

#ADA25 Campaign: Using Social Media to Promote Participation, Social Inclusion, and Civic Engagement of People With Intellectual and Developmental Disabilities

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Abstract

Social media is used for civic engagement and building social inclusion. Twitter is one social media tool that facilitates conversations on important societal events. A digital divide between the general population and people with intellectual and developmental disabilities (IDD) remains. Given the divide, we sought to understand the inclusion of the community of people with IDD in the conversations around the 25th anniversary of the Americans with Disabilities Act of 1990 (ADA). We conducted a content analysis of tweets associated with the anniversary and few tweets referenced the community of people with IDD. Our findings suggest that people with IDD are not included in larger civic conversations. Implications include targeted social media training for people with IDD and their support networks.

Key Words: *Twitter; engagement; disability; social network*

Background

The disability rights movement led to several policy and programmatic changes in the United States promoting the inclusion of people with disabilities, including people with intellectual and developmental disabilities (IDD), in our broader society (Ferguson, Ferguson, & Wehmeyer, 2013). For instance, the Americans with Disabilities Act of 1990 (ADA) sought to break down societal and institutional barriers to participation among people with disabilities in all areas of public life, including work, education, transportation, and leisure (National Network Information, Guidance, and Training on the Americans with Disabilities Act, n.d.). In fact, participation is a component of the World Health Organization's (WHO) International Classification of Functioning, Disability, and Health (World Health Organization, 2001), which considers how functioning impacts participation in all aspects of life. In response, researchers exploring participation have expanded their definition of participation to include all aspects of society including civic, cultural, and spiritual participation (Dean, Fisher, Shogren, &

Wehmeyer, 2016) in order to live a full life (Thompson et al., 2009).

Access to Technology

Access to technology and participating in society via technology is critical for people with IDD because an estimated 86% of Americans use the internet and about 69% of Americans use social media to connect with others and exchange information (Greenwood, Perrin, & Duggan, 2016). People with IDD do not use technology at the same rates as the general population (Federal Communications Commission, 2016). The ADA covers the provision of inclusive digital spaces, access to technology, and accessible technology. Additionally, Section 504 of the Rehabilitation Act of 1973 requires reasonable accommodations for people with disabilities for technology use.

For adolescents and adults with IDD, access to the internet and social media is important because technology use enhances their social networks, provide opportunities for advocacy or civic engagement, and improves self-determination (Chadwick, Wesson, & Fullwood, 2013; Weh-

meyer & Shogren, 2013). Civic engagement is a measure of social capital; National Research Council (2014) refers to civic engagement as:

Civic engagement is a cluster of individual efforts and activities oriented toward making “a difference in the civic life of . . . communities and developing the combination of knowledge, skills, values and motivation to make that difference. It means promoting the quality of life in a community, through both political and non-political processes.” (Ehrlich, 2000, p. vi) (p. 35)

Recent research emphasizes the importance of increasing social ties and social networks for people with IDD to promote social inclusion (Bogenshutz et al., 2015), employment (Nord et al., 2015), and technology use (Wehmeyer & Shogren, 2013). This work is grounded in social capital theory (Putnam, 2000) which posits the relationships one has (i.e., social networks) provide resources, in the form of either support or opportunity, and that weak or strong ties can facilitate access to information, mobilize community resources for civic engagement, and improve quality of life through increased social cohesion and self-advocacy (Schalock & Alonso, 2002; Shogren, Wehmeyer, Reese, & O’Hara, 2006).

Social Networks

Research indicates that people with IDD have smaller social networks (Emerson & McVilly, 2004). Institutions such as schools or social service agencies may play a role in facilitating smaller social networks and increased social isolation among people with IDD (Roberston et al., 2001). For instance, Fisher and Shogren (2016) found adolescents with IDD in segregated environments had smaller networks, less access to technology, and fewer opportunities to engage with friends in social activities than peers with and without disabilities in more inclusive environments such as co-taught or general education classes. Likewise, Lippold and Burns (2009) found that adults with IDD had more restricted social networks than people with physical disabilities, largely due to the support needs of people with IDD. In their examination of what networks provided people with intellectual disability, van Asselt-Goverts, Embregts, and Hendriks (2013) found participants had smaller networks composed mostly of family members and professional

staff and that participants relied more on professional staff for practical information. When examining the network’s ability to meet their needs to connect with others, participants indicated the network provided little support in this area. Targeting popular ways to connect with others in their network and participate in civic conversations is a key area for people with IDD.

Digital Divide

Unfortunately, people with disabilities, including people with IDD, experience a digital divide with lower internet use compared to people without disabilities (Chadwick et al., 2013; Fox & Boyles, 2012; McKenzie, 2007). However, addressing the digital divide is difficult as adults with IDD are often overlooked in efforts to promote adult computer literacy (Hoppestad, 2013). Recent studies have explored social media use among adults with disabilities. Holmes and O’Loughlin (2012) found that people with learning disability used Facebook to help create a social identity to connect with others. Adults with IDD using Facebook reported that it helped with their mental health and provided a sense of belonging (Shpigelman, 2016). Systematic literature reviews regarding social media use of people with traumatic brain injury and people with IDD found that social media use improved communication skills, reduced stigma, and created opportunities for sharing information and developing friendships (Brunner, Hemsley, Palmer, Dann, & Togher, 2015; Caton & Chapman, 2016). Caron and Light (2015) found that adults with cerebral palsy who utilize augmentative and alternative communication (AAC) devices used social media to enhance their independence and encouraged their employment. Adults with severe communication disabilities who utilize AAC have reported positive experiences with using Twitter to connect with others (Hemsley, Dann, Palmer, Allen, & Balandin, 2015). Technology use can provide a key mechanism for people with a variety of disabilities to improve inclusion, engagement, and advocacy across many aspect of life.

One key social media tool for social inclusion, civic engagement, and participation is Twitter, a social media platform with a stated mission “to give everyone the power to create and share ideas information instantly, without barriers” (Twitter, 2017). Twitter’s 313 million active users worldwide use Twitter to connect with one another via direct messaging and to share resources and

information broadly with their Twitter followers (Twitter, 2017). In fact, researchers acknowledge the power of Twitter to enhance individual and community networks and to increase civic engagement (Crosier, Webster, & Dillon, 2012).

Purpose

In order to explore whether or not people with IDD participate, are socially included, and engage in civic conversations, we examined the national digital conversation on the ADA's 25th anniversary. During the anniversary week, there were organized hashtag campaigns to celebrate, with the culminating campaign from July 25 through July 27, 2015. Within these campaigns, organizers promoted the use of social media to both celebrate and raise awareness about the ADA. Given the growth of social media in our society as a mechanism for social inclusion, community engagement and participation, we sought to study how inclusive the Twitter dialogue was regarding the 25th anniversary of the ADA. The purpose of the current study was to utilize Twitter to assess the nature of conversations regarding the ADA and to understand whether people with IDD, advocacy groups, and service providers working with people with IDD and their families) were a part of this national Twitter conversation. Our research questions were:

1. Which groups tweeted most frequently about the anniversary of the ADA?
2. For those groups who tweeted most frequently, what type of tweet were they using about the ADA 25th anniversary?
3. To what extent were people with IDD included in the Twitter conversations?

Methods

We completed a content analysis of Twitter posts containing hashtags associated with the ADA 25th anniversary. The affiliated Institutional Review Boards (IRB) reviewed the study methodology and confirmed that it was not human subjects research as it was using publicly available data and therefore did not need IRB approval.

Procedures

The research team. Two faculty members mentored two doctoral students in this research

project. The doctoral students were responsible for coding the tweets and met regularly with the faculty mentors to discuss data collection and analysis. The doctoral students were in the fields of occupational therapy and special education. The two faculty mentors have expertise in the field of IDD, social network theory, social network analysis, technology, and disability policy.

Identifying ADA hashtag. To identify the hashtags used in this content analysis, the research team members reviewed social media campaigns promoting the 25th anniversary of the ADA. Hashtags were selected which were promoted by several groups (#ADA25; #ADA) or were promoted by groups with large national reach including The ADA Legacy Project (#BecauseoftheADA) and The White House (#OurADASTories).

Obtaining tweets. The Twitter Application Program Interface (API) is available to retrieve archival data for up to seven days from when the script is run. Since we examined tweets more than seven days from the time of retrieval, a Python script was used, GetOldTweets (<https://github.com/Jefferson-Henrique/GetOldTweets-python>), that allowed for a Twitter search through a browser to collect the tweets associated with a particular hashtag into a CSV file. Using this script, the team collected the data from July 24–27, 2015, dates surrounding the 25th anniversary of the ADA, July 26, 2015. The following hashtags were used to pull the archival data: #ADA, #ADA25, #OurADASTories, and #BecauseoftheADA. The script allowed for the collection of the following information for each tweet: (a) the text of the tweet; (b) the username of the poster; (c) any favorites or retweets; (d) the hashtags and @mentions from the tweet in separate columns; (e) the timestamp and geo-location (if available); (f) the unique tweet ID; and (g) a permalink to the tweet. The initial data set has 8119 tweets.

Coding tweets. Each member of the research team initially coded 35 random tweets using an a priori codebook developed from a previous Twitter content classification framework (Dann, 2010). The number of tweets was selected at 140 total (35 per researcher) for the initial update of the code book as it allowed for more than 10% of the sample to be reviewed. The research team then met to review the 140 tweets to come to consensus on the coding process and to update the a priori codebook. The a priori codebook, included first

order, second order, and user type codes. The research team used an iterative process to continually update the codebook and come to agreement on coding. A category was added to identify if the account was verified or not by Twitter.

Research question one (RQ1): Who tweeted? User type code was a diverse list of how people could possibly identify themselves from their Twitter page. User type was determined by reviewing the profile information provided by the Twitter user. The research team was able to review each Twitter user's bio provided by the user, which included the individual's identifying their connection to IDD. Twitter bios can also include web links to organizations the individual works with or links to personal websites or blogs. All of the biographical information provided, including web links, were reviewed to answer this question. It should be noted that 11% of the Twitter users in this data set were verified by Twitter, meaning the user submitted an application to Twitter to publicly verify their account.

Research question two (RQ2): Tweet type (first and second order codes). Generally, the first order code was used to categorize the main purpose of the tweet into the following five categories: conversational, pass along, status, news, or phatic. A conversational tweet engaged another Twitter user by using their user handle in the tweet. A pass along tweet was a tweet that signaled an endorsement of another tweet or passed along information from a previous tweet. A status tweet indicated what the user was doing at the time of the tweet. A news tweet reported news content. A phatic tweet was an undirected tweet. Each first order code had additional second order codes that further expanded the purpose or the intent of the tweet. For example, if someone wanted to "pass along" information, they could either retweet, post a link to their own blog or social media page, or direct followers to another page or article. See Table 1 for a list of all codes with their definitions and examples.

Research question three (RQ3): Intellectual and/or developmental disability community participation. After identifying who was tweeting (RQ1) and the type of tweet they used (RQ2), we sought to understand whether community of people with IDD were part of the conversation. To do this, we engaged in two types of coding: (1) identified whether or not the individual who tweeted was a person with IDD or a group that involved or focused on people with IDD or (2) the

tweet contained specific information related to IDD. Examples of people or groups related to IDD included self-advocates with IDD or a support or advocacy group for people with IDD.

Interobserver agreement. After the coding rules were finalized, a random number generator was used to pull a sample of 1,000 tweets (250 randomly pulled from each day) to use in the content analysis. Two members of the research team divided the tweets into groups of 125 tweets. Within each group of 125 tweets, the two researchers overlapped with 25 of the tweets. These researchers met weekly to review these tweets for the first three groups of 125 tweets. At this phase, the researchers had a 98% agreement over the first 375 tweets. Next, the researchers met biweekly to complete the last five groups (remaining 625 tweets) and further clarified codes in the codebook. Throughout the process, the researchers also clarified tweets that fell into more than one category deciding to code as the primary category. In addition, the researchers added a detailed list of user types which were later collapsed into larger categories and ensured that users with multiple tweets were coded consistently as the same user type. Overall, agreement on the content analysis was 97%.

After removing foreign language tweets, the final data set was 954 tweets. From this data, frequencies were calculated using the cross tabulations function in Microsoft Excel. The following cross tabulations were completed in Excel: (a) first order code by second order code; (b) first order code by user type; (c) second order code by user type; (d) first order by specific content related to IDD; and (e) user type by IDD. These cross-tabulations addressed the three main research questions including an understanding of who was involved in the ADA Twitter conversation, how Twitter was used, and how inclusive the conversation was of people with IDD.

Results

A majority of tweeters in our sample were advocates, supportive groups, or government/media groups. Generally, tweeters passed along information and engaged in conversations around the ADA. Advocates were the most prevalent user type in conversational tweets, and supportive people and groups were the most prevalent user type in pass along, phatic, and status tweets.

Table 1
Social Media and the ADA Codebook

Codes	Definitions and Examples
Conversational First Order	
1.0 Conversational	Uses an @statement to indicate a directed message to another Twitter user. Provides the building blocks of social interactions between users.
Conversational Second Order	
1.1 Query	Any tweet with both an @symbol and a question mark (?) and/or a link to a poll or survey. Example: @user have you heard about this? www.url.com OR @user Do you have an opinion on the ADA? Check out our survey www.survey.com
1.2 Referral	Any tweet with an @symbol and a URL directing user to another website or directing user to another @user’s handle. Excludes Retweets. Example: @user1 meet @user2 to learn more about the ADA OR @user1 @user2 you should check out this ADA resource guide www.ada.com
1.3 Action	Any tweet with an @symbol indicating the reality or illusion of physicality/engaged activity with another twitter user. Example: Listening to great @user ADA talk with @user OR At ADA event with @user
1.4 Response	Tweets intentionally engaging another user by means of using the @symbol but does not meet the other second order categories (query, referral, action) Example: Happy ADA anniversary @user!
Status First Order	
2.0 Status	Provides an answer to what the user is doing now. First-person language or describes action of the Twitter user.
Status Second Order	
2.1 Personal	Any tweets using personal pronouns. Example: I love the ADA
2.2 Temporal	Any content referencing specific dates, times or temporal activity Example: Can’t wait for the ADA anniversary on July 26th!
2.3 Location	Comments regarding travel, flights, transportation, or checking in at a location. Example: At the PHX airport heading to the ADA celebration
2.4 Mechanical	Any tweet related to technology or mechanical systems (computers, cars, phones) and related technical issues of these mechanical devices functioning. Example: I can’t believe my phone isn’t ADA compliant!
2.5 Physical	Tweet referring to a physical or sensory experience such as heat, cold, tiredness, hunger, etc. Example: I am so hungry right now, have to eat and will be late to ADA celebration
2.6 Work	Tweet referring to work related activity including getting things done, to do lists, jobs, bosses, co-workers. Example: Can’t wait to get out of work today to celebrate the ADA!

(Table 1 continued)

Table 1
Continued

Codes	Definitions and Examples
2.7 Automated	Status update triggered automatically by a third party application, Foursquare, Yelp, etc. Example: Just purchased my ADA shirt @teespring
2.8 Activity	Non-work activities includes any verb-based update describing an activity in progress Example: Watching the ADA coverage on live TV!
Pass Along First Order	
3.0 Pass Along	Tweets that endorse the content of other users on Twitter. By passing along the other user's information you are showing a level of trust and belief in credibility of the Twitter user's content. Can include h/t or via@source.
Pass Along Second Order	
3.1 ReTweet	Any retweets of another user's Tweet. Example: No example would be categorized already as a RT
3.2 UGC (user-generated content)	Any full-length or shortened URL which can be identified as the user's blog or a photo hosting post (twitpic.com). Links to content created by the user (blog, video, picture) Example: Check out www.mybog.com OR Check out www.twitpic.com
3.3 Endorsement	Any other content containing full length or shortened URLs which do not fit the codes for Conversational/Referral, Conversational/Query, Pass-Along/ ReTweet, or Pass Along/UGC. Links to Web content not created by the sender. Example: Check out www.ada.com or Via @NPR : Why Disability And Poverty Still Go Hand In Hand 25 Years After Landmark Law http:// n.pr/ 1HOLzID #disability #ada
News First Order	
4.0 News	Identifiable news content which is not user-generated content. Excludes retweets as well.
News Second Order	
4.1 Headlines	Tweets which resemble mainstream media news coverage of news events. Breaking news or eyewitness accounts. Example: Can't believe this accident happened at ADA event www. newsagencywebsite.com
4.2 Sport	Tweets which contain identifiable results of sporting events. Example: Arizona Cardinals win 27-0!
4.3 Live-Event Coverage	Any tweet which represents live discussion of an identifiable event through the use of a hashtag. Live opinion or commentary on a live broadcast. Example: Hillary needs to say more about #ADA right now!
4.4 Weather	Any tweet reporting the weather. Example: Current temperature 110 =(

(Table 1 continued)

Table 1
Continued

Codes	Definitions and Examples
Phatic First Order	
5.0 Phatic	Represent the connected presence between members of a social network through sheer existence of a tweet rather than any specific content. Communications here are distinguished from status updates by their third person nature and/or use of the platform for undirected communications.
Phatic Second Order	
5.1 Greetings	Generic statements of time, place and greeting to the broader Twitter community. Excludes Status-Temporal (simple statements of time) or Conversational-Response (direct remarks to another user). Example: Good morning Twitterverse!
5.2 Fourth Wall	Textual equivalent of comments made directly to camera in television or cinema. Include statements like “Dear [Brand Name]” or “Just for the record” or “Note to self.” Includes meta commentary tweets discussing Twitter, Twittering, and the Twitter account itself. Example: “Note to self: Make sure to bring your camera to the ADA event.” OR “Dear Company Name: Please have a more ADA compliant building.”
5.3 Broadcast	Undirected statements which allow for opinion, statements and random thoughts to be sent to the author’s followers. Example: “ADA is great unless no one knows what it is and why it matters.”
5.4 Unclassifiable	Any undecipherable tweet due to errors, half-posted sentences, garbled text. Example: “ADA laksxdjfaoidfhaodh;ieharldfajksdhf;a”
Spam First & Second Order	
6.0 Spam	Junk traffic, unsolicited automated posts or tweets generated without user consent.
User-Type	
Advocates	Advocacy Group, Family Member, Friend, Self-Advocate, Advocate
Providers	Provider Agency, Provider
Government	Government Agency, Government Official
Media	News agency, Blogger, Media, News Aggregator
Other	Bot, Parody
Research Agency	Public or private research group
Researcher	Individual researcher
Supportive Individuals and Groups	Music group, Author, DJ, Librarian, Dancer, Theater, Comedian, Artist, Photographer, Actor, Attorney, Doctor, Architect, Insurance , Non-profit agency, Museum, Political Party, Unspecified Individual, Business, Politician
Teacher/educator	Teacher
University/School	Public university

(Table 1 continued)

Table 1
Continued

Codes	Definitions and Examples
Intellectual and Developmental Disabilities (IDD)	
Person with IDD	Individual Twitter user identifies as a person with IDD
IDD specific information	Mention of IDD specific information in their tweet and/or linked content is IDD specific
Specific agency or group working with people with IDD	User-type is a specific agency or group working with people with IDD
Verified Account	
Yes	Verified accounts have a blue checkmark.
No	Not verified (no blue checkmark).

Note. IDD = Intellectual and developmental disabilities.

Following is a description of who tweeted (RQ1), the tweet type used (RQ2), and the extent that the community of people with IDD were a part of that conversation (RQ3).

Who Tweeted?

Table 2 identifies the user types involved in the ADA Twitter conversation and the primary mechanism used by each user type. Across the data set, advocates and supportive people/groups engaged the most. Advocates, such as self-advocates or advocacy groups accounted for 45% of the total tweet sample. Supportive individuals or groups accounted for 39% of the Tweet sample. Other groups with high engagement rates in the dataset included government agencies, media, and providers. While there were various groups engaging in the ADA conversation within our dataset, what participants tweeted about varied.

Tweet Type

Tweeters in our sample mostly engaged in pass along or conversational tweets. These pass along or conversational tweets combined to be a total of 77% of our sample (See Table 3). We found a majority of tweets (58%) were pass along tweets where the user did not generate the content of the tweet on their own, but, passed along information of someone else's tweet, sent out an article, or directed people to their own blog or social media. Conversational tweets were the next most frequently used tweets (19%). Conversational tweets directly addressed another user by including their username

(handle) in the content of the tweet. The third most used tweet was phatic (13%) which included tweets not directed at another user and usually third person in nature. The last two first order codes, status and news, collectively made up only 10% of the total data set. We also examined how specific types of Twitter users engaged in the two most common tweets, pass along and conversational.

Pass along tweets. After further examination, within pass along, users were largely endorsing another user's content typically through referring to another website followed by passing along user-generated content, i.e., content that a specific user had produced like a personal blog or website. Among pass along tweets, supportive people and groups were most present in the Twitter conversation using Twitter to retweet content, promote their own user generated content, or endorse another resource. Advocates were the second most involved group using Twitter in a similar fashion to the supportive individuals and groups. (See Table 4.)

Conversational tweets. The conversational tweets were largely responsive in nature; there was no specific action or question asked of the other user but rather just a general connection made to them in attempt to generate a response. Within conversational tweets, advocates were engaged in action based tweets, questioning others, and generally posting a tweet at another user to generate a response. Once again supportive individuals and groups were the second most likely user type involved. (See Table 5.)

Table 2
Who Is Using Twitter?

First Order	User Type	Number	User Type as % of 1st Order Category
Conversational	Advocates	81	45%
	Government	6	3%
	Media	10	6%
	Other	1	1%
	Providers	3	2%
	Researcher	5	3%
	Supportive Individual or Group	69	39%
	Teacher/Educator	3	2%
	University/School	1	1%
Conversational Total		179	100%
News	Advocates	2	29%
	Media	5	71%
News Total		7	100%
Pass Along	Advocates	129	23%
	Government	59	11%
	Media	30	5%
	Other	7	1%
	Providers	50	9%
	Research Agency	9	2%
	Researcher	11	2%
	Supportive Individual or Group	242	44%
	Teacher/Educator	7	1%
	University/School	10	2%
Pass Along Total		554	100%
Phatic	Advocates	37	29%
	Government	13	10%
	Media	7	5%
	Other	1	1%
	Providers	11	9%
	Researcher	5	4%
	Supportive Individual or Group	51	40%
		University/School	3
Phatic Total		128	100%
Status	Advocates	25	29%
	Government	15	17%
	Media	3	3%
	Providers	9	10%
	Supportive Individual or Group	28	33%
	Teacher/Educator	2	2%
		University/School	4
Status Total		86	100%
Grand Total		954	

Table 3
How Is Twitter Being Used?

First order	Second order	Number	2nd order as % of First Order Category	First Order as Percent of Total
Conversational	Action	39	22%	19%
	Activity	6	3%	
	Query	23	13%	
	Referral	27	15%	
	Response	84	47%	
Conversational Total		179	100%	
News	Headlines	4	57%	1%
	Live-Event Coverage	3	43%	
News Total		7	100%	
Pass Along	Broadcast	1	0%	58%
	Endorsement	346	62%	
	ReTweet	74	13%	
	UGC	133	24%	
Pass Along Total		554	100%	
Phatic	Broadcast	116	91%	13%
	Fourth Wall	2	2%	
	Greetings	5	4%	
	Unclassifiable	5	4%	
Phatic Total		128	100%	
Status	Activity	17	20%	9%
	Location	26	30%	
	Mechanical	1	1%	
	Personal	15	17%	
	Temporal	24	28%	
	UGC	1	1%	
	Work	2	2%	
Status Total		86	100%	
Grand Total		954		100%

Note. UGC = User Generated Content.

Extent to Which People With IDD Participated

Table 6 provides a summary of the inclusion of the community of people with IDD within the Twitter ADA celebration conversation. First, people with IDD or groups focused on or supporting people with IDD accounted for 3% ($n = 27$) of all tweets. There were an additional 8 tweets containing information on IDD. Across the data set, 4% ($n = 35$) of tweets involved the community of people with IDD indicating that they were not a major part of the ADA conversation. When analyzing the tweets that referenced IDD in some way, the tweets were phatic (6%) followed by status updates (4%) and

pass along (4%), and then conversational (2%). Among the user types, specific information related to IDD was found among advocates (8%), supportive individuals and groups (3%) and university/school (11%). In summary, only 1% ($n=11$) of the 954 tweets were from a person with IDD. The overall presence of the community of people with IDD in the sample was 4% ($n = 35$).

Discussion

While previous studies have identified benefits of social media use among people with disabilities, the current study identified minimal participation by the community of people with IDD in a

Table 4
How Are User Types Primarily Using Twitter (Pass Along)?

First Order	Second order	User type	Number	User type as % 2nd order
Pass Along	ReTweet	Advocates	25	34%
		Government	2	3%
		Media	2	3%
		Other	2	3%
		Providers	4	5%
		Researcher	2	3%
		Supportive Individual or Group	34	46%
		Teacher/Educator	1	1%
		University/School	2	3%
			ReTweet Total	
UGC	UGC	Advocates	29	22%
		Government	22	16%
		Media	8	6%
		Other	1	1%
		Providers	16	12%
		Research Agency	5	4%
		Supportive Individual or Group	51	38%
		University/School	2	1%
			UGC Total	
Endorsement	Endorsement	Advocates	74	21%
		Government	35	10%
		Media	20	6%
		Other	4	1%
		Providers	30	9%
		Research Agency	4	1%
		Researcher	9	3%
		Supportive Individual or Group	158	46%
		Teacher/Educator	6	2%
		University/School	6	2%
	Endorsement Total		346	100%

Note. UGC = User Generated Content.

Twitter conversation celebrating the ADA. This study found a diverse group of advocates and other supportive individuals and groups primarily engaged in passing along information or attempting to engage other users in conversational content, however, people with IDD or topics related to people with IDD were not a noticeable part of this conversation. If people with IDD were more engaged on this social media platform, it could result in additional opportunities for enhanced inclusion in society.

Among social media platforms, Twitter is identified as an important tool for traditionally marginalized groups to mobilize communication

efforts due to its open platform (Beykikhoshk, Arandjelovic, Phung, Venkatesh, & Caelli, 2015; Murthy, Gross, & Pensavalle, 2016). However, Twitter's text-based platform may make it difficult for people with IDD who have cognitive limitations (Stock, Davies, & Gillespie, 2013). Given this potential, efforts need to be made to encourage more inclusion of people with IDD on Twitter. Previous studies which identified benefits of social media use also noted potential barriers including cyber security concerns, technology accessibility, and safety concerns (Brunner et al., 2015; Caron & Light, 2015; Caton & Chapman, 2016). Universal design in the development of technology used for

Table 5
How Are User Types Primarily Using Twitter (Conversational)?

1st Order	Second order	User type	Number	User type as % 2nd order
Conversational	Action	Advocates	16	41%
		Government	1	3%
		Media	3	8%
		Providers	1	3%
		Researcher	3	8%
		Supportive Individual or Group	14	36%
		Teacher/Educator	1	3%
		Action Total		39
	Activity	Advocates	2	33%
		Government	1	17%
		Supportive Individual or Group	3	50%
	Activity Total		6	100%
	Query	Advocates	20	87%
		Supportive Individual or Group	3	13%
	Query Total		23	100%
	Referral	Advocates	8	30%
		Government	1	4%
		Media	4	15%
		Providers	1	4%
		Researcher	1	4%
		Supportive Individual or Group	11	41%
		Teacher/Educator	1	4%
	Referral Total		27	100%
	Response	Advocates	35	42%
		Government	3	4%
		Media	3	4%
		Other	1	1%
Providers		1	1%	
Researcher		1	1%	
Supportive Individual or Group		38	45%	
Teacher/Educator		1	1%	
University/School		1	1%	
Response Total		84	100%	

social media access is one strategy to address broad accessibility barriers (Foley & Ferri, 2012). Applications such as Easy Chirp 2.0 embed web-accessibility in Twitter and allow for ease of navigation, extended Alt-text on image descriptions, and use with screen readers can improve access for people with IDD (Woods & Woods, 2013). Additionally, educating adolescents and adults with IDD as well as their caregivers about safe social media use could help overcome safety barriers (Chadwick et al., 2013).

Limitations

As with any study utilizing secondary data analysis, there are limitations to this study. First, the researchers identified hashtags based on reviewing publicly promoted social media campaigns regarding the ADA 25th anniversary. It is possible that the research team missed a lesser known hashtag that might have been more inclusive of people with IDD. Second, the research team had to take the user profile information at face value if the accounts were

Table 6
Inclusion of Intellectual and Developmental Disabilities (IDD)

First order	IDD yes or no	Number	IDD% of 1st Order Category
Conversational	IDD group	2	1%
	Person with IDD	2	1%
	None	175	98%
Conversational Total		179	100%
News	None	7	100%
News Total		7	100%
Pass Along	Group working with people with IDD	9	2%
	IDD specific information	7	1%
	Person with IDD	4	1%
	None	534	96%
Pass Along Total		554	100%
Phatic	Group working with people with IDD	2	2%
	Specific information related to people with IDD	1	1%
	Person with IDD	4	3%
	None	121	95%
Phatic Total		128	100%
Status	Group working with people with IDD	3	3%
	Person with IDD	1	1%
	None	82	95%
Status Total		86	100%
Grand Total		954	

not verified by Twitter. In other words, the research team had to trust that the user was in fact who they said they were and at times the Twitter user provided minimal information to correctly identify who they were. This is a limitation in any study using social media as a data source. In this study, 11% of the users were verified. A recent review of user verification on Twitter found that only 0.061% of daily active users were verified (Navarra, 2016). Additionally, Twitter is the only social media platform which allows any user to verify their account. Currently, Facebook and Instagram only allow public figures, companies, and brands to obtain verification status (Facebook, 2018; Instagram, 2018).

Finally, our results are indicative of the ADA 25th anniversary campaign and may or may not be representative of the overall participation of people with IDD in Twitter overall. It may be that given the ADA focuses to a large extent on reasonable accommodations to public spaces, that conversations around the ADA typically center around people with different types of disabilities

including physical disabilities, vision impairments, or people who are deaf or hard of hearing. It may be that issues related to people with IDD are not typically included pointing to a need for more advocacy regarding the full intent of the ADA.

Implications for Research, Practice and Policy

This study utilized a growing data set of publicly available information to identify the inclusion of the community of people with IDD on a free and open access social media platform, Twitter. The lack of representation of the community of people with IDD in the public discourse regarding the ADA's 25th anniversary indicates a need to educate the public regarding the full scope of the ADA. Policy efforts can be promoted through educational activities or programmatic policies which acknowledge that the ADA is about creating accessible public spaces through not only physical accommodations but also accommodations for sensory and/or communication challenges.

Twitter is a great resource of information regarding societal attitudes and trends. A strength of this study was the rigorous processes undertaken to triangulate understanding of the Twitter content. Future research is needed on the social barriers that marginalize people with IDD and social media provides a natural data set to explore these barriers, as well as facilitators (Caton & Chapman, 2016). Additionally, future research could address preferences for social media use among people with intellectual and/or developmental disabilities. It is possible that photo based platforms, such as Instagram and Facebook are more popular and may have a higher proportion of users with IDD. Also, future research could address social media preferences and usage among various age groups, race/ethnicity, and other demographic differences among people with IDD.

Researchers and practitioners could develop and evaluate training programs to promote Twitter use or other social media and also could look at prospective Twitter data to complete a social network analysis to identify the interconnectedness of Twitter user networks (Hemsley, Palmer, & Balandin, 2014). Analytic tools such as NodeXL (an open and free analytic tool; <https://archive.codeplex.com/?p=nodexl>) can assist researchers in examining the social media networks of both people with IDD and those who support or advocate on their behalf (Social Media Research Foundation, 2016). This line of research could examine whether these networks are only connected to other people who support people with IDD or if the networks provide connections with key policy, political, or business connections to move the needle beyond the disability field. In practice, health, education, and social service providers could incorporate social media use into their standards of practice for people with IDD.

Access to technology provides a way for people to connect with their communities, participate, and engage in civic conversations. Given the isolation of people with IDD and their families, addressing access to technology to build social networks, participate in community conversations, and advocate for civil rights should be a key area of support for adolescents and adults with IDD. A starting point would be the *Declaration on the Rights of Individuals with Cognitive Disabilities to Technology and Information Access* (Braddock, Hoehl, Tanis, Ablowitz, &

Haffer, 2013) which recognizes that people with IDD have a right to access to information and technology to participate more fully in society. In fact, the Federal Communications Commission issued a white paper on the importance of technology use to live independently, participate in education and work, to use transportation, and to be socially included (Federal Communications Commission, 2016). Applying causal agency theory to goal setting around social media use may provide a framework embedding social media engagement within self-determination action (Shogren, et al., 2015). Agencies, advocacy groups, schools, and self-advocates can emphasize technology training and usage to not only support inclusive living but also to increase social networks and participate in society. People with IDD can develop resources which can directly promote accessing social media in a productive and safe manner.

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