The Impact of the COVID-19 Pandemic on Emerging Adults with Type 1 Diabetes

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INTRODUCTION

- Individuals with type 1 diabetes (T1D) have an elevated risk for a severe COVID-19 infection
- Emerging adults' (EAs) focus on their developing identity, independence, and autonomy is associated with greater risk-taking
  - Greater risk for sub-optimal diabetes management, partly due to the transition of management from caregiver to patient
  - Greater risk for COVID-19 exposure, due to adolescents' invincibility fable with greater risk-taking behavior
- EAs are underrepresented in the existing literature on COVID-19
  - Clumped in with children and adolescents or adults

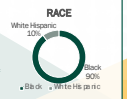
OBJECTIVE

- The goal of this study was to assess EAs' perceptions of, experiences with, and the impacts of COVID-19 on their personal life during the initial months of the pandemic.

METHODS

Design
- Data collected secondary to intervention refinement interviews with EAs as part of a larger intervention development study
- One study visit, conducted May-June 2020

Participants
- Recruited from a pediatric diabetes clinic at a large, urban teaching hospital
- Inclusion Criteria:
  - Diagnosed with T1D for ≥6 months
  - HbA1c ≥9% currently and averaged over prior 6 months
- Ten emerging adults (M_{age} = 19.0, SD = 1.5) diagnosed with T1D for an average of 10.8 years (SD = 5.1)
- Majority monitor glucose using a fingerstick glucose meter (N = 7) and use injected short- and long-acting insulin (N = 8)

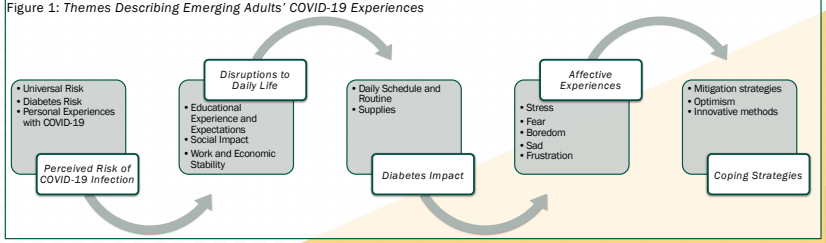


Procedures
- Informed consent via an information sheet
- Brief questionnaire to collect demographic and clinical characteristics using Qualtrics XM
- Semi-structured qualitative interview via video conferencing
- Incentive: $50 electronic gift card

Data Analysis
- Interviews were professional transcribed
- Two coders coded to consensus using conventional content analysis

RESULTS

Figure 1: *Themes Describing Emerging Adults' COVID-19 Experiences*



Diabetes Risk: *"I was kind of worried about it [COVID-19] because I also know that people with compromised health that already have other sicknesses or medical conditions are affected differently." [White Hispanic female, age 21].*

Social Impact: *"Places are being shut down because of the coronavirus. I mean you can't really do too much, like taking care of your hair, getting your hair trimmed, or just going out where there's too many people." [Black male, age 19].*

Work and Economic Stability: *"I'm not spending as much money, but I'm also not getting any money. I'm not able to work right now, which sucks because, I don't eat like that [an excessive amount or expensive meals] but I still have to eat at some point. Or like paying rent and bills, it's- it's getting a little bit stressful. I'm hoping that I'll be eligible for like unemployment or whatever assistance is available, because I'm like struggling." [Black female, age 21]*

Educational Experience and Expectations: *"It's truly affected my life in ways that I didn't think it would. Because initially we were going to take a day off of school and come back the next day, just to make everything was clean. Little did I know that we would be out for, however long it's been. I had a lot of expectations for this year since it was my last year of high school." [Black female, age 17]*

Themes

1. *Perceived Risk of Covid-19 Infection*
   a) Universal Risk: EAs recognized the widespread, universal risk of COVID-19 infection
   b) Diabetes Risk: EAs recognized having diabetes placed them at elevated risk for a severe COVID-19 infection
   c) Personal Experiences with COVID-19: EAs' recounted friends and family being exposed to and contracting the COVID-19 virus, which reinforced their consciousness of the above risks
2. *Disruptions to Daily Life*
   a) Educational Experience and Expectations: Most EAs experienced an abrupt transition to virtual education with an unclear timeline for return; milestone events, like prom and graduation, were cancelled
   b) Social Impact: Quarantine mandates confined EAs to their homes requiring new modes of social interaction or social isolation
   c) Work and Economic Stability: Half reported job sites being "shut down" or getting "laid off" resulting in economic hardships; essential workers experienced increased hours and perceptions of risk and stress
3. *Diabetes Impact*
   a) Changes in EAs' daily schedule had a significant impact on diabetes routines, including eating and sleeping patterns
   b) Some EAs struggled to obtain diabetes supplies and had to ration their supplies
4. *Affective Experiences*
   a) Stress: EAs felt the stress of the pandemic had a negative impact on their diabetes
   b) Fear: EAs feared COVID-19 infection; the lack of knowledge of COVID-19 heightened fear
   c) Boredom: EAs were stuck at home due to the lockdown and unable to go out or socialize with friends
   d) Sadness: some lost loved ones or knew someone who had due to COVID-19
   e) Frustration: EAs were frustrated with the lockdown, individuals who didn't follow CDC guidelines, and the pandemic in general
5. *Coping Strategies*
   a) COVID-19 mitigation strategies (masking, social distancing) kept them safe from infection
   b) Maintained an optimistic frame of mind to get through the pandemic
   c) Innovative ways to combat boredom, e.g., working out, playing Xbox, walk/drive around the neighborhood

Stress: *"As far as my diabetes itself, the stress that it's [COVID-19] placing on everybody, maybe that's like making my sugars a little bit more elevated, because I've been cruising I guess, in like the 250s and 300s rather than like the 150s where I'd like to be." [Black female, age 21]*

Mitigation Strategies: *"My grandma is buying masks like you wouldn't believe it." [Black Female, age 21]*

Work and Economic Stability: *"I don't work anymore. I was working at a fast-food restaurant, which is an essential worker right now, but I didn't want to risk it, you know, having diabetes and asthma, I have a weak immune system." [Black female, age 17]*

Daily Schedule and Routine: *" [Oversleeping's] actually an issue because I wake up with lows [blood glucose] because I'm taking [insulin] at such a late time, and that's because I'm getting up late and not having my meals within routine because my home environment is just something that I haven't been used to being at all day, so it's just affected my routine…My levels in the morning and sometimes at night are low. …because my routine was thrown off." [Black female, age 17]*

Fear: *"The simplest way I could put it is the fear of the unknown… Because I feel like there's so much that's not known about it yet. And so it's really scary for everyone because we just don't know. There's not anything, there's not much we can do to control it." [White Hispanic female, age 21]*

CONCLUSION

- Figure 1 summarizes EAs' experience during the COVID-19 pandemic
  - EAs' perceptions of risk and personal experiences with COVID-19 resulted in significant disruptions to EAs' daily lives which, in turn, impacted their diabetes
  - EAs experienced a range of affective responses but mitigated these emotions by employing a variety of positive coping strategies
- This research begins to shed light on the experiences of EAs during the COVID-19 pandemic, a group that is oft overlooked

Research Implications
- Further research is needed to comprehensively assess EAs' experiences during and the impacts of the COVID-19 pandemic and understand how the experiences of EAs living in non-metropolitan areas might have differed

Clinical Implications
- The COVID-19 pandemic highlighted the disparate experiences and emergency preparedness needs of EAs living in an urban area
  - Some EAs struggled to obtain diabetes supplies, in part, due to restrictions on the amount of insulin dispensed
- The emotional experiences of EAs highlights the importance of telemedicine and other remote intervention approaches to support EAs during unanticipated hardships

Public Health Implications
- Most participants had a change in nutrition and/or physical activity during the pandemic and with this knowledge, we can work to better provide food security and education on at-home exercises to better physical activity.

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