Examining Health Information Scanning and Seeking across Diverse Language, Cultural and Technological Media among Latinx Adolescents

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Submitted to: Journal of Medical Internet Research
on: July 23, 2024

Table of Contents

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Abstract

Background: Latinx adolescent populations may find media, especially social media, as supportive to mental health. In light of this, public attitudes, policies and practices must consider a more diverse portrait of new and diverse language/cultural social media when deliberating about potential harmful effects on mental health risks among adolescents.

Objective: This study aimed to identify health information scanning and seeking behaviors in diverse language/cultural media types among Latinx adolescents as knowledge is limited.

Methods: In 2021, 701 U.S.-based Latinx adolescents ages 13-20 self-completed a cross-sectional survey about health-related media use. Assessments ascertained frequency of media use and mental/physical health information scanning and seeking across various media technologies (e.g., television, podcasts, social media) and language/culture (i.e., Spanish, Latinx-tailored-English, and general-English). Linear regression models estimated adjusted predicted means of mental/physical health information scanning/seeking across diverse language/cultural media types, net personal/family factors, in the full sample and across mental health symptoms (moderate/high versus none/mild).

Results: No significant differences in media use were observed across symptom groups. However, Latinx adolescents with moderate/high versus none/mild symptoms more often scanned general-English media and social media for mental health information ($p<.05$), although not for physical health information. Also, Latinx adolescents with moderate/high versus none/mild symptoms more often sought mental health information on Latinx-tailored and general-English media, and social media ($p<0.05$); a similar pattern was found for physical health information seeking. Finally, Latinx adolescents with moderate/high versus none/mild symptoms more often sought help from family/friends for mental/physical health problems and healthcare providers for mental health only ($p<0.05$).

Conclusions: While media usage was not disparate across mental health, Latinx adolescents with moderate/high symptoms more often encountered mental health content in general-English media, and social media and family/friend networks, underscoring the importance of providing accessible, quality information to social networks, both in-person and online, to address adolescent mental health.

(JMIR Preprints 23/07/2024:64672)
DOI: https://doi.org/10.2196/preprints.64672

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Title: Examining Health Information Scanning and Seeking across Diverse Language, Cultural and Technological Media among Latinx Adolescents

Running Head: Latinx Health Information Behaviors (40 characters w/ spaces max)

Word Count: 3494; 3500 word max

Number of Figures/Tables: 5 max

Number of References: 50 max

Key Words: adolescent behaviors; mental health; Latino; Latina; ethnicity

Abstract

Purpose. This study aimed to identify health information scanning and seeking behaviors in diverse

language/cultural media types among Latinx adolescents as knowledge is limited.

Methods. In 2021, 701 U.S.-based Latinx adolescents ages 13-20 self-completed a cross-sectional survey about health-related media use. Assessments ascertained frequency of media use and mental/physical health information scanning and seeking across various media technologies (e.g., television, podcasts, social media) and language/culture (i.e., Spanish, Latinx-tailored-English, and general-English). Linear regression models estimated adjusted predicted means of mental/physical health information scanning/seeking across diverse language/cultural media types, net personal/family factors, in the full sample and across mental health symptoms (moderate/high versus none/mild).

Results. No significant differences in media use were observed across symptom groups. However, Latinx adolescents with moderate/high versus none/mild symptoms more often scanned general-English media and social media for mental health information (p<.05), although not for physical health information. Also, Latinx adolescents with moderate/high versus none/mild symptoms more often sought mental health information on Latinx-tailored and general-English media, and social media (p<.05); a similar pattern was found for physical health information seeking. Finally, Latinx adolescents with moderate/high versus none/mild symptoms more often sought help from family/friends for mental/physical health problems and healthcare providers for mental health only (p<0.05).

Conclusion. While media usage was not disparate across mental health, Latinx adolescents with moderate/high symptoms more often encountered mental health content in general-English media, and social media and family/friend networks, underscoring the importance of providing accessible, quality information to social networks, both in-person and online, to address adolescent mental health.

Implications and Contribution:

Latinx adolescent populations may find media, especially social media, as supportive to mental health. In light of this, public attitudes, policies and practices must consider a more diverse portrait of new and diverse language/cultural social media when deliberating about potential harmful effects on mental health risks among adolescents.

Introduction

Current reports depict a national adolescent mental health crisis. In the U.S., about 1-in-5 adolescents ages 10-19 years experience poor mental health, especially race/ethnic minoritized adolescents.[1-5] In 2021, the U.S. Surgeon General stated that the COVID-19 pandemic further altered adolescents' experiences at home, school, and the community that generated devastating effects on their mental health.[6] In 2021, 42% of adolescents had persistent sadness/hopelessness and 22%of

adolescents considered suicide, representing significant increases since 2019.[7] Latinx (46%) adolescents—representing 25% of all adolescents nationally—report higher rates of sadness than Asian (35%), Black (39%), and White (41%) adolescents, with the pandemic especially worsening mental health for Latinx adolescents.[8] Despite these trends, less than half of Latinx adolescents with mental illness receive care.[5]

Given the concern about adolescent mental health, emerging public attitudes, policies and practices has focused on how social media in particular may influence health and healthcare knowledge, norms, and behaviors.[9-20] While past research has focused on legacy media (e.g., television, radio, print), more recent research has examined the use of new digital media, especially social media, as a risk factor for poor mental health among adolescents. Moreover, the COVID-19 pandemic significantly increased adolescents' social media use. Mental health content on social media is highly variable.[16-26] While #MentalHealth is one of the three most popular social media tags about health, pejorative content is prevalent too.[15-20,27,28] Legacy and new digital media can deliver mental health information, which potentially influences mental health knowledge, attitudes, and behaviors. Thus, further study about adolescents' mental health information behaviors and the effect of those behaviors on help-seeking across diverse language, cultural and technological media types is warranted. This is especially relevant for adolescents with preexisting mental illness, as about half of social media users are 10–29 years old—the same age of most mental illness onset.[21]

Research on legacy media has shown direct links between use and mental health risk behaviors, while newer studies on social media use and mental health risk among adolescents have identified small associations.[10,11,18,29-32] However, the work on social media use has predominantly employed simple measures of time spent on social media as a unidimensional construct, failing to examine the linguistic, cultural, and technological diversity in social media.[32] Thus, prior studies have assumed that social media is experienced universally, where frequency of use is the mark of an association, and has not examined the algorithm-driven content curation characteristic of social

media or considered new measurements. Moreover, adolescent populations are diverse, as is their access to language and cultural media across technology (i.e., social media, podcasts, streaming TV). Importantly, Latinx populations in the U.S. use social media more than other race/ethnic groups, including the top three popular apps among adolescents (i.e., Instagram, Snapchat, TikTok).[21] Further, Latinx adolescents have access to media, including social media, in Spanish and from Latin America due to close global social networks from dynamic migration experiences. At the same time, Latinx communities are impacted by poor-quality, slow dissemination of health communication as content moderation in industry and public agencies tends to overlook Spanish-language and Latinx communications in general, and social media in particular.[12-14,33-40] Therefore, more research is needed on the relationship between diverse language, cultural, and technological media and health—that is, media across global languages (e.g., Spanish, Mandarin, Hindi, etc.); global cultures (e.g., Latinx, Korean pop culture or K-Culture, celebrity/influencer cult followings, online/digital social movements such as #BlackLivesMatter, #ALSIceBucketChallenge, #MeToo); and technologies for delivery and communication (e.g., websites, social media such as YouTube, Facebook, Instagram, Snapchat, TikTok, Pinterest, Reddit, mobile apps, email, blogs, console-, computer-, hand-held-, or VR-based gaming, music, film, and streaming services such as Netflix, Hulu, Spotify, Pandora, etc.).

Because research on media and health, particularly social media and mental health, has largely focused on English-language media and limited Latinx adolescent representation relative to their share of the adolescent demographic, new research is needed to assess diverse language, cultural, and technological media use by Latinx adolescents.[10,41-44] Addressing that gap, this study presents findings about adolescent mental and physical health information behaviors across diverse language, cultural, and technological media types and mental health profiles. Importantly, we employ newly validated, culturally appropriate measures to capture diverse language, cultural, and technological media for mental and physical health information and to assess formal and informal health help-seeking (e.g., healthcare providers, family, and friends). Our measurement extends prior

measures focused on language competency and legacy media to capture culturally relevant new media including social media that is accessible to Latinx adolescents. Because Latinx adolescents' social media use media has been inadequately studied, yet important, this study aims to generate new knowledge about the frequency of mental and physical health information scanning and seeking behaviors across diverse language, cultural, and technological media types, including social media, among Latinx adolescents.

Method

Sample

In 2021, 701 eligible U.S.-based Latinx adolescents ages 13-20 provided consent/assent to self-complete a 20-minute cross-sectional survey about behaviors related to Spanish- and English-language media use and mental and physical health information acquisition; further details about the study procedures are reported elsewhere.[BLINDED] Briefly, a definition of "Latina/o/x/e" identity was provided to eligible participants to determine eligibility. Recruitment and sampling quotas oversampled age, ethnic origin, and gender to generate a sample with power to examine Latinx groups that are under-represented in population health research. Participants self-completed the survey online using personal digital devices. In 2021, smartphone/tablet ownership and usage among adolescents was extremely high and non-differential by race/ethnicity in the U.S.[45] Random checks of the survey reviewed accuracy and consistency in data entry. All study materials were offered in Spanish and English; 96.58% of the study sample completed the survey in English. Participants received a $5 giftcard for their time and effort in completing the study. BLINDED Institutional Review Board approved the study.

The achieved study sample of Latinx adolescents had a median age of 17 years (N=701); 78.21% were female and 86.51% were U.S.-born (Table 1). Among the 13.49% that were foreign-born, average age of arrival to the U.S. was about 10 years old. Ethnic subgroups included Mexican (57.49%), Cuban/Dominican/Other Latinx group (11.84%), Puerto Rican (10.56%), Central

American (12.27%), and South American (7.85%), and race subgroups included American Indian/Alaskan Native (3.01%), Black (5.88%), Multiracial (10.62%), White (35.01%), and Other (45.48%). About 41% reported household incomes of <$20K, while 46% reported between $20K to <$75K; 14% reported $75K+. Participants reported high Latinx ethnicity attachment and English-language media use, followed by Latinx-tailored and Spanish-language media use. Details comparing the study sample to national data are reported elsewhere.[BLINDED] Finally, two subsamples based on PHQ-4 mental health scores (see details below under *Measures*) included no/mild (n=391) and moderate/severe (n=310) mental health symptoms. The subsamples varied significantly by gender, race, parent/guardian nativity, and Spanish acculturation ($p<0.05$), and not by other covariates listed in Table 1.

Measures

Media Use. As previously validated,[BLINDED] seven items assessed Spanish, Latinx-tailored English, and general English media use across print media, free broadcast TV, subscription TV, Twitter, other social media (e.g., Facebook, Instagram, TikTok), radio/podcasts, and music/music streaming. Participants were asked how often on an average day they engage in each language/cultural media type (1=Never to 5=Always).

Media-Based Health Information Scanning. Five items assessed frequency of mental and physical health information scanning (i.e., passive exposure to health information in media) across the three language/cultural domains for each media type: print media, TV, websites, social media, or radio/podcasts.[BLINDED] Participants were asked how often they encountered mental health and, separately, physical health, information (i.e., scanning) in each language/cultural media type during an average week (1=Not at all to 4=A few times a week). Total scores of all items for each language/cultural domain were combined to create three subscales of *all media scanning* for mental health and, separately, for physical health (α=0.92-0.94). Two items pertaining to social media for each language/cultural domain were also combined to create three subscales of *social media scanning* for

mental and physical health.

Media-Based Health Information Seeking. Five items assessed frequency of mental and physical health information seeking (i.e., searching on purpose for health information in media) across the three language/cultural domains for each media type (print media, TV, websites, social media, and radio/podcasts).[BLINDED] Participants were asked about the frequency that they purposely sought mental health and, separately, physical health, information in each media type for a mental or physical health problem of one's own, a family member, or friend (1=None to 4=Always). Total scores of all items for each language/cultural domain were combined to create three subscales of *all media information seeking* for mental health and, separately, for physical health (α=0.87-0.90). Two other configurations of these items by media type emerged in factor analyses: a legacy television, radio, and print media subscale (α=0.93; *legacy media seeking*) and an Internet-based websites and social media subscale (α=0.89-0.90; *Internet/social media seeking*).[BLINDED]

Formal Healthcare and Informal Networks Health Information Seeking. Four-items assessed seeking mental or physical health information from either healthcare professionals (formal) or family/friends (e.g., in-person or phone/video call or text) (informal): "For each of the following sources, how often have you actively looked for information about a (physical/mental) health problem that you, a family member, or a friend had?" Participants responded on a Likert scale of 1 to 4 (1=Never to 4=Always) for formal and informal networks to the item specific to mental health followed by a similar item specific to physical health.

Sociodemographic and mental health factors. Age, sex, ethnicity, race, nativity, household income, and migration factors (e.g., age at arrival to the U.S.) were also measured (Table 1). Six items assessed ethnic attachment (α=0.90)—the extent of exploration, belonging, and commitment to one's ethnic identity; 18 items measured language use and proficiency (α=0.90-0.91). Lastly, the Patient Health Questionnaire-4 (PHQ-4) screened for mental health symptoms. The PHQ-4 demonstrated excellent reliability in the current data (α=0.89). The four items are scored on a four-

point Likert scale (0=Not at all to 3=Nearly every day) and summed so that full scale ranges from 0 to 12. Two categories were created using established cut points: scores 0 to 5=None/Mild and scores 6 to 12=Moderate/Severe.

Statistical Analysis

We utilized linear regression models to estimate adjusted predicted means of mental and physical health information scanning and seeking across diverse language, cultural, and technological media types (i.e., all media inclusive of legacy media or Internet-based websites and social media available in Spanish-language, Latinx-tailored English-language, and general English-language). All models were adjusted for age, sex, nativity, race, ethnic origin, household income, ethnic attachment, acculturation, and Spanish, Latinx-tailored English, and general English media use. Models inclusive of the full sample controlled for mental health symptoms. Multi-collinearity was not observed between the covariates; all correlations between variables were <0.5. Because bivariate tests showed no statistically significant differences between all media use variables across mental health, all media use variables were entered into all linear regression models as control variables. Model fit chi-square statistics indicated good fit ($p<0.05$). Adjusted predicted means from linear regression models were also analyzed across subsamples of symptoms (no/mild vs. moderate/severe). Figures plotting the adjusted predicted means for all outcomes are presented in the main results (see online Appendix for accompanying Tables). All results were considered significant at $p<0.05$ and obtained using StataSE Version 18.

Results

Media-Based Health Information Scanning

Table 2 displays the adjusted predicted means of all outcomes, including media-based mental and physical health information scanning across diverse language, cultural, and technological media types, including legacy versus Internet/social media. In the full sample of Latinx adolescents and subsamples of mental health symptoms, mental and physical health information scanning occurred

most often in general English-language media, followed by Latinx-tailored and Spanish-language media; similar patterns were found for social media.

Figure 1 displays the adjusted predicted means of mental and physical health information scanning in the full sample of Latinx adolescents and subsamples of mental health symptoms. No statistically significant differences in mental and physical health information scanning were found for Latinx-tailored or Spanish-media and social media outcomes across the subsamples of symptoms. However, Latinx adolescents with moderate/severe symptoms obtained mental health information through scanning English-media and social media significantly more often than those with no/mild symptoms ($p<0.05$; Figure 1A). In contrast, no significant differences for physical health information scanning outcomes were found across mental health (Figure 1B).

Media-Based Health Information Seeking

Table 2 also displays the adjusted predicted means of the media-based mental and physical health information-seeking outcomes across diverse language, cultural, and technological media types, including legacy versus Internet/social media. In the full sample of Latinx adolescents and subsamples of mental health symptoms, mental and physical health information seeking in all media types occurred most often in general English-language media, followed by Latinx-tailored English-language media and Spanish-language media. In terms of media type, the full sample of Latinx adolescents and both subsamples of mental health symptoms reported seeking mental and physical health information most often in Internet/social media versus legacy media (i.e., TV/Book/Radio).

Figure 2 displays the adjusted predicted means of mental and physical health information seeking in the full sample of Latinx adolescents and subsamples of mental health. No significant differences in mental and physical health information seeking were found for Spanish-language media or legacy media across the subsamples of mental health. However, Latinx adolescents with moderate/severe sought mental health information in Latinx-tailored and non-tailored English-language media and Internet/social media more frequently than those with no/mild symptoms

($p<0.05$; Figure 2A). Similarly, Latinx adolescents with moderate/severe sought physical health information in Latinx-tailored English-language media and Internet/social media more frequently than those with no/mild symptoms ($p<0.05$; Figure 2B).

Formal and Informal Help-Seeking

Table 2 also displays the adjusted predicted means of formal (i.e., healthcare providers) and informal (i.e., family/friends) help-seeking for mental and physical health problems in the full sample of Latinx adolescents and subsamples by mental health symptom level. Both the full sample and subsamples by mental health symptoms sought help for mental/physical health problems more often from family/friends than from healthcare providers.

Figure 2 displays the adjusted predicted means for formal and informal help-seeking for a mental and physical health problem in the full sample of Latinx adolescents and subsamples of mental health. Adolescents with moderate/severe symptoms were more likely to seek help from family/friends for both physical/mental health problems ($p<0.05$; Figure 2A and 2B) and from healthcare providers for mental health problems only ($p<0.05$; Figure 2A), compared to those with no/mild symptoms. Overall, Latinx youth sought help for health problems from family/friends and Internet/social media more often than from healthcare providers for help-seeking for health problems (Figure 2A and 2B).

Conclusion

While current data trends in the U.S. depict an adolescent mental health crisis, with simultaneous significant increases in social media use, our study provides a more nuanced understanding of health information acquisition across diverse language, cultural, and technological media types among Latinx youth. Our study (1) makes distinctions between mental and physical health, (2) examines diverse language and cultural media domains, (3) makes distinctions between passive and active media exposure (e.g., scan versus seek), and (3) accomplishes these assessments for both legacy and new digital media. Our study makes unique contributions by examining how

Latinx adolescents access mental and physical health information on media through passive, casual browsing and/or an active, purposeful search. We also compare these media-based outlets to help-seeking behaviors for mental and physical health problems via help-seeking to family/friends or healthcare providers. Importantly for mental health equity goals, our study considers a more diverse portrait of adolescent populations, as well as their mental and physical health information behaviors across the diverse language, cultural, and technological media that they encounter. This focus was important to pursue, in part, because Latinx populations tend to use social media more than all other major social groups in the U.S. despite structural inequities in content moderation of Latinx media.

In terms of passive exposure to health information in media, overall our study found that Latinx adolescents with moderate/severe mental health symptoms were more likely to engage in mental health scanning in English-language legacy and social media, but not for mental/physical health scanning in Spanish-language or Latinx-tailored legacy or social media. These patterns may be explained by how there is generally more mental health content available in English-language media and social media than Spanish-language media, as prior studies confirm.[BLINDED] This is an important finding because as Latinx adolescents with mental health needs engage with media, they may passively be more exposed to mental health content suggestive of taking mental health action in English-language media that more often provides resources and supports for symptom management, awareness, and help-seeking. In contrast, passive exposure to mental or physical health content in Spanish-language and Latinx-tailored media did not vary by mental health possibly because quality health information appears less often in Spanish/Latinx-media versus English-language media. For Latinx families with Spanish/Latinx-media preferences, disparate diffusion of health communications may play a role in producing health inequities.

With respect to purposeful health information seeking, our study found significant differences in the use of Latinx-tailored and English-language media for mental health information seeking and Latinx-tailored media for physical health information seeking across mental health. Latinx

adolescents with moderate/severe symptoms seek information that is tailored to them because the mental health information is presented in their preferred language (English) and in a culturally-aligned context. Public health interventionists may take note of this preference, and the availability of tailored, targeted mental and physical health information in media for Latinx adolescent audiences. Finally, family/friends, the Internet, and social media were more often used for both mental and physical health information than healthcare professionals, especially among Latinx adolescents with moderate/severe symptoms, indicating a greater preference for more easily accessible informal supports for health problems within the Latinx community. Future studies could examine the role of mistrust of health and healthcare experts and providers as sources of health information among Latinx communities, including adolescents, to better understand these patterns.

As a global power language, Spanish is the most common non-English language spoken in the U.S. The U.S also has the second largest population of Spanish speakers worldwide behind Mexico. Our study points to Spanish-language and Latinx-tailored media as an important sources of health information in addition to English-language media as the most common source, in part, owing to more health information being more available. For example, recent studies of primetime advertising on YouTube TV revealed vast disparities in health-related advertising: English-language television was more likely to include health promotion advertisements while Spanish-language television was more likely to include helath-adverse advertisements.[BLINDED] Inequities in health-realted advertising on social media is likely similar though this remains a knowledge gap in the literature. As our study also found that Latinx media is an important source of mental health information for Latinx adolescents who are experiencing moderate/severe symptoms, Latinx media may serve as an important resource for learning about and seeking support for mental and physical health conditions. Media content with greater immigrant community representation and storytelling with respect to mental and physical health issues is important to foster in future media programming and content curation.[37,46]

This study has some limitations that warrant discussion. First, as Latinx populations are dynamic, especially with respect to media and linguistic preferences and behaviors, longitudinal assessments could improve directionality between variables. Second, other related dimensions such as mistrust and comprehension of the mental or physical health information, would be important to ascertain. Third, the study relied on participant recall, however, recall bias is likely minimal and non-differential across the subgroups by mental health as the measures asked highly relevant information to self that is encountered daily. Finally, the study sample was recruited from a proprietary, survey panel; thus, details regarding response among its volunteers is undisclosed. Nevertheless, we found that the achieved study sample is robust to national data while also oversampling understudied Latinx groups, as previously reported.[BLINDED]

In sum, our study demonstrates a more diverse portrait of adolescents in the U.S., specifically Latinx adolescents who have diverse, diasporic, global ties, and legacy and new Internet-based media that they encounter, and suggests potential contexts in which media might be beneficial to health. Current scrutiny about the effects of social media use on adolescent health has not sufficiently approached this research area through the lens of diversity, equity, and inclusion, which is essential to help inform equitable policies, programs, and practices related to the safe use of media for adolescents given diverse adolescent populations will have unique contexts, needs and assets with respect to the use of diverse language, cultural, and technological media types. Policies and attitudes about social media, and media overall, tend to generalize the issue but our study demonstrates how diverse language, cultural, and technological media can be an important source of health information for Latinx adolescents. For Latinx adolescents experiencing mental health symptoms, media and social media seem to be useful as a source of support and resources. This is important to recognize with implications for other minoritized adolescents populations who might find media as a tool to prevent health risks especially during high-risk circumstances. Greater access and equity with respect to new digital media remains critical to health outcomes, especially for minoritized populations

which includes adolescents.

References

1. Lindsey MA SA, Xiao Y, Joe S. Trends of Suicidal Behaviors Among High School Students in the United States: 1991–2017. *Pediatrics*. 2019;144(4)
2. Keyes KM, Gary D, O'Malley PM, Hamilton A, Schulenberg J. Recent increases in depressive symptoms among US adolescents: trends from 1991 to 2018. *Soc Psychiatry Psychiatr Epidemiol*. Aug 2019;54(8):987-996. doi:10.1007/s00127-019-01697-8
3. Mojtabai R, Olfson M. National Trends in Mental Health Care for US Adolescents. *JAMA Psychiatry*. Jul 1 2020;77(7):703-714. doi:10.1001/jamapsychiatry.2020.0279
4. Stephenson J. Children and Teens Struggling with Mental Health During COVID-19 Pandemic. JAMA Health Forum. 2021.
5. Goodwin R, Dierker, LC, Wu, M, Galea, S, Hoven, CW, Weinberger, AH. Trends in U.S. Depression Prevalence From 2015 to 2020: The Widening Treatment Gap. *American Journal of Preventive Medicine*. 2022;63(5):726-733.
6. Health and Human Services. *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*. 2021. https://www.hhs.gov/about/news/2021/12/07/us-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic.html
7. Centers for Disease Control and Prevention (CDC). *Youth Risk Behavior Survey: Data Summary and Trends Report 2009-2019*. 2019. https://www.cdc.gov/healthyyouth/data/yrbs/yrbs_data_summary_and_trends.htm#anchor_1612890189
8. McGinty EE, Presskreischer R, Anderson KE, Han H, Barry CL. Psychological Distress and COVID-19-Related Stressors Reported in a Longitudinal Cohort of US Adults in April and July 2020. *JAMA*. Dec 22 2020;324(24):2555-2557. doi:10.1001/jama.2020.21231
9. Phelan JC, Link BG. Controlling disease and creating disparities: a fundamental cause perspective. *J Gerontol B Psychol Sci Soc Sci*. Oct 2005;60 Spec No 2:27-33. doi:10.1093/geronb/60.special_issue_2.s27
10. Ross A, Morgan, AJ, Jorm, AF, Reavley, NJ. A systematic review of the impact of media reports of severe mental illness on stigma and discrimination, and interventions that aim to

mitigate any adverse impact. *Social Psychiatry and Psychiatric Epidemiology*. 2019;54:11-31.
11. Seale C. *Media and health*. Sage Publications; 2003.
12. Clayman ML, Manganello JA, Viswanath K, Hesse BW, Arora NK. Providing health messages to Hispanics/Latinos: understanding the importance of language, trust in health information sources, and media use. *J Health Commun*. 2010;15 Suppl 3:252-63. doi:10.1080/10810730.2010.522697
13. Manganello JA, Gerstner G, Pergolino K, Graham Y, Strogatz D. Media and Technology Use Among Hispanics/Latinos in New York: Implications for Health Communication Programs. *J Racial Ethn Health Disparities*. Sep 2016;3(3):508-17. doi:10.1007/s40615-015-0169-9
14. Bastick Z, Mallet-Garcia, M Double lockdown: The effects of digital exclusion on undocumented immigrants during the COVID-19 pandemic. *New Media and Society*. 2022;24(2)
15. Anderson CA, Shibuya A, Ihori N, et al. Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: a meta-analytic review. *Psychol Bull*. Mar 2010;136(2):151-73. doi:10.1037/a0018251
16. Craig W, Boniel-Nissim M, King N, et al. Social Media Use and Cyber-Bullying: A Cross-National Analysis of Young People in 42 Countries. *J Adolesc Health*. Jun 2020;66(6S):S100-S108. doi:10.1016/j.jadohealth.2020.03.006
17. Berryman C, Ferguson CJ, Negy C. Social Media Use and Mental Health among Young Adults. *Psychiatr Q*. Jun 2018;89(2):307-314. doi:10.1007/s11126-017-9535-6
18. Sadagheyani HEaT, F. . Investigating the role of social media on mental health. *Mental Health and Social Inclusion*. 2021;25(1):41-51.
19. Wilksch SM, O'Shea A, Ho P, Byrne S, Wade TD. The relationship between social media use and disordered eating in young adolescents. *Int J Eat Disorder*. Jan 2020;53(1):96-106. doi:10.1002/eat.23198
20. Plaisime M, Robertson-James, C, Mejia, L, Nunez, A, Wolf, J, Reels, S. Social Media and Teens: A Needs Assessment Exploring the Potential Role of Social Media in Promoting Health. *Social Media and Society*. 2020:1-11.
21. Auxier B, Anderson, M. *Social Media Use in 2021*. 2021. Accessed December 14, 2022. https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/
22. R.J.J.M. Van den Eijnden JL, P.M. Valkenburg,. The social media disorder scale: Validity and psychometric properties. *Comput Hum Behav*. 2016;61:478-487.
23. Kong W, Song, S., Zhao, Y.C., Zhu, Q., & Sha, L. TikTok as a health information source: assessment of the quality of information in diabetes-related Videos. *Journal of Medical Internet Research*. 2021;23(9)
24. Broniatowski DA, Jamison AM, Qi S, et al. Weaponized Health Communication: Twitter Bots and Russian Trolls Amplify the Vaccine Debate. *Am J Public Health*. Oct 2018;108(10):1378-1384. doi:10.2105/AJPH.2018.304567
25. Zheng DX, Ning, A. Y., Levoska, M. A., Xiang, L., Wong, C., & Scott, J. F. Acne and social media: A cross-sectional study of content quality on TikTok. *Pediatric dermatology*. 2021;38(1):336–338.
26. Vargas L, Comello MLG, Porter JH. The Web's Potential to Provide Depression Literacy Resources to Latinx Teens: A Missed Opportunity? *Howard Journal of Communications*. 2021/08/08 2021;32(4):366-381. doi:10.1080/10646175.2020.1819480
27. Instagram. Hashtag search of #MentalHealth, #MentalHealthAwareness, #MentalHealthMatters.
28. Hashtag search #MentalHealth and #MentalHealthAwareness. TikTok. 2022a.
29. Becker A. Television, Disordered Eating, and Young Women. *Fiji: Negotiation Body Image and Identity During Rapid Social Change*. Culture, Medicine, and Psychiatry; 2004:533-559.

30. Wahl O. Depictions of mental illnesses in children's media. *Journal of Mental Health*. 2003;12(3):249-258.
31. Donohue D SL. The portrayal of mental illness in popular children's programs on Netflix: A content and thematic analysis. *Psychology of Popular Media*. 2022;
32. Odgers C, Jensen, M. Adolescent Mental Health in the Digital Age: Facts, Fears and Future Directions. *J Child Psychol Psychiatry*. 2020;61(3):336-348.
33. Feldman JM, Bassett MT. Variation in COVID-19 Mortality in the US by Race and Ethnicity and Educational Attainment. *JAMA Netw Open*. Nov 1 2021;4(11):e2135967. doi:10.1001/jamanetworkopen.2021.35967
34. Rios MD, Giachello A, Khosla S, et al. Illinois Unidos: A Community Demands Equity, Justice, and Inclusion. *Am J Public Health*. Oct 2021;111(S3):S204-S207. doi:10.2105/AJPH.2021.306407
35. Maleki P, Al Mudaris M, Oo KK, Dawson-Hahn E. Training Contact Tracers for Populations With Limited English Proficiency During the COVID-19 Pandemic. *Am J Public Health*. Jan 2021;111(1):20-24. doi:10.2105/AJPH.2020.306029
36. Olayo-Méndez A, Vidal De Haymes, M, García, M, Cornelius, LJ. Essential, Disposable, and Excluded: The Experience of Latino Immigrant Workers in the US during COVID-19. *Journal of Poverty*. 2021;25(7):612-628.
37. Reny T MS. The Negative Effects of Mass Media Stereotypes of Latinos and Immigrants. In: Ruhrmann G SY, Widmann P, ed. *Media and Minorities: Questions on Representation from an International Perspective*. Vandenhoeck & Ruprecht; 2016:195-212.
38. Thompson DA, Flores G, Ebel BE, Christakis DA. Comida en venta: after-school advertising on Spanish-language television in the United States. *J Pediatr*. Apr 2008;152(4):576-81. doi:10.1016/j.jpeds.2007.09.011
39. Alegria M, Takeuchi D, Canino G, et al. Considering context, place and culture: the National Latino and Asian American Study. *Int J Methods Psychiatr Res*. 2004;13(4):208-20.
40. McDevitt M, Butler, M. Latino Youth as Information Leaders: Implications for Family Interaction and Civic Engagement in Immigrant Communities. *InterActions: UCLA Journal of Education and Information Studies*. 2011;7(2)
41. Wahl O. Children's views of mental illness: a review of the literature. *Psychiatric Rehabilitation Skills*. 2002;6:134–158.
42. Maiorano A, Lasalvia, A, Sampogna, G, Pocai, B, Ruggeri, M, Henderson, C. Reducing Stigma in Media Professional: Is there Room for Improvement? Results from a Systematic Review. *The Canadian Journal of Psychiatry*. 2017;62(10):702-715.
43. Gwarjanski AR PS. Schizophrenia in the News: The Role of News Frames in Shaping Online Reader Dialogue about Mental Illness. *Journal of Health Communication*. 2018;33(8):954-961.
44. McGinty EE WD, Barry CL. Effects of News Media Messages About Mass Shootings on Attitudes Toward Persons With Serious Mental Illness and Public Support for Gun Control Policies. *The American Journal of Psychiatry*. 2013;170(5):494-501.
45. Atske S, Perrin, A. Home broadband adoption, computer ownership vary by race, ethnicity in the U.S. Pew Reseach Center. Accessed October 27, 2023, https://www.pewresearch.org/short-reads/2021/07/16/home-broadband-adoption-computer-ownership-vary-by-race-ethnicity-in-the-u-s/#:~:text=By%20contrast%2C%20there%20are%20no,say%20they%20have%20a%20tablet
46. Menjivar C. Immigrant Criminalization in Law and the Media: Effects on Latino Immigrant Workers' Identities in Arizona. *American Behavioral Scientist*. 2016;60(5-6)

REFERENCES #47-50 BLINDED FOR PEER REVIEW

Supplementary Files

Multimedia Appendixes

Contains four tables with coefficients and 95% confidence intervals B [95% CI] from linear regression models assessing media outcomes in the Latinx youth full sample; N=701, 2021.
URL: http://asset.jmir.pub/assets/d12d6c614028101b25256a1ea56f6a0b.docx