following recipes. She shared how she would browse TikTok videos on birthday cakes to find ideas for a cake for her brother. In contrast to P8, P10, and P12, P3 did not find the need to follow the recipe and only used the video to source ideas for her own creation. P3 shared, this time baking for her dog's birthday, that her strategy involved searching *"what dogs eat for the birthday"* and *"mixing a few recipes together"* to make her own cake, remarking how this ownership in the process felt *"really cool."* In contrast, TikTok baking videos inspired P2 to try baking for the first time. P2 mentioned making cream cheese bread following a TikTok recipe as she was enticed by a video featuring a *"really, really, really fluffy cream cheese bread,"* and remarking her attempt to be *"honestly pretty good"* despite it being her first time baking.

Other participants noted how making viral TikTok recipes was a form of social exchange. For P6 who had little baking experience, she opted for simpler recipes such as *"cake pops"* and *"chocolate bombs"* since those were *"all over TikTok."* P9 enjoyed baking as a pastime, primarily sharing her creations with her boyfriend as she kept *"seeing videos... of people making really cute little pastries that are like little animals,"* and even on some occasions baked *"really simple [recipes] together"* with her boyfriend.

The overall sentiment across participants was that these viral recipes were easy entryways as the videos presented the recipes to be accessible and attainable. The most frequent types of food they listed as *"easy"* recipes included spaghetti (and pasta in general), ramen, and mocktails. P13, who never made pasta before, highlighted a specific pasta-focused TikTok creator to be an exemplar creator for their *"very simple, easy ways to make pasta"* as *"it has fewer steps [and] the pasta didn't have meat,"* significantly reducing the recipe's steps, effort, and *"chance for failure."* P6 and P8 noted how they were drawn to mocktail recipes for the same reasons of the recipes being *"easy... and less time-consuming."*

Not all attempts to cook or bake based on TikTok videos were successful. Many participants talked about the failed attempts when trying food ideas from TikTok:

> So it was this Korean taco thing, and then I tried to put it together with three ingredients that I had at home, and then it did not turn out like the TikTok at all! So I think I just gave up at that point. (P12)
>
> I didn't [comment when I failed] because I don't like to be mean on TikTok. And I don't like commenting. Because I feel like people can take it the wrong way. It can be sad. (P1)

The central sentiment shared across these stories was that of self-blame, attributing their failed attempt to *"not following [the video] correctly"* (P8) and deciding to not interact with the content further through negative means (e.g., leaving a dislike button or unfavorable comment).

4.4.3 Trying Healthy Eating Strategies. Teenagers in our study learned various strategies to eat more healthily, such as by integrating healthy options in their food, substituting ingredients, or adopting new diets and eating methods.

Many participants saved TikTok food videos that presented healthy alternatives to the food they already liked. For example, P9, P10, and P14 all shared how they incorporated healthier ingredients they discovered on TikTok videos when they made ramen, such as adding eggs and vegetables. P10 specifically mentioned the video he saved from a celebrity chef demonstrating *"how to remake... instant ramen into something better,"* explaining that the video content resonated with him *"as a college student"* since the video *"makes [ramen] more healthy by incorporating some [healthier]*

ingredients" that were readily available at his college dining hall. P4, P6, P9, P11, and P12 all shared how they learned how to make pasta healthier using substitutes, such as swapping from *"pasta to konjac noodles"* that were *"lower [in] calorie and healthier"* (P4).

Besides making healthy changes to their meals, participants also experimented with different types of eating habits, such as cutting down on meat, keeping track of nutritional intake, and adopting new dieting methods. P2 decided to decrease her red meat consumption after learning from a TikTok video about how it simply *"is just not as good for you"* and *"are overpriced."* P4 shared how she found intermittent fasting helpful as it *"makes [her] less likely to overeat."* P7 and P14 both incorporated smoothies into their regular eating routines as some TikTok videos had explained how to customize smoothies with ingredients for specific outcomes:

> I get some smoothie [videos] from TikTok. Sometimes where they're talking about the different types of smoothies and they're like, 'If you put in these blueberries, it's like an antioxidant'. Bananas are good for replenishing. So I get recovery shake, stress relief smoothie, ... (P14)

In all these experiences, participants shared how the knowledge they gained from TikTok was instrumental in changing and developing their dietary habits towards—what they perceived to be—a more healthy trajectory.

4.4.4 Posting Food on Social Media. While all participants enjoyed watching food content on TikTok, only one participant (P6) posted food content on TikTok. P6 posted videos on different boba teas at a chain store and was met with a positive reception on TikTok. As a teenager who enjoyed watching viral food videos, she was eager to follow the food trends she saw *"a whole bunch of other people doing"* and desired to *"get in on [the fun]."*

Outside of TikTok, seven participants posted their food on other social media platforms, such as Instagram (P1, P3, P9, P11) and YouTube (P9). For example, P11 shared food videos on her private Instagram account which was only followed by her selected friends. She used the "Story Highlights" feature on Instagram to document her process of cooking, from *"starting the pot"* to *"seasoning the food,"* even being open and vocal to share her failed attempts with her friends, who responded *" 'what is that?' in a friendly way."*

When asked why they did not post any content on TikTok, participants explained that they did not think the food they made was good enough to be shared on the platform. They further explained how they believed TikTok posts needed to be innovative and visually appealing. For example, P10 thought the fact that the simple act of following a recipe did not warrant anything novel to the platform, describing it as *"nothing [he] can really share."* Other participants felt that they could not make the content as *"glamorous"* as the ones they saw on TikTok as they lacked the technical skills of *"lighting"* and *"props"* (P2). P12 wanted to post TikTok videos to document her *"[evolution] in cooking"* and her journey to *"perfecting [her] cooking"* and did post one video to start this endeavor. However, she ultimately did not post a second video as she did not think she *"[improved] enough to be making an entire series about it."*

4.5 Developing Long-Term Reflective Changes: Establishing Sustainable Relationships with Food and Healthy Eating Practices

As teenagers tried different recipes and diet regimens in the *executing action* stage, they developed their own healthy eating attitudes and practices over time. Some participants became more conscious of what they consumed after watching food-related videos. P4 shared that she used to eat a lot of snacks when she first got an allowance but shifted to a healthier diet after learning about the "divided plate method" on TikTok and practicing it in her daily life, focusing on balancing *"vegetables, a certain part protein, another part dairy, and then a very small part carbohydrate."* Similarly, P13

became more health-conscious as she cooked more TikTok video-inspired meals, explaining that she was more *"understanding [of] the food that [she's] putting in [her] body"* and explicitly felt that her *"relationship with food is getting better."*

Several participants also reported starting tracking nutrition intake due to TikTok influence. P15, who was on the basketball team at her school, started using a food-tracking application after she learned about it on TikTok. After tracking for a while, she also developed a strategy to keep up with her daily sufficient nutrition instead of focusing on every time she ate.

> [Influencers on TikTok] like talking about tracking your calories and macros and how much protein you should be eating a day. So I remember there's one point where after basketball season, I tried tracking my protein. ... And then I was just trying to get protein or vegetables and fruit in every meal. So I didn't have to make sure I had this or that at certain times of the day. I just tried to find a balance that was easy to keep track of. (P15)

For those participants who did not cook often, TikTok was used to remind them to eat healthier. P14 knew a lot about healthy eating and saved videos on healthy recipes. However, she seldom took action to make these meals and recognized that she did not *"eat the best (healthiest) right now."* Instead, she used TikTok as an *"encouragement to keep eating healthy"* and continued to *"learn more about different (healthier) options."*

After participants developed their own beliefs and attitudes toward healthy eating, some attempted to influence their peers. P14 shared videos about plant-based diets with her friends to *"educate and convince [them] to do this (plant-based diets)."* She even explained in detail the steps towards adopting a plant-based diet to her peers, such as *"[trying] to find substitutes,"* still allowing themselves to eat *"what [they] liked,"* all in hopes to pass forward the *"best advice"* for healthy eating she had seen on TikTok.

Across participants in our study, healthy eating was often synonymous with a healthy lifestyle and identity. In some cases, teenagers also attributed their healthy identity to exercise and maintaining an active lifestyle. P9 understood how healthy eating had to be incorporated into their physically active routines. P4 researched different healthy lifestyles through "a Day in the Life of" TikTok videos that present a story of the daily activities of a specific individual (e.g., "a Day in the Life of a Ballerina" or "a Day in the Life of a University Student"), aspiring to adopt these *"living the best life"* models:

> It's a lot of "a Day in the Life" thing. So they show what they do during the day and what they eat, like, "I get up, I do my morning stretch, I eat breakfast and I exercise." It's a very organized routine. (P4)

Similar to P4, P12 had also envisioned herself living out one of these model lifestyles in high school. When she entered university, she was finally able to enact all the plans she had for a model healthy life by *"looking up how to use gym equipment,"* eating *"health foods or superfoods or protein shakes"* on TikTok.

5 DISCUSSION

We contribute to the existing body of literature by examining how teenagers use TikTok food videos online and offline to support healthy eating. The researchers in this study are all interested in food content on social media and use TikTok on different frequencies. The first author is a frequent TikTok user; the other authors are less frequent TikTok users but are familiar with the use and experience of other social media platforms. The second author is familiar with food-related phenomena on social media, namely YouTube and Twitch. The third author offers professional perspectives on healthy eating and social media. This diversity provides a multifaceted perspective

that helped construct the study design and analysis. Building on our findings, in this section, we first discuss how to make healthy eating social to support teenagers to develop healthy eating habits. We also discuss how technologies such as TikTok can support the changing lifestyles of teenagers and leverage the four temporal stages of the social media-inspired healthy practices model. Finally, we reflect on the use of the model and propose potential extensions to the temporal model to capture more social media usage with nuances.

5.1 Making healthy eating social

TikTok as a social media platform allows teenagers in our study to interact with familiar and unfamiliar online while watching food videos. Their actions were influenced by the content on TikTok and extended to everyday offline contexts. Building on this understanding, we identify opportunities for technology design to better support teenagers in connecting with close ones and other TikTok users to pursue healthy eating.

From the analysis of our interview data, we found that participants' actions varied when they were interacting with friends and family—those close to the teenager—versus when they were interacting with fellow users on TikTok during the four temporal stages:

- The Immediate Actions stage: Teenagers read and liked comments from fellow TikTok users and actively shared entertaining videos with their close family members and friends.
- The Planning stage: While teenagers often shared food content with family members and close friends by default, they highly valued strangers'—fellow TikTok users' — opinions in their planning considerations.
- The Executing Actions stage: Participants made or ate food with people they shared ideas with. They also depended on others, mostly their parents, to provide the food items or ingredients they needed. When revisiting the saved recipe videos, they also took notes of the alternative ingredients and cooking methods that other TikTok users commented.
- The Developing Long-term Reflective Changes stage: Participants tried to adopt and urge friends and family members to develop the eating habits or diets that they considered healthy.

These findings echo findings in prior work on the exercise habits of friends providing familiar suggestions while public crowds provide more opportunity for exploration [3]. Specifically pertaining to our study, teenagers interacted with these two social groups (friends and family versus TikTok users) in different ways, both in terms of decision-making and computer-mediated social interactions. In our discussion, we will shed further light on the opportunities for software systems like TikTok to facilitate teenagers' varied social interactions involving eating habit formation and maintenance.

Focusing on the social aspect of food and eating planning is one direct way to support teenagers' healthy eating habits. Similar to Living Cookbook [87] or SnackBuddy [80] where families can share recipes or food ideas and provide social support, technology supporting collaborative food experience can promote and help build family relationships. Transitioning food ideas and decisions that are seeded from TikTok videos into the holistic process of planning, discussion, and coordination should therefore take into account the collaborative role of family. Teenagers in our study primarily played the role of discovering new food ideas from TikTok and sharing with their parents to negotiate about incorporating those food ideas into their meals, with these ideas often being turned down due to the food being unhealthy. We envision TikTok and other social media platforms with strong food and health communities directly supporting these negotiation interactions by implementing a friend or family-based collaborative save, vote, and commenting system wherein these interactions are only broadcasted within the family's social circle. Such a system could also allow teenagers and their family and friends to co-create recipes and suggest alternative

ingredients—common activities as reported by our participants. Directly supporting these forms of family and friend-based food discovery, negotiation, and collaboration promotes youth-centric social media design [6], countering the current prevailing designs focused on parental surveillance, restriction, and control [105]. We also envision additional interaction design pathways to further facilitate youth-centric design, such as encouraging parents to reciprocate suggesting novel food ideas to their children or even incorporating teenagers' food search patterns into the parents' video suggestions. Such systems can encourage parents to initiate food negotiations and support collaborative food discovery.

The process of planning could also be enhanced by supporting teenagers and their planning partners to collaboratively document their successful and failed attempts at making certain foods. The most salient stories shared by teenagers in our study revolved around meaningful moments spent with their friends and family recreating food ideas from TikTok, regardless of whether they were successful or not. Focusing on this, we see opportunities for social media interaction systems to support the execution of food-related ideas. This can be in the form of a dedicated feedback system for teenagers to comment on whether they successfully accomplished a recipe, a video response system where parents can film themselves making requested food items, or a system for communities of parents to share and coordinate food as an expanded food experience across multiple families. Continuing the focus on youth-centric social media design, we propose that future systems could encourage teenagers and their planning partners to create, comment, and reflect upon their exploration and creation processes together, facilitating meaningful conversations about food and health.

There are also opportunities to cater to teenagers' willingness to execute food ideas by curating online communities to facilitate information sharing and digesting. A direct way to support these interactions is to allow users to suggest natural break points or provide interactive comments at a given point of a recipe video. Participants in our studies valued the opinions of fellow TikTok users and frequently referenced the comment section for planning and executing recipes (e.g., unit conversions and ingredient alternatives). However, since TikTok videos are relatively short and condensed (an average video lasts 32 to 41 seconds [22] and most recipe videos last 25 to 60 seconds[106]), teenagers often needed to pause to look for more detailed information. To facilitate these interactions, systems could integrate key comments and information directly into the viewing interface or allow individual/creator users to set automatic pause points (such as "finished, next step!", "re-watch this step", or "pause"). Such a "recipe-following mode" can directly support teenagers' execution of food ideas, and the incorporation of key comments and personalized pause points highlight the community-focused efforts of these food endeavors.

Past studies acknowledged how younger users utilize videos to tell stories, capturing both authentic experiences and staged scenarios [109]. From our findings, we see even more design potential in facilitating teenagers to create and share food content in an online community in a safe and accountable manner. Most of the participants in our study were hesitant to create food content of their own because of the perceived labor and comparison with existing perceived "high standard" content from popular creators of food videos, aligning with the discussion on creative labor on TikTok [83]. While this is the case, participants who had experience posting on TikTok highlighted the positive feedback they received from their food videos and how it strongly motivated them to continue with content creation; this sense of encouragement was compounded when the feedback came from family and friends. While TikTok and similar social media platforms already have the standard set of features of trendy hashtags, audio, or filters that are heavily used on food-related social media content, these features are not explicitly designed to support food-related content creation and sharing. For instance, ingredient-specific or diet-specific filters can directly support community-building between creators and teenagers, and auto-transcription

for recipes can be integrated to make recipe videos more accessible. A prior study has shown posting food-related content on Instagram provides strong accountability and motivation for its community members [24]. Therefore, we see similar opportunities to explore how TikTok videos and short-form videos at large (e.g., YouTube Shorts and Instagram Reels) can invoke similar attitudes of accountability and motivation among teenagers towards food and healthy eating. We recognize there are hesitations towards teenagers' involvement in social media content creation both from our participants themselves, as well as established research on social media privacy and toxicity [13]. As past literature discussing creative labor suggested However, informed by the call for better youth-centric design to balance the benefits and challenges of teenagers navigating social media by similar scholarship [6, 13], we envision empowering youths' ownership in their health via food and eating. Our research continues the youth-centric social media design dialogue by elucidating features to directly facilitate teenagers' planning and executing of food ideas to directly support family, friends, and community collaboration. Our study also charts these social media trajectories toward a healthier and more informed future.

While we discussed how online communities could be curated to support the development of teenagers' healthy eating practices, the algorithms used on such social media platforms should also be designed in awareness of teenage users' development of self-identity online. TikTok signifies a shift from the "networked self" (selfhood shaped by the dynamic of their online networks) [71] to the "algorithmized self" [10], where selfhood is shaped by reflective interaction with personalized algorithm-mediated versions [51]. This shift could reflect the broader impact of social media platforms on identity formation and behavior among teenagers. While teens use TikTok to fill their developmental needs for identity experimentation, creative presentation, and self-discovery [11], they also reflect on and develop their identities in the For You Page that is heavily algorithm-driven. Even though teenagers in our study seldom posted on TikTok, they were still cultivating their self-identity online when going through food content on their For You Page, making decisions on their food practices, and forming dietary preferences.

In summary, we found different ways that teenagers interacted with family and friends and fellow TikTok users, as well as their overall attitudes toward interacting with them on and off TikTok. Systems should take into account these different ways of interaction and support teenagers' planning and execution by integrating more collaborative features and mechanisms.

5.2 Social Media as a Lightweight Technology to Support Changing Lifestyles

Reflecting on our findings, we found that the food content teenagers interacted with on TikTok represented a record of participants' changing lifestyles. Teenagers in our study were going through different life transitions and were cognizant of the effects of food and health decisions. These changes, in turn, changed how they interacted with these types of content. The most notable manifestation of these reflections was in how participants shifted from the immediate actions of "liking," "saving," and "sharing" familiar food content to exploring new topics, such as food purchasing options, practical recipes, and diet changes. For example, many participants shared how they started to receive and use their allowance for simple food purchases and groceries, giving them more agency and responsibility for their health. They also started to get more involved in family events by contributing their baking and cooking skills. Older teenagers (around 18 to 19 years old) were experiencing more drastic changes in their lives, moving out of their homes for college or adapting from first-year mandatory dormitory life to living off-campus. They tried to hold on to past eating habits such as maintaining a vegetarian lifestyle and having food from their cultural backgrounds, but were also having constraints on food choices due to limited facilities and ingredients.

In this way, the use of TikTok for food content presented an opportunity to support teenage users in collecting and reflecting on changes in life. Traditionally, tracking through life transitions can be challenging, even though reflecting on and re-interpreting tracked data could be useful for trackers going through life changes [33]. One of the barriers to long-term food tracking is inconvenience, leading to relapse or quitting [84]. However, in our study, we observed a *casual* relationship between teenagers' continuous exploration and realizations on topics surrounding food on TikTok. We envision TikTok's lightweight interactions such as "saving" and "sharing" to hold similar tracking effectiveness since teenagers already practice curating TikTok content that is meaningful to them during different stages of life. "Saved posts" can be configured synonymously as an archival of "tracked data," and the rituals of revisiting the saved content could be modeled similarly to revisiting tracked data. Taking into account the intuitiveness of these interactions, systems could support teenagers to collect meaningful data that tracks not only what they consume, but attitudes, plans, and goals toward food items and eating habits. The stigma of tracking in a social setting—identified as a negative nudge toward food journaling [33]—could also be alleviated by the lighthearted and fun nature of making and watching TikTok videos. Moreover, the performative and entertaining qualities of TikTok allow teenagers to watch, share, and reflect on content together.

Furthermore, TikTok has the potential to provide social support that can be beneficial for changing lifestyles. Currently, most teenage participants in our study used TikTok videos to connect with their family members and friends, who can be instrumental in providing guidance and information on how to maintain a healthy diet during transitions. However, since algorithms on TikTok could potentially recognize the transition period when noticing changes in liked or saved content, they could also support users by recommending to connect with creators going through similar transitions or lifestyle changes. Systems could also explicitly probe if a user is going through a transition, encourage them to reflect on their saved content, and collaborate to form a series of content that the user can benefit from. However, on the other hand, algorithms could also pose potential harm to users, as there is potential that like-minded individuals might create online spaces to foster and encourage behaviors and activities that are harmful to themselves [67, 72], or might recommend harmful content when tailoring to one's identity [45]. Similarly, while the For You Page can provide support and affirmation for certain identities, it can also be exclusionary and undermine those same identities [82]. Systems could help alert teenage users or people they trust when certain harmful patterns are detected in earlier stages when they were cultivating preferred content through immediate actions on TikTok. For example, viral food content or food challenges are not always safe for teens to try; extreme dietary methods could pose harm to teens. Systems could also offer more transparency of the content shown on teenagers' For You Page, such as providing reasons why certain content appears, and whether parental supervision could be helpful when trying out certain recipes or dietary methods.

Traditionally, many people look for online communities to receive such support during lifestyle changes [40], transitioning to independent living [86], and learning to manage chronic conditions [23]. While a strong bond in these online communities could allow users to receive necessary social support [54], it could also create burdens from interacting and socializing with others in the community. In our study, we found that teenagers did not express a need to belong to an obvious community on TikTok. They seldom interacted with fellow TikTok users, nor used hashtags to find people they identified with. However, even when there was little to no sense of a strong-bond community, teenage users in our study still found it useful to follow healthy eating practices and adhere to these recommendations. They also found that because TikTok was not designed as an online health community that focuses on a specialized lifestyle, the rich and varied TikTok food content was easy to consume and kept them engaged in healthy eating, avoiding the usually challenges of retaining user engagement in traditional online health communities [14].

Overall, teenagers' plans and execution of food practices were constantly developing and changing, which called for designs to be more flexible and aware of the changing constraints and needs of the users. Systems like TikTok that are already collecting teenage users' interactions with the content have the ability to infer their environmental and contextual changes. Though these systems may not be collecting direct personal data from teenagers, leveraging the lightweight interactions and entertaining qualities of short-form videos, they can provide opportunities to better promote users to identify, reflect on, and receive support for changing lifestyles.

5.3 Reflecting on the Temporal-Based Actions of Social Media-Inspired Healthy Practices

Behavior change models and personal informatics models are the most commonly adopted frameworks in the HCI and CSCW communities that address healthy eating behavior and practices. Traditional behavior change models (e.g., Health Behavior Model [52], Transtheoretical Model[60], and Fogg Behavior Model [34]) focus on the motivations and goals behind adopting healthy behaviors and how they influence the pursue and maintenance of such behavior. Personal informatics models (e.g., Stage-Based Model of Personal Informatics Systems [52], Lived Informatics model [30], and Model of Socially-Sustained Self-Tracking for Food and Diet [57]), on the other hand, focus on how individuals collect, reflect on, and act on personal data to achieve their behavior change goals.

In our study, teenagers often approached TikTok food content without a clear goal or intention to keep track of what they ate. Rather, the broad exploration of food on TikTok, the process of planning, and the trials and errors helped them develop certain eating habits over time. As a result, neither the behavior change models nor personal informatics models appropriately describe teenager behavior in adopting and adapting healthy eating practices through TikTok food content. Through providing empirical evidence to validate and refine the temporal-based actions model, this paper contributes to both the understanding of how teenager interacts with online TikTok food content and carry on offline healthy eating practices as well as theoretical implications of how these understanding can inform future model extension.

Reflecting on the use of the temporal-based actions model, we discuss a potential opportunities to further extend the model in the future (Fig. 1). Specifically, we further examine the micro-iterations within each temporal stage, consider the influence of abandoned ideas within these iterations, and extend transtemporal support in long-term reflections.

While the temporal-based actions model provides a clear view of the process of adopting and adapting simple food ideas into long-term eating habits, our study also suggests accounting for the numerous iterations within each stage. Teenagers might start with several simple food ideas and iteratively add supporting ideas that complement the process of eating habit formation. These iterations may include altering TikTok original recipes or food ideas in the planning stage, trading off constraints (cf. Section 4.3.4) and desirable food ideas while executing actions (cf. Section 4.2, or repeatedly trying and refining actions inspired by TikTok to arrive at long-term eating attitudes and practices (cf. Section 4.5). We propose that future studies examining micro-level interactions with food content on social media, such as a detailed understanding of views, use time, shares, and other metrics, can probe further into the smaller ongoing decisions.

We also propose the model to represent the impact of "abandoned ideas" teenagers encountered on TikTok. When teenagers in our study explored, there were only a handful of ideas that got saved for later. During the planning stage, a lot of the ideas may not survive through the action stage or make it to the reflection stage (cf. Section 4.3.5). However, it does not necessarily mean that the abandoned ideas did not affect the development of one's healthy eating habits. For example, while P14 saved a recipe about egg rolls and never proceeded to actually make it, it might still have affected her food choices when she was eating out. From our study, while we acknowledge

that participants' eating habits were largely influenced by the actions they repeatedly executed, those actions they planned to do but had not yet executed also had some influence on their overall healthy eating beliefs and attitudes.

Although each stage in the model has a clear definition, there are behaviors, such as the ones within the planning and immediate action stages, that tend to span across multiple stages and cannot be categorized as clearly. For example, it is not always easy to determine the specific timing of when teenagers share food content for planning or just for entertainment purposes. We are also unsure of the exact time frame of when a behavior "sticks" or how long teenage participants would maintain the habit that they shared with us. However, drawn from the findings, we do see traces of reflection and micro-iterations across each stage, serving as motivation and a bridge for entering the next stage and iteratively forming long-term changes.

The role of "reflection" in design has gained attention in CSCW, social computing, personal informatics, and HCI. Past research emphasized this interest, especially with the technological accumulation of personal data, and offered new opportunities for reflective practices [53, 66]. In our study, while teenagers could elaborate on how they planned and executed food activities interacting with TikTok food videos, tools that facilitate reflection in the reflective stage remain lacking.

There is an opportunity for the model to incorporate the idea of "transtemporal support"—the support that individuals encounter in the present by revisiting their past social media content [44] from teenagers' self digital archives. Revisiting past collected and created content could be an opportunity for systems such as TikTok to promote reflections across stages. Apart from using video-based social media as a performative "stage" [109], we observe in our study that there is a certain sense of "archival" in which teenagers save content from others that they wanted to revisit. Incorporated with the idea of making healthy eating social for teenagers, the act of reflection can be a fun and engaging way to reminisce about enjoyable moments, fostering a sense of nostalgia and emotional connection to one's personal history and time spent with close ones. The introspective process of self-reflection could contribute to a deeper understanding of one's identity and the factors influencing personal development, and serve as motivation to support future growth. One potential implementation is to curate the content or interactions in each temporal stage into a "wrap-up" for users to reflect on. For example, at the end of each year, systems could curate a short video that reviewed all the food content users liked, saved, shared, or revisited multiple times to try out. This could also help users reflect on the development of their eating habits in a certain period of time. Systems could also invite teenagers to create content for a compilation of their favorite videos.

Examining the degree to which people associate themselves with past content may reveal patterns of self-identity and the consistency (or evolution) of one's values and interests. However, with transtemporal support also comes transtemporal harm. On sensitive topics such as fitness (as reported in the findings), there could be content that teenagers no longer wish to see when looking at past content. The impact of the association on self-esteem and well-being needs to be carefully examined, considering positive reinforcement and potential challenges related to unmet expectations from this form of reflection.

Echoing back to the "algorithmized self" [10], TikTok videos made the formation of self-identity more fluid. This is due to its implementation of the non-subscription following model, which allows TikTok's algorithm to expose users to a wide range of content, potentially introducing users to new trends, creators, and interests that could shape their identities. This constant evolution could contribute to a more dynamic reflection on past data as users observe shifts in their preferences and trends over time. For example, users may find their engagement history reflecting participation in various "viral" food trends, providing a snapshot of the cultural moments they participated in. Such a phenomenon provides future research opportunities to further examine how to design for

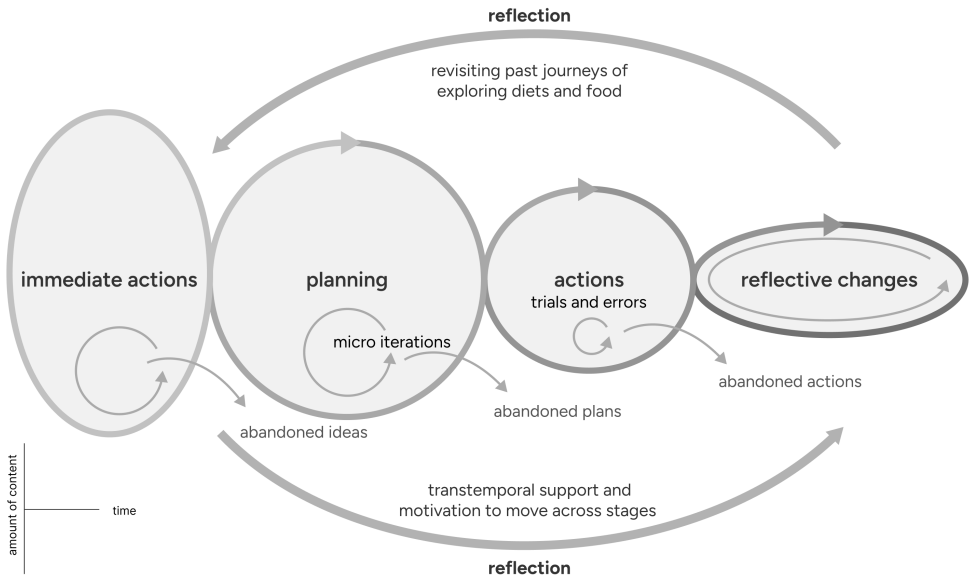

Fig. 1. Potential extension to the model of Temporal-Based Social Media-Inspired Reflective Healthy Practices: accounting for micro-iterations within each stage, examining the impact of abandoned ideas, and investigating mechanisms for transtemporal reflection support.

reflection on identity building on fast-paced social media. Specifically, examining how individuals reflect on collected and created short-video content and how algorithms shape the narrative of the "self" over time could shed light on the intersection of technology, personal identity, and the formation of teenagers' healthy behaviors.

Food content is prevalent on social media in general [42, 74], and there is a potential that the four stages we identified can be applied beyond the context of TikTok. The temporal-based model, in this sense, illustrates this process of health behavior decision-making. Throughout the mass collection of TikTok content teenagers peruse, some of these videos manifest themselves as actual physical food that teenagers consume. The food viewed on a phone screen eventually becomes food on a plate, food on the plate becomes food ingested, which may amalgamate into lifestyle changes. While it is apparent that this is not always the case (e.g., people's diets are not completely dictated by social media), this study elucidates the process of this phenomenon: the gathering and filtering of content, decision-making refinement, and long-term habit-forming as practiced by teenagers. We encourage other researchers and practitioners to incorporate this perspective of social media-facilitated decision-making into broader examinations of adolescent health. Similarly, we recognize that our study examines the single vertical of food content on TikTok, and in the future, could take a more comprehensive examination into how TikTok use fits into other aspects of a teenager's life (e.g., school, health education, or exercise). Regardless, we emphasized the value of the temporal lens in examining teenagers' use of TikTok and food-related decision-making.

In this research, we focus on examining teenagers—users who spend proportionally longer time on TikTok (than other age groups), who often require negotiation and coordination in their

decision-making, and who are actively forming their selfhood via adolescent development. The temporal-staged model, developed through these users who are intimately and exceptionally engaged with the process of fashioning aesthetics, has the potential to adapt to other aspects healthy lifestyle beyond food. This temporal model also informs the design of technologies for reflection and transtemporal support. There is also value in further examining the use of this model in understanding health behavior decision-making in future research.

6 LIMITATIONS & FUTURE WORK

We used an interview method in this study. While the interviews brought us rich qualitative data, the reliance on self-report introduces potential recall bias, such as inaccuracies with recollection of experiences on TikTok and—especially considering the age group of our participants—selective reporting of only positive experiences to meet interviewer expectations. We would also like to address the gender skew in this study. While we strove to recruit all teenagers who expressed initial interest via email, most of them identified as female, and in the end, only two male-identifying participants met our inclusion criteria. To address this gender imbalance, we adopted snowball sampling to try to recruit a more diverse group of teenagers, including those underrepresented in our initial sample. Despite our efforts, we were unable to achieve gender balance, limiting us from describing the experiences of teenage users on TikTok more broadly. We see a similar challenge in recruiting gender-diverse participants in previous works on social media and healthy eating or diet-related topics [24, 64]. Future research could further examine the perception of food and food-related habits among social media users, noting the importance of increasing gender diversity in the study. Furthermore, our collected data mainly comprised verbal descriptions of participant use behavior, thus omitting tacit or situated actions unaware by the participants.

In the future, longitudinal studies following teenagers' eating and food behaviors stand as an ideal next step to expand our research question as it provides data necessary to understand long-term eating and food behaviors. Such a longer-term study would be instrumental to fully examine the "planning," "executing," and "reflective" actions, as well as explore long-term health and behavior changes with respect to continued use of TikTok. To understand a more holistic view of teenagers' healthy eating interactions in social contexts, members checking with other teenage TikTok users as well as with family members and friends can also provide insights into expanding our research question.

7 CONCLUSION

Teenagers use social media as a daily technology. They use such technology to explore new things and establish health-related habits that will contribute to their long-term healthy habits as they become an adult. Our study shed light on how teenagers interact with food videos on TikTok, how they incorporate food content into their everyday food practices, and how this influences their long-term eating behavior.

To comprehensively examine the relationship between teenagers' use of TikTok and their food practices, this study adopts a four-stage model that offers a temporal perspective on the decision-making process and the formation of healthy eating lifestyles influenced by social media. We not only capture the immediate and sporadic effects, such as the purchase or creation of food inspired by TikTok, but also examine the long-term impact on teenagers' healthy eating behaviors, including the development of sustainable habits tailored to their lives.

In our design implications, we especially note the collaborative and negotiating interactions with others and call for more youth-centric designs that support teenager-parent collaboration. We also call for designs that allow tracking and reflecting on one's health behaviors or attitude through intuitive interactions, such as saving and liking, taking social media designs and interactions as

inspiration for future personal informatics technologies. Furthermore, we discuss how algorithm-driven social media could influence teenagers' reflection and identity-building.

Building on this current research, future research should continue to investigate how healthy eating and other health behaviors manifest through social media platforms. This includes examining observed online risks, such as the promotion of harmful diets, as well as the adoption and development of specific eating regimens, such as vegan or vegetarian lifestyles. Moreover, we recognize the importance of studying transitional periods beyond specific demographic groups. By expanding the focus to encompass various life transitions, such as the shift from adolescence to young adulthood, the transition from work to retirement, or the transition from being single to married, future research can gain deeper insights into the dynamic interplay between social media, health behaviors, and evolving lifestyles. This holistic approach will provide a more nuanced understanding of the multifaceted influences of social media on individuals' health practices and behaviors throughout different stages of life.

In conclusion, our study contributes to an in-depth understanding of the intersection between social media, health behaviors, and adolescent development, with implications for both research and practice in fostering healthy lifestyles among teenagers in the digital age. We applied the concept of transtemporality to the initial temporal model to flush out the intricacies of the decision-making behaviors as observed in our findings. Our proposed model extension details additional behaviors such as micro iterations, decision abandonment, and reflection across the stages that serve as a starting point for further investigations of teenagers' health behaviors. Such extension could also facilitate a more comprehensive understanding of the influences of social media and support social media and health practitioners to develop designs that promote teenagers' healthy lifestyles.

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