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A brief review of self-asphyxial risk-taking behaviour in adolescents

Adolescence is often viewed as a time for experimentation and risk-taking behaviour. For instance, when I was a teenager, my friends and I used to occasionally play a game that we called 'Headrush' where we would have our breathing temporarily stopped by someone holding onto our chests after a deep expiration and hyperventilation (so that we could not breathe). It induced feelings of light-headedness and dizziness followed by temporary unconsciousness (usually lasting 10 to 15 seconds). I did it twice and on both occasions I felt as though I had lived a whole other life while I was unconscious. I cannot remember exactly why I had engaged in such a potentially life-threatening behaviour except that all my friends were doing it.

SARTB

This activity that I engaged in as a teenager is an example of self-asphyxial risk-taking behaviour (SARTB), and the game we called 'Headrush' is more popularly known in the academic literature as the 'choking game' or the 'fainting game' (but is also known by dozens of alternative names as listed in Appendix 1).

As an academic, I first became aware of this issue in a case study published by Shlamovitz et al. (2003) on 'suffocation roulette' (although reports of SARTB date back to the early 1950s in the medical literature [e.g., Howard et al., 1951]). Shlamovitz and colleagues reported the case of a 12-year-old boy admitted to hospital because of recurrent syncopal episodes (i.e., persistent fainting). The authors reported that the fainting episodes were due to SARTB. It also appears that what I did when I was an adolescent was a form of 'self-induced hypocapnia' (i.e., a state of reduced carbon dioxide in the blood). It has also been reported that these 'games' can be played alone and typically involve self-strangulation, or sometimes with others (Shlamovitz et al., 2003), and where like my own experiences, the cutting off of the oxygen supply was carried out by somebody else.

SARTB has been defined by Toblin et al. (2008) as self-strangulation or strangulation by another person with the hands or a noose to achieve a brief euphoric state caused by cerebral hypoxia. As with autoerotic asphyxiation (i.e., suffocation as a way of enhancing sexual arousal [Aggrawal, 2009]), the aim of SARTB is to intentionally cut off the oxygen supply to the brain to experience a feeling of euphoria (the only difference being that in children's games, it is not done for a sexual reason). As the *Wikipedia* entry on SARTB notes:

> *"According to Dr. Steve Field, chairman of the Royal College of General Practitioners in London, the fainting game is pursued primarily by children and teens 'to get a high without taking drugs.' Children 'aren't playing this game for sexual gratification.' It is frequently confused with erotic asphyxiation, which is oxygen deprivation for sexual arousal. Unlike erotic asphyxiation, practice of the fainting game appears to be uncommon in adulthood".*

There has been relatively little research into the practice although Drake et al. (2010) claimed that 'thrill-seeking' is risk factor in engaging in SARTB. Another paper by MacNab et al. (2009) said there was a perception among those who engaged in such games that inducing fainting was a low-risk activity. MacNab and colleagues attempted to determine the prevalence of knowledge about and participation in SARTB and how best to raise awareness of this risk-taking behaviour and provide preventive education. Their study collected data from children and adolescents (aged 9 to 18 years with

an average age of 13.7 years) at eight middle and high schools in Texas (US: n=6) and Ontario (Canada: n=2). They also noted that there had been a recent death from playing the choking game in one of the Texas schools, and that two other fatalities had occurred within the state. Over 2,500 questionnaires were completed. They reported that 68% of children had heard about the game, 45% knew somebody who played it, and 6.6% had tried it (and 40% perceived no risk from the activity). The study found that the most respected source of a preventive education message was parents for pre-adolescents (43%) or victim/victim's family (36%) for older adolescents.

Other reasons to participate in fainting games

Neal (2008) noted other reasons that children participate in fainting games include curiosity (as to what the act of fainting might feel like), peer pressure (including a challenge or a dare or a rites of passage into a particular social group), and as an exploration of ways to 'get high' and intoxicated at no financial cost (compared to engaging in illicit drug use). Neal also noted that children that experienced self-induced hypocapnia blackouts may experience dreaming or hallucinations (albeit fleetingly), and may regain consciousness with short-term memory loss and involuntary movement of their hands or feet. Although full recovery is usually made within seconds, such activities can cause confusion, headaches, amnesia, permanent brain injuries, and in extreme cases, death (Urkin & Merrick, 2006). Advocacy groups have claimed that the number of fatalities due to SARTB is more than 1000 worldwide (GASP, 2008).

Fatalities of children engaged in SARTB have been reported in the clinical and medical literature. For instance, Egge et al. (2010) reported the case of a 12-year-old girl who was brought to the paediatric emergency department after her mother found her hanging from her bunk bed. She died five days after being admitted to hospital and it was eventually found that she had played the choking game.

The revalence of the activity is debatable as most of the academically published studies are case reports (usually when a problem – and in some cases, death – has occurred). However, a comprehensive systematic review of SARTB was recently published by Busse et al (2015). They attempted to assess the prevalence of engagement in SARTB and associated morbidity and mortality in children and adolescents (and up to early adulthood). Busse and colleagues examined every survey and case study that had been published on SARTB, and more specifically examining the behaviour among those aged 0–20 years (excluding any study where the motive was autoerotic, suicidal or self-harm). They reported that 36 studies had examined child and adolescent SARTB in 10 different countries (North America and France being the most common, but also reports in the UK).

Risk factors

Risk factors for SARTB were hard to assess because most of the studies examining such risks did not control for other confounding variables. However, five of the studies reported an association between SARTB and a number of other risky behaviours including substance misuse, risky sexual behaviours, poor mental health, poor dietary behaviours, and engagement in risky sports. The review also reported that there did not seem to be any association between SARTB and engagement in physical activity, and experiencing accidents, and/or hospital admissions. It was also noted that a number of other behaviours increased the likelihood of engaging in SARTB including experiences of violence, being more impulsive, having a thrill-seeking personality, and having lower school achievement. However, only six of the 36 studies they reviewed reported the potential for SARTB to be associated with other risky behaviours. No consistent findings were found between SARTB and gender, age and other demographic factors (such as socio-economic status).

Examining the studies as a whole, Busse and colleagues reported that awareness of SARTB ranged from 36% to 91%, and that the median lifetime prevalence of engagement in SARTB was 7.4% (however, these were studies that used convenience sampling, therefore none of the studies were necessarily representative). In the SARTB literature, a total of 99 fatal cases were reported (and of the 24 detailed case reports, most of the deaths occurred when individuals were engaged in SARTB alone and used some type of ligature).

In a different analysis, Toblin and colleagues

(2008) used US news media reports to estimate the incidence of deaths from SARTB. Their report identified 82 probable SARTB deaths among youths aged 6-19 years during 1995 and 2007. Of these 82 cases, 71 (86.6%) were male, and the mean age of death was just over 13 years of age. The study also noted that deaths were recorded in 31 US states and were not clustered by location, season or day of week. Busse and colleagues assert the importance of education and prevention and more specifically note:

> *"As it has been suggested that knowledge and identification of symptoms and signs of engagement in [SARTB] could have possibly enabled early identification and possible prevention of fatal cases, we believe that clinicians, paediatricians, health professionals and teachers should receive education on the symptoms and signs of [SARTB]. The need to educate health professionals has been highlighted as awareness of [SARTB] will enable these individuals to identify symptoms and signs and to act as educators to young people and their parents…We further recommend that more research is carried out together with young people to develop appropriate education material. In line with recommendations from others, we further recommend removing existing videos about [SARTB] from the internet and ensuring that preventative website rather than promotional websites appear first on internet searches" (p.8).*

This brief examination of the literature suggests that a significant minority of adolescents have engaged in SARTB and that in extreme cases it may lead to death. Despite being known about for over 60 years, the data concerning SARTB are still limited and relatively little is known about the associated risk factors. However, SARTB certainly appears to be an activity that parents and teachers should be made more aware of even if the prevalence of such activity among children and adolescents is low.

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Appendix 1 (Source: Urban Dictionary, 2015)

According to the online Urban Dictionary, asphyxial games have many different names worldwide including: Airplaning, America Dream Game, Black Boxing, Black Out Game, Breath Play, Breathing the Zoo, Bum Rushing, California Blackout, California Choke, California Dreaming, California Headrush, California High, California Knockout, Catching Some Zs, Choking Game, Cloud Nine, Crank, Dream Game, Dreaming Game, Dying game, Fall Out Game, Flat Liner, Flatline Game, Flatliner Game, Funky Chicken, Getting Passed Out, Grandma's Boy, Groobling, Halloween, Harvey Wall Banger, High Riser, Hoola Hooping, Hyperventilation Game, Indian Headrush, Knockout Game, Passing Out Game, Pass-out Game, Purple Dragon, Natural High, Neckies, Redline, Rising Sun, Rocket Ride, Sandboxing, Sleeper Hold, Sleepers, Space Monkey, Speed Dreaming, Suffocation Game, Suffocation Roulette, The Game, The Mysto World, Tingling Game, Trip to Heaven