

Parental Influence Over Teen Risk-taking

A review of the literature

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Executive Summary

Researchers suggest that parents are one of the most important influences on the risk behaviours that their children decide to engage in. Previously it was thought that the more vigilantly parents *monitored* their children's behaviours, the safer their children would be. However, it has recently been determined that parental *knowledge* is actually key to increasing influence and there are several key variables within parental control that can contribute to the amount of knowledge that they have about their children. Specifically, parents have the power to create positive familial environments where their children feel comfortable disclosing information about the risky decisions they are facing in their daily lives. In such environments, children are more apt to listen to their parents about the ways that they should best handle these decisions. In addition to interactions with their children, parents also influence their teens' behaviours through their own behaviours. Researchers have found that adolescents will mimic the safety behaviours that their parents demonstrate and that parental safety behaviours (or lack thereof) translate into the behaviours that children will demonstrate. This is true both for their behaviours as teens and for how they feel adults are supposed to behave. Parents need to be vigilant about "practising what they preach" to their children and programming pieces directed at parents need to emphasize this component.

Various programming efforts have attempted to target parents and educate them on how to best influence and encourage adaptive behaviours from their teens. This is especially true for programs focusing on adolescent risky driving behaviours, as teens have the highest inclination toward risky driving and experience the most crashes. An environmental scan of the current programs suggests that future efforts should work to involve parents through interactive presentations and persuasive messaging techniques that allow them to participate at their own pace and within their hectic schedules. Creating online resources and workshops could prove to

be a successful technique for educating and engaging parents, while creating high-energy presentations similar to the No Regrets Live program could be a potential vehicle for including hands-on involvement of parents. Additionally, social media techniques should be utilized within future programming efforts in order to expand reach to our target groups, who are increasingly moving away from traditional communication methodologies (e.g., television and print media).

Overall, parents have been shown to be one of the key influencing factors in the decisions that adolescents make around risky behaviours, especially risks while on the road. Programs need to incorporate new academic research that highlights the variables that parents need to take control of, and look to successful programs (such as the CHOP Teen Driver Source program) as examples for how to create an all-encompassing approach to educating and empowering parents.

Adolescence is a developmental period marked by increased health risk-taking and novelty seeking behaviours (Kelley, Schochet & Landry, 2004). This marked increase in risk-taking usually does not occur at any other point in the lifespan (Kelley, et al., 2004).

Adolescence is also marked by an increase in injury and mortality rates (SMARTRISK, 2009); in fact, mortality rates increase by 200% during this developmental period (Dahl, 2004). This rise in mortality has been related to adolescents' increased involvement in maladaptive health risk-taking behaviours, such as risky driving practices, substance use, violence and unsafe sexual behaviours (Steinberg, 2004). Maladaptive risk-taking, by definition, is pathogenic and dangerous, with little or no chance for secondary gain and refers to the risky behaviours that should be discouraged among most adolescents (Baumrind, 1987). Increased risk-taking has been called one of the greatest behavioural changes that occurs within adolescence (Kelley, et al., 2004); it is a time marked by increased novelty seeking, risk-taking and in turn injury and mortality. In fact, statistics on motor vehicle crashes, risky sexual behaviours, binge drinking and crime demonstrate that adolescents engage in more risk behaviours than any other age group, including children (Dahl, 2004; Steinberg, 2004). Accordingly, researchers have devoted much attention to this period of heightened risk-taking during adolescence (Dahl, 2004) and efforts to understand how other variables may influence adolescent risk engagement have been extensively examined.

The role of the parent¹ in the prevention of adolescent maladaptive risk-taking has been extensively examined (e.g., Boyer, 2006; Soenens, Vansteenkiste, Luyckx & Goossens, 2006; Stattin & Kerr, 2000; Fletcher, Steinberg, & Williams-Wheeler, 2004; Dishion & McMahon 1998). Various parenting variables have received a great deal of attention (Soenens et al., 2006),

¹ It is important to note that the descriptive term "parent"/"parents" has been used throughout the document for clarity, but that this term can refer to any important adult figure in an adolescents life (e.g., legal guardian, grandparent, older sibling).

in part due to the fact that parenting strategies are malleable, and can serve as targets for intervention efforts and programming pieces (Dishion & McMahon, 1998). Parents are key role models for adolescents to look to regarding which behaviours are acceptable and which are not. Parents are one of the main guiding influences over which risks adolescents feel safe engaging in and how often they will do so. Parents help to shape the way that adolescents interpret the world and the way that they act within it. This parental influence can occur in a variety of manners, but generally parents may offer guidance, advice and set examples around acceptable risk-taking behaviours (Boyer, 2006; Dishion and McMahon, 1998; Kerr and Stattin, 2000; Pettit et al., 1999; Stattin and Kerr, 2000; Willoughby and Hamza, 2011). This document will serve to review and explain the most important manners in which parents influence and guide their children's risk-taking behaviours; will review an environmental scan conducted on the most common programs working with parents around influencing their children; and finally will present a summary of what the literature and programming pieces have shown about working with parents to influence adolescent risk-taking, and offer some recommendations for what to highlight in future surveys and programming efforts.

It is important to note that the beginning of this literature review concentrates on adolescent risk-taking in general, but that the environmental scan of programming efforts has been concentrated on adolescent risky driving behaviours. This literature review has been designed this way to first educate the reader on general risks and then to narrow the focus to one of the most common adolescent risk behaviours. Throughout the research section of the document, each section ends with a list of potential areas and questions that would be important to include in future survey efforts. In the concluding section, remarks have been made about future programming efforts for involving parents in teaching adolescents to be safe behind the

wheel, based on what is known about the influence of parents on risk-taking in general and what other programming efforts have attempted to do.

Previous research

Parental monitoring & parental knowledge

Previous researchers have demonstrated that parental monitoring is an important protective factor against adolescent participation in maladaptive risk-taking behaviours. Parental monitoring refers to parental patterns of behaviours that involve attending to and tracking children's activities, peers, beliefs and whereabouts (Dishion & McMahon, 1998). It has been found that greater parental monitoring relates to less maladaptive behaviours among adolescents (Barnes, Reifman, Farrell & Dintcheff, 2000; Mott, Crowe, Richardson & Flay, 1999; Patterson & Stouthamer-Loeber, 1984; Pettit, Bates, Dodge & Meece, 1999). Additionally, highly monitored youth have been found to demonstrate more adaptive patterns of development, such as having higher academic achievement, than do poorly monitored youth (White & Kaufman, 1997). However, recent research has focused on reconceptualizing what behaviours and familial patterns parental monitoring actually encompasses (Stattin & Kerr, 2000; Kerr & Stattin, 2000). Such recent studies suggest that parental monitoring, as conceptualized as parental vigilance over adolescent behaviours, may not be a significant predictor of outcome adolescent risk-taking. In fact, various other parenting strategies and family dynamics have been found to be more effective in reducing maladaptive risk behaviours among adolescents.

In such recent efforts, researchers have questioned the previous operationalization of monitoring as the extent to which parents were *knowledgeable* about their teens' whereabouts, activities and peers (e.g., do you know how often your child wears their seatbelt), rather than active monitoring efforts by parents (e.g., do you actively solicit information from your child about their driving behaviours) (Stattin & Kerr, 2000). Researchers have suggested that the

problem with such a definition is that it does not determine the manner in which the parents *became* knowledgeable and thus, active parental monitoring cannot be identified as the best parenting practice to decrease maladaptive adolescent risk behaviours without the definition of such a parent behaviour actually referring to a measurement of active monitoring efforts as they relate to outcome risk-taking (Stattin & Kerr, 2000). The previous definition of parental monitoring does not provide information about the manner in which parents came to be knowledgeable, but instead simply that knowledge is an important predictor of teen risk-taking. This definition of parental monitoring has been the predominant method of assessing parental predictors of teen risk-taking behaviours in research before 2000, which meant that such previous work actually measured passive parental knowledge (i.e., that parents with knowledge had teens who engaged in the least amount of risks), instead of how active parental *efforts* to monitor related to such knowledge and outcome risk behaviours. Such previously employed methodology, in turn, presented a confound between the idea of parental monitoring and parental knowledge. As such, it cannot be claimed that parental monitoring is a predictor of less teen risk-taking, but it can be noted that greater parental knowledge (which is what was actually being measured with this previous definition) relates to less maladaptive adolescent risk-taking.

In more recent studies, researchers have aimed to clarify the relationship between parental monitoring, knowledge and youth risk behaviours. The focus of this work was to utilize the correct definitions of both parental monitoring and knowledge and attempt to ascertain the relationships between both constructs and risk-taking. As such, parental monitoring is currently operationalized as active attempts by parents to obtain information regarding their children's behaviours, whereabouts and peers; whereas parental knowledge is operationalized as the extent

to which parents actually know about their children's behaviours, whereabouts and peers (Stattin & Kerr, 2000; Fletcher et al., 2004; Soenens et al., 2006).

The research that has been completed to re-situate parental variables as they relate to youth risk-taking behaviours has produced several interesting results. Consistent with predictions, researchers have discovered that parental knowledge, not monitoring, is the strongest predictor of outcome adolescent risk-taking behaviours (Fletcher et al. 2004; Stattin & Kerr, 2000; Willoughby & Hamza, 2011). Such research has demonstrated that parental monitoring does influence teen risk-taking, but that this is an indirect effect, through parental knowledge. In fact, some of the research has indicated that increased parental monitoring may relate to higher maladaptive risk behaviours among adolescents (Stattin & Kerr, 2000). Additionally, Fletcher and colleagues (2004) reanalyzed a longitudinal data set with the re-conceptualized definitions of parental monitoring and knowledge. These researchers aimed to provide information on the nature and direction of the relationship between the selected parental variables and adolescent risk-taking (i.e., does parental knowledge or monitoring predict adolescent risk-taking over time). It was found that parental knowledge was a predictor of adolescent risk-taking behaviours and that as expected, parental monitoring did not predict risk-taking over time. In a more recent study by Willoughby and Hamza (2011) a longitudinal dataset of almost 3,000 adolescents was analyzed to determine the potential associations between various parental variables, such as monitoring, knowledge, control, and warmth; and adolescent risk-taking. It was found that higher parental knowledge predicted lowered maladaptive adolescent risk-taking behaviours over time. Additionally, parental control and warmth both demonstrated indirect links to adolescent risk-taking.

When considering the recent discoveries regarding the predictive power of parental knowledge, previous research has provided several explanations as to why this parental variable may exert such influences on risk-taking trends among youth. Some researchers have suggested that parents who are more knowledgeable about their adolescents' activities, whereabouts and peers have more opportunities to influence behaviours and intervene when they see that maladaptive behaviours may be occurring (Dishion & McMahon 1998). However, this position has not been fully supported by all of the literature and thus other hypotheses regarding the importance of parental knowledge have been put forth.

Another hypothesis regarding the influence of parental knowledge is that such an association may exist through peer relationships. Peer involvement in risk-taking has been found to be one of the strongest predictors of teen risk-taking (see Boyer, 2006). However, it has been suggested that such an association is mediated by parental knowledge (Wood, Read, Mitchell & Band, 2004). For example, researchers have demonstrated that parent-child relationships can dictate the type of peer relationships an adolescent will form and the type of peers that adolescents feel comfortable and safe associating with (Ellis, Rogoff & Cramer, 1981). Laird and colleagues (2008) discovered that adolescents who perceived their parents as being knowledgeable were less likely to associate with maladaptive peers and less likely to be influenced by such maladaptive peers.

Overall, parental monitoring is not the most effective parenting strategy when attempting to decrease and deter maladaptive risk behaviours among youth. However, greater parental knowledge has been found to be related to less maladaptive risk behaviours among teens, for a variety of reasons. As such, researchers have now turned to focus attention on parenting and familial practices that may aid in increasing parental knowledge. One variable of importance

that has been identified is adolescent disclosure. Program pieces focusing on the influence of parents on adolescent risk behaviours need to incorporate these new research findings into their activities and resources. Programmers should work to help parents understand that monitoring alone is not enough to keep their children safe and that they need to work on appropriate ways to increase how much they know about their teens, such as increasing their adolescents' disclosure rates, which will be discussed further below.

Adolescent disclosure

Researchers have identified that adolescent disclosure is a very important contributor to parental knowledge, even more so than active parental monitoring (Stattin & Kerr, 2000; Kerr & Stattin, 2000; Crouter & Head, 2002; Waizenhofer et al., 2004; Willoughby and Hamza, 2011). Adolescent disclosure refers to teens voluntarily disclosing information to their parents about their behaviours, whereabouts and friends, without their parents having to actively solicit the information. From a review of the literature on parental knowledge and adolescent disclosure, it appears that parents actually gain knowledge as a result of their adolescents' willingness to disclose information. The key question then becomes, how can parents influence their children's disclosure.

Research has suggested that parents do have an indirect impact on how much knowledge they have, through active practices that can encourage adolescents' willingness to disclose. A study by Fletcher and colleagues (2004) underscored the influence of parents on adolescent disclosure. These researchers found that parental variables such as warmth were directly related to increased adolescent disclosure and in turn increased parental knowledge. Willoughby and Hamza (2011) furthered the investigation of the influence of parents on adolescent disclosure and in turn adolescent risk-taking, through investigating the importance of several other parental

variables. It was found that there are three key parental variables that may help to foster a family environment where teens feel comfortable to disclose information and thus indirectly increase parental knowledge. The first parental variable is establishing parental control, which involves setting reasonable restrictions and rules for teens' activities and whereabouts (e.g., needing their parents' permission to stay out late on a weekday evening). This also includes establishing ramifications for breaking these rules (Fletcher et al., 2004). The second parental variable is promoting a warm relationship with their teen. Adolescents need to feel that disclosing to their parents is a safe and easy thing to do and must know that their parents will listen and respond with sensitivity when they decide to disclose (Willoughby & Hamza, 2011). The third parental variable is scheduling family fun activities, which refers to having regular family activities that teens will want to partake in. This has been found to provide positive environments where teens feel comfortable and safe to talk with their parents (Willoughby & Hamza, 2011). Overall, researchers have found that parents have control over key variables that can foster an environment where teens will feel comfortable to voluntarily disclose information to their parents and this increased adolescent disclosure leads to increased parental knowledge and influence, which has been found to be directly related to less maladaptive risk-taking behaviours among adolescents.

Overall, a review of the literature has suggested that parental variables such as warmth and control are significant predictors of adolescent disclosure. As discussed above, increased adolescent disclosure is a key contributor to parental knowledge and increased knowledge, in turn, has been related to less maladaptive risk-taking behaviours by adolescents. One of the most important aspects that should be kept in mind by parents and programmers is that in order to understand parental influence and knowledge, it is crucial to understand the active role that

adolescents have on these constructs. As such, programming pieces focusing on parental influence on youth risk behaviours should aim to teach parents the importance of encouraging their children to voluntarily disclose to them and ways that they can help create familial environments where youth feel comfortable and safe to talk to their parents openly about their whereabouts, peers and behaviours.

Parental behaviours

Researchers have also identified that adolescents have a tendency to model and mimic parental risk behaviours. Specifically, parental risk-taking behaviours and safety practices have been found to be key indicators of how teens will behave and how they intend to behave when they are adults (Morrongiello, Corbett & Bellissimo, 2008). Researchers have found evidence that there is an “intergenerational transmission of injury risk” (Morrongiello et al., 2008, pp. 502) and that families tend to have stable and similar rates of injuries from one generation to the next, with parents passing on their risk and safety behaviours to their children through modelling and possibly some genetic components (Bianchi & Summala, 2004; Morrongiello et al., 2008). It has been postulated that when parents do not practise the safety behaviours that they teach to their children they are actually teaching them that safety and the avoidance of maladaptive risk behaviours is only something that children should be concerned about (Morrongiello & Lasenby-Lessard, 2007). Additionally, when parents engage in the behaviours they teach their children not to do, it sends the message that safety is not as important as it really is. For example, if a parent continually tells their child that they cannot drive after drinking, but drives home after having a few drinks at a family party then the previous safety messaging may be negated in the child's eyes. Moreover, researchers have found that adolescents are very attentive to the safety practices that their parents employ and the amount of risk behaviours that they engage in (Ehrlich et al.,

2001). Additionally, it has been found that youth will sometimes attribute the noticed discrepancy between what their parents teach them and what their parents do as demonstrating that older people possess greater experience and skills and therefore do not need to be concerned about safety, which is untrue (Morrongiello et al., 2008). This attentiveness on behalf of adolescents translates into their behaviours and perceptions around which safety behaviours are important to follow. In fact, one of the best predictors of which safety and risk behaviours adolescents intend to engage in, is their perception of their parents' behaviours (Morrongiello et al., 2008).

Moreover, it has been found that it is common for parents to not practise the safety rules that they ask their children to follow (Morrongiello et al., 2008). Researchers have found that even parents who focus a great deal on educating their children about risk-taking and safety have a tendency to not practise these safety behaviours in front of their children. SMARTRISK's 2009 study with State Farm Canada concerning teen driving trends indicated that this was especially true around parental driving behaviours. Specifically, researchers in this study found that a great deal of youth said that they wouldn't let their friends drive them home after drinking, but that they would let their parents because they trusted them and their decisions. Additionally, results demonstrated that it was a common practice for youth to notice that parents/guardians did not practice the road safety behaviours they were teaching. In general, researchers have suggested parents, even safety conscious parents, do not commonly practise the behaviours that they preach to youth. Such parental behaviours teach adolescents that the safety behaviours they are being told to do are not as important as they really are. Parents need to be educated that they are models for their children not only through their words, but through their actions as well.

Overall, parental safety behaviours translate into youth safety behaviours in a number of ways. When parents do not practise what they preach around safety they are negating the importance of the messaging and demonstrating to their children that with age they can become less strict on the safety precautions that they take. Safety is not simply a concern for younger people and parents should work to be vigilant in both their teachings and behaviours, as their children are listening to and modelling their every move. As such, programming pieces should work to educate parents on the importance of having congruency between the safety and risk behaviours they teach to their children and the safety and risk behaviours they exhibit to their children. Additionally, parents need to understand that their children are watching their behaviours very closely and will model the behaviours that are shown to them. Parents not only show their children how youth should behave, but also how adults are supposed to behave. Programs focused on parents should work to educate them on how much influence their words *and* actions have on their children's current and future behaviours. An understanding of the intergenerational transmission of safety and risk behaviours is integral for programmers and parents.

Programming Efforts

There have been a great deal of programming efforts focusing on the role of the parent in preventing adolescent risk-taking behaviours. Most parental involvement programs have focused on one specific type of teen risk behaviour, namely adolescent driving trends. This is likely because teens are more inclined towards risky driving than any other age group and have the highest rates of crash involvement. It has been found that 16-year-olds are 18 times more likely to be involved in a crash as compared to 30-34-year-olds (Waylen & McKenna, 2007). Young people in the age range of 15-24 have the highest rate of crash involvement of all age groups (Arnett, Offer & Fine, 1996). The following sections will review the current parental

programming efforts around driving behaviours in both the United States and Canada and present some overall learnings and suggestions for future programs.

Programming Efforts in the United States of America

One of the most prominently cited programs in the U.S. is The Checkpoint Program, which was developed to provide parents with resources to help support them and to promote parental management of teen driving practices. Checkpoints involves sending parents multiple ‘persuasive communications’ intended to highlight important facts and motivate parents and adolescents to manage teen driving behaviours (Simons-Morton, Hartos & Leaf, 2002). One of the main aspects of Checkpoints is to increase parental monitoring of teen driving behaviour through the major tool of the program, namely a signed agreement between parents and their children setting certain rules and restrictions on teens’ driving and consequences for breaking of these rules. Parents and teens are asked to set up four checkpoints where the rules will be revised (and usually lightened) depending on how the teen has followed the rules and demonstrated safe driving behaviours.

There have been numerous evaluations completed of the Checkpoints program. In 2002, Simon-Morton, Hartos and Leaf found that the program successfully increased parental limits on teen driving, but whether or not these increased limits translated into safe driving behaviours and retention beyond the program was not commented on. The researchers concluded that the strength of the Checkpoints program resulted from the multiple messages sent out at specific intervals and the focus on a single tool that the parents and teen referred back to several times through the program (i.e., as the teen transitioned through the various checkpoints). In 2001, Hartos, Nissen and Simons-Morton conducted a pilot test on the acceptability of the Checkpoints parent-teen driving agreement and found that it was acceptable in most families and that it

worked to encourage parents to establish control and restrictions on their teens' driving behaviours. Overall, the evaluations conducted on the Checkpoints program have demonstrated that it does work to increase parental monitoring and management of teen driving behaviours, but it does not incorporate the recent research on adolescent disclosure through educating parents on the importance of adolescent disclosure or demonstrating practices to do so.

A more recent and extensive U.S.-based program concerning the influence and importance of parents on adolescent risk-taking behaviours is the Children's Hospital of Philadelphia's (CHOP) Teen Driver Source website and resources, which was developed in partnership with State Farm Insurance America. The programming work by CHOP focuses on teen drivers, their parents, researchers and policy makers, with websites and resources created for each group focusing on the importance of safe driving practices and manners to promote safety while driving (Children's Hospital of Philadelphia, 2011). The main focus of the CHOP program is to educate teens, parents, researchers and policy makers about their roles in keeping teens safe behind the wheel.

The parenting side to the program includes comprehensive recommendations for parents regarding how to effectively monitor, restrict and educate their teens concerning driving behaviours. In addition to this, the program also details effective parenting strategies such as the importance of increasing parental knowledge, working with teens to make them feel comfortable to disclose, being authoritative (i.e., parental control), and understanding how much teens model their parents' safety behaviours (Children's Hospital of Philadelphia, 2011). These additional parenting resources make the CHOP program far exceed the other programs that have been established to involve parents. Not only does this program work to have parents and teens establish rules to follow behind the wheel, but the programmers have also taken into

consideration academic research which has indicated that there are several other parental variables that do influence the risky behaviours adolescents take (e.g., increased adolescent disclosure, increased parental control, warmth of relationship). After reviewing the extensive literature on the influence of parents on adolescent risk-taking and the current programming efforts, one can come to the conclusion that the CHOP Teen Driver Source program is one of the best practices for involving and informing parents about how to influence the risky decisions that their children face.

Programming Efforts in Canada

There have not been a great deal of programming efforts established in Canada to involve parents in their children's risk-taking decisions. One recent Canadian program that attempts to increase parental management of teen driving behaviours is the I Promise Program (IPP). IPP involves parents and teens entering into a similar contract to the Checkpoints program.

Additionally, the program initially called for participants to affix decals to all shared vehicles, stating that there is a teen driver in the car and if any community members wished to comment on the teens' driving behaviour, they could call a toll free number. Any calls into the number were reported and mailed to the parent/owner of the vehicle. Unlike the programs reviewed in the U. S., there originally was a cost of \$49 (CAD) per year per family to be involved in the IPP, whereas now a contract can be downloaded for \$10 (Votta & MacKay, 2005).

Evaluations of the IPP demonstrated mixed results. In 2005, Votta and MacKay found that there were several problems with the community involvement aspect of the program, namely that participants were concerned about the validity of the reports that would come in and that the toll free number would not be used. In the program's first three years, only one report was filed; as such, this aspect of the program has been since removed. Additionally, there was a concern

with the cost of the program. It was found that when charged for the program there were only 175 participants in the first three years, but after the program was made free, roughly 200 contracts and decals were downloaded monthly. With regards to the content, researchers have found that families' recall of the contract items and program's key messages was poor (Votta & MacKay, 2005). Overall, it was found that there was only a short term initial impact of the program (Votta & MacKay, 2005). It was proposed that this was due to the lack of community involvement and advertising and these have been put forth as recommendations for future programming efforts (Votta & MacKay, 2005). Overall, the IPP has demonstrated some key learnings for future programming efforts, namely that there should be emphasis placed on community involvement, follow-up resources to increase the long-term retention of the messages and behaviours and participants should not be expected to pay to be involved.

Another programming effort focusing on both adolescents and their parents has been developed by BCAA Traffic Safety Foundation for parents in British Columbia. In addition to their numerous resources for youth, the Traffic Safety Foundation has researched and created an interactive parent programming piece that includes both driving tips for parents and workshops for parents of teen drivers (BCAA Traffic Safety Foundation, 2008). Some of the main focuses of the parental side to their programming include encouraging parents to take an active role in their teens' driving experiences and highlighting the influence that parents have over their teens' driving. An interesting and novel aspect to the Traffic Safety Foundation's programming is the offering of workshops to parents where they learn five key steps to help their teens be safer drivers: 1) Know the facts, 2) Assess your influence, 3) Get informed about the process, 4) Manage the process and 5) Use the tools. Additionally, these tools are increasingly being made available online for parents, which increases the reach of the program beyond the parents who

are available to come to workshops and allows parents to become involved at their own pace. In order to increase the reach of this program, it was designed with a bottom-up approach and includes local police forces and community champions in the workshop process. However, there have been problems with the uptake of this face-to-face aspect of BCAA's programming and they are currently working toward placing these programs online, in order to increase participation. Overall, in terms of Canadian programming, the BCAA Traffic Safety Foundation offers a good example of a potential vehicle for engaging and informing parents about the influence that they have and attempting to educate them in practices to play an active and positive role in their teens' driving behaviours. However, it should be noted that future programming efforts should concentrate on online programming and quick workshop-like presentations, instead of designing several face-to-face meetings that parents would have to sign up for and attend.

Common Programming/Prevention Efforts

One common program/policy effort between the United States and Canada is the graduated licensing system. In both countries, graduated driver licensing (GDL) is a policy that is in place for all new drivers, although conditions vary by province and state. Similar programs exist in Australia, New Zealand and some European countries. GDL places restrictions on all novice drivers for a certain amount of time. For example, in Ontario teens cannot get their licence until they are at least 16 years of age and must pass two tests in order to get fully licensed (MTO, 2010). Upon receiving their G1 licence, new drivers must hold their licence for at least 12 months before qualifying to take the road test in order to graduate to the next licence level (this 12 month period can be reduced if the driver takes a Ministry of Transportation-approved driver education course). During this initial 12 month period, there are several restrictions placed

on drivers for safety reasons, such as maintaining zero blood alcohol content (BAC), being accompanied by a fully licensed driver at all times and refraining from driving on major 400-level highways (MTO, 2010). Once a driver has graduated to the next level of licensing the restrictions are reduced, but some are still in place, such as maintaining a zero BAC (MTO, 2010). In addition to the general restrictions, teen drivers aged 19 and under have additional restrictions such as not carrying more than one passenger aged 19 and under between midnight and 5 am (MTO, 2010). Such graduated licensing programs have been based on research and best practice recommendations (MTO, 2010) and various evaluations have been completed on the impact and success of such licensing programs.

Overall, evaluations have found that GDL systems reduce motor vehicle crashes among novice and teen drivers and have been met with public support and adherence, for the most part (Foss & Goodwin, 2003; Shope & Molnar, 2003). In a recent review of the literature, Williams (2006) reports that GDL systems have been found to reduce the rate of crashes by 20-30%. Such reductions have been attributed to the limitations on passengers, night-time driving and longer periods in each of the levels of the licensing system (Lin & Fearn, 2003; Mastern & Hagge, 2004). However, there have been various issues brought up regarding the GDL system. One specific concern is that the restrictions placed on novice drivers result in less experience in the real-life distracting environments that they will be faced with upon completion of the licensing process (e.g., exposure to driving at night and with peer passengers) (Simons-Morton & Ouiment, 2006; Williams, 2006). Overall, evaluations have found that the GDL system is mainly successful at risk management for novice and teen drivers, but that it does not aim to change driver attitudes around risky driving behaviours and the lessons learned may not be applicable to the real-life situations that youth will encounter once obtaining a full licence (Williams, 2006).

However, evaluations have found that involving parents in the GDL messaging and process may extend the effects of the safety precautions required during the novice driving period (Williams, 2006). Such research is very important as it reinforces the notion that parents are key to keeping their children safe on the road and that the policies in place work best when parents become involved as well. Simons-Morton and Ouimet (2006) cite that parents are extremely important during the licensing procedure as they can provide their children with the information and exposure they need regarding the real-life driving situations that they will be encountering. Additionally, it has been found that a key aspect to producing long-term safe driving behaviours is continued control of driving environments by parents (e.g., parents continue to restrict when and where their children can drive), even after children are allowed to drive alone (Simons-Morton & Ouimet, 2006). What this demonstrates is that as previously mentioned, parental control of and involvement in youths' risky decisions is key to teaching them how to make the right choices when it comes to safety, thus reinforcing the need to teach parents the importance of parental control. Additionally, researchers have suggested that parents should use the current driving legislation to help support the rules and regulations they ask their children to abide by (Simons-Morton & Ouimet, 2006). The CHOP program incorporates this idea into their parent programming piece as well, suggesting that parents "let the law back [them] up" (Children's Hospital of Philadelphia, 2011) as they may be met with less resistance if they let their children know that the rules they're putting in place are not only what the parents feel they should be doing, but are also the law (Children's Hospital of Philadelphia, 2011).

Overall, the GDL system is an effective programming and policy initiative to keep youth safe during their novice driving period, has been found to reduce crash rates and has been met with public support. However, evaluations have revealed that the lessons learned during the

novice driving period may not transcend beyond the GDL period. It has been found that parents are key to extending the effects of GDL and should use the policies in place to support their own rules and restrictions for their children.

Overall Lessons from Current Programming Efforts

Both Canada and the United States have clearly recognized the need for programs to target youth risk and safety behaviours, especially behind the wheel. Evaluations have revealed that parental involvement is key to the success of program messages. As such, programming pieces like the Checkpoints and IPP work to get parents and their children communicating about what behaviours are acceptable behind the wheel and entering into agreements about what driving situations teens are allowed to engage in at certain points during their novice driving period. The CHOP Teen Drive Source and BCAA Traffic Safety Foundation programs present two of the most all encompassing programming efforts to teach parents how to influence their children to stay safe while driving. The CHOP program incorporates the framework of increasing adolescent disclosure through variables that parents have control over, such as parental control, warmth, creating fun/active family environments, and being a positive role model for youth. The BCAA Traffic Safety Foundation works to educate parents on these key areas of influence through interactive and creative workshops. However, they have had some problems with the uptake of their programming and future programs should acknowledge these. Additionally, research has found that programming efforts where simple booklets with information for parents about how to influence their children do not work as well as previously thought. Persuasive and interactive communications are needed to make the messages stick and help to educate parents in a positive manner (Simons-Morton & Ouiment, 2006). The Checkpoints, IPP, CHOP, and BCAA Traffic Safety Foundation programs have all incorporated

such messaging strategies into their programming and future programming efforts should attempt to do the same. Overall, programming efforts should look the CHOP program as a best practice for parental involvement in targeting youth risk-taking behaviours (especially driving practices) and similar programs are needed in Ontario.

Future Directions/Programming Efforts

Several key learnings for campaign development can be observed from the aforementioned research and programming findings. First, it is obvious that parents are key aspects to program pieces targeting teen risk behaviours. The amount of knowledge that a parent has about their teen's behaviours, whereabouts and peers is directly related to the amount of influence that they have on their teens. In general, research has found that the more knowledge a parent has, the less maladaptive risk behaviours their teen will engage in. As such, future programs need to educate parents on how to become "in the know" about what their teen is doing or thinking about doing. Such programming efforts could include resources teaching parents the importance of knowledge, videos showing parents the "do's" and "do not's" for increasing their knowledge or interactive messages sent out to parents asking them to think about how much they really know about their teen.

Second, research has demonstrated that adolescent disclosure is one of the top contributors to parental knowledge. When youth feel comfortable talking to their parents, they're going to disclose more candid information about the risks they take or which risk decisions they may be faced with. With this increased disclosure, parents will have more knowledge and will be able to make informed efforts to try to influence their children to make the most adaptive choices possible. In order to teach parents the importance of this, campaigns targeting parents should work to highlight ways that parents can encourage youth to feel comfortable disclosing to them and demonstrate to parents the effective ways that they can get

their children talking. Specifically, programs should focus on the three major parental variables that contribute to adolescent disclosure, namely parental control, parental warmth and creating a comfortable and fun family environment. A campaign that empowers parents to understand the ways to establish effective rules and ramifications for their teens' behaviour could prove extremely successful in increasing parental control techniques. For example, many parents have not been taught to allow the law to back up the rules they set and find themselves in arguments with their children about why they are attempting to control certain behaviours. Programs should work to show parents that they do not need to explain their rules if they are only asking their children to obey the law. Additionally, campaigns including videos demonstrating to parents the effective and ineffective ways to create warm and open relationships with their teens could prove to be successful materials in showing parents common communication mistakes and ways to remedy them. Finally, interactive contests, such as asking parents to send in the ways that they have fun as a family on a weekly basis could help to promote the family environments that have been found to lend to adolescent disclosure.

A very interesting finding was the fact that parents commonly do not practice the safety behaviours that they ask/require their children to follow. Further compounding this was the fact that youth are very aware of the behaviours that their parents exhibit and tend to internalize and mimic them. A campaign piece that educates and informs parents of the impact of their behaviours on both their teens' current *and* future safety behaviours could be successful in fostering the realization that parents must practise what they preach. For example, a fact sheet or online poster campaign could attempt to capture the idea that youth will display the behaviours that their parents are demonstrating to them and ask parents if they are portraying the person that they want their children to be. Additionally, simple reminders/pointers such as "risk takers beget

risk takers”, “they steal your clothes, why wouldn’t they steal your driving behaviours too?” or “you can’t just tell them to drive safe, you have to show them to drive safe” may prove effective in reminding parents about how much their children watch them.

A very important, and often overlooked finding, was that parents are also key to the success of GDL programming efforts. Specifically, parental involvement, even once youth have gone through the GDL process, produces long-term safety results in children. Programming should aim to educate parents on the fact that they need to become involved in the GDL process and that it is their job to make sure that their children continue to practise the rules and behaviours that they have been taught. Educational materials should be created for parents demonstrating to them that simply because their child’s training has stopped does not mean that their job as a parent is done. Parents need to be reminded that safety is a daily process and that they bear the brunt of the responsibility for ensuring that youth continue to drive safely even after they’ve been taught how to.

From the environmental scan of programs designed to involve parents in keeping teens safe behind the wheel, some of the most interesting programs found were the CHOP Teen Driver Source parental resources and the BCAA Traffic Safety Foundation programming focusing on educating parents on how they influence their children and how to become involved in the safety process. Both of these programming efforts have incorporated the above-outlined research into comprehensive and persuasive communications for parents to either watch, read and/or attend. Such delivery methods allow for parents to become involved at their own pace and in a manner they feel most comfortable (e.g., some parents will not feel comfortable attending a workshop but would like to download and read tip sheets at home). Additionally, these programs have included all aspects of parental influence (e.g., increasing adolescent disclosure techniques,

importance of portraying safety behaviours and need to be involved past the GDL period), instead of simply focusing on one aspect of parental influence. Future programming efforts should look to the CHOP and BCAA programs as examples of the various ways to involve and educate parents.

Finally, programming efforts should also attempt to use several communication techniques to engage and reach parents. Programmers need to remain cognizant of the fact that restriction of resource availability may limit the number of parents who can be reached through the campaign and may also limit the program pieces to parents who have access to the resources (e.g., only parents who have Internet access if it's just an online program). A wide breadth of resources for parents will ensure that they can be reached through many levels and mediums. These communication techniques should include downloadable resources (e.g., tip and fact sheets), videos of experts and scenarios for parents to watch, persuasive communications (e.g., catch phrases of important lessons, graphics and easy to read hard copy materials) and workshops for parents to enrol in (both in person and online courses). In addition to simply using online communications, the power of social media techniques, like blogging, need to be recognized and capitalized on when program tools are being developed. Research has demonstrated that campaigns utilizing such social media mediums can be very effective methods for delivering health communications to various audiences (Schein, Wilson & Keelen, 2010). Additionally, the use of social media has been found to be a powerful tool for incorporating health messages into people's daily lives and can be used to reach demographics that are leaning toward abandoning traditional communication techniques such as television and print campaigns. This finding is of particular interest for our target audience of parents and their teens and

suggests that our future programming efforts should attempt to utilize various social media techniques to engage and inform our participants.

Throughout this environmental scan and review of the literature, it has been noted that persuasive communications and engagement of parents is key to educating them on the influence that they have over their children's risk-taking behaviours. However, beyond the BCAA workshops there have been no programs focusing on educating parents through presentations and hands-on involvement. This presented a gap within the literature, as the best practice for involving and empowering parents has been shown to be through upbeat and engaging communications and presentations, rather than through workshops and in-person courses that they have to sign up and find time for. However, within the SMARTRISK programming framework there are numerous opportunities to engage parents in an interactive and educational environment that would also be less taxing on parents' busy schedules. Specifically, the SMARTRISK No Regrets Live programming offers a vehicle to create and run one-time presentations for parents where they could be educated on the influence that they have and how to best use this influence, all in a very engaging context. Currently, the No Regrets Live program operates as a one-hour presentation that combines fast-paced video clips of young people taking risks with a live presentation by an injury survivor who speaks candidly about how the injury has affected his or her life, while presenting positive choices that can be made to reduce the risk of injury. In order to engage parents in a similar environment, a parent version of the No Regrets Live program could be created with adult presenters who have experienced the loss of a child due to injury. Such a presentation could work to incorporate the learnings from our research and educate parents on the serious ramifications that could happen if they don't work to be positively involved in their children's risk decisions. SMARTRISK already has

several parents involved in our programs who are interested in serving as presenters if such a program were to be created. SMARTRISK's current framework presents an interesting opportunity for a redesign of specific programs to target parents in an interactive and meaningful manner.

Overall, there is no shortage of areas for exploration in the creation of campaigns around involving parents in their children's risk-taking behaviours, particularly the behaviours they engage in while behind the wheel or as a passenger. The research, statistics and previous programs outlined throughout this report speak for themselves regarding the necessity and possibilities for future campaigns to be developed and the important impact that a successful and well thought-out program could have on youths' lives and society as a whole.

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