



# Understanding the Roles of Romantic Partners and Parents in the Management of Type 1 Diabetes in Emerging Adults

MaryJane S. Campbell,<sup>1</sup> Avia Gray,<sup>2</sup> Deborah J. Wiebe,<sup>2</sup> and Cynthia A. Berg<sup>1</sup>

<sup>1</sup>Department of Psychology, University of Utah, Salt Lake City, UT; <sup>2</sup>Department of Psychology, University of California, Merced, Merced, CA

During the emerging adulthood of people with type 1 diabetes, long-term romantic partners may be involved in diabetes management in ways that supplant parental involvement. We examined the perspectives of involvement in diabetes management of the parents and romantic partners of 29 emerging adults with type 1 diabetes, using qualitative interviews and an online survey. When the individuals with diabetes were in long-term romantic relationships, their partners were heavily involved in managing diabetes and providing support; however, when the individuals with diabetes were in short-term relationships or not in a relationship, their parents were described as having the biggest positive impact on their diabetes management. Emerging adults described the involvement of their parents and romantic partners in both positive and negative ways. Romantic relationship status is an important but understudied variable in understanding social involvement and its effects on type 1 diabetes management during emerging adulthood.

Emerging adulthood (a developmental period typically defined as spanning the ages of 18 and 25 years) is marked by a changing social context, with emerging adults decreasing their reliance on parents and beginning the transitional process of forming long-term romantic relationships (1,2). This developmental period is also seen as a high-risk time for type 1 diabetes management, as evidenced by high A1C, low self-care, high diabetes distress, and loss of access to health care and insurance (3), in part as a result of changing relationships (4). Although it is well established that parental monitoring and involvement in diabetes self-care is an essential component of optimal diabetes management during adolescence (5), sources of social involvement that facilitate diabetes management during emerging adulthood are only beginning to be understood. Recent research suggests that continued parental involvement remains beneficial even into emerging adulthood (6,7). Peer and romantic relationships evolve across the emerging adulthood period and become important sources of social support for diabetes management as they develop (8,9), yet little is known about precisely how peers and romantic partners are involved in diabetes management. Despite a vast literature regarding the benefit of social support in individuals with diabetes (10), findings have been mixed regarding peer support and its associations with diabetes management, with some evidence suggesting that support from romantic partners may be

more important than peer support for type 1 diabetes management and psychological well-being (9,11–13).

Romantic relationships during emerging adulthood vary from casual dating relationships to more committed relationships of differing lengths (1,2,14), with differences in these relationships potentially related to how partners are involved in diabetes management. Early adolescent romantic relationships are characterized by support, negative interactions, and turbulence (14). Relationships that are longer and more committed are associated with more positive support and a decline in negative interactions (14) and thus may be more amenable to the type of involvement needed for type 1 diabetes management. As emerging adults develop long-term romantic relationships and reorganize their social support system, they may increasingly seek involvement from their romantic partner rather than from parents or peers. This prediction is consistent with what is known about adults in long-term relationships, as spouses are the most frequently cited relationship for type 1 diabetes support among adults (15).

It is also possible that emerging adults use romantic relationships differently from relationships with parents or peers as sources of support (16). For example, emerging adults may rely on parents for involvement in instrumental tasks such as navigating insurance. However, they may turn to romantic partners for emotional support as they

Corresponding author: Cynthia A. Berg, [cynthia.berg@csbs.utah.edu](mailto:cynthia.berg@csbs.utah.edu)  
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deal with diabetes distress and changing social contexts. It has been suggested that, for adolescents, parents may provide instrumental support, whereas peers and romantic partners may provide more emotional support (12,16). However, little is known about how emerging adults view helpful and unhelpful involvement, especially given the changing relationships with parents (e.g., moving out of the parental home and decreased parental involvement) and the emergence of romantic relationships during this developmental period. Accessing emerging adults' views of the involvement of their parents and romantic partners in type 1 diabetes management will assist in understanding what roles they view as most helpful from these relationships.

Because social involvement in diabetes management is not all positive, we also sought to understand how the involvement of parents and romantic partners may be perceived as not only positive, but also negative. Parents are sometimes perceived as involved via miscarried helping (17,18) or in ways that are perceived as controlling (19). Similarly, the involvement of long-term romantic partners can also be perceived as negative in terms of the control they exert and their persuasive strategies (20). In fact, social support has frequently been described as a double-edged sword, with instrumental and emotional support perceived as both helpful and controlling or nagging (21–23). Among adolescents and young adults with type 1 diabetes, peers, co-workers, and romantic partners can be perceived as both facilitating and getting in the way of diabetes management (16,24–26). Furthermore, as the social context changes throughout this developmental period, emerging adults may face the additional challenge of learning to let others know about their support and self-management needs. Because emerging adulthood represents a unique developmental period with a changing social context, understanding who is involved and how these individuals are perceived by emerging adults is crucial to providing the best diabetes care for this population.

This study sought to examine emerging adults' perceptions of social involvement in type 1 diabetes management through a qualitative research approach. We sought to understand from emerging adults themselves the form (e.g., helpful and unhelpful aspects) and extent to which their parents and romantic partners were involved in their diabetes management. We examined who was viewed as having the biggest impact on their diabetes management (both positively and negatively), what these individuals did that was helpful or unhelpful, and what information emerging adults with type 1 diabetes shared with those individuals. We expected that parents and romantic

partners would be heavily involved in diabetes self-management, but that this involvement would depend on whether emerging adults were in a committed romantic relationship. We anticipated that emerging adults in a committed romantic relationship would perceive their romantic partner as being primarily involved in their diabetes management, as opposed to their parents.

We also explored through qualitative coding what emerging adults found to be helpful and unhelpful about these individuals' involvement, thus providing information on whether parents and romantic partners may play different roles in supporting type 1 diabetes management at this transitional time (e.g., parents providing instrumental support and romantic partners providing more emotional support). Second, we assessed via a survey how parents, romantic partners, friends, and others were involved in various aspects of instrumental (e.g., tangible assistance) and emotional (e.g., encouraging and understanding) support surrounding type 1 diabetes management. We explored whether the breakdown of parents' and romantic partners' involvement in the survey mirrored findings from the qualitative data.

## Research Design and Methods

### *Procedure*

Participants were drawn from a sample that participated in a 4-year longitudinal study of late adolescents and emerging adults with type 1 diabetes (6). Individuals who had completed participation in the longitudinal study were invited to participate in the current study. At the time of recruitment for the current study, participants were 22–24 years of age and facing a period of multiple transitions, as emerging adults tend to move out of the parental home, attend college, and begin careers. Individuals were randomly selected to obtain a 1:1 ratio of males to females and a 4:1 ratio of Whites to racial/ethnic minorities. Of the 60 individuals identified for recruitment, 21 were not reached, 1 declined participation because of time constraints, and 38 agreed to participate; after agreeing to participate, 7 did not complete the phone interview and 2 were excluded from analyses due to technical errors. The final sample included 29 emerging adults with type 1 diabetes (mean age  $22.96 \pm 0.85$  years, range 21.36–24.48 years). The emerging adults provided consent to participate. They were then sent a link via e-mail to complete the pre-interview survey via a secure online platform, after which they completed a phone interview lasting between 9 and 40 minutes. Participants were compensated with either a gift card or a check for \$25. Trained research assistants conducted semi-structured interviews, which were audio-recorded and transcribed. All study

procedures were approved by the Institutional Review Boards of the University of Utah and University of California, Merced.

## Measures

### *Relationship Status*

Participants responded to a single-item measure of romantic relationship status in the online survey. Response options were 1) no current romantic relationship; 2) dating, but not in a committed relationship; 3) dating for a period of time, but no long-term commitment; 4) in a committed, long-term relationship; 5) in a committed, long-term marital relationship; 6) other; and 7) decline to answer. Given prior literature noting the importance of long-term committed relationships versus more casual relationships, we collapsed these categories into a single dichotomous variable (in versus not in a long-term committed relationship). Responses indicating committed, long-term marital and nonmarital relationships were coded as being in a long-term committed relationship.

### *Demographics*

Participants completed a brief demographics survey, providing information on their residential status (e.g., parental home, shared apartment, or college dorm), who lived in their primary residence, their romantic relationship status, their education status (e.g., enrolled vs. not enrolled in school), and their current occupational status (e.g., working full-time, working part-time, or not working). Additional demographic information was taken from the prior study's records, including participants' sex, age, time since diagnosis, and race/ethnicity.

### *Semi-Structured Qualitative Interview*

Each participant was asked, "Overall, who is the person who seems to have the biggest positive effect on your diabetes, other than yourself?" For each person identified as positive, interviewers asked, "How does this person affect your diabetes?" To understand the frequency of positive involvement, we asked, "About how frequently would you say they affect your diabetes?" To understand whether emerging adults solicit support from their available social systems, we asked, "What kind of information do you tell them about your diabetes?" These questions were then repeated to understand who had the biggest negative impact on diabetes management. Of note, the language used throughout this article is consistent with the wording of interview questions (e.g., "affect" and "impact") and is not meant to imply causality.

A coding team (authors M.S.C., A.G., and D.J.W. and two other coders) developed a qualitative coding system using

an iterative process to identify broad themes related to social involvement in type 1 diabetes management using a subset of interviews ( $n = 4$ ). Although coders were knowledgeable about the extant literature on this developmental period, no a priori codes were used, as participant responses informed all codes. An initial system was used to code additional interviews until no new themes emerged and the codes were well defined ( $n = 7$ ). Through this iterative process, a final coding system was developed and was used to double-code all interviews, with an option of "other" being used to identify any emerging themes. Coding discrepancies and emerging themes were resolved via discussions with the full coding team until consensus was reached. All interviews were coded using NVivo, v. 12.1, qualitative coding software. To examine who had the biggest positive and negative impact on type 1 diabetes management and how those individuals were involved, we identified interview codes to qualitatively describe emerging adults' perspectives of who had the greatest impact on their diabetes management, as well as their type of involvement and whether this involvement differed based on relationship status. Second, we examined whether emerging adults' perceptions of social involvement in the survey supported findings from the qualitative interviews.

### *Social Involvement*

Participants completed a nine-item survey modified to assess helpful or hindering people in the emerging adults' social network (27). The original WHOTO survey measure assessed to whom individuals turn when in distress or when trying something new and with whom they prefer to stay in close proximity (27). Given the focus of the current study on social involvement in type 1 diabetes management, the seven original items were modified to reflect diabetes-specific aspects of social involvement when individuals are feeling diabetes distress or are in new or unknown situations related to diabetes. For exploratory purposes, two additional items were created to identify social network members whose behavior was especially problematic for diabetes management. These items pertaining to disease management are shown in Table 1. Participants selected from the following options to report who was involved in their diabetes management: parents, friends, romantic partner, sibling, nobody, or other.

## Results

### *Sample Demographics*

Of the emerging adult participants, 55% were female, 66% were Caucasian, and the mean age was 22.96 years

**TABLE 1** Qualitative Analysis of Biggest Negative Social Involvement

Item	Representative Quotes (Participant Identification Number, Sex, and Age)
<i>How does this person affect your diabetes?</i>	
Uninformed/misguided behavior from others	<p>“She [grandmother] just doesn’t really seem to understand, I guess, the differences between type 1 and type 2. And she thinks just because she knew, like, a couple of type 2’s, that she knows everything that I’m doing. And, so, she’s, like, under the impression that I’m just not supposed to have carbs or, like, sugar ever. So, she’s, like, buying sugar-free stuff and is like, ‘Here you go.’ And I’m, like, ‘Yeah, I still have to cover for that.’ I mean, the gesture is nice, I guess . . . She’s, like, making sure that I ate, but it’s really misguided.” (2002, male, age 24 years)</p> <p>“Just being unaware of . . . what affects my blood sugars. So, again the, um, friends who get bubble tea . . . and then, say, ice cream after that, after having a meal or something like that. So, it’s like it’s just the carbs and sugar overload, and so, uh, friends forget that. I mean, they don’t have to think about it, right?” (2103, male, age 22 years)</p>
Social context barriers	<p>“If I’m listening to an instructor or taking a test or doing something that requires my immediate attention, it’s harder to, say, go to the bathroom to take an insulin shot, if I can feel my blood sugars rising. Um, so, kind of strict work time constraints, I would say, or traveling. Like, if I’m on an airplane, and there’s a line for the restroom [or] if I’m on a long flight that makes it harder.” (2053, female, age 23 years)</p> <p>“Because when you’re around them [friends], it’s like you don’t want to be left out. Like, I enjoy eating pizza or drinking every now and then, so you kind of want to do it, but you really shouldn’t. It makes it harder because you want to be included or involved with everyone else.” (2057, female, age 22 years)</p>
<i>What kind of information do you tell them about your diabetes?</i>	
Diabetes health information	<p>“Just in general, like, if my blood sugar is low, I might explain that that were happening, but that’s about it.” (1073, female, age 22 years)</p>
Type 1 diabetes education	<p>“Oh, I become a health professional, and I’m like, ‘Listen, this is what diabetes is, they don’t know what caused it.’ I break down everything and be like, ‘Listen, when I eat food, I need to take insulin. When my blood sugar’s low, I need . . .’ Like, I just spell it out for them so that they know and, like, give them symptoms of my high blood sugars and symptoms of my low blood sugars because there’s some times I can’t catch them, so I’m like, ‘If you’re gonna be my friend, you’re gonna have to also help me take care of myself.’” (1041, female, age 23 years)</p>

(range 21.36–24.48 years). Fifty-five percent of our sample were working full-time jobs, and 37.9% were working part-time jobs. Thirteen were identified as not in a long-term relationship (10 not in any romantic relationship, one casually dating, and two dating with no long-term commitment), whereas 16 were in a long-term, committed relationship (11 in a long-term committed relationship but not married and five married). The majority of our sample was not living in the parental home, with nine living in the parental home, six in an apartment or house without roommates, 12 in a shared apartment or house, and two in a college dormitory. Table 2 summarizes demographic information. Participants in a committed relationship did not significantly differ from those who were not in a committed relationship on any demographic variables, including sex ( $t[26] = 0.60, P = 0.68$ ), age ( $t[26] = 1.8, P = 0.35$ ), ethnicity ( $t[25] = 1.6, P = 0.55$ ), time since diagnosis ( $t[26] = 2.2, P = 0.06$ ), and living situation ( $t[26] = 0.08, P = 0.89$ ).

### *Aim 1: Qualitative Description of Parent and Romantic Partner Involvement by Relationship Type*

Participants commonly reported that either their parent ( $n = 15$ ) or romantic partner ( $n = 11$ ) had the biggest positive impact on their diabetes management. When emerging adults did not describe a parent or a romantic partner, they described a range of individuals as having the biggest positive impact: health care provider ( $n = 2$ ), roommate ( $n = 2$ ), grandparent ( $n = 1$ ), coworker ( $n = 1$ ), or sibling ( $n = 1$ ). Because some participants mentioned multiple people, these numbers may exceed the sample size of 29. There were no significant differences in who was described as having the biggest positive impact (parents vs. partners) depending on the sex of the emerging adult. Most participants reported that individuals who had the biggest positive impact on diabetes management did so on a daily ( $n = 12$ ) or weekly ( $n = 14$ ) basis, with some ( $n = 3$ ) involved on a less than weekly basis (e.g., once per month or once every few months). Themes related to positive social involvement included

**TABLE 2** Sample Demographics

	Mean ± SD or %
Age, years	22.96 ± 0.85
Length of diagnosis, years	12.14 ± 4.45
Female sex	57.1
Race	
Black/African American	11.1
Native American	3.7
Native Hawaiian or Pacific Islander	3.7
White	70.4
More than one	11.1
Occupational status	
Working full time	55.2
Working part time	37.9
Unemployed	6.9
Living in parental home	32.1

reminders and instrumental and emotional support. Table 3 provides examples. Emerging adults frequently stated that no one other than themselves had the biggest negative impact (*n* = 10) and occasionally mentioned general acquaintances (*n* = 3) and coworkers (*n* = 2) as having the biggest negative impact. Instances of individuals having the biggest negative impact on diabetes management were described as occurring fairly infrequently, with these individuals involved on a weekly (*n* = 8) or less than weekly (*n* = 4) basis. Themes related to negative social involvement included social context barriers and uninformed or misguided behaviors of others (26). See Tables 1 and 3 for additional details regarding qualitative themes.

To examine whether parent or partner involvement differed based on emerging adult relationship status, we descriptively compared qualitative interviews of emerging adults who were or were not in long-term relationships. When emerging adults were in a committed relationship, they primarily discussed their romantic partner as having the biggest positive impact (*n* = 11 of 16). In contrast, emerging adults who were not in a romantic relationship or were casually dating discussed their parents as having the biggest positive impact on their diabetes management (*n* = 9 of 13). Interestingly, even emerging adults who were casually dating but not in a committed relationship focused on parents as a primary source of help, focusing on parents' long history and knowledge of type 1 diabetes management. For example, one woman said, "My parents, because they've known about it the longest and kind of know what to do and when to do it. They've [parents] been to the doctor with me in the past, so they know what kinds of questions to ask because they know exactly what it's like" (participant identifier 2010, female, age 23 years). Participants also said that remaining on their parents' health plan positively affected their type 1 diabetes management.

As described in Table 1, common themes emerged regarding the ways in which parents and romantic partners positively affected type 1 diabetes management, including by providing reminders (e.g., reminding to test and bolus), emotional support (e.g., reassurance), and instrumental support (e.g., making sure the person with diabetes eats well). Parents and romantic partners were described as providing similar types of positive behaviors (i.e., reminders and instrumental and emotional support) on a daily or weekly basis. Specifically, emerging adults discussed being able to vent about diabetes challenges to both parents and romantic partners and said that both parents and partners helped to keep them on track with diabetes management. For example, an emerging adult who was not in a romantic relationship and one who was married both reported that their parent and romantic partner, respectively, helped administer insulin when needed and would help count carbohydrates for meals and snacks (i.e., instrumental support). Emerging adults who discussed parents as positively affecting diabetes management also often cited their shared history with type 1 diabetes management as the primary reason. For example, one woman noted that, "she's [mother] kind of been through the learning process with me" (participant identifier 1119, female, age 21 years), which did not come up in interviews in which romantic partners were described as having the biggest positive impact. Table 1 includes other representative quotes.

Regarding the kinds of diabetes health information that emerging adults shared with parents and romantic partners, emerging adults frequently provided diabetes health information to those who had the biggest positive impact on their diabetes management. Specifically, emerging adults described sharing blood glucose levels, recent A1C values, and upcoming supply or prescription needs with the individuals who had the biggest positive impact on their diabetes management. Few emerging adults explicitly reported seeking support from these individuals, but acknowledged that asking for such support could be helpful. For example, one participant described an instance in which her pump malfunctioned on the way to dinner, but her friends were in a rush, so she was unable to change her pump site. She explained that explicitly soliciting support may have ameliorated this situation (Table 3).

Regardless of relationship status, the individuals identified as having the biggest negative impact on diabetes management were primarily individuals other than parents and romantic partners. Representative quotes can be found in Table 2. Specifically, friends and coworkers were identified as negatively affecting diabetes management, and the specific type of behavior that was perceived as having the

**TABLE 3** Qualitative Analysis of Biggest Positive Social Involvement

Item	Representative Quotes (Participant Identification Number, Sex, and Age)
<i>How does this person affect your diabetes?</i>	
Reminders	<p>“She [mother] is just constantly on top of it when I’m, sometimes I forget, and she always reminds me.” (1037, female, age 23 years)</p> <p>“Like reminding me to test and bolus for meals. It’s what she [girlfriend] does for me.” (1116, male, age 21 years)</p>
Emotional support	<p>“She’s [mother] the one if I want [to be] reassured that I’m doing the right thing, or if I’m frustrated that my blood sugar is not coming down. She’s the one that I vent to.” (2062, female, age 22 years)</p> <p>“I guess just by, uh, exhibiting a legitimate care for my health, I guess. I know, like, yeah, doctors do the same thing, but I guess it’s not quite [as] personal, if that makes sense. Yeah. Just like, it’s very, very personal care that she’s [girlfriend] shown.” (2028, male, age 23 years)</p>
Instrumental support	<p>“I’m giving a shot at a restaurant where I’m not familiar with the carbs and she’s [mother] there. She’s the one that I kind of go back and forth with to see if that’s what I should get. And if I were to, like, fall asleep on the couch, she’ll wake me up and make sure I take my nighttime insulin.” (2062, female, age 22 years)</p> <p>“He [boyfriend] tries to make sure I eat the best that I can . . . He tries to help me with my eating habits. And like I said, he’ll administer medication if he needs to, check my sugar, and provide me with snacks or anything if I need it.” (2033, female, age 22 years)</p>
<i>What kind of information do you tell them about your diabetes?</i>	
Diabetes health information	<p>“My numbers, my A1C, . . . or if I get a prescription that day or if I’m out of insulin, or pump-related things that I have to go and deal with . . . pretty much just like all the information I have I give to him [husband].” (2073, female, age 23 years)</p>
Support seeking	<p>“I often tell her [mother] about moods associated with my blood sugars, like, I mean, when they’re really bad or if something went wrong.” (1119, female, age 21 years)</p> <p>“However, I did not . . . express my need, so they were unaware, but I did end up going to dinner with them [friends], and I didn’t have the adequate insulin for it.” (1094, female, age 21 years)</p>

biggest negative impact was uninformed/misguided behaviors. Behaviors were often unintentional, including individuals not understanding the difference between type 1 and type 2 diabetes and social context barriers such as social situations like taking an exam in college or eating out that make it challenging to take care of their diabetes. Participants mentioned that they shared more general information with individuals negatively affecting their diabetes, such as whether their blood glucose was low or high, rather than specific numbers. Furthermore, emerging adults described having to provide a lot of diabetes education to these people. One woman said, “I become a health professional” (participant identifier 1041, female, age 23 years) to explain what diabetes is and how she must take care of it. Others mentioned even trying to limit the information they share with these individuals, with one emerging adult stating, “When she asks me a question about it, like, I give her a one- . . . [or] two-word answer, just to kind of get her to stop the conversation” (participant identifier 1028, male, age 23 years). Table 2 provides additional representative quotes.

Occasionally, the same relationship was described as representative of the most positive and most negative social involvement. For instance, one emerging adult described mixed

emotions toward his girlfriend’s involvement, stating, “Well she, I don’t know, she has, like, this knack at, like, fussing at me every time I’m overeating or something, or like I’m eating too many sweets or something. I mean, it’s annoying but, I mean, it’s helpful, you know” (participant identifier 2009, male, age 24 years). This quote illustrates how the same person can be perceived as negative (nagging) and positive (supportive). Similarly, one emerging adult described her father as being both negative (criticizing) and positive (trying to help), stating, “So, when he looks at something off, he . . . gets me really worked up when he rides me about it. So, if I give too much insulin and I go low, he’ll be like, ‘How’d you give that much insulin? Like, why would you do that? Because now you’re low, and you were going to work out, and now you can’t work out.’ So, he kind of tends to get me a little flustered . . . whenever I either overcorrect or I don’t give enough insulin. And it’s not on purpose, but it just gets me flustered” (participant identifier 2062, female, age 22 years).

### *Aim 2: Converging Findings from Survey*

WHOTO survey responses provided supporting evidence about social involvement in type 1 diabetes management, with emerging adults primarily identifying parents and

**TABLE 4** Social Involvement From the WHOTO Survey

Item	Parent	Romantic Partner	Friend	Sibling	Nobody	Other
1. Who do you always count on and know will be available to help with your diabetes?	17	10	0	0	2	0
In a committed relationship	6	10	0	0	0	0
Not in a committed relationship	11	0	0	0	2	0
2. Who is most likely to try to do everything for you in the management of your diabetes?	17	8	0	0	4	0
In a committed relationship	7	8	0	0	1	0
Not in a committed relationship	10	0	0	0	3	0
3. If you were in a new or unknown situation with diabetes, whom would you most likely have with you?	13	11	2	0	2	1
In a committed relationship	7	9	0	0	0	0
Not in a committed relationship	6	2	2	0	2	1
4. Who supports you the most as you strive to grow as a person and to achieve personal goals related to diabetes?	14	10	0	1	4	0
In a committed relationship	5	10	0	0	1	0
Not in a committed relationship	9	0	0	1	3	0
5. To whom do you most prefer to turn for comfort when you are feeling upset or down about your diabetes?	6	14	5	0	4	0
In a committed relationship	1	14	1	0	0	0
Not in a committed relationship	5	0	4	0	4	0
6. Who nags or criticizes you the most about your management of your diabetes?	14	8	1	1	3	2
In a committed relationship	8	8	0	0	0	0
Not in a committed relationship	6	0	1	1	3	2
7. In whose presence is it most difficult to manage your diabetes?	5	0	10	0	13	1
In a committed relationship	2	0	6	0	8	8
Not in a committed relationship	3	0	4	0	5	1

romantic partners as sources of both positive and negative influence on diabetes management (Table 4). Specifically, emerging adults primarily reported that they counted on parents and romantic partners to be available to help with diabetes, wanted parents and romantic partners to be around in new or unknown diabetes situations, and perceived parents and partners as supporting them in reaching diabetes goals. Friends were cited as the most negative, such that it was most difficult to manage diabetes in the presence of friends. No emerging adults selected romantic partners in response to the survey question “In whose presence is it most difficult to manage your diabetes,” regardless of relationship status.

Consistent with the qualitative interview, emerging adults in a committed romantic relationship counted on their romantic partner most for diabetes help, indicated that romantic partners were likely to try to do everything for

their diabetes management and that partners supported them in pursuing diabetes goals, and indicated preferring to turn to romantic partners for comfort when feeling down about their diabetes. Emerging adults who were single or only casually dating counted on their parents most for diabetes help, reported that their parents were likely to try to do everything for their diabetes and that their parents supported them in pursuing diabetes goals, and preferred their parents to comfort them when feeling down about their diabetes. Interestingly, emerging adults often identified parents as sources of nagging and criticism regardless of relationship status.

### Discussion

Parents and romantic partners are an important part of the social context during emerging adulthood and are

seen as both positively and negatively involved in diabetes self-management during this developmental period. Both interview and survey results indicated that parents and romantic partners provide multiple supportive functions, as opposed to one individual providing solely emotional support or instrumental support. Because parents and partners were involved in diabetes management in similar ways, the key difference at this developmental stage is perhaps *who* is the primary support, rather than *what* that person is doing. This similarity may exist because individuals with type 1 diabetes may benefit from both instrumental and emotional support—both types of support that one would get from one's primary support person. Although emerging adults identified parents and romantic partners as the most trusted social resources for type 1 diabetes, these same relationships were the most common sources of criticism and thus were perceived as making diabetes management more difficult, suggesting that when others are frequently involved, they often slip into nagging and criticizing. Emerging adults may benefit from assistance in managing the harmful aspects of social involvement and in soliciting more helpful forms of social involvement, such as navigating the fine line between reminding and nagging.

Romantic relationship status emerged as an important indicator of social involvement during emerging adulthood. Emerging adults who were not in a romantic relationship often cited their parents as most involved in their type 1 diabetes management, whereas those with a committed romantic partner often cited their partner. Although future longitudinal research will be necessary to fully understand how this social context develops from adolescence into young adulthood, such findings raise the possibility that parental involvement is maintained until emerging adults develop a committed, long-term romantic relationship. If so, relationship status may serve as an important indicator to health care providers of who is likely to be involved in type 1 diabetes management tasks. In particular, because romantic partners may not have the same shared history as parents who were likely involved since diagnosis, partners may benefit from diabetes education to enhance their diabetes knowledge and promote more of the positive aspects of involvement in diabetes management tasks.

When asked about the type of information emerging adults share with those who have a positive impact on their diabetes management, emerging adults rarely reported that they explicitly solicited support from these individuals. This finding may suggest that emerging adults view disclosure of diabetes health information (e.g., telling a partner that blood glucose levels were unusual today) as a form of seeking out

support but do not view this as explicit solicitation of support. For example, if emerging adults disclose information to people in their social network, they may receive more support for diabetes management (28). In addition, although those in a romantic relationship reported that they most prefer to turn to a romantic partner for comfort related to diabetes (WHOTO survey), emerging adults rarely discussed romantic partners as providing emotional support for their diabetes management. It is possible that this finding is the result of the unstructured, organic nature of the interview or that emerging adults do not perceive partners' overt acts of emotional support, but rather view them as a person to turn to when things go wrong.

Given that parents are still among the primary people involved in emerging adults' type 1 diabetes management, maintaining their involvement across the transition to emerging adulthood may be important (6). Such involvement may also be beneficial as emerging adults transition from a pediatric to an adult care clinic. The findings that both parents and romantic partners were seen as involved in positive as well as negative ways is consistent with research across adolescence that parents can be both supportive and controlling (19) and that romantic partners can both be supportive and cause conflict (12). Somewhat surprisingly, friends were infrequently cited as having the most negative or most positive impact on type 1 diabetes management. When mentioned, however, friends were frequently described in more negative terms, although, as noted, these instances were often identified as unintentional. This finding is consistent with the existing literature on peer involvement in type 1 diabetes (9). The fact that family and friends can be involved in both helpful and harmful ways is also found among adults with type 2 diabetes (29). Emerging adults may benefit from assistance with optimizing these relationships, as both negative and positive aspects of relationships have been associated with poorer self-care and A1C over time (12,28). Interventions such as the FAMS (Family/Friend Activation to Motivate Self Care) program, which was developed for those with type 2 diabetes, may be beneficial in increasing the positive and decreasing the negative aspects of social involvement (30). Through phone-based coaching, adults in this program learn skills to engage in assertive communication to ask for support or reduce negative involvement and enhance collaborative problem-solving with others.

The current study has limitations that must be considered. First, the sample was likely highly motivated, given that they remained in a 4-year longitudinal study and agreed to participate in future research. Combined with the small sample size and restricted age range (22–24 years), it is possible that the results of this sample may not fully transfer to the full age range of emerging adults. Thus, future research to



replicate these findings with a larger sample is warranted. In particular, exploration of the nuances among subsets of participants in the current study were limited, and future research with larger samples may provide fruitful information regarding differences in perceived social involvement among groups (e.g., those who are financially independent from parents vs. those who are financially dependent). In addition, we were unable to determine whether emerging adults ask for help from others, and if not, why not and how others know to be involved. Although this study serves as a starting point from which the field can continue to examine these questions, future research with a larger sample should include examination of *how* emerging adults seek out social support. In addition, although interviewers instructed participants to provide open and honest answers to interview questions, it is possible that the reason many emerging adults cited “no one” as having the biggest negative impact on their diabetes management was because they were unwilling to say negative things about others or because they were highly independent in their type 1 diabetes self-management. Finally, we did not assess emerging adults’ insurance status, which limits the generalizability of our findings to emerging adults who may lose access to care or supplies during this developmental period. Future research should incorporate this crucial aspect of the high-risk emerging adulthood period to better understand the social support systems that are either in place or needed for emerging adults.

In summary, it is clear that romantic relationship status has important implications for who is involved in type 1 diabetes management during this time and that parents likely remain involved in diabetes management into emerging adulthood. Providers working with this population should consider assessing social involvement in individuals’ diabetes management, with particular attention to whether emerging adults perceive others as positively and/or negatively affecting their diabetes management. Furthermore, romantic partners who are newly on the scene for diabetes management may benefit from additional diabetes education to provide optimal support. Because it is possible that romantic partners may engage in more frequent negative involvement (e.g., control or criticizing) with increased diabetes knowledge (e.g., regarding the risks of hypoglycemia and complications), education efforts for romantic partners should include content targeting ways to optimally support their partners with type 1 diabetes without overinvolvement or control. Likewise, because the same individuals may provide helpful and unhelpful involvement, emerging adults may benefit from assistance in managing their social networks to optimize support for type 1 diabetes tasks.

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#### DUALITY OF INTEREST

No potential conflicts of interest relevant to this article were reported.

#### AUTHOR CONTRIBUTIONS

M.S.C. wrote the manuscript and researched data. A.G. researched data and reviewed/edited the manuscript. D.J.W. researched data, reviewed/edited the manuscript, and contributed to discussion. C.A.B. reviewed/edited the manuscript and contributed to discussion. M.S.C. is the guarantor of this work and, as such, had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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