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CLINICAL PERSPECTIVES

Using Technology to Limit the Impacts of Isolation on Youth in Inpatient Psychiatry Units

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The COVID-19 pandemic has been identified as a mental health crisis for children and adolescents in America.¹ Social isolation and loneliness during the pandemic present a significant challenge. A rapid systematic review published in this journal found that social isolation correlates with depression and anxiety and may heighten the risk of disorder onset.² Specifically in an infectious disease context, research on the H1N1 influenza pandemic showed that children in North America required to quarantine were 5 to 30 times more likely to meet criteria for posttraumatic stress disorder than children not under these restrictions.²

Given current realities, there is interest in exploring virtual social connections as a strategy to mitigate the detrimental impacts of isolation.^{2,3} However, electronic devices are rarely available to pediatric and adolescent patients on inpatient psychiatric units,⁴ where isolation precautions for COVID-19 hit children and adolescents hard.

THE IMPACT OF ISOLATION PRECAUTIONS IN THE PSYCHIATRIC INPATIENT UNIT

On our inpatient child and adolescent psychiatry unit, patients who test positive for COVID-19 or other communicable diseases are placed on isolation precautions. We have observed that this isolation exacerbates their already-weakened connectedness with family and friends as visitations become restricted. These youth must remain in their rooms, where they have no contact with their peers or access to the therapeutic milieu. They are not permitted to attend group therapy, have limited access to family meetings, and

are often more limited in their ability to engage with unit clinicians. Clinicians may have hesitations and complex countertransference reactions when mobilizing to visit isolated youth. When clinicians do engage with these youth, they are masked, gowned, and wearing visors, limiting the immediacy of human connection. Thus, patients may experience severe isolation and limited therapeutic treatment after testing positive for certain communicable diseases.

Even as the threat of the COVID-19 pandemic decreases, the impacts of isolation precautions on inpatient child and adolescent psychiatry units remain a critical problem. Patients will continue to be placed on isolation precautions for communicable diseases that preceded COVID-19, such as norovirus, influenza, and methicillin-resistant *Staphylococcus aureus*. COVID-19 infection rates will continue to fluctuate. Moreover, COVID-19 infections and related isolation precautions may disproportionately impact racial-minority pediatric populations. Social determinants of health, systemic inequity, and racism may contribute to the finding that youth identified as Black, Hispanic, and Asian test positive for COVID-19 at rates disproportionately higher than youth identified as White.⁵ For the foreseeable future, innovative approaches to protect against the impacts of isolation precautions are required to promote an equitable and optimal therapeutic environment for children and adolescents.

OPPORTUNITIES FOR VIRTUAL TECHNOLOGY

Amid the pandemic, there has been increased discussion about the possibility that virtual social support might

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protect against isolation. Although data are limited, a prospective cohort study of 1,113 adults in Italy during COVID-19 shelter-in-place policies suggests that specifically during periods of severe isolation, online connections may protect against psychological distress.³ Although developmental differences may limit the generalizability of these findings to younger populations, there is evidence that children and adolescents can find beneficial communities online in the right settings.^{6,7}

A feasible and safe strategy to allow patients to access electronic devices is critical to capitalize on the potentially protective benefits of virtual social support. Electronic device access also enables virtual treatment modalities, mitigating the therapeutic limitations of isolation precautions. With an electronic device, patients on isolation precautions can virtually attend group therapy and family meetings, meet with unit therapists, and even engage with novel mental health technology, including apps and chatbots.

In adult psychiatry units, strategies have been documented that safely provide adults with unsupervised access to their personal electronic devices.⁸ However, these practices remain very uncommon and poorly documented in pediatric units.

A FEASIBLE AND SAFE STRATEGY TO INTRODUCE ELECTRONIC DEVICES

By leveraging recent advances in “parental control” software, it is possible to provide patients in inpatient pediatric and adolescent psychiatry units with safe and unsupervised access to Internet-enabled devices. In particular, hospital-issued tablets may be equipped with “parental control” software that enables password-protected restricted content. All applications may be removed from the device except for a video chatting application, set to allow incoming and outgoing calls only from approved family and friends, and a video streaming application restricted to appropriate content. A password-protected lock can be placed on application downloads and settings. As an added layer of protection, the tablet can be locked to one application such that a password has to be entered to exit or to change applications. To protect the privacy of other patients and staff, patients using the devices cannot access the device camera or other social media applications. To protect patient privacy, devices can be reset between patients.

Using content restrictions, the majority of safety concerns associated with providing electronic devices can be addressed (Table 1). In particular, content restrictions mitigate risks associated with accessing inappropriate or harmful content, being contacted by harmful actors, posting explicit or harmful content, and reckless purchasing. A

standard screening process can mitigate the physical risk of the device being used as a projectile or sharp weapon. Devices may not be appropriate for patients at risk for suicide, impulsivity, aggression, or psychosis.

IMMEDIATE APPLICATION TO PATIENTS ON ISOLATION PRECAUTIONS

Providing patients on isolation precautions with hospital-issued, content-restricted electronic devices is beneficial, safe, and feasible. Access to devices can protect against social isolation and enable virtual therapeutic treatment. Content restrictions protect against many risks and allow patients to use these devices unsupervised (Table 1). The proposed strategy may be helpful to other providers looking to offer similar benefits to their patients safely.

Staff on inpatient units may be initially trepidatious about introducing devices. Errors in device setup may expose patients and staff to risk. Starting new protocols may be daunting. Staff training is necessary. In addition, more widespread adoption of devices will require policy support, funding, technical and educational staff, and mechanisms for continuous quality improvement. However, motivation to support severely isolated patients can help these efforts to prevail.

A PATH TO MORE WIDESPREAD ACCESS TO ELECTRONIC DEVICES

The strategy of using hospital-issued, content-restricted devices may be extended to allow more widespread access to electronic devices on inpatient pediatric and adolescent units, unlocking the potential benefits of “titrating” social media access.⁴ For some children and adolescents—particularly for those who identify as part of the lesbian, gay, bisexual, transgender, queer, plus community⁶—social media and online-only friends are central to their social support.⁴ For others, patterns of unhealthy electronic device engagement may contribute to their hospitalization.⁴ Both to give patients access to social support and also to provide them opportunities to practice social media coping skills, there have been recent calls to introduce “regular, limited, and supervised access” to social media during hospitalization.⁴

However, there are significant barriers to widespread adoption. These include potential risks for youth, staffing resources and comfort, and limited evidence on safety protocols—especially in pediatric and adolescent settings.⁴ Although some suggest electronic device access might eventually be considered a patient right—similar in spirit to telephone calls, mail, and visitors—there is no evidence that such legislative action will occur

TABLE 1 The Risks and Costs of Introducing Electronic Devices and Strategies for Mitigating or Sizing Them

Risks and costs	Contact precaution strategy	Social media strategy
<ul style="list-style-type: none"> • Inappropriate or harmful content • Cyberbullying • Social media triggers • Pro-suicide or anorexia content • Distressing news or current events • Explicit content 	<ul style="list-style-type: none"> • No social media access outside of video messaging for pre-approved contacts • No internet-browsing access 	<ul style="list-style-type: none"> • Access limited to enabled social media applications
Privacy or safety for patients and others <ul style="list-style-type: none"> • Contact from harmful actors • Posting explicit or harmful content about self • Posting information about other patients/staff 	<ul style="list-style-type: none"> • No social media access outside of video messaging for pre-approved contacts 	<ul style="list-style-type: none"> • Access limited to enabled social media applications • No general camera access; limited to enabled social media applications
Reckless purchasing	<ul style="list-style-type: none"> • No application access outside of video messaging for pre-approved contacts 	<ul style="list-style-type: none"> • No internet browsing; no e-commerce applications
Physical safety given weight of device, glass or other sharp components	<ul style="list-style-type: none"> • Devices given only to patients with minimal risk of suicide, impulsivity, aggression, or psychosis • Fixed cost per device 	<ul style="list-style-type: none"> • Devices given only to patients with minimal risk of suicide, impulsivity, aggression, or psychosis • Fixed cost per device
Cost of hardware <ul style="list-style-type: none"> • Acquiring devices • System for charging devices 	<ul style="list-style-type: none"> • Clearly identified patient population • Fixed cost for unit • Cost per patient using devices 	<ul style="list-style-type: none"> • Fixed cost for unit • Fixed cost for unit • Cost per patient using devices
Cost of identify clear and consistent guidelines for who gets devices	<ul style="list-style-type: none"> • Fixed cost for unit 	<ul style="list-style-type: none"> • Fixed cost for unit
Cost of establishing rules of use	<ul style="list-style-type: none"> • Cost per patient using devices 	<ul style="list-style-type: none"> • Cost per patient using devices
Cost of enforcing consequences of misuse	<ul style="list-style-type: none"> • Unlikely given patients isolated 	<ul style="list-style-type: none"> • Cost per patient using devices
Cost of managing patient conflicts instigated by devices	<ul style="list-style-type: none"> • Cost per device per patient 	<ul style="list-style-type: none"> • Cost per device per patient
System for sign in/sign out	<ul style="list-style-type: none"> • Cost per device per patient 	<ul style="list-style-type: none"> • Cost per device per patient
Managing device settings	<ul style="list-style-type: none"> • Not needed 	<ul style="list-style-type: none"> • Cost per patient using devices
One-on-one supervision		

in the near future.⁹ In its Patient's Bill of Rights, the United States Mental Health Systems Act of 1980 established that mental health patients have the right to telephone and mail unless contraindicated for therapeutic reasons.⁹ Given the drastic shift from physical to digital communication, some legal experts have argued for the extension of these rights into the digital domain.⁹ However, current court rulings have favored restricting access to electronic devices, suggesting that a "patient right to the Internet" is a distant and uncertain reality.⁹ Therefore, without additional attention, the introduction of electronic devices on pediatric and adolescent inpatient units will likely occur slowly, cautiously, and sporadically.

We believe that our proposal to provide electronic devices to patients on isolation precautions can serve as a

stepping stone to gradually and carefully introducing supervised social media access on inpatient units. By providing hospital-issued, content-restricted devices, as opposed to personal electronic devices, staff can mitigate many of the most severe risks of social media and electronic device access (Table 1). By providing these devices, at first, only to patients on isolation precautions, staff can build confidence and optimize safety protocols on a smaller scale. By starting with a small subset of social media applications and expanding gradually, staff can investigate application-specific safety measures and decide on a case-by-case basis the applications they are equipped to manage.

Clinicians should consider hospital-issued, content-restricted devices as a strategy to safely titrate supervised

access to social media applications for patients for whom it is deemed to be potentially therapeutic.

SUMMARY

Social isolation is associated with negative mental health among pediatric and adolescent populations²—a finding particularly relevant to pediatric and adolescent inpatient psychiatry patients on isolation precautions. Although previous research has shown that online connections may protect against the impacts of severe isolation,³ electronic devices are often unavailable to pediatric patients because of unit policy and safety risks.⁴ Hospital-issued, content-restricted devices can be safely and effectively deployed to patients in isolation on pediatric and adolescent inpatient psychiatric units. The strategy of leveraging hospital-issued, content-restricted devices might serve as a framework to slowly and cautiously introduce “regular, limited,

and supervised” access to social media⁴—a shift that may be beneficial for certain patients in a digitally centered world.

Accepted September 14, 2022.

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The authors have reported no funding for this work.

Author Contributions

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Disclosure: Dr. Rice and Mss. Hanss and Carcana have reported no biomedical financial interests or potential conflicts of interest.

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0890-8567/\$36.00/©2022 Published by Elsevier Inc. on behalf of the American Academy of Child and Adolescent Psychiatry.

<https://doi.org/10.1016/j.jaac.2022.07.833>

REFERENCES

1. U.S. Department of Health and Human Services. U.S. Surgeon General issues advisory on youth mental health crisis further exposed by COVID-19 pandemic. Accessed March 23, 2022. <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>
2. Loades ME, Chatburn E, Higson-Sweeney N, *et al.* Rapid systematic review: the impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *J Am Acad Child Adolesc Psychiatry.* 2020;59(11):1218-1239. <https://doi.org/10.1016/j.jaac.2020.05.009>
3. Marinucci M, Pancani L, Aureli N, Riva P. Online social connections as surrogates of face-to-face interactions: a longitudinal study under COVID-19 isolation. *Comput Human Behav.* 2022;128:107102. <https://doi.org/10.1016/j.chb.2021.107102>
4. Burke TA, Nesi J, Domoff SE, Romanowicz M, Croarkin PE. Titrating social media use during adolescent inpatient psychiatric hospitalization. *J Am Acad Child Adolesc Psychiatry.* 2020;59(9):1007-1009. <https://doi.org/10.1016/j.jaac.2020.06.008>
5. Bailey LC, Razzaghi H, Burrows EK, *et al.* Assessment of 135 794 pediatric patients tested for severe acute respiratory syndrome coronavirus 2 across the United States. *JAMA Pediatr.* 2021;175(2):176. <https://doi.org/10.1001/jamapediatrics.2020.5052>
6. Ybarra ML, Mitchell KJ, Palmer NA, Reisner SL. Online social support as a buffer against online and offline peer and sexual victimization among U.S. LGBT and non-LGBT youth. *Child Abuse Negl.* 2015;39:123-136. <https://doi.org/10.1016/j.chiabu.2014.08.006>
7. Smith D, Leonis T, Anandavalli S. Belonging and loneliness in cyberspace: impacts of social media on adolescents' well-being. *Aust J Psychol.* 2021;73(1):12-23. <https://doi.org/10.1080/00049530.2021.1898914>
8. Eakley R, Walton M. A feasible and effective model for personal electronic usage in inpatient psychiatry. *Psychiatr Serv.* 2017;68(9):979-980. <https://doi.org/10.1176/appi.ps.68907>
9. Morris NP. Internet access for patients on psychiatric units. *J Am Acad Psychiatry Law.* 2018;46(2):224-231. <https://doi.org/10.29158/JAAPL.003760-18>