

Review Article

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Aggression and Violence Affecting Youth During the COVID-19 Pandemic: A Narrative Review

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ABSTRACT

Experiencing aggression and violence has long-term developmental effects. Youth have indirectly or directly experienced aggression and violence during COVID-19. Aggression and violence have been happening in communities throughout the world, and with excessive social media exposure, youth are observing violence. Partner violence has also been experienced at home along with sibling violence. Being the target of aggression/violence has been reported by youth via texting hotlines and via self and parent-report surveys. This narrative review includes summaries of this COVID-19 research as well as potential underlying mechanisms for aggression/violence including frustration and touch deprivation. Limitations of these studies include their non-representative samples and cross-sectional data deriving from different pandemic periods.

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Received: July 12, 2021; Accepted: July 16, 2021; Published: July 21, 2021

Keywords: Aggression, Violence, Youth, Partner Violence, COVID-19

Introduction

This narrative review is based on some of the larger sample studies and reviews on exposure to aggression and violence by youth during COVID-19 that have appeared on PubMed for the years 2019-2021. The terms aggression, violence, youth and COVID-19 were entered into the advanced PubMed search which yielded 193 papers. Inclusion criteria were peer-reviewed studies and review papers. Case reports and non-English papers were excluded. Following these criteria, 34 papers were selected for this brief overview. The resulting review that reflects the current literature includes long-term effects of violence on the health and development of youth, exposure to community violence via social media, family/partner violence, sibling violence and violence directed at youth. Potential underlying mechanisms and limitations of the literature are also discussed. Consistent with this literature, this paper is divided into sections on those topics.

Long-Term Effects of Violence on the Health and Development of Youth

A vast literature has accrued on the long-term effects of violence on the health and development of youth. Some studies have advanced inter-generational genetics theories for this occurrence and others have used the ACE (Adverse Childhood Experiences) theory that early child abuse leads to adult violence. A meta-analysis on 124 longitudinal studies suggests that early abuse/neglect leads to significant odds ratios for several psychological conditions including depression, drug use, and suicide attempts [1]. In addition, risky sexual behavior and several physical conditions including eating disorders and diabetes were linked to early child

abuse in this meta-analysis. The odds ratio for depression resulting from physical abuse was 1.54, from emotional abuse 3.06, and from physical neglect 1.36. The odds ratios for drug use resulting from physical abuse were 1.92, from emotional abuse 1.41, and from physical neglect 1.36. The odds ratios for suicide attempts resulting from physical abuse were 3.40, from emotional abuse were 3.37 and from physical neglect were 1.78. This meta-analysis included an unusually large number of studies (124) suggesting the veridicality of the odds ratios. However, the studies are based on heterogeneous samples that might have resulted in high odds ratios from a large range of ratios. Despite this limitation, the data highlight the long-term negative effects of youth exposure to abuse/violence.

Exposure to Community Violence Via Social Media

The excessive use of social media (including news media) by youth has resulted in significant exposure to violence. During March 2021 of the COVID-19 pandemic, at least 50 mass shootings occurred, killing eight at Atlanta spas and ten at a Boulder grocery store. Also during spring break of that month, at least two women (one young and one old) were raped and killed on Miami Beach.

According to a later report from The Guardian (March 24, 2021), 4,000 extra murders occurred in 2020 in what was the worst single year increase in murders (a 25% increase across the U.S.) since murders were first recorded in 1960. And, in a later report, just in the 5 months of the current year (2021), 267 mass shootings (defined as at least 4 deaths) have occurred in the U.S., suggesting a 38% increase in violence. And, a month later, according to ABC News (June 13, 2021 1:34 pm), 4 mass shootings occurred in just 6 hours leaving 39 wounded and 5 dead including an 18-month-old baby and two teenagers who were wounded. As the report read,

“At least 4 major U.S. cities were reeling from an onslaught of mass shootings over the weekend-Austin, Cleveland, Chicago and Savannah- that erupted over a 6-hour streak.” And an even more recent report suggested that at least 150 people were fatally shot in more than 400 shootings over the fourth of July weekend (CNN, 7/5, 4:24).

Other violence occurred at the insurrection at the U.S. Capitol. And many protests that were meant to address important anti-racism issues turned violent across the pandemic years. Violence toward others, homicides and mass killings were also accompanied by an increase in suicides which have been disproportionately prevalent among the youth during the COVID-19 pandemic [1,2].

Youth have been exposed to this community violence via their involvement in protests as well as their excessive time on social media. Not surprisingly, several researchers have reported excessive social media use during the confinement of the COVID-19 lockdowns. In a Survey Monkey study, as many as 98% of 260 respondents reported texting, 100% using the internet, and 91% being on Facebook during a COVID-19 lockdown [3]. The percentiles for those using the different media “a lot” were 45%, 77% and 42% respectively. Internet use was positively related to scores on Stress, Anxiety and Depression Scales and Facebook use was positively related to not only scores on Stress, Anxiety and Depression Scales but also to scores on Fatigue, Sleep Disturbance and PTSD (posttraumatic stress disorder) scales. These results are limited by their being self-reported data from a non-representative, cross-sectional sample. Nonetheless, they highlight the excessive use of social media and the negative effects of specific social media during a COVID-19 lockdown.

In a study from China, more than 80% of the participants in a cross-sectional online survey reported frequent exposure to social media after controlling for covariates [4]. The frequent exposure to social media had higher odds for anxiety as well as a combination of depression and anxiety. Given the cross-sectional nature of this study, the direction of effects cannot be determined. It is also possible that this was a self-selected sample of people with pre-existing mental health problems.

In another study that also arbitrarily assumed that excessive use of social media was contributing to worse mental health, Chinese college students (N= 512) completed measures of social media use, COVID-19 stressors, negative affect, secondary traumatic stress, depression and anxiety (ZHAO). Their regression analysis suggested that greater social media use was associated with higher depression scores and that negative affect mediated the relationship between social media and depression.

In still another study on children’s use of social media, structural equations models suggested that both children and parents with higher anxiety scores were more likely to excessively use social media during COVID-19 [5]. This study, like many others in this literature, was reliant on parent report rather than both parent and youth report. Interestingly, although there were dozens of studies showing the relationships between excessive social media use and mental health problems, none of these addressed anger as an emotion and aggression as a negative behavior. This is surprising given the amount of violence that has occurred during COVID-19 and the pre-COVID literature that assessed and confirmed the relationship between excessive social media exposure and aggression in youth.

A significantly large pre-COVID literature has documented the relationship between excessive exposure to social media violence

by youth and its relationship to aggression. The titles are reflective of this research including “the role of media violence and violent behavior”, “the influence of media violence on youth”, “media violence and physical aggression in fifth grade children”, “media violence effects on children, adolescents and young adults” and “media violence exposure and aggression in adolescents”.

In a very recent pre-COVID study, for example, survey data from 1,990 adolescents and a content analysis of popular TV shows and films were evaluated for the effects of media violence exposure on adolescents [6]. In a relative weights analysis, media violence exposure was the most significant predictor of aggression after impulsivity and family conflict. In a cross-sectional survey of even very young children (N= 5147 fifth graders), a linear regression suggested that children’s exposure to media violence was associated with physical aggression even after adjusting for demographic, family and community violence and child mental health variables [7]. Effect sizes for media violence exposure and physical aggression were greater than for the other variables.

Domestic Violence/Partner Violence

Domestic violence, a quieter form of violence, has been referred to as “the hidden pandemic” or “Danger in Danger” and others have referred to the pandemic as “the perfect storm” leading to family violence and still others as a “pandemic within a pandemic” [8-11]. Domestic or family violence has been reported in dozens of survey studies and analyses of public records during COVID-19 [12-15]. Typically, domestic violence has referred to partner violence. Domestic violence has reportedly increased by 8% during COVID-19 based on a review of 18 studies (12 from the U.S.) [16]. A higher rate has been reported for Brazil at 40-50% [17]. And helpline calls have been noted to increase by 20%, for example, in a region of Spain, during the first days of their lockdown [17].

In a study called “the hidden pandemic of family violence during Covid-19”, over 1 million tweets related to family violence and COVID-19 were analyzed for their different themes [8]. The themes that resulted included 1) increases in Hotline calls; 2) Child abuse, domestic violence, and sexual abuse; 3) physical aggression; 4) risk factors including alcohol abuse, financial problems and quarantine; 5) victims of violence including women and children; 6) social services including hotlines and shelters; 7) responses from 911 calls and protective orders; 8) raising awareness; and 9) domestic violence-related news. This was one of the more interesting methodologies for tapping family violence effects during COVID-19.

In a survey on the severity and types of intimate partner violence during the early stages of COVID-19 pandemic, the results from a sample of 2,441 suggested that 18% screened positive for intimate partner violence [18]. Of those respondents, 54% stated that victimization did not change while 17% said it worsened. Worsened victimization was significantly greater for physical and sexual abuse.

In an analysis of the risk factors specific to COVID-19 intimate partner violence, several stressors were noted [19]. These included the fear of the disease, the disruption of the household routine, increased time with a partner, separation from folks outside the household, financial problems, a previously strenuous relationship, and limited availability and access to support and services. Relatedly, in many cities, hotels were mandated by their councils to provide rooms for people escaping from domestic abuse/violence. Designing studies that could recruit people from

those hotel shelters would have provided more informative data at least on the experiences of domestic violence victims. Although partner violence is not the focus of this review, exposure to this violence, even if not physically affecting youth, has significant emotional and psychological effects.

Sibling Violence

Sibling abuse or sibling violence has rarely appeared in the COVID-19 literature, although it has been reportedly as prevalent as partner violence [20]. Reputedly, the prevalence of partner violence has increased the odds of sibling violence by 1.8. Sibling abuse is generally either physical abuse (punching, kicking, choking) or emotional abuse (threatening, manipulating, insulting). It has been associated with behavior problems, suicidal ideation delinquency and bullying [21,22]. Some have suggested that it is more likely to occur during COVID because of the isolation in combination with economic, interpersonal and social relationships where abuse already exists [20]. During the pandemic there has been less access to reporting sibling abuse because of limited support services and the difficulty that youth may have phoning from home or using hotlines. Some had predicted that there would be greater sibling violence during COVID in the absence of adult supervision while parents were working away from home [23].

Violence Against Youth/Child Abuse in Families

Although prevalence statistics have been reported for partner violence during COVID-19, equivalent statistics for violence against youth during COVID-19 were rare in the COVID-19 literature [24]. Most of the data are based on abusive head trauma that has significantly increased and texts to hotlines from children and adults [25,26]. The pre-COVID prevalence was reported to be 23% for physical abuse, 36% for emotional abuse, 18% for sexual abuse of girls, 8% for sexual abuse of boys, 16% for physical neglect and 18% for emotional neglect [27]. A wider range prevalence was noted in the meta-analysis of 124 studies on the long-term effects of violence against youth [1]. In the data they presented, the global prevalence ranged from 4-62% with a lesser range of 4-16% happening in high income countries. Ten per cent reportedly experienced neglect or emotional abuse and 80% of the violence was notably perpetrated by parents. The risk factors were listed as poverty, mental health issues, low education, alcohol/drug misuse, maltreatment as a child and family breakdown or family violence.

Violence against youth or child abuse has typically been reported as physical abuse, although emotional, psychological and sexual abuse have also occurred during COVID-19. Despite the fewer vehicles of reporting during COVID-19 (especially lockdowns), i.e. school authorities and medical services, violence against youth/child abuse has continued based on texts from youth, emails from parents and surveys from both youth and parents.

In a recent review of COVID-19 literature on the exposure of youth to violence, 48 papers were summarized that led the authors to several conclusions [14]: 1) most of the studies on children's exposure to violence during COVID-19 have been on physical or psychological violence at home including studies from North America, South America, Africa, Europe and Asia; 2) contributing factors to the violence were parental depression and anxiety as well as financial and social difficulties; 3) most of the data were derived from administrative records versus surveys, and the surveys were from parents except for one study that surveyed both parents and adolescents; 4) although there are many limitations to the literature including the rare use of random sampling and unrepresentative samples recruited through

Facebook or Amazon Mechanical Turk, the studies have come to a similar conclusion that children were being exposed to more violence during COVID-19; 5) reports and referrals to the police and child protective services have decreased due to closure of the schools (the most frequent reporters along with healthcare workers); 6) calls to 911 and hotlines have increased in at least 14 U.S. cities and Internet searches have increased in London; 7) hospital visits and injuries have increased; and 8) increases have also been reported on surveys from 43 countries. As already noted, there are limitations to this literature including no baseline data, the use of different protocols, the reliance on Facebook and Amazon Mechanical Turk and the majority of the data being collected in North America. Nonetheless, the analysis of this literature by these authors is informative.

Examining testimonials from Reddit forums is another way data have been collected on children's exposure to violence before and after the start of lockdowns [28]. In this study, subreddits on family violence, defined as any form of abuse committed by any family member against another, were selected. Forty-two percent of these were about intimate partner abuse, 22% about physical abuse, 18% about sexual abuse, and 12% about child abuse. The results suggested that violence-related subreddits were among the most-frequently mentioned topics after the COVID-19 pandemic outbreak. Approximately 35% more abuse-related subreddits appeared following the start of the lockdown versus prior to the lockdown. These are tenuous findings inasmuch as the data derive primarily from the U.S. and the specific age of the targets of abuse could not be determined. Further, risk factors were not assessed, like much of the published research on violence during COVID-19.

A more precise way of assessing violence against youth was exploring the differences between texts that were sent on hotlines (Childhelp) during the COVID-19 pandemic (between the spring of 2019 and spring of 2020) [26]. The data from this study suggested that there has been a 14% increase in hotline calls during the pandemic. In this database, 75% of the callers were females and 93% were over the age of 18 years. In contrast, the majority of the texts were from youth less than 18 years. Although there was a decrease in calls from school reporters and a smaller decrease from protective service workers, an increasing number of calls have come from neighbors, landlords, relatives and friends. A steady increase in texts from youth suggest increasing self-advocacy by youth. This study is limited by not having information on the type of texts and calls, as the data have been exclusively demographics on gender, age and type of reporter.

Cyberbullying or Violence by Youth Against Youth Online

Violence by and against youth online has been labeled cyberbullying by the perpetrator or by the victim or by those who are both perpetrator and victim. Cyberbullying has been defined as the use of force, threat or coercion to abuse, embarrass, intimidate or aggressively dominate others using electronic forms [28]. This form of violence against youth has been reported in many publications that have been recently reviewed [29].

In a survey pre-COVID, the prevalence of cyberbullying varied across 44 different countries in Western Europe and Canada [30]. The prevalence varied, for example, between 3% of 15-year-old boys in Spain to 29% of 15-year-old boys in Lithuania. Literature on cyberbullying during COVID is relatively sparse.

A relatively precise method for monitoring bullying is analyzing social media forums like Twitter. In a recent study, already mentioned, Twitter conversations (tweets) were analyzed to assess

the prevalence of cyberbullying or abusive/hateful content [28]. On July 2020, of the reputedly 330 million twitter users, 8% were below the age of 18. Sixty-two million of these came from the U.S. The policy of twitter is to remove posts or suspend accounts when abusive behaviors to harass or to intimidate are found. The data analysis of the Twitter data suggested that cyberbullying and abusive content had significantly increased during lockdowns.

Potential Underlying Mechanisms

Several models have been presented for risk factors for violence against youth in the pre-COVID literature. Surprisingly, potential underlying mechanisms have rarely been mentioned for violence experienced by youth during COVID-19. Two potential underlying mechanisms that may be specific to COVID-19 are frustration leading to aggression and touch deprivation leading to aggression and violence against youth.

Frustration/Aggression Model

Lockdown and social distancing experiences could be described as frustrating. For example, in the article “Danger in Danger”, the authors suggested that aggression has followed on feelings of frustration during COVID-19 [9]. In the frustration/aggression model aggression is thought to result from an individual’s goals being blocked. Examples of COVID-19 “goals being blocked” include getting children to school, pursuing one’s work and meeting with friends [31]. Blocked goals lead to frustration which, in turn, can lead to aggression [32].

In a recent study, individuals experiencing a lockdown were compared to those who were not experiencing a lockdown [33]. An aggression questionnaire (the Buss-Perry Aggression Questionnaire (BPAQ)) was given across each month of the first six months of the COVID-19 pandemic to adults (N=5,928) in the U.S. Higher total aggression scores were reported for those under lockdown versus those who were not. This was also true for the subscale scores of the BPAQ including Physical Aggression, Verbal Aggression, Anger, and Hostility. These data are highly suggestive of aggression related to the frustration of pandemic lockdowns. Several other models could be relevant for the higher lockdown-related aggression scores inasmuch as the significance of the factors that led to frustration and aggression were not measured in this study. The results are also tenuous because the data are cross-sectional, not longitudinal within the same participants in both lockdown and non-lockdown conditions. And causality or direction of effects cannot be determined from cross-sectional survey data. Nonetheless, the results importantly inform interventions that could reduce frustration and aggression during lockdowns.

Another study that suggests that frustration of COVID-19 lockdowns could lead to aggression comes from research on dreams [34]. In this study on Toronto students, 55% more dreams were stressful, 42% more dreams were nightmares and 30% of dreams related to the pandemic. Anxiety was experienced by 63%, confusion by 61% and fear by 51%. Women had more dreams about aggressive interactions including more physical versus verbal aggression dreams. The increased nightmares were, not surprisingly, noted to reduce sleep quality. The increase in nightmares reported in this study and in other studies during COVID-19 may not simply be an increase in nightmares but also an increase in dreaming and the associated recall of dreams related to increased REM sleep and decreased deep sleep deriving from the stress of COVID-19 [35-37]. Nightmares and the loss of deep sleep in themselves could lead to more frustration and aggression.

At the very least they could contribute to anxiety and depression which, in turn, have been comorbid with anger that could lead to aggression [38].

Touch Deprivation/Aggression Model

In a COVID-19 survey, touch deprivation was expressed by 60% of the sample even though only 21% of the sample were living alone, suggesting that 39% of respondents who felt touch deprived were living with others [38]. And, only 32% said they touched their partners a lot and only 21% reported touching their children a lot. Less touch has been related to more aggression in several human and animal studies. Examples of these are given in the following brief summaries.

Research suggests that touch deprivation in early development and adolescence may contribute to violence in adults. Cultures in which there is more physical affection toward young children show lower rates of adult physical violence and vice versa [39]. Examples given in this report were from the Arapesh tribe in New Guinea who engaged in a lot of touching behavior and were not aggressive and the Mundugamor tribe in New Guinea who showed little touching behavior and excessive aggression (originally described by Margaret Mead, the world renowned anthropologist) [40].

The amount of touching that has been noted by anthropologists in non-primitive cultures has also been highly variable, for example, between couples in cafés [41]. Among the highest touch cultures in this observational study was France where touching between couples occurred 110 times during a 30 minute observation in a café. The least amount of touching between couples was noted in a U.S. café. (two times during 30 minutes). Other data from the late nineties suggest that high touch countries have relatively low rates of young adult homicide (e.g. France) and low touch countries have extremely high rates of young adult homicide (e.g. U.S.) (CDC statistics presented in Prescott, 1990). These data are outdated and unfortunately anthropologists are no longer conducting observations of this kind, and more recent statistics from the CDC are suggesting that many more low touch countries have high rates of young adult homicide.

Studies that have assessed cross-cultural differences in touching and aggression among youth include, for example, a comparison between parents and preschoolers observed on playgrounds in Paris versus Miami [42]. Those observations revealed that the Parisian parents were more frequently physically affectionate with their children [42]. Their preschoolers, in turn, were less often verbally and physically aggressive toward their peers on the playgrounds.

Another observation study was conducted with adolescents who were “hanging out” at McDonald’s restaurants in Paris and in Miami [42]. In the Paris restaurants, significantly more frequent peer touching was noted (such as leaning on each other, casually rubbing each other’s backs while talking, hanging an arm around each other’s shoulders and leaning a head on each other’s shoulders) in both same-sex and opposite-sex interactions. In contrast, the Miami sample exhibited more frequent self-touch behavior (such as playing with rings on fingers, ringing hands, twirling hair, rubbing one’s own limbs, hugging oneself, cracking knuckles, biting lips and in general showing a lot of fidgeting). And, the Miami adolescents, in turn, showed more frequent verbally and physically aggressive behaviors (including hitting, pushing and knocking others down).

Animal Models

Macaque monkeys vary in their early touch experience/later aggression. For example, Bonnet Macaques receive more affectionate touch and are carried around by their mothers as infants and they are non-aggressive as adults. In contrast, Pigtail Macaques receive very little physical affection as infants and are aggressive as adults [43]. Approximately 5-10% of those growing up in the wild show aggressive reactions to stressful situations. Those touch deprived monkeys are also noted to have low serotonin levels which are also noted in depressed humans [44,45]. Serotonin deficits have been related to extreme aggression among monkeys who receive less physical affection in early development [44]. Aggression has not only been associated with low serotonin levels but also with high testosterone levels and low cortisol levels [46]. These neurotransmitter/hormone profiles have also been noted in aggressive humans and have also been associated with anxiety and fear [47]. These data may have relevance for the aggressive behavior and the associated emotions of fear, anxiety, depression and anger being observed during COVID-19 [37].

Methodological Limitations and Future Directions

Most of the data on aggression and violence experienced by youth during COVID-19 have derived from administrative records. Random sampling has been rare, and the limited survey research has been based on unrepresentative samples from Facebook and Amazon Mechanical Turk. Further, the majority of the studies have been conducted in the U.S.

Although the survey research, unlike the administrative records, has typically included more than prevalence and demographic data, it has usually been limited to parent self-report instead of both parent and youth report. Adolescents' reports of the aggression they were experiencing and ratings of their interactions with parents and peers during the lockdowns would have been valuable data. The surveys would have also been more informative if they had assessed risk factors for aggressive/violent behaviors such as depression, anxiety, frustration and touch deprivation. All of these risk factors as well as anger, which is typically comorbid with depression and anxiety and often predictive of aggression, could have been tapped by brief standardized scales [38]. In turn, regression models could have been used to determine the amount of variance that each of those risk factors contributed to aggression/violence, as was noted, for example, in the study in which partner violence increased the odds of predicting sibling violence and child abuse but at different odds ratios [1].

The cross-sectional nature of the data is also problematic. Not having baseline or follow-up data has limited any inferences about causality or direction of effects. Longitudinal research is needed to explore the causal relations between pandemic-related stressors/risk factors and aggression/violence experienced by youth.

More studies are needed using protocols other than surveys, for example, collecting information from the texts that are sent to hotlines by youth [26]. Although the prevalence of the different types of reporters noted in that study was interesting, the hotline texts could be coded for more than demographic data in future studies. Another promising research strategy in this literature was the analysis of subreddits on Twitter for evidence of cyberbullying [28].

Protective factors have not been identified in this literature. Just as risk factors need more research, data on protective factors would be critical for designing intervention studies. The absence of intervention studies is notable, but the data for their design

are missing. Similarly, underlying mechanisms for aggression/violence such as the neurotransmitter/hormone profiles have not been studied in the context of the pandemic because potential participants could not visit laboratories. Many pre-COVID human and animal studies are suggestive of biochemical and physiological mechanisms underlying these problems, which may be exacerbated by the confinement of lockdowns. And, the comorbid, pre-existing psychological and physical conditions that have often been researched in pre-COVID studies have not been included in the COVID-19 studies, although they would also be significant risk factors.

Conclusion

Despite these methodological limitations, this literature has highlighted the aggression and violence that youth have been directly or indirectly experiencing during COVID-19. This has included their excessive social media exposure and their experience of partner violence and sibling violence at home. Most of the data are limited to reports by youth via texting hotlines and via self and parent report. Potential underlying mechanisms for aggression/violence include the frustration/aggression and the touch deprivation models. Although intervention data are absent from this literature, the published research can help inform intervention efforts for the different types of aggression/violence that youth have been experiencing during COVID-19.

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