

Problem of Cyberbullying Among Disabled Students

Abdulhameed Hasan Talafha

College of Education, Umm Al-Qura University, Makkah 24382, Saudi Arabia

Mobile: +966 56 203 2105, E-mail: Ahtalafha@uqu.edu.sa

ORCID: <https://orcid.org/0000-0002-9035-9361>

KEYWORDS Behavioural Effects. Cyberstalking. Denigration. Flaming. Harassment. School

ABSTRACT It has become an undeniable fact that cyberbullying is the talk of town these days. It has grown as a worrisome concern with the skyrocketing rise in cases that have been reported. Regrettably one of the most vulnerable communities in the society has become the main and easy target of the heart-wrenching offence. This unfortunate and vulnerable community is known as the disabled, especially the students, as they are considered minor and incapable of dealing with major events at a very young age. The objective of this study is to raise public awareness and understanding of the issue of bullying, and to generate ideas and alternatives to effectively combat this harmful behaviour. To achieve this, the researchers are conducting a thorough review of articles and collecting relevant data to draw informed conclusions and develop solutions. The hope is to break the cycle of bullying and create a safer and more supportive environment for all.

INTRODUCTION

In the past few years, it is unarguable that one can see a trend of increased media attention towards the subject of the stomach-churning act of cyberbullying. As far as that goes, most studies focusing on cyberbullying have turned a blind eye to the youth with disabilities in favour of middle schoolers and neurotypical youngsters. It is safe to say, the present study is directed and engages towards how cyberbullying affects college students both with disabilities. The findings of these studies showed that, like conventional bullying, cyberbullying targets adolescents with disabilities. The prevalence of disability, Internet use, and traditional bullying all served as risk factors for victimisation. For those with disabilities, the negative consequences of cyberbullying victimisation (such as poor self-esteem and significant unhappiness) woefully appear to be more severe (Ortuño-Sierra et al. 2022).

The outrageous act of bullying that occurred on online platforms, which can be done on various mediums such as computers and tablets, is identified as cyberbullying. Online social media platforms, forums, and games wherever users may read, engage in, or exchange material, as well as SMS, text messages, and applications, are all potential venues for the vulgar acts of cyberbullying. Sending, posting, or circulating hurtful, destructive, false, or vicious material about another person is referred to as cyberbullying. Sharing

intimate or delicate information about another individual might make them feel humiliated or embarrassed is also a form of cyberbullying. Cyberbullying may lead to a crime which is then considered out of control according to the 2019 Youth Risk Behaviour Surveillance System (Nicholson et al. 2023). Any form of bullying can cause physical and psychological harm to a teen. Children who are targeted may experience a range of problems, such as behavioural issues, worry, fear, melancholy, low self-esteem, and academic challenges.

Recently, Zhu et al. (2021) examined 63 references and found that the rates of cyberbullying preparation varied between 6.0 percent and 46.3 percent, while the rates of cyberbullying victimization ranged from 13.99 percent to 57.5 percent. Verbal violence emerged as the most prevalent form of cyberbullying in this particular study where they identified fourteen risk factors and three protective factors associated with cyberbullying. The risk factors reviewed included age, gender, online behavior, race, health condition, past experience of victimization, and impulsiveness. Additionally, factors at the situational level such as parent-child relationship, interpersonal relationships, and geographical location were also examined in relation to cyberbullying. On the other hand, protective factors that were frequently mentioned included empathy and emotional intelligence, parent-child relationship, and school climate.

Types of Bullying

Bullying may be categorised into two different categories, which are classic or traditional bullying and cyberbullying.

Traditional Bullying

When a wicked and notorious offender offends their victims, it is possible they are not physically there, it is considered indirect aggression. A manifestation of indirect bullying is the dissemination of rumours, whether it is done verbally or digitally (Gladden et al. 2014). Straight violent actions remain ones that take place in front of the victim (as in face-to-face connections that contain damaging communication). Other forms of bullying exist in addition to these two predominant ones like relational, physical, and verbal bullying, are a few examples of various types of bullying.

Cyberbullying

The act of bullying done by the usage of technology, such as social networking websites, chat rooms, sexting, texting, blogging, and instant messaging is every so often stated as electronic bullying or online harassment (Notar et al. 2013). According to recent research done by the practitioner, the prevalence of cyberbullying may be rising as a result of more people having access to technology devices and loose internet regulation (Mishna et al. 2010). While some studies imply that conventional bullying and cyberbullying are comparable, others reveal that there are some major differences that exist.

Individual Risk Factors

Age

The danger and effects of cyberbullying may be influenced by the age of the offender and/or victim in the bullying scenario. Age may have some bearing on social skill development, which affects peer relationships and, in turn, engagement in bullying (Rose et al. 2011). The relationship between age and other contextual factors, such as the amount of time spent online, may also exist because teenagers may feel more liberated to engage in online activities.

Gender

According to some research, both boys and girls are equally likely to experience cyberbullying and cyber victimisation. As far as the researchers are concerned, reports show that a middle school sample from the US revealed that women were more likely than males to report engaging in both online harassment and bullying (Rice et al. 2015). However, a global sample of children their age showed that boys were more likely than girls to bully others and experience online harassment (Sharma et al. 2017). On the flip side, it is safe to say that it is crucial to consider different aspects connected to cyberbullying and cyber victimisation, which may have an impact on men and women differently. Girls are more likely than men to account for having a negative impression of their figure or body, and body dissatisfaction has been linked to an increased risk of cyber victimisation (Kenny et al. 2018).

Disability Status

A noteworthy trend in the frequency of cyberbullying behaviour is the rising prevalence of cyberbullying and cyber victimisation, especially among students with disabilities (Heiman et al. 2015; Kowalski et al. 2016). It is intriguing that despite the possibility of a wide range of diseases and presenting symptoms, children in special education settings report greater rates of cyberbullying and cyber victimisation than their peers in general education classrooms. In this perspective, having a disability or attending special school may be viewed as a risk factor in and of itself.

Effects of Cyberbullying

A young person's life might be significantly stressed out by cyberbullying. According to Nixon's study, 32 percent of the children who are the targets of cyberbullying say they have experienced at least one stress symptom (Nixon 2014).

In addition to being upset, people could also feel injured, humiliated, and even worried for their safety. They could even attribute cyberbullying to themselves.

Humiliation

Online abuse seems everlasting since it takes place in cyberspace. Children are aware that once

something exists, it does so permanently. They could experience overwhelm, humiliation, and exposure. When cyberbullying takes place, offensive postings, messages, or texts can be distributed widely. The sheer number of individuals who are aware of the bullying might cause severe emotions of embarrassment.

Isolation

Cyberbullying sometimes causes children to be excluded and ostracised at school. Consequently, they often feel alone and isolated (Nixon 2014).

Anger

Many cyberbullying victims will become upset about what is happening to them. To prove them, some studies have shown that the most frequent reaction to cyberbullying is rage (followed by being upset and worried). Some abused children may even plan their vengeance and act in reprisal.

Powerlessness

It might be challenging for cyberbullying victims to feel secure. They could experience weakness and helplessness. These emotions frequently come to the surface since online bullying might enter their house at any time of day via a computer or a mobile device. They are no longer able to flee to a haven.

Depression

Research has found correlations between depression and engagement in cyberbullying as a victim or offender among young individuals with disabilities (Didden et al. 2009; Wright 2017). For instance, Didden et al. (2009) discovered a positive correlation between experiencing cyber victimisation and exhibiting depressive symptoms in a sample of teenagers between the ages of 14 and 19 who had either an intellectual or developmental impairment. According to the same study's findings, having depressive symptoms and engaging in cyberbullying are positively correlated. Wright (2017) also discovered a link between depression and cyber victimisation. Participants

in this research ranged in age from 14 to 15 and had either an intellectual or developmental impairment.

Suicidal Thoughts and Self-Harm

Targets of cyberbullying may hurt themselves to cope with their strong emotions. For instance, some people may slash or burn themselves as a form of self-harm, in fact, studies repeatedly show a connection between bullying and self-harm (Karanikola et al. 2018).

Objectives

Present-day information technologies have emerged fully integrated into one's daily lives, and they have especially been blended by children and the young. Nonetheless, in addition to countless advantages which the advancement and availability of modern technology bring to everyday life, there are also chances of this medium being abused to hurt others. Bullying is swiftly spreading like a disease these days. It is undeniable that this happens in every sort of life in each kind of demographic including age, sex, religion, income, education and employment. Innumerable places this incident could occur such as workplaces, schools, public transport and even virtual life. This is what is called as cyberbullying. There is no surprise how damaging this vicious act is towards the victims, especially the most vulnerable community, the disabled.

One of the perks of using modern media negatively includes cyberbullying, which is unfortunately present to a certain extent among students in both primary and secondary schools. The horrendous fact is still going on and the manners of its manifestation become increasingly complex with the development of modern media (Patchin and Hinduja 2015).

According to the Cyberbullying Research Centre, cyberbullying victimisation was randomly sampled from a school in the Midwestern US in the year 2015. Based on the study done, it has shown that up to 34.4 percent admitted that they had been cyberbullied at least once in their lifetime. From that number, 21 percent of them revealed that this incident occurred at least once throughout their life. The ways of bullying were various, which includes rumours about the vic-

tim being spread virtually amounted to around 19.4 percent, which was the highest way of cyberbullying followed by general cyberbullying, which amounted to 15 percent. 14.8 percent of the schoolchildren received mean and hurtful comments on an online platform for the past 30 days when this survey was conducted while 8.3 percent were being threatened online.

What was even worse is that the researchers believe this problem is not going to be solved anytime soon. Throughout the phase outline, the researchers figured out how awful it is for the disabled schoolchildren community in facing these acts as stated above. Thus, in this study, the researchers aimed to dive deeper into the experience of cyberbullying towards disabled students.

RESULTS

School students with disabilities have been the subject of a large portion of the studies on both conventional and cyberbullying as it appears that they are at a particularly susceptible age when bullying is most likely to occur (Kowalski et al. 2014; Notar et al. 2013). Additionally, this study has mostly focused on neurotypical children samples, excluding studies of bullying, especially cyberbullying, among young people with impairments. Therefore, prevalence rates of cyberbullying perpetration and victimisation, as well as correlates of cyberbullying victimisation, among youth with and without impairments were evaluated in this study. In addition, responses to cyberbullying scenarios from people with and without impairments were compared to see if, as anticipated by the theory of mind, disability status (present or absent) affects one's capacity to recognise the existence or absence of cyberbullying. Finally, the study concentrated on children between the ages of 16 and 20, rather than the middle school group that is often investigated. Cyberbullying affects people of all groups of ages, it is crucial to view all groups of ages because it is not simply a problem among middle school students. In previous studies on cyberbullying, the age range included in the current study has been drastically underrepresented.

Behavioural Effects of Cyberbullying

Children with disabilities who are bullied online can exhibit the same behavioural alterations as

children who are bullied in more conventional ways. They could lose interest in hobbies or behave secretly, for instance. Children occasionally even display more substantial behavioural changes in extreme situations or when cyberbullying is sustained. This may consist of the following.

School Absences

When these disabled children experience cyberbullying, the prospect of attending class may be too much for them to take. As a result, it is not unusual for them to skip class or act in a way that gets them suspended. Cyberbullied individuals reported two or more suspensions or detentions in the year previous, according to one poll (Ybarra et al. 2007).

Addiction to Drugs or Alcohol

Children who experience online bullying are more prone to abuse drugs or alcohol. Research indicated that disabled victims of cyberbullying were 2.5 times more likely than their peers to use marijuana or binge drink.

Physical Effects of Cyberbullying

Being the target of cyberbullies may be quite damaging, particularly if many children are participating in it.

Cyberbullying-related Sleep Disruptions

This might affect a person's sleep schedule. They might have nightmares, excessive sleeping, or insomnia when trying to get some shut eye (Nixon 2014).

Disordered Eating

Cyberbullying may have an impact on such children's eating habits, leading them to skip meals or engage in binge eating. Since they believe that they have little control over their life, they look to their eating behaviours as a source of control. These measures may become a serious eating disorder, especially if the victim's opinion of their body was negatively impacted by the bullying (Marco and Tormo-Irun 2018).

DISCUSSION

Detailing Cyberbullying Involvement

Youth with some form of disability reported experiencing cyberbullying at considerably greater rates than their neurotypical classmates, as was predicted. However, there were no appreciable differences in the rates of cyberbullying between these two groups. While the relative differences between the two groups are significant, what is even more noteworthy is the high rate of cyberbullying victimisation experienced by youth in both groups, that is, over 50 percent of neurotypical respondents and almost three-fourths of those with disabilities, underscoring the necessity of researching cyberbullying among both disabled and non-disabled people.

The results from three cyberbullying scenarios that were tested imply this is not the case, notwithstanding the possibility that the greater victimisation rate among young people with disabilities may be related to their failure to recognise cyberbullying. Those with and without disabilities were equally capable of recognising the cyberbullying scenarios, indicating that more studies are required to determine whether the theory of mind differences is present, at least in cyberbullying scenarios (Badenes et al. 2000; Heerey et al. 2003). However, given that people with disabilities spend a disproportionately greater amount of time online than people without, the considerable disparity in victimisation may be due to disparities in time spent online. To be more precise, more people with disabilities than without them spent 9 or more hours online each day. Previous studies have demonstrated a connection between internet time and the likelihood of experiencing cyberbullying (Casas et al. 2013; Kowalski et al. 2014). The new study also evaluated lifetime prevalence in a larger, more varied sample of subjects. The participant pool is less homogenous when utilising a data collecting platform like Amazon's Mechanical Turk than it is likely to be when using a single school or other data collection site, which is one of the benefits (Wong et al. 2021).

It is possible that the participants' prior experiences with cyberbullying, especially those with disabilities, contributed to the lack of differences between those with and without disabilities in

the current study's ability to identify cyberbullying. Over 50 percent (56.2%) reported having experienced cyberbullying at least a few times in their lifetime, with 11 percent saying they have experienced it several times. These respondents may have been more aware of circumstances that include and do not entail cyberbullying as a result of their level of victimisation (Chan et al. 2021).

Regarding the development of young people reporting their victimisation, the data show conflicting findings. Few pupils in each group of students reported having reported cyberbullying to someone. However, more than half of those who did confess did so to a parent. This is crucial since parents are frequently better equipped than friends to assist the youngster in coping with cyberbullying. Only those with disabilities confided in a therapist, although this is probably because people with disabilities are more likely to have a therapist in their lives (Modecki et al. 2021).

The question asking participants about their responses to being cyberbullied confirmed the conclusion that individuals were reluctant to disclose their victimisation. Unfortunately, more than a third of respondents in each category said they took no action after becoming the target of cyberbullying. While in certain rare situations this reaction could be advised, it is often not the best course of action when victimisation is continuous. On the other hand, other replies imply that participants have received some guidance on the best course of action, such as preventing criminal activity and preserving evidence. Given that persons with disabilities were more likely to tease the bully in front of others, these individuals might benefit from further instruction on how to react correctly in cyberbullying scenarios, especially to prevent further victimisation. The pattern of greater perpetration rates among children in the disability group compared to the neurotypical group may also be explained by this reaction. Others could view the mocking response as cyberbullying.

Middle and high school were crucial periods for cyberbullying to occur among children in both groups, albeit the precise time frames varied depending on the impairment group. Youth with disabilities said they were cyberbullied most frequently during high school, contrary to neurotypical respondents, who said it happened most frequently during middle school. From the stand-

point of prevention and intervention, these findings are significant. A group that needs cyberbullying education and instruction beyond middle school may not be getting it since so much focus on it is focused on elementary and middle school children (Cantone et al. 2015). Another children at the school was the second most frequent match for the perpetrator, which emphasises the necessity for ongoing preventive and intervention activities within the educational system.

The victim's connection to the offender may be indicative of how people with and without impairments interact socially in general. More respondents without impairments than those with disabilities reported being harassed online by friends and romantic partners. Perhaps people with disabilities have more limited social networks than their neurotypical counterparts do, making it harder for them to be bullied by other people in their relationships. To investigate this concept further, more research is required.

Higher levels of social anxiety, melancholy, suicidal ideation, and loneliness were shown to be negative correlations of cyberbullying victimisation in the current study, and these findings are consistent with those found in other investigations (Kowalski and Limber 2013). The fact that these effects were not modified by the combination of victimisation and handicap status implies that the correlates may be the same for both groups, at least for people in this age group.

In earlier studies with college students Kowalski et al. (2016) discovered that negative correlations of victimisation were more prominent among people with disabilities than people without impairments. However, victimisation status may take precedence over disability status in determining bad outcomes for young people in late adolescence, where the social meaning of bullying victimisation may differ from that in college. The researchers did not investigate cyberbullying correlates by specific categories of disability in the current study due to the small number of participants with certain types of impairments and the lack of general variations in the participation of cyberbullying by disability type. However, this would be a fascinating subject for further research that may aid in the development of preventative and intervention strategies.

CONCLUSION

Cyberbullying is undeniably a major worrisome and pervasive problem in schools today, with alarmingly high rates of both traditional and cyberbullying (35% and 15%, respectively). Due to personal (such as sexual orientation) and contextual (like supervision/monitoring) characteristics, teens with and without disabilities may both be at risk for engaging in conventional and online bullying.

According to research, disabled students in schools may be more prone to engage in cyberbullying risk factors. Additionally, cyberbullying and traditional bullying have been shown to have harmful short-term and long-term effects on both mental and physical health as well as on academic and social abilities of the disabled students to counter cyberbullying, the researcher specifically recommends utilising frameworks such as the Multi-Tiered System of Supports (MTSS) used in schools, which includes general preventive programming. Additionally, studies have shown the effectiveness of stigma-based bullying interventions and social-emotional learning programs and components). Since there is a scarcity of research on cyberbullying among students with disabilities, further research is undoubtedly required to guide professional application and avoidance methods linked with cyberbullying and victimisation among students with disabilities.

In other words, the research recommends controlling the schools where disabled students are suffering from bullying and making schools a safe place for the vulnerable community. Perhaps the profitable and the non-profitable organisation could lend a hand in the scenario in order to resolve this wicked problem. After all prevention is better than cure.

RECOMMENDATIONS

For children, the shift to digital is a fantastic thing. Young children may study, connect, and have fun in unfamiliar settings, which has many advantages. This chance, though, must not be at the expense of the security of children. Online safety has for too long centred on shielding children from adults and material that is intended for adults. This has diverted attention away from the behaviour of other young people and the current

bullying-related images, movies, and websites that they are creating. Stopping online bullying and its causes must be the top goal if one wants to help most children, the Internet Safety Technical Task Force's report to the US Attorneys General states. The problem is the same elsewhere.

The same civil and judicial sanctions apply to illegal action online as they do offline, and it is traceable. Regulations are in place to penalise offenders when intimidating or threatening cyberbullying practices result in crimes. Even though it is imperative that schools, the government, and the judiciary address bullying and child-on-child violence with the same gravity as they do adult-on-child violence, the courts should only be utilised as a last resort. One runs the risk of criminalising many children while failing to prevent the hundreds of thousands of episodes of persistent non-criminal bullying from ever happening if one leaves anti-bullying measures up to the courts.

REFERENCES

- Cantone E, Piras AP, Vellante M, Preti A et al. 2015. Interventions on bullying and cyberbullying in schools: A systematic review. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*, 11(Suppl 1 M4): 58.
- Chan TK, Cheung CM, Lee ZW 2021. Cyberbullying on social networking sites: A literature review and future research directions. *Information & Management*, 58(2): 103411.
- Badenes LV, Clemente Estevan RA, García Bacete FJ 2000. Theory of mind and peer rejection at school. *Social Development*, 9(3): 271-283.
- Casas JA, Del Rey R, Ortega-Ruiz R 2013. Bullying and cyberbullying: Convergent and divergent predictor variables. *Computers in Human Behavior*, 29(3): 580-587.
- Diden R, Scholte RH, Korzilius H, De Moor JM, Vermeulen A, O'Reilly M, Lancioni GE 2009. Cyberbullying among students with intellectual and developmental disability in special education settings. *Developmental Neurorehabilitation*, 12(3): 146-151.
- Gladden RM, Vivolo-Kantor AM, Hamburger ME, Lumpkin CD 2014. *Bullying Surveillance Among Youths: Uniform Definitions for Public Health and Recommended Data Elements, Version 1.0*. Washington, D.C., USA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
- Heerey EA, Keltner D, Capps LM 2003. Making sense of self-conscious emotion: linking theory of mind and emotion in children with autism. *Emotion*, 3(4): 394.
- Heiman T, Olenik-Shemesh D, Eden S 2015. Cyberbullying involvement among students with ADHD: Relation to loneliness, self-efficacy and social support. *European Journal of Special Needs Education*, 30(1): 15-29.
- Karanikola MN, Lyberg A, Holm A-L, Severinsson E 2018. The association between deliberate self-harm and school bullying victimization and the mediating effect of depressive symptoms and self-stigma: A systematic review. *BioMed Research International*, Article ID 8930541, 1-14 pages. <https://doi.org/10.1155/2018/8930541>
- Kenny U, Sullivan L, Callaghan M, Molcho M, Kelly C 2018. The relationship between cyberbullying and friendship dynamics on adolescent body dissatisfaction: A cross-sectional study. *Journal of Health Psychology*, 23(4): 629-639.
- Kowalski RM, Giumetti GW, Schroeder AN, Lattanner MR 2014. Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, 140(4): 1073.
- Kowalski RM, Limber SP 2013. Psychological, physical, and academic correlates of cyberbullying and traditional bullying. *Journal of Adolescent Health*, 53(1): S13-S20.
- Kowalski RM, Morgan CA, Drake-Lavelle K, Allison B 2016. Cyberbullying among college students with disabilities. *Computers in Human Behavior*, 57: 416-427.
- Marco JH, Tormo-Irun MP 2018. Cyber victimization is associated with eating disorder psychopathology in adolescents. *Frontiers in Psychology*, 9: 987.
- Mishna F, Cook C, Gadalla T, Daciuk J, Solomon S 2010. Cyber bullying behaviors among middle and high school students. *American Journal of Orthopsychiatry*, 80(3): 362-374.
- Modecki KL, Minchin J, Harbaugh AG, Guerra NG, Runions KC 2014. Bullying prevalence across contexts: A meta-analysis measuring cyber and traditional bullying. *Journal of Adolescent Health*, 55(5): 602-611.
- Nauta MM, Epperson DL 2003. A longitudinal examination of the social-cognitive model applied to high school girls' choices of non-traditional college majors and aspirations. *Journal of Counseling Psychology*, 50(4): 448.
- Nicholson J, Marcum C, Higgins GE 2023. Prevalence and trends of depression among cyberbullied adolescents- Youth Risk Behavior Survey, United States, 2011-2019. *International Journal of Cybersecurity Intelligence & Cybercrime*, 6(1): 45-58.
- Nixon CL 2014. Current perspectives: The impact of cyberbullying on adolescent health. *Adolescent Health, Medicine and Therapeutics*, 5: 143.
- Notar CE, Padgett S, Roden J 2013. Cyberbullying: A review of the literature. *Universal Journal of Educational Research*, 1(1): 1-9.
- Ortuño-Sierra J, Pérez-Albéniz A, Fonseca-Pedrero E, Solbes-Canales I, Lucas-Molina B 2022. Bullying, cyberbullying and mental health: The role of student connectedness as a school protective factor. *Psychosocial Intervention*, 31(1): 33-41.
- Patchin JW, Hinduja S 2015. Measuring cyberbullying: Implications for research. *Aggression and Violent Behavior*, 23: 69-74.
- Rice E, Petering R, Rhoades H et al. 2015. Cyberbullying perpetration and victimization among middle-school students. *American Journal of Public Health*, 105(3): e66-e72.

- Rose CA, Monda-Amaya LE, Espelage DL 2011. Bullying perpetration and victimization in special education: A review of the literature. *Remedial and Special Education*, 32(2): 114-130.
- Sharma D, Kishore J, Sharma, N, Duggal M 2017. Aggression in schools: Cyberbullying and gender issues. *Asian Journal of Psychiatry*, 29: 142-145.
- Wright MF 2017. Parental mediation, cyberbullying, and cybertrolling: The role of gender. *Computers in Human Behavior*, 71: 189-195.
- Ybarra ML, Diener-West M, Leaf PJ 2007. Examining the overlap in Internet harassment and school bullying: Implications for school intervention. *Journal of Adolescent Health*, 41(6): S42-S50.
- Zhu C, Huang S, Evans R, Zhang W 2021. Cyberbullying among adolescents and children: A comprehensive review of the global situation, risk factors, and preventive measures. *Frontiers in Public Health*, 9: 634909.

Paper received for publication in November, 2022
Paper accepted for publication in June, 2023