efpsa Journal of European Psychology Students

Hunter, J., & Hoskyn, M. (2026). Navigating Risk: A Multiple Case Study Examining Maternal Awareness and Actions in Response to Adolescent Substance Use and Impaired Driving. *Journal of European Psychology Students, 16*(2), 21–33. https://doi.org/10.59477/jeps.673

RESEARCH ARTICLE

Navigating Risk: A Multiple Case Study Examining Maternal Awareness and Actions in Response to Adolescent Substance Use and Impaired Driving

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Adolescent substance use and impaired driving behaviors are prevalent in Canada. While research has emphasized the influence of parents in protecting against these risky behaviors, insufficient research has investigated maternal perspectives on this issue. Accordingly, this paper presents a longitudinal multiple case study to examine maternal awareness of, beliefs about, and responses to adolescent substance use and impaired driving. The stories of four women, each of whom identified as a mother to multiple adolescent sons, form the basis of this qualitative investigation. Within- and cross-case analysis, employing both deductive and inductive logic, led to the identification of four consensually generated themes. Themes pertain to mothers' experiences as a source of awareness, early awareness guiding maternal action, mothers reacting to change in awareness, and barriers between awareness and action. The themes are discussed through the lens of case evidence, theory, and research.

Keywords: adolescent substance use, impaired driving, parenting, monitoring, mothers

In Canada, adolescent substance use is pervasive. Indeed, Canadian adolescents report some of the highest rates of alcohol and cannabis use of any industrialized nation (Haines-Saah et al., 2019). This is concerning, as substance use can lead to high-risk impaired driving behavior (IDB), encompassing driving impaired (DI) or riding with an impaired driver (RWID). Large scale surveys have found that a significant number of adolescents engage in these high-risk behaviors (Asbridge et al., 2015; Leadbeater et al., 2008). For example, Leadbeater and colleagues (2008) found in a survey of adolescents in the province of British Columbia (N = 2594) that 11% of urban respondents and 17% of rural respondents reported driving after drinking, while 19% of urban and 22% of rural drivers reported driving after cannabis use. Similarly, a survey conducted in Canada's Atlantic provinces found that 8% of adolescents (N = 3655) reported driving under the influence of alcohol, 14.8% under the influence of cannabis, and 4.3% under the influence of opioids within the past twelve months (Asbridge et al., 2015). Within both studies, an even greater percentage of adolescents reported receiving a ride from a peer who had been drinking or a peer who had been using cannabis (Asbridge et al., 2015; Leadbeater et al.,

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2008). This prevalence represents a significant concern for all road-users.

Risk Factors for Adolescent Impaired Driving Behaviors

To better understand the phenomenon of adolescent IDB, researchers have investigated associated risk factors including gender, ethnicity, socioeconomic status, urban versus rural location, and certain developmental factors. First, male adolescents have been found to have a greater propensity for DI than female adolescents (Lauckner et al., 2020; Leatherdale & Burkhalter, 2012; Song et al., 2012), although gender does not appear to relate to RWID (Lauckner et al., 2020). Additionally, male adolescents who begin using substances at an earlier age, and in larger amounts, appear to be at greater risk of DI (Leadbeater et al., 2017). Furthermore, research indicates that adolescents living in predominantly White communities are at greater risk of DI than adolescents living in ethnically diverse communities (Delcher et al., 2013; Lauckner et al., 2020). Meanwhile, adolescents whose families are of higher socio-economic status are also at greater risk of DI (Asbridge et al., 2015; Delcher et al., 2013), likely due to vehicle availability or adolescent vehicle ownership. Similarly, greater reliance on private vehicles for transportation may help explain the finding that rural adolescents appear to be at greater risk of IDB than urban adolescents (Lauckner et al., 2020; Leatherdale & Burkhalter, 2012). Regarding development, risk factors for adolescent IDB appear to include heightened attention to peer norms (Haegerich et al., 2016; Nygaard & Grube, 2005), increases in aggression (Gulliver & Begg, 2004), increases in sensation seeking (Arnett, 1990; Asbridge et al., 2015; Delcher et al., 2013), and egocentricity (Arnett, 1990).

Parenting and Adolescent Impaired Driving Behaviors

In light of these risks, it is important to consider protective factors that discourage adolescent IDB. Research identifies parenting as a powerful protective influence. Specifically, positive parental role modelling and the expression of disapproval for IDB serve as important social controls, reducing risk even into late adolescence (Chen et al., 2008). Moreover, parent-child bonding and closeness have been identified as protective factors for IDB (Chen et al., 2008; Ginsburg et al., 2009; Haegerich et al., 2016; Tin et al., 2008). However, evidence connecting parenting styles to IDB reveals the importance of two key dimensions: warmth and control. Indeed, adolescent children of authoritative parents, whose parenting is characterized by high warmth and high control, have been found to be at lower risk of DI than children of permissive or authoritarian parents (Ginsburg et al., 2009). By contrast, ample evidence suggests that adolescent children of permissive parents, whose parenting is warm but lacks control, are at the greatest risk for alcohol use (Chen et al., 2008; Lauckner et al., 2020; Li et al., 2014), DI (Beck & Lockhart, 1992; Ginsburg et al., 2009; Haegerich et al., 2016; Lauckner et al., 2020; Li et al., 2014; Tin et al., 2008), and RWID (Vaca et al., 2016). All these researchers identified a lack of monitoring, conceptualized as "attention paid to and tracking of the child's whereabouts, activities, and adaptations" (Dishion & McMahon, 1998, p. 61), as a mechanism which puts adolescents of permissive parents at greater risk for IDB. For this reason, monitoring has been identified as the most consistent and powerful predictor of the likelihood that an adolescent will engage in IDB (Haegerich et al., 2016).

Mothers as Monitoring Figures

Mothers are central caregiving figures and household authorities, often taking responsibility for household tasks and childrearing (Hays, 1996). Indeed, in many households, mothers are the primary or sole caregiver (Malczyk & Lawson, 2017). Despite the knowledge that mothers serve an important role in the family, their unique role in the challenge of IDB remains understudied. Research has typically focused on the role of parents more generally (e.g., Chen et al., 2008; Ginsburg et al., 2009; Haegerich et al., 2016; Lauckner et al., 2020; Tin et al., 2008). Yet, maternal monitoring literature specifically reveals a connection to reductions in adolescent problem behavior. For instance, De Los Reyes and colleagues (2010) found that when maternal reports of child activities were

consistent with the child's own reports (indicating high concordance), this was associated with reduced adolescent delinquent behavior at two-year follow up. Similarly, Keijsers and Laird (2014) found that among mothers whose authority was perceived as legitimate by their children, soliciting information and engaging with their adolescent children (e.g., conversation, listening), was associated with less secrecy and more disclosure of leisure activities. Together, this work illustrates the importance of accurate maternal insight into adolescent activities, and its association with healthier, less delinquent adolescent behavior. This research underscores the importance of studying maternal perspectives and actions with respect to IDB, as is the focus of this study.

A Theoretical Model of Parental Involvement in Adolescent Substance Use and Impaired Driving Behaviors

Beck and Lockhart's (1992) model of parental involvement offers comprehensive insights into parental influence on adolescent substance use and impaired driving. Developed following years of extensive research into parental perceptions and attitudes towards adolescent substance use and impaired driving (Beck et al., 1987, 1991; Beck, 1990), this model builds off of problem behavior theory (PBT; Jessor, 2014). PBT posits that adolescent risk behaviors occur within a complex web of individual factors (e.g., genetics, values, goals) and the child's perceived environmental system (e.g., social relationships, cultural context). Applied to PBT, Beck and Lockhart (1992) situate parents within the child's perceived environmental system, such that the presence of parental authoritative support and monitoring is theorized to constrain problem behavior, whereas an absence of parental action will facilitate opportunities for problem behavior. Thus, PBT grounds their argument that parental actions influence the likelihood of problem behavior. However, their work extends PBT by attending to the beliefs which guide parental actions.

Beck and Lockhart's (1992) model traces two sequential pathways from parental beliefs to child outcomes. Each path begins with different levels of parental awareness (i.e., high or low) and ends with different likelihoods of adolescent substance use behavior and IDB (i.e., consequences of fewer versus greater opportunities). In the protective pathway, parents with *high awareness* of the problem of adolescent substance use and IDB, who *strongly accept* that these phenomena may apply to their children, and who *take action* through monitoring and enforcement of family policies, *limit opportunities* for their children to engage in substance misuse and problem behaviors like DI and RWID. Conversely, in the risk pathway, parents with *low awareness*, who exhibit *weak acceptance* of these threats (i.e., denial) and *do not act* through monitoring or enforcing family policies, *fail to limit opportunities* for substance misuse and IDB. In sum, this model stresses the importance of parental beliefs in the form of awareness and acceptance on adolescent behavioral outcomes through their influence on parental action.

While Beck and Lockhart's (1992) model of parental involvement provides a beneficial framework for identifying and understanding central parental beliefs and actions, it lacks explanatory depth regarding the origins of these parental beliefs, how parents may react to changes in beliefs, and potential barriers to action beyond simple awareness or acceptance. Beck and Lockhart (1992) originally noted this gap and called for more research into "parents' perceptions of their roles and capabilities to intervene successfully to prevent use of alcohol by their children" (p. 48). However, little research has been conducted to answer this call.

The Present Study

It is therefore the goal of this longitudinal multiple case study (Yin, 2018) to describe the beliefs and experiences of four women, all mothers to adolescent boys, in relation to their familial experiences of adolescent substance use and IDB. More specifically, we sought to examine how these mothers' beliefs and experiences aligned with the four proposed stages of the model of parental involvement (i.e., awareness, acceptance, action, and consequences; Beck & Lockhart, 1992). Simultaneously, we attended to any possible novel insight into sources of

awareness, manifestations of relevant parenting behaviors, and circumstances that may influence the connection between parenting beliefs and behaviors. The four cases situate participants' responses within their life histories, from their own adolescence to their experience as parents of adolescents. This is beneficial as it is not well understood how parents' own experience with substance use and IDB during adolescence informs their parental perspectives and behaviors. This work was guided by the following research questions:

RQ1: What are mothers' beliefs surrounding adolescent substance use and impaired driving?

RQ2: How do mothers perceive their role and capabilities in managing adolescent substance use and impaired driving?

RQ3: How do mothers use parental monitoring strategies to prevent or mitigate adolescent substance use and impaired driving?

RQ4: What support and barriers do mothers experience in the implementation of successful monitoring strategies?

Methods

Participants

Institutional research board approval was received for this multiple case study of parental beliefs and behaviors surrounding adolescent substance use and IDB. A snowball sampling method was used to recruit parents interested in participating in the research. Four women who identified as biological mothers to adolescent children volunteered to participate. Each participant met the inclusion criteria of having at least one adolescent child between the ages of 14 and 19 years old, who was attending high school, and who lived with her at least part-time. All mothers identified as White, lived in the same region of Ontario, and each had only male children. These women's stories, gathered across multiple interviews, were our data source. Consequently, this study includes four cases, each about one mother's beliefs and experiences. Any names given are pseudonyms. The participants were offered $30 (CAD) gift cards to businesses of their choosing as an incentive and token of appreciation.

Data Collection

Data collection occurred in two phases between May 2019 and October 2019. The decision was made to collect data longitudinally as it permitted analysis of change or development in participants' beliefs and parenting actions with respect to adolescent substance use and IDB over time. The ability to understand changes in conditions over time is a methodological advantage of longitudinal case study design (Yin, 2018). Interviews conducted by the first author took place with each mother over FaceTime, Apple's proprietary video calling software. The first round followed a semi-structured interview protocol that included questions asking the mothers to describe themselves and their families, share their perceptions of impaired driving, discuss whether they communicated with their children about substance use and impaired driving, describe what actions they have taken (or might take) to ensure their child's safety in situations where drugs or alcohol might be involved, and explain whether they had established family policies or rules regarding alcohol or drug use (see Appendix A). First-round interviews ranged from 18–36 minutes and averaged 29 minutes.

Second round interviews were semi-structured and included questions which expanded upon topics explored in the first interview. A unique series of questions were generated for each participant in this round; however, shared topics across second interview questions included further query about their perceptions of alcohol, cannabis, and impaired driving, parental roles and actions including communication and monitoring, and expectations around their sons' behavior. Second-round interviews ranged from 35–62 minutes and averaged 47 minutes. Interviews were recorded and transcribed for analysis by the first author and reviewed by the second author for accuracy and to build familiarity with cases (Hill et al., 1997).

Ensuring Case Quality

Member checking was conducted to ascertain authenticity of participant voices (Candela, 2019). Participants were provided with transcripts of their interviews and preliminary interpretations were offered for their feedback. Participants were told that

they could make additions or removals to their responses, or make comments, using Microsoft Word's Track Changes. All participants reviewed the provided materials but none opted to make changes, or add comments, to either their first or second interview transcripts. This process helped to ensure the trustworthiness of the data; a form of internal validity in the context of qualitative research referring to the ability to trust that one's data is an accurate representation of participant perspectives (Zhao et al., 2022). Moreover, during the data analysis phase, validity and reliability of interpretations were sought via open dialogue within the research team, which comprised three individuals. The goal of this step was to reduce potential bias or oversights which can emerge from analysis by a single researcher, which poses a threat to reliability (Yin, 2018), and to increase the validity of interpretations through their triangulation across research team members.

Analysis and Interpretation

While the methodological design of this study was a longitudinal multiple case study (Yin, 2018), our analytical process followed consensual qualitative research (CQR; Hill et al., 1997). CQR is a team-based, qualitative analytical approach to forming consensus about patterns and themes detected within a small number of intensively studied cases (Hill et al., 1997). As CQR typically relies on small numbers of cases, it is a logical analytical extension of multiple case study design. Open dialogue and joint formation of themes are essential aspects of CQR (Hill et al., 1997), that were employed in this study. Initially, the first author generated and examined four unique and thickly detailed case descriptions to guide the detection of within-case patterns to be examined across cases (Yin, 2018). Concurrently, analytic memoing, through Microsoft Word's document commenting feature and handwritten notes, was employed to record "impressions and emerging ideas about the meaning of the data" (Hill et al., 1997, p. 551), including preliminary insights into cross-case connections. These case descriptions and analytic memos were then reviewed by the entire research team, who proceeded to engage in a process of open dialogue to identify and hone themes. The first author then formalized these themes in writing, which were then audited for clarity and coherence by the research team. The themes described in this study are the product of this process of consensual meaning-making.

This analytical process followed both deductive and inductive logic. Deductive analysis involved exploring how each case aligned with the propositions of the model of parental involvement (Beck & Lockhart, 1992); specifically attending to mothers' awareness and acceptance beliefs, self-reported monitoring and policy enforcement, and the familial outcomes they described. Examining cases in relation to the model of interest helped the team to remain focused on the most theory-relevant within- and cross-case elements. However, given the model's limitations in explaining origins of parental beliefs, change or evolution in beliefs and resultant actions, and potential barriers or challenges encountered by parents, inductive analysis was also essential. Therefore, novel data-driven insights into potential origins of participants' beliefs, experiences of belief change, varied forms of parental action, and barriers encountered were examined. This combined deductive/inductive logic reflects Swain's (2018) notion of 'a priori and a posteriori' analysis; whereby the researchers approach the collection and early analysis of data with an analytical framework already in mind, while simultaneously attending to novel, emergent properties of the data. Moreover, this joint deductive/inductive analytical approach supported the emergence of themes that pertained to some, but not all, cases. Indeed, given that the process of identifying and generating themes in a multiple-case study is an inherently creative process, driven by the available data, the formalization of themes that 'speak to' some cases more than others is common (Yin, 2018).

Results

Brief Case Descriptions

Sharon, a government employee and mother of two adolescent boys—Steven (19 years old) and Simon (18 years old)—expressed deep concern about the risks that substance use and IDB could pose to her sons. She reported consistently engaging her sons in

conversations about the risks associated with substances and establishing clear family policies on substance use. Sharon reported enforcing a policy of moderate tolerance for occasional alcohol use at social gatherings and zero tolerance for cannabis. She reported prioritizing their safety by ensuring her availability to assist them with a ride during a night out.

Molly, a registered nurse practitioner and divorced mother of three adolescent boys—Marcus (19 years old), Miles (17 years old) and Mason (15 years old)—reported that she actively educated her sons about substance use and safe behaviors through open dialogue and the modeling of responsible alcohol consumption. She stated that when her sons drank at social gatherings, which was the case for all three boys, she ensured her sons had safe transportation options, offering to pick them up herself or arrange for a cab. Leveraging her nursing background, Molly emphasized the importance of maintaining open and trusting relationships with her sons, aiding their understanding and navigation of substance use.

Heather, a business manager and married mother of two boys—Harry (14 years old) and Henry (11 years old)—living in a rural area, reported that she had been reluctant to discuss substance use and related issues with her sons due to their young age. However, she was forced to confront the topic when her eldest son was caught drinking alcohol at a party, then months later smoking cannabis in his room. This led Heather and her husband to set strict boundaries and consequences for Harry, including grounding and close monitoring of his possessions and social life (in-person and digitally). Heather's approach reflected her intense fear of her son following a potentially dark path with substances. Despite causing significant strife with Harry, as he viewed his mother to be overly strict, Heather would not compromise on this approach.

Rachel, a stay-at-home mother and separated mother of four boys—Ryan (21 years old), Reid (18 years old), Richard (16 years old), and Riley (14 years old)—held complicated feelings about substance use and impaired driving behaviors. This related to her eldest son's early alcoholism and later involvement in a motor vehicle collision as an impaired driver. For these reasons, she described herself as "not impartial… [and] on the more understanding and forgiving side of it." With Ryan and with her younger sons, Rachel reported refraining from openly discussing substance use and associated risks. Despite feeling as though setting boundaries and rules about substance use would be a good idea, Rachel felt uncomfortable and incapable of doing so. She attributed her difficulty in addressing substance use with her sons to her own struggles with depression, lack of co-parental support, and family size.

Theme 1: Personal Experience as a Source of Awareness

Across all cases, participants drew awareness of adolescent substance use and impaired driving behavior from their own personal experiences. For instance, Sharon spoke about her own underage drinking experiences and described them as something "we've all done," illustrating her perception that this behavior is typical in adolescence. Similarly, in considering what had shaped her expectations of her sons' substance use behaviors, Molly remarked, "I was a kid once and I knew what I was doing." Molly also stated she sourced insights into adolescent substance use exploration from her professional experience as a nurse practitioner, saying, "I work with kids all the time, [and] I know who's doing what." These quotes suggest that these mothers' personal experiences—both with substance use as an adolescent and, for Molly, professional experience working with youth in a healthcare setting—shaped their awareness.

In contrast to Sharon and Molly, Heather and Rachel claimed to have low levels of awareness of adolescent substance use exploration prior to dealing with these behaviors in their own children. Both mothers connected their level of awareness of adolescent exploration and risk-taking behaviors to their own adolescent experiences abstaining from substance use. For example, when Heather considered the circumstances under which Harry might use substances, she said, "I thought maybe late high school, college… I don't know… It was not

something I ever did. I don't think I ever drank before I was legal and I certainly never did drugs." This comment suggests that Heather's own experiences as an adolescent had shaped her belief that her 14-year-old son was unlikely to engage in alcohol or cannabis use. This provides insight into why she felt so blindsided when Harry was indeed discovered doing these very things at this age. Like Heather, Rachel indicated that she abstained from substances as an adolescent. She shared, "I was pretty sheltered… I didn't really go out with friends and party. I spent a lot of my time with my boyfriend, and we did quiet things and whatnot. I really didn't get exposed to a lot of [substance use]." As with Heather, it was likely that Rachel's own adolescent experience may have shaped her beliefs about adolescent substance use exploration and the assumptions she carried for her sons' behavior.

Collectively, this evidence suggests that all four mothers sourced awareness of adolescent substance use behaviors from their personal experiences. Sharon and Molly reported the perspective that substance use exploration is a typical part of adolescence. In contrast, Heather and Rachel's personal histories of abstention seemed to have influenced their expectations for their sons.

Theme 2: Early Awareness Guides Action

Having anticipated adolescent substance exploration, Sharon and Molly reported proactive behaviors, including speaking to their sons about substance use and associated risks like impaired driving. Both indicated that they started these conversations with their children in late childhood and early adolescence. Sharon stated that she initiated conversations with her children about real-world events involving substance use, such as impaired driving incidents that had occurred in the community. Molly also described how she grounded her conversations about substance use with her sons in real world issues and events such as the opioid crisis.

Furthermore, Sharon and Molly both described establishing boundaries and expectations relating to substance use behavior with their children. They reported identifying situations that they considered reasonably safe versus those which they considered risky and unacceptable. Specifically, both communicated their belief that occasional alcohol use in social settings was of minimal risk, but neither parent wanted their children using cannabis. While Sharon told her sons that cannabis was a "hard pass," Molly described the boundaries for cannabis use as more porous:

> I guess we have sort of a loose policy in the sense that I expect that you're going to have a drink from time to time. That's just the way it goes! I want you to leave the house and have some fun and so that choice is going to be in front of you. I expect that you're not going to [use cannabis]. That is not compatible with being in this house [but] I want to know if you are so we can come up with some ideas around that.

This messaging, of expecting her sons not to use cannabis while not entirely shutting down the conversation, is something Molly emphasized as important to her communication approach with her children. Indeed, she described her perspective on parent-adolescent communication as follows, "I [recognize] that you can give them advice… and tell them your own expectations, but also that the communication has to be open because they are going to go against what you say." These quotes evidence Molly's desire to make her children feel comfortable approaching her, even if they violate a household expectation around substance use.

Additionally, as part of their communication about substance use with their sons, Sharon and Molly both described telling their children that they were available to help ensure their safety. Sharon described staying awake to ensure that she saw her sons arrive home safely or be available to pick up if needed. Similarly, Molly described positioning herself to be available to assist her sons with a ride, or a taxi, on a night out. Molly explained her desire to prioritize strategies that, "…are going to make it more comfortable, and more likely, that [they're] going to tell me that [they] need help." Molly emphasized the importance of these open communication channels as they were her primary method for monitoring her

sons' activities.

Sharon also reported a similar desire to monitor through direct communication. She explained that without her sons' honesty, she could not be prepared for the risks associated with their choices. While Sharon emphasized her desire to rely on the direct solicitation of information to monitor her sons' activities, she also reported other surveillance strategies. For instance, Sharon recounted how she had used a geo-tracking phone application to determine Simon's whereabouts while she was out of town with her husband. She also reported occasionally checking Simon's bags as he was leaving the house. In both of those situations, she reported discovering Simon acting dishonestly—attending a party and sneaking alcohol out of the house—without his parents' knowledge.

Taken together, this evidence suggests that Sharon and Molly both held high levels of awareness of adolescent substance use exploration and potential associated risks like IDB, and that this awareness influenced their choice to proactively engage in communication, policy setting, and monitoring. They both reported having open conversations with their sons about substances, including alcohol and cannabis, and related risks from the time their children were young. Moreover, they established expectations around their sons' substance use behavior, highlighted their availability to assist their sons in getting home safely, and monitored their sons' activities to ensure safety and compliance.

Theme 3: Reacting to Change in Awareness

As previously discussed, Heather and Rachel both encountered the challenge of discovering that their eldest sons were using substances in early adolescence. However, whereas Heather had made this discovery just weeks before the first interview, Rachel made this discovery almost eight years earlier. While these mothers shared in this challenging experience, their reactions to the situations differed significantly.

Heather explained that this discovery made her feel naïve and unprepared. As her awareness shifted, she initiated immediate action, expressing the need to make up for lost ground. In response to Harry's drinking, she and her husband discussed the negative impacts of substance use, and other risk-associated health behaviors, with Harry. They soon established strict rules: "there's no drinking, there's no smoking, there's no vaping, there's no drugs, and… no sex." They also told Harry what he could expect if he were caught doing these things, including grounding and the loss of privacy.

Heather reported active monitoring of Harry's activities to ensure his compliance with these rules. While she reported attempting to directly solicit information about his activities through conversation, Heather employed a variety of other surveillance strategies. For instance, after he was caught using cannabis, Heather reported looking through Harry's room and checking his bags. She also confiscated his phone and used it to monitor his conversations and social media accounts. Heather described what she saw on Harry's social media accounts as intensifying her anger and frustration:

> It's kids sitting in their room smoking pot and taking pictures and putting it on Snapchat... I had to turn it off… I couldn't believe the number of kids that were doing it and just sitting in their room. Do all these parents know what's going on?

For his substance use, Harry was grounded, which served as both a punishment and a way to actively constrain his opportunities for substance use. These methods constitute different monitoring strategies which Heather implemented to monitor Harry's compliance with family policies.

Heather's approach reflected her intense fear of her son developing substance dependence. Despite causing significant family strife and Harry viewing her as "the strictest mom in the world," Heather would not compromise on this approach. She said:

> I'd be so much more calm if we were past this but we're just not past this. How do we know this isn't the start of going down a bad road and not a phase that I went through when I was 14, 15, and boy did I scrape my life around! That's the thing, it's like, what if it's pot today

> and next week it's something stronger? That's my fear.

Examination of Heather's response to Harry's alcohol and cannabis use offers insight into the path between awareness and action. Heather, supported by her husband, felt motivated and capable of responding to her change in awareness. She did so with actions like communication, establishment of family policies, and monitoring. Yet, the sudden nature of this shift caused her significant distress. Her intense monitoring and firm boundaries were driven by fears of escalation from occasional to chronic substance use. Despite family tension, with Harry viewing her as overly strict, Heather remained stalwart in this approach.

Theme 4: Barriers Between Awareness and Action

When describing her reaction to her eldest son Ryan's early substance use, Rachel shared that she did not engage in the actions of communication, policy setting, or monitoring. Instead, Rachel described herself as retreating from the problem. She connected this to her experience with depression:

> I was diagnosed with depression after the kids… I never really got a handle on it until Riley was about 6. So that was like 8 years ago now. That was around the time that Ryan started having his biggest problems as well. I tend to look back at that time and wonder how much of an effect that my depression and my tendency to kind of retreat from everything… affected how things went.

Rachel's depression made it difficult for her to be available to her sons. Rachel was very critical of herself regarding this and explained that her tendency to baby Ryan, even in his emerging adulthood, is the by-product of her guilt. She explained:

> With Ryan, I struggle not to jump in and fix everything or try to make everything better because he's had such a hard time. I know that a lot of that is his doing but I'm still thinking well if I had done something different then – [begins to cry].

Here, Rachel's reflections reveal a deep and complicated blend of guilt and concern over her parenting and its impact on Ryan's development and struggles with substance use. She explained her tendency to overcompensate for perceived past shortcomings by trying to "fix everything" for Ryan, driven by a painful awareness of his hardships and her own role in them.

Rachel also expanded on her concerns about Ryan by linking them to broader psychological theories, suggesting that Ryan's challenges may also be influenced by developmental arrests linked to trauma and early substance use. She shared:

> There are some theories out there that when a child, you know about the whole trauma theory with kids and how when there's been trauma sometimes the kids stop growing – or not physically growing – but maturing at the age of trauma? So, I've had some questions about that with him. Because he's really pretty immature… Part of that might be that I've done so much for him, being a stay-at-home mom and everything… But also, I don't know if you've heard of the theory about alcoholics and… if they start drinking at a young age they also have a similar type of thing happen to them that they don't mature?

These quotes lend insight into why Rachel, recognizing Ryan's struggles, found it difficult to find him responsible for his actions, including his history of impaired driving. This accounts for her sense of impartiality towards the matter of adolescent impaired driving, where she had explained, "I tend to be I think on the more understanding and forgiving side of impaired driving… family members of mine have been convicted of that. Like I said, I'm not impartial."

With the complexity of Ryan's situation, Rachel struggled to broach the subject of substance use with her family. She reported not discussing the issues of substance use or impaired driving with her other children. Despite expressing the notion that boundary setting and expectations regarding

substance use would be a good idea, Rachel felt uncomfortable and incapable to do so. The following quote offers some insight into why that may have been:

> I think that [having family policies on substance use is] a really good idea and that it's really important and that I wished I had set harder lines earlier. If I could do it all over again, I'd like to say I would do it differently, but knowing my personality I probably wouldn't.

In addition, Rachel lamented that other factors, including her sense of overwhelm with four children and a lack of support from her co-parent, had contributed to her approach towards adolescent substance use. She said:

> In an ideal world, and maybe if I had fewer children, and a different father of my children, then maybe those basic values and… instincts would have been communicated better. Unfortunately… in my family there's been a lot of 'let's see what we can get away with' type of stuff… it's kind of been like 'don't ask, don't tell.'

Thus, Rachel's case provides insight into the barriers that may block the path from awareness to action. Despite her awareness of adolescent substance use exploration, and potential consequences like IDB, Rachel felt incapable of acting in response to these threats because of her struggles with mental illness, family size, and lack of co-parental support. These factors appear to have contributed to a strong sense of guilt and shame.

Discussion

Insights From the Model of Parental Involvement

Adolescents are naturally exploratory and crave new experiences (Ciranka & van den Bos, 2021). Driven by this curiosity, it is common for adolescents to experiment with substances (Haines-Saah et al., 2019), sometimes beginning in the early teenage years (Leatherdale & Burkhalter, 2012). However, as seen in the cases of Heather and Rachel, many parents underestimate the likelihood of this common adolescent behavior (Nygaard & Grube, 2005). In this study, we connect maternal awareness to mothers' personal experiences with adolescent substance use and impaired driving. To our knowledge, this finding is novel as we could not find evidence explicitly linking parental substance use histories with their expectations of their adolescent children's substance use and IDB. Consequently, this suggests a need for further examination into the sources of parental awareness of adolescent substance use and IDB.

Consistent with Beck and Lockhart's (1992) model, we also observed connections between mothers' awareness and their communication efforts. Beck and Lockhart (1992) stipulated that a high degree of parental awareness of adolescent substance use behaviors was predictive of parent-child communication about substance use. They suggested that parental communication efforts can decrease the likelihood of adolescent substance misuse, whereas a lack of communication may, in turn, increase the likelihood of adolescent substance misuse and related risk behaviors. Evidence from three of the four cases aligns with Beck and Lockhart's (1992) model, as Sharon, Molly, and Heather all exhibited progression from awareness to action. For Sharon and Molly, early awareness of adolescent substance use and IDB corresponded to their proactive approach to communication, rule setting, and monitoring. For Heather, this transition occurred as a reaction to a sudden change in awareness following the discovery of Harry's drinking and cannabis use.

Beck and Lockhart (1992) also offer insight into the lack of movement between awareness and action observed in Rachel's case. They identified a pattern of denial in parents who, like Rachel, acknowledged their child's risk but lacked the skills or resources to establish and enforce family policies. The authors suggest, for these parents, denial may serve as a coping mechanism for feelings of helplessness. They also suggest that denial can reinforce inactivity. This pattern likely provides insight into Rachel's case.

Insights Into the Importance of Parental Tone

Across the four cases, each mother adopted a unique approach to their sons' substance use and the risk of

IDB. For instance, tone of communication was seen to differ across cases, with Sharon and Molly exemplifying more authoritative approaches and Heather a more authoritarian approach. This is important as research has acknowledged that the content and tone of parent-child conversations can affect their success. Chaplin et al. (2014) emphasize that parent-child discussions centered on substance use scenarios and learning experiences, as was characteristic of Sharon and Molly's communication strategies, are less stressful for adolescents than strict rule enforcement or criticism. They caution that an excessive focus on rules, as reported by Heather, may hinder open discussions and impede the transmission of helpful information from parents. Furthermore, Song et al. (2012) found that outcome differences exist between parental communication efforts characterized by yelling versus a more level-headed approach. They discovered that being 'yelled at' was as effective as receiving a 'talking to' in preventing the onset of drinking. However, once an adolescent began drinking, being 'yelled at' lost its effectiveness, while receiving a 'talking to' continued to be effective in preventing further drinking. This may shed insight into why Heather's communication with Harry, which she had described as a fight, did not seem to affect his substance use between May and October of 2019.

Similarly, parental approach to monitoring adolescents can also shape outcomes. Currently, evidence suggests that invasive monitoring strategies are associated with different outcomes for adolescents than less invasive strategies. Hawk et al. (2013) suggest that invasive monitoring strategies can be counterproductive to parents' desire to remain knowledgeable about their adolescent's whereabouts. They found that parental privacy invasion is associated with less parental knowledge of adolescent activities. They suggest that parental invasiveness may incentivize adolescent secrecy. This could suggest that the invasive strategies, such as checking possessions, phones, and the use of geo-tracking, as reported by Heather and Sharon, may be counterproductive to the goal of remaining aware of their children's activities.

In comparison, less invasive monitoring strategies that are more reliant on parental solicitation of information, as Molly reported, are associated with less secrecy over time (Keijsers & Laird, 2014). While it is seen in the literature that dishonesty typically increases over adolescence as a function of desire for autonomy (Dykstra et al., 2020), parental knowledge appears more likely to be preserved through less-invasive, less-controlling parenting strategies (Hawk et al., 2013). It is possible that Molly's use of autonomy-supportive strategies facilitated greater awareness of her sons' realities. Moreover, adolescents who report greater self-determination—a quality that Molly sought to integrate into her parenting when collaboratively planning a safe night out with her kids—report less autonomy frustration, greater perception of parental legitimacy, and less defiance (Van Petegem et al., 2019). Thus, we encourage parents to employ minimally intrusive monitoring methods where possible.

Nevertheless, we acknowledge that any form of monitoring is preferable to none. As reviewed, researchers have investigated outcomes for adolescents who are not monitored by their permissive parents and found that these adolescents are more likely to drink (Chen et al., 2008; Lauckner et al., 2020; Li et al., 2014; Song et al., 2012), drive under the influence of alcohol (Beck & Lockhart, 1992; Ginsburg et al., 2009; Haegerich et al., 2016; Lauckner et al., 2020; Li et al., 2014; Song et al., 2012; Tin et al., 2008), drive under the influence of drugs (Asbridge et al., 2015; Ginsburg et al., 2009), and engage in RWID (Vaca et al., 2016). This research may offer insight into Rachel's case, as she reported little monitoring but the presence of some of these behaviors in her family.

Insights Into Barriers to Parental Action

Rachel's case introduced several barriers which may have blocked the path from awareness to action, including depression, lack of co-parental support, and family size. Her experience of these barriers is consistent with existing research. In brief, the detrimental effects of depression on parenting have been established. Evidence indicates that mothers with depression communicate less effectively, are less responsive to their children, and have qualitatively

less positive relationships with their children (Lovejoy et al., 2000). Research has also documented that parents with less perceived co-parental support report more stress, and this stress can negatively impact parenting practices (Cooper et al., 2009; Fagan & Lee, 2014). Relatedly, mothers who report a lack of resources to meet parenting demands report greater stress and feeling of overwhelm (Cooper et al., 2009), which also relates to family size. Other research into family size has found that parental stress can increase with more children as parents' available time and energy is spread across more care dependents (Rodriguez-Jenkins & Marcenko, 2014; Taylor et al., 2007). However, no research to our knowledge has explored how these specific barriers influence parenting actions with respect to adolescent substance use and IDB, as well as adolescent outcomes with respect to these behaviors. We believe this to be an area for future investigation. Moreover, since Rachel presented the barriers she faced as intersecting, it would be wise for future research to examine interactions among these barriers on parenting actions and adolescent outcomes.

Practical Implications

We believe that this research may offer valuable insight for professionals, such as primary healthcare providers (e.g., family physicians), who can work with parents with the aim of reducing adolescent substance misuse and consequences like IDB. We echo previous assertions that healthcare professionals can encourage adaptive beliefs (e.g., awareness and acceptance) and monitoring behavior in parents to counter these challenges (Ginsburg et al., 2009). This is especially relevant for healthcare professionals working with families with pre-adolescent children who can raise the topic of adolescent substance use exploration and its potential consequences before its possible onset. These professionals can also emphasize the importance of fostering open, autonomy-promoting communication and monitoring strategies. As discussed, tone is important, as autonomy-thwarting, controlling parenting practices may inadvertently increase the likelihood of hazardous behaviors associated with substance use, such as IDB, as children are less inclined to rely on their parents and more inclined to be secretive and deceptive (Hawk et al., 2013; Van Petegem et al., 2019).

Similarly, we believe that these findings may be relevant to public health officials and advocacy organizations such as Mothers Against Drunk Driving (MADD) in that this study reinforces the importance of public awareness of adolescent substance use and IDB, and personal acceptance of the risk they pose to one's family and community. In addition to raising awareness and acceptance, informational campaigns can arm parents with adaptive, autonomy-supportive strategies to address these challenges, such as monitoring and policy enforcement.

Limitations and Future Directions

This study is limited by its reliance on participant interviews as the sole data source. Triangulation with adolescent reports or co-parent reports would have been valuable to enhance case strength and integrity. We suggest that future researchers collect data through a variety of channels (such as focus groups, observations, journal entries, etc.) to better triangulate beliefs and behaviors. Moreover, while we propose connections between participant beliefs and actions, our methodology prevents us from establishing causation. We hope that future research may further probe the connections between beliefs and actions.

Finally, we acknowledge that our participants represent a narrow subset of the global population: White mothers to adolescent sons living in an relatively affluent area of North America. We believe this to be theoretically valuable, as the issue of adolescent IDB is concentrated within more affluent, White communities and is more likely to involve male drivers. However, to ensure that our knowledge on this topic remains comprehensive and reflective of more diverse populations, we encourage further research both within and outside this population.

Conclusion

In this study, we examined the cases of four mothers as they discussed their perceptions of, and familial experiences with, adolescent substance use and IDB.

The consensually generated themes provide insight into the theoretical pathways proposed in Beck and Lockhart's (1992) model of parental involvement in adolescent drinking and driving. Drawing on this model, we examined sources of relevant beliefs and behaviors and considered how they may pertain to adolescent substance use and IDB outcomes. Moreover, through inductive analysis of within- and cross-case patterns, we also identified novel insights regarding the sources of maternal awareness of adolescent substance use and IDB, how mothers may react to changes in awareness, and how barriers can exist between awareness and action. We substantiated the resultant themes through case evidence and related them to theory and prior research. These findings may enrich future research on the topic of adolescent substance use and IDB through the identification of previously unidentified factors influencing parental beliefs and actions. Furthermore, these findings may impact future public health initiatives to address the issues of adolescent substance use and IDB via healthcare providers' direct communication with families and through public information campaigns by public health and advocacy organizations.

Acknowledgements

We would like to thank our participants for their time and earnestness. We also thank Dr. Lucy LeMare for her analytical assistance and scholastic insight.

Conflict of Interest

The authors declare that they have no competing interests.

CRediT Statement

Jessica Hunter: Conceptualization; Data Curation; Investigation; Formal Analysis; Methodology; Validation; Writing – Original Draft. **Maureen Hoskyn**: Methodology; Formal Analysis; Supervision; Writing-Reviewing and Editing.

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