

# Overuse: A Systematic Concept Analysis in Pediatric Nursing

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## ABSTRACT

Spending much of her career in clinical pediatrics, the author was greatly troubled regarding the amount of screen time in which the patients of her office were reportedly engaging. It is for this reason that the concept of "overuse" was chosen for analysis. The author explores multiple facets of overuse including social media in adolescence, caffeine, pumpkin spice, "pitcher's elbow", antibiotic prescription, and interpersonal kindness. The purpose of this concept analysis is to explore the many differing applications of the definition of overuse as well as to construct a practical definition for identification and response in the pediatric clinical setting.

## Introduction

Pediatric screen time use is an ever-growing topic of discussion as the availability and ease of obtainment of technology continues to grow and as the positive and negative influences on child development is understood. Screen use, as well as its "overuse", is a topic needing further research, assessment, and intervention in the coming years, as infants as young as under a year old are beginning to interact with screens. In fact, over one third of infants will touch or scroll a screen by the age of one year old, and televisions plus at least one other form of media are present in over 98% of the homes of children zero to eight-years-old (Courtney & Nowakowski-Sims, 2019; Rideout, 2017). The heavy presence of technology available to the pediatric population has begun to spur further exploration into this topic, and research has begun to point to the undeniable effect of screen time on the development of the pediatric mind and body (Courtney & Nowakowski-Sims, 2019; Rideout, 2017). It would also be reasonable to suggest that the technological over-saturation of the pediatric demographic would bring with it a certain level of technological dependence and "overuse".

This concept of overuse, though rooted in the ebb and flow of a family's allowance versus boundary setting, is affected greatly by the practice of an advanced practice provider. To delve into this further, this analysis will apply the concept of overuse to the utilization of technology by the pediatric patient. The number of times physicians and advanced practice providers have attempted to treat patients whose little faces are inches from a screen or to communicate with parents more concerned with their telephone than the topic of discussion, is likely too numerous to count. Though it seems to be common knowledge that the use of technology, whether it be a smart phone, smart pad, or etc., by children has increased exponentially and often to concerning levels, there is not a current, widespread intervention being used by pediatric healthcare workers to help parents set healthy boundaries between their children and their children's use of technology. It is for this reason that this concept analysis has been written – to draw attention to an important topic relevant to the practice of every healthcare provider today.

## Methods

Following the selection of a concept, the author must next define the aims and purposes of the analysis of chosen concept (Walker & Avant, 2011). The purpose and aim of this analysis was to explore the many differing applications

of the definition of overuse as well as construct a practical definition for identification and response in the pediatric clinical setting. Identifying and distinguishing the significance of overuse in regards to both positive and negative connotations will occur. Through the use of this analysis, the reader will come to an understanding of what defines overuse and its application in the world of several different disciplines, as well as in healthcare and the work of an advanced nurse. Case studies will also describe contrasting characteristics of overuse through hypothetical discussions between a child's guardian and an advanced nurse of a pediatric practice. Effort to measure overuse of technology in a pediatric patient will also be attempted.

The topic of "overuse" was explored through several different resources inside of and outside of the medical perspective for the purposes of obtaining a comprehensive view in the realm of healthcare as well as the American perspective and culture as whole. The search engines used for this review were CINAHL, PubMed, and Google. Though it is not traditionally considered a scientific database, Google was used intentionally to identify culturally relevant examples of overuse including but not limited to the use of pumpkin spice and caffeine. More scholarly articles were also explored throughout CINAHL and PubMed through the use of the keywords such as "overuse or excessive" in addition to "injury", "antibiotics", "social media", "kindness or empathy", "screen time", "child development", and others. The publication dates were limited to a five year timeframe of 2013 to 2019. Results from CINAHL ranged from 29 to 1,902 articles and from 71 to 9,486 articles in PubMed depending on the topic; for both databases, "injury" yielded the greatest number of articles while "kindness or empathy" yielded the fewest. All topics discussed in this analysis were chosen based on perceived medical and cultural relevance.

## Dictionary Definitions

To begin the process of dissecting and applying the word overuse, it would be to one's benefit to first understand the literal meaning of the word as defined in the dictionary. The word overuse could be viewed as the combination of two words: (1) over and (2) use. According to the Etymology Dictionary (2018), the first half of the word, over, is a word that stems from Old English; this word alone is defined as "above; highest; across; too much; above normal". Most commonly in the Germanic application, the word "over" was used as a prefix, often with negative connotation (2018). The second half of the word, "use", hails from Old French language, which had adapted the word from the original Latin word "usare" – meaning "to employ for a purpose" (2018). One could gather that the two definitions together could roughly mean "to use for a purpose too much or above normal". As defined by the more modern Merriam-Webster (2018) dictionary, overuse is "to use (something) too much, to use (something) excessively or too frequently", and it states hackney, overexpose, stereotype, and vulgarize are each synonyms of the word overuse.

## Overuse in Various Disciplines

### Social Media in Adolescence

The American culture has slowly developed into one of identity jockeying; often, individuals feel the need to create a persona for themselves that embodies little of who she actually is. This is especially true for adolescents growing up in the age of social media. Overuse of social media has become a societal norm; it is now normal to walk into a coffee shop or down the street and not meet the eyes of any one person. There is question of what is real and not real through the sharing of carefully selected, overly filtered photos and experiences, opening the door to one of the greatest foes of the adolescent mind – comparison. This dependency on access to social media is observed in depth by Clark et al. (2018). They go on to describe this as "normalized addiction", as the obsession of adolescents "[resembles] the progressive, withdrawal-producing, and dose-dependent symptoms of substance addiction" (2018). Like substance addiction, the overuse of social media often has consequences; the excessive use of social networking frequently comes

at the expense of a young person's mental health – often leading to serious mental health complications. The complications of overusing social media outlets can include symptoms of feeling isolated, depressed, and anxious (2018).

## Caffeine

In the world of nonstop movement and push towards progress, the stimulant caffeine, whether it is in the form of coffee, soda, energy drinks, or teas, has become a popular means to obtaining more energy. Normal doses of caffeine, doses of 400 milligrams or less daily, in healthy adults can bring positive effects. The positive effects could include but are not limited to increased sharpness of the mind, concentration, and athletic achievement, as well as a decrease in an individual's fatigue (Mitchell et al., 2014). Unfortunately, an individual can overuse caffeine. Most symptoms of the overuse of caffeine – such as “anxiety, headaches, nausea, and restlessness” – are benign and brief; however, studies have indicated that there is risk for long term cardiovascular, skeletal, and mental effects in avid caffeine abusers (2014).

## Pumpkin Spice “Everything”

In the modern American experience, fall brings more than crunchy leaves and cooler weather; the cooling of the summer months now means one thing – pumpkin spice everything. Advertisement for the release of this prized concoction begins weeks before its actual arrival. Individuals shift their schedules, as well as their budgets, to be among the first to consume it – hot, ice, or blended. A trend that at one time only affected coffee connoisseurs with the pumpkin spice latte, dubbed the “PSL” by avid consumers, and lovers of pumpkin pie has almost literally exploded into orange shards all around grocery stores, bakeries, and even bars. One may assume that the PSL's famed pumpkin pie spice is overused, but its popularity is not waning. Instead, one can enter their nearest grocery store and obtain pumpkin spice coffee, pumpkin spice beer, pumpkin spice ice cream, pumpkin spice cookies, pumpkin spice M&M's, pumpkin spice cereal, pumpkin spice cough drops, and, if one could fathom it, even pumpkin spice dog treats. According to Tom Popomaronis (2017) of Forbes Magazine, over one-third of Americans purchase at least one pumpkin spiced item each fall, and the pumpkin spice industry is now valued at over \$500 million. Oversaturated and overused or not, the market for pumpkin spice products is still growing.

## “Pitcher's Elbow”

The future stars of baseball are now experiencing challenges not undergone by those who played before them. From high school games to traveling baseball leagues, the arms of young baseball pitcher's do not get much rest. One team's season ends only to open the doors for the next. Their shoulders and elbows are overused, going through the same kinesthetic rotation over and over, at times over 100 times in one game alone. Unfortunately, for many teenage baseball players, this places the athlete at risk for what is known as “pitcher's elbow”, a result of ulnar collateral ligament injuries (Okoroha et al., 2018). Certain pitches can cause greater stress, or torque, on the athlete's elbow; for instance, a fast ball places the greatest amount of torque on the elbow in comparison to other pitches, such as curveballs (2018). In order to protect their athletes from overuse injuries, many school administrations have begun putting certain parameters and regulations on their baseball team's pitchers. One high school administration in Minnesota went so far as to create mandatory rest days depending on the number of pitches thrown by an individual pitcher in one game; for example, a pitcher who throws 51- 75 pitches in one game has two mandatory days of rest (Haggstrom, 2017).

## Antibiotic Prescription

A recent hot topic in the world of healthcare is the overuse of antibiotic prescriptions. It has been well known in the healthcare community that the over-prescription of antibiotics causes more harm than good, often in the form of inadequate immune systems and the formation of antibiotic-resistant bacteria. New scientific studies are now indicating overuse is affecting the development of HIV, childhood obesity, and asthma due to the antibiotic's effect on the body's normal flora (Fiore et al., 2018). Unfortunately, over the last few generations, a mindset has developed that has led individuals to believe they need an antibiotic every time they present with a sickness, even when the sickness is not fueled by bacteria. "Patient demand, pharmaceutical company marketing activities, limited up-to-date information sources, and fear of losing patients" have all been cited as reasons why healthcare providers continue to prescribe unneeded antibiotics even with understanding of the risks (2018).

## Kindness

Though the word overuse often has negative connotations, one example of a positive ramification is the overuse of kindness. It is tradition among many families to say, "You can never overuse please and thank you or saying, 'I love you'." The development of empathy and outward kindness often begins within the home from a very young age. Infants as young as a couple days old can begin displaying signs of empathy via "reacting to distress" (Dewar, 2015). As a child grows and develops, so does her ability to empathize and be kind. Beginning as early as 24 months old, children do not just detect emotions and distress as they once did as newborns; instead, they can begin responding to the signals they have received (2015). For instance, if a parent said they were thirsty, their toddler may bring them a cup or something they associate with "fixing" the problem they detected. Practice makes perfect in the subject of empathy and kindness as well, as a child's empathetic character and kindness grows and flourishes in opportunities to use them. A unique study showed that a child's feelings of sadness are directly related to their feelings of sympathy and their initiation of acts of kindness (Miller et al., 2016). These initiations of kindness help the child become more "prosocial" and outgoing as they grow (2016). Because of the results of this study, it can be inferred that "overusing" opportunities for kindness and empathy assist the social development of children.

## Definition in Nursing and Healthcare

For the healthcare nurse, the concept of overuse often impacts the patient individually, often negatively, as previously discussed. Healthcare providers often have to counsel or assist patients in overcoming the negative effects of overuse, whether it be in situations with a substance such as food, drink, or drug or a behaviour such as sedentary lifestyle. The act of overuse many include food, sedentary attitudes, etc., especially in the modern-day United States of America. In 2016, 39.8% of Americans were diagnostically considered to be obese; to put that more specifically, this is about 93.3 million Americans (Hails et al., 2017). Overeating, combined with a sedentary lifestyle, often leads to obesity and several other complications including cardiovascular disease, blood sugar management, cancer, and arthritic pain caused by increased stress on joints, all of which the nurse works to manage in a partnership with her patient (Alvarez et al., 2013).

In the pediatric setting, nurses, as well as advanced practice nurses, are given the task of not just assisting an individual patient with lifestyle navigation but also assisting the family unit. This presents new difficulties, as the challenges and issues discussed span outside of the control of the patient alone. Instead, there are several people whose thoughts, opinions, and beliefs must be considered, often the parent or guardian, in order to bring about change in the patient's life. For instance, the issue of the overuse of screen time in the pediatric patient is multifaceted in that the family itself, its dynamic, present habits, and present beliefs regarding screen time usage must be considered in order to combat the issue. The popularity of varying technological devices only exacerbates the issue at hand.

Depending on the age and personal attributes of a child, studies have indicated that children spend an average of 19.5 hours per week watching television and 2.5 hours per week playing video games (Fuller, 2018). While many would assume that teenagers are the age group that most overuses the top-ranking form of screen time – television, two- through eleven-year-old children watch 2-6.5 more hours of television on average than teenagers. (2018). An additional sobering point of discussion is that children in this same age group only spend three-and-a-half hours per week reading, and the statistical majority of parents allow their children to watch two to four hours of screen time per day (2018).

Perhaps the most important step in combatting this issue is understanding the impact and severity of overuse of electronic devices. In a nationwide longitudinal study of young children by Kato et al. (2018), it was discovered that children as young as six years old who have developed a habit of disorganized bedtimes and staying up late were using electronic devices more frequently and for longer periods of time than children with set, organized bedtimes. This indicates that the presence and abundance of technology is not the only culprit in the development of excessive screen time. Dysfunctional habits at home, even those that seem minor such as disorganized bedtime and bedtime routines, ultimately affect more than just a child's amount of sleep. It could be hypothesized that creating a more structured, organized home life for children could decrease the amount of children dealing with areas of lack of self-control and need for immediate gratification, such as overuse of electronics.

## Defining Attributes

The next step in combatting excessive electronic use in children is to identify and understand what makes electronic “overused”. Identifying the defining attributes of excessive screen time is crucial to helping identify children and families in need of assistance of changing old and developing new habits. The concept of overuse is often times used negatively, and that is how it will be presented throughout the rest of this analysis. It will explore what is and is not overuse as well as what falls in between.

Like its venture in the assistance of developing healthy eating habits within families, the American Academy of Pediatrics has recently developed guidelines for healthy technology habits, a technology “diet” of sorts. The AAP also created an online, interactive “Family Media Use Plan” that allows parents or guardians to set up a child's schedule, setting hours aside for each category, such as meal time or school, allowing parents to visualize how much time a child should have “left” for screen time, as well as set up a Family Media Use Plan that allows families to construct healthy boundaries and regulations on a child's use of technology (“Family Media Use Plan”, 2016).

Using the AAP's recommendations for each age bracket will allow for the defining of what would be considered excessive screen time for a child of each age. For an infant one-and-a-half to two years old, the AAP recommends that parents “avoid use of screen media other than video-chatting”, and any screen time outside of that should be high quality and co-viewed by a parent or guardian (“AAP Announces”, 2016). For a child ranging from two to five years old, screen time should be limited to an hour a day and contain only high-quality, education material that the parent or guardian co-views to assist in understanding (2016). For children six years old and older, the parent or guardian should ensure “media does not take the place of adequate sleep, physical activity and other behaviors essential to health”; another way to digest this would be to reflect on the behaviors and actions of a child, identify the actions as positive or negative, and adjust screen time accordingly (2016). Families should also allocate specific times of the day to be “media-free” times, such as making family dinners technology free, and frequently discuss online safety, etiquette, and bullying to help their children maneuver a technology-filled world safely and with integrity (2016). For the sake of simplicity, screen time outside of the recommendations of the AAP will be considered to be excessive. It is important to mention that these recommendations remain uncontested and are presently recommended for use in education of the pediatric demographic.

## Case Studies

### *Model Case*

Holly is a seven-year-old little girl who lives at home with her two parents. She was recently given a smart tablet for her birthday, preloaded with all kinds of fun games and activities. She often plays with it on the car ride to school, the car ride home, at the dinner table when she can get away with it, and even in bed before bedtime. Sometimes her tablet use is supervised, but there are times it is not, including when she hides under her covers late at night, long after her bedtime, to play games. Ultimately, this affects her sleep and her attitude the next morning. Holly has always been a well-mannered, teachable little girl, but since getting her smart tablet, she has developed some negative behaviors. These include not listening to her mom and dad when they instruct her to do something, ignoring her daily and weekly chores, and getting angry when asked to put her tablet away when it is time to eat or sleep.

This is a classic case of excessive technology use. Holly is spending much of her free time on her tablet rather than exercising her body and brain by playing and spending time with family. Her screen habits are viewed as a red flag through the lens of the AAP recommendations. Her overuse of her smart tablet has led to several negative attributes and actions, indicating that it may be time for her mom and dad to create new, healthy boundaries for Holly's screen time.

### *Borderline Case*

Spencer is a 20-month-old infant of an on-the-go single mom. Spencer's mom is often busy juggling two jobs and caring for him. He spends the day at a high quality daycare while his mom is at work, and he enjoys the time he has interacting and playing with his fellow toddlers. Spencer plays, eats his snack, interacts on the learning circle, and takes a good nap while at daycare. However, things get a little trickier at home. Upon arriving home after a long day of working each day, Spencer's mom needs to cook dinner for them both and would like to spend a couple minutes tidying up their home and doing a load of laundry. Because she knows that Spencer is busy and will want her attention, she puts on his favorite show for him to sit and watch while she does the few chores around the house. She occasionally leaves the room he is in to grab dirty clothes from the hamper or wipe down the bathroom sink. Once dinner is prepared, the television is turned off, and Spencer and his mom eat their meals together. Afterwards, they get ready for bedtime.

Despite her busy days, Spencer's mom does a great job of working to help him grow both mentally and physically. Spencer is exercised both physically and mentally at his high-quality daycare, where he does not encounter any electronics. Though his mom occasionally leaves him to have unsupervised, non-video chatting screen time, she has a handle on ensuring that they still get one on one time with one another and that Spencer gets to bed on time without any extra distractions from the television. The screen time served its purpose of allowing her to get a few things done around the house and was then turned off, though she should keep in mind the AAP recommendations and be very cautious of leaving him unsupervised during his viewing time as well as do her best to co-view with him to help his growing mind digest what it is seeing and hearing.

### *Contrary Case*

Maya is a nine-year-old little girl who lives with her mom, dad, and two siblings, a five-year-old brother and a fifteen-year-old sister. She is in fourth grade and excelling in school. She often goes outside and plays with her neighbor's children and loves playing pretend with her siblings and stuffed animals. She occasionally sits down to watch her favorite, science kid's show in the afternoon after school in the living room where her parents can keep an eye both on her and the content of what she is viewing. Maya and her family all sit down together and have a "screen free" dinner at the dinner table, and even her fifteen-year-old sister is without her smart phone. She and her siblings also keep their electronic devices and their chargers outside of their rooms while they are sleeping to prevent them from being a distraction or a danger.

Maya and her family are a great example of what healthy screen time boundaries look like. Her parents are very cautious of what is being viewed by her and her siblings and are careful to have them watch each show in a public location, such as their living room. They also strive to keep screens away from the dinner table and bedrooms, allowing the opportunity for family time and a good night's sleep. The family's actions line up with the latest AAP recommendations, and Maya and her siblings are mentally and physically benefitting from it.

## Antecedents

It is not uncommon to wonder about how society and child development came to be at a certain place. Poor technology habits do not appear all at once. Oftentimes, the overuse of anything is the product of several small steps, leading further and further into poor choices and the removal of once-set boundaries. Small steps may include a parent or guardian offering their smart phone to their child to obtain "just ten minutes" of silence and "me time". Unfortunately, all too often, the "just ten minutes" develops into a half hour and sometimes even into the parent purchasing a smart device for their child, just to keep them occupied.

It also could be argued that some parents and guardians have "too much" trust and confidence in technology as well as their child. Parents may assume that the extra screen time is only improving the child's wellbeing and mental function, making them smarter and not posing any danger. A parent may also assume that their child would participate in other activities if the child wanted, ignoring the addictive effects of the overuse of screen time and history of poor habits. The reason children have parents is to help lead and assist them in becoming well-rounded adults full of character; a child is incapable of setting their own healthy boundaries. It is crucial that parents begin to take responsibility for the media use within the home. The issues of overusing screen time often go unknown or ignored by families, making it particularly important for the advanced nurse to take the initiative in asking questions and help assist families on this journey.

## Consequences

What may be considered to be an easy way to distract a child, overuse of media has a great deal of consequences. The consequences of excessive screen time transcend simply taking up time that could be spent doing other things, such as interacting with peers, performing chores, or spending time with family. It has come to be known that overuse of technology in childhood has impacts on the physical and cognitive development of a child. Consequences can affect several aspects of a child's life, and these aspects may include "physical strength and general health"; "diet and obesity"; "sleep"; "cognitive ability"; and "socio-emotional and mental health" (Domingues-Montanari, 2017). Though affected by outside issues such as socioeconomic and racial communities, the negative impact of the overuse of screen time is the same across all communities. From a physical perspective, the study performed by Domingues-Montanari (2017) found it "negatively affects locomotive skills, physical strength, dietary habits and adiposity". The negative consequences also affect a child's mental health and development, as it "affects the cognitive and socio-emotional development of children" and "is associated with poorer mental health during adolescence", and surprisingly, exercise outside of screen time did not allow for the reversal of these negative effects (2017).

## Empiric Referents

The word "overuse" lends itself to be fairly vague. It communicates that there is something being done "over and above" what would be defined as "normal". There is great difficulty in creating a quantitative avenue of measuring such vague terminology, as what is normal and what is excessive. However, largely due to the efforts of the American Academy of Pediatrics and their work to assist families in creating a healthy media "diet" within the home, the word "overuse" is given the opportunity to be measured, as the definition of what would be considered to be "normal", and its relation to each age group has been defined. By understanding what is defined as a characteristic baseline for the

use of technology in childhood by the AAP, an individual is awarded the opportunity to identify what is “over and above” the normal. Overuse is also affected by each individual child’s response to too much screen time; what causes negative behavioral outcomes in one child may produce fewer or even greater negative outcomes in another. Collectively, understanding the recommendations of the AAP and understanding the unique attributes of a particular child can be used to define what is truly “overuse” of technology for a particular child.

## Conclusion

Throughout this concept analysis, the word overuse has been thoroughly defined across several different facets, ranging from the literal Latin dissection and translation to its applicable definitions in differing areas of the modern American culture and healthcare. Though often rooted in negative connotation like in social media use in adolescence, overuse can have positive connotations, such as when it is applied to concepts such as kindness. As previously mentioned, the role of the advanced nurse in measuring and taking steps to solve “overuse” in a patient’s life or family’s structure is multifaceted, yet incredibly important.

The exceptional importance of identifying excessive electronic use in children is immeasurable. For it is only until one has identified a problem that one is able to take steps in order to solve it. It has become easy for parents to offer technology the role of raising their children – surely the educational games teach them something while they afford themselves some “peace and quiet”. Maybe what the world needs now is a little less peace and quiet and more face-to-face interaction. Maybe it needs a little more mess in the living room and taking an extra fifteen minutes to get dinner in the oven, in order to provide adequate parental supervision to a little ones in need of quality time and guidance. For these reasons, family and pediatric advanced practice providers can act as the bridge between parental figures and research, allowing for parents and guardians to make the best, evidence-based decisions for their families. Reduced ambiguity regarding the “overuse” of technology and screen time by the American Academy of Pediatrics makes building this bridge simpler, and these recommendations allow for providers to communicate clearly and confidently about appropriate boundaries and what it looks like to have a healthy child-media relationship. This in turn allows healthcare providers to help create a positive movement within the pediatric demographic, setting them up for a lifetime of healthy media boundaries.

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