"Who is driving you?" Development and an evaluation of an impulse control and road safety intervention

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Final report for the Road Safety Trust

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2 Executive Summary

2.1 Overview

Road traffic accidents are a leading cause of death and serious injury in adolescents and young adults (World Health Organization, 2018). A potential cause of these accidents is adolescent risk taking (Reyna and Farley, 2006). This is potentially explained by changes in the development of impulse control and strategies to respond to novel experiences (O'Brien and Gormley, 2013). The reasons for adolescents increased vulnerability on the road are complicated, but many of the collisions involving young people occur because they often make risky decisions based on poor impulse control (McKnight and McKnight, 2003).

Educating young people about the consequences of these risky behaviours may impact future decision-making processes however, education about consequences alone is not sufficient (O'Brien and Gormley, 2013). Giving young people the information to understand how their thoughts lead to their behaviours and the tools to change or moderate those behaviours may have a greater impact on the number of road traffic accidents seen on the roads. Improved impulse control may also improve other aspects of young people's lives.

To address risky driving, an intervention was developed to improve and reduce impulsivity in young people, framed around driving behaviours. The intervention "Who is driving you?" was designed with the aim of improving the intention for young people to make better decisions by planning how they could control their behaviour in difficult situations. It is hoped that by impacting intention, that behaviour can be changed, and road traffic incidents in young people can be reduced.

This report details the development of a novel road safety intervention, anchored in the literature, and developed using the Behaviour Change Wheel (Michie, Van Stralen, and West, 2011). This intervention was then delivered to three classes and subject to a pilot evaluation to understand if it could help young people make better decisions by planning how to control themselves in difficult situations, and to determine its acceptability and potential for wider roll out and implementation.

2.2 Literature review and Intervention development

Lack of impulse (self) control in teenagers' driving behaviour can have disastrous consequences. Speeding and drinking under the influence of alcohol are often factors leading to death or injuries in the teenage population worldwide. Learning how to use self-

control, will have benefits for safer driving and it also can lead to a whole array of safer decisions in other domains of teenager's activities - such as sexual behaviour, use of recreational drugs, and sensation seeking behaviour. The proposed brief intervention will adapt best practice, evidence-based methodologies that have achieved fast and effective behavioural change in teenagers. In some cases, behaviour change was still present four years after the intervention. The well-known and frequently used Behaviour Change Wheel (BCW) framework was used to conceptualise the intervention in three steps – 1. Understand the behaviour, 2. Identify intervention options and 3. Identify content and model delivery. The focus of the project development was to identify appropriate behavioural change techniques (BCT). Considering the time constraints (2 hours of class time), it was decided to select the most promising techniques that were embedded in Cognitive Behavioural (CBT), Acceptance and Commitment (ACT), Insight and Cognitive based brief therapies. The intervention designers identified 15 specific BCTs suitable for a class-room delivery environment, including generating insights, problem solving, re-framing, social rewards, mindfulness, and information about antecedents.

2.3 Evaluation Methods

The evaluation was carried out by Ulster University following the delivery of the intervention to three schools in Northern Ireland. The evaluation was conducted in three phases. Phase 1 used a pre and post questionnaire based on the Theory of Planned Behaviour (Fishbein and Ajzen, 1975) to determine if the intervention could help young people make better decisions by planning how to control themselves in difficult situations. Phase 2 comprised of a focus group with young people to understand their thoughts on the intervention, what they liked and disliked, and their take home messages from the content. Phase 3 was individual interviews with teachers present on the day and facilitators who delivered the intervention. Similarly phase 3 explored the strengths and weaknesses of the novel intervention "Who is driving you?", the perceptions of what the intervention aimed to deliver, and factors impacting wider implementation.

2.4 Evaluation Findings

2.4.1 Phase 1: The questionnaire

In young people, there was a significant, positive change in intention to make better decisions by planning how to control yourself in difficult situations. The primary target of the intervention was to influence intention (as many of the young people were not old enough to drive). Intention to make better decisions was positively associated with positive

attitudes, perceived behavioural control, and social norms but was not associated with self-efficacy. Results should be cautiously interpreted due to lower than expected recruitment.

2.4.2 Phases 2 and 3: Focus group with young people and interviews with teachers and facilitators

From the qualitative data it was evident the "Who is driving you?" intervention was received very positively by the young people in the focus group, teachers, and the facilitators. Evidence suggested the intervention may not only benefit young people in their thought processes and impulsivity in relation to driving behaviours but that as a further consequence, they potentially improve their decision-making abilities in general and enhance their life skills. Several enhancements were suggested including partnership with other organisations with interest in road safety (e.g. the Northern Ireland Fire and Rescue Service) and to increase the interactivity of the content to improve attention and engagement throughout.

2.5 Recommendations

Several key recommendations were made including minor adjustments to the intervention to increase interactivity using tasks or additional videos to illustrate learning outcomes. It is also recommended that the intervention use advances in digital technologies to poll participants during the session and monitor the impact of the intervention. Further it was advised the developers collaborate with other stakeholders who have an interest in road safety to include the intervention in a suite of road safety initiatives (e.g. the Fire Service). A fully powered evaluation is recommended on the second version of this novel intervention comprising of a randomised control trial with control group which accounts for the clustering in Schools, tests the findings in the full range of ages targeted (14 to 18 years), with a longer follow up period.

2.6 Conclusion

An effective and novel intervention, "Who is driving you?" was developed to improve intention to make better decisions in young people by helping them plan how to control themselves in difficult situations. The intervention was developed using theoretical literature on road safety and child development and using the Behaviour Change Wheel. The pilot evaluation showed intention changed pre and post intervention. The intervention was positively received by key stakeholders including teachers, pupils, and facilitators with some minor adjustments to the presentation ahead of a fully powered RCT evaluation

across multiple schools, the full range of ages from 14 to 18 years old, and with a long-term follow up.

3 Literature Review and Intervention Development

3.1 Background to the intervention

The World Health Organisation (2007) identified road injuries as the leading cause of death globally for 15 to 19-year olds, a very significant risk. For example, in Northern Ireland, in 2017/18 the 16 to 24-year age group had the highest proportion of 'killed and serious injuries' (KSI), accounting for 22% of the 811 recorded deaths (Police Service of Northern Ireland, 2018). This project was inspired by recent research (Paaver et al, 2013), that used brief intervention techniques which delivered not only fast, but also long-term (4 years) behavioural change on impulse decision making leading to more appropriate speed choices lowering significantly the risk of injuries and death of the cohort of teenagers. Young people's reasons increased vulnerability on the road are multiple, but many collisions involving young people occur because they often make risky decisions based on poor impulse control. These decisions are often seen as being caused by a lack of driving experience in combination with a developing prefrontal cortex, the seat of the executive functions. These functions, which control all higher cognitions namely, beside impulse control - emotion regulation, hazard perception and risk management, are not known as signature strengths of young drivers (McKnight and McKnight, 2003).

3.2 Design Methodology

As with any behavioural change intervention, a strong and proven methodology should be used to design the intervention and ensure it maximises its impact. Our intervention applies the Behavioural Change Wheel (BCW). The BCW has been selected as it is a synthesis of 19 frameworks of behavioural change (Michie, Van Stralen and West, 2011) and has been cited over 140 times in peer reviewed journals. It has been applied across a wide range of interventions that have impulsive behaviour elements. These include: smoking cessation, eating disorders and limiting the spread of infections in hospitals (for an overview see Michie, Atkins, and West, 2014). The BCW process has three steps in the design process, with several sub-steps included in each (see Figure 1).

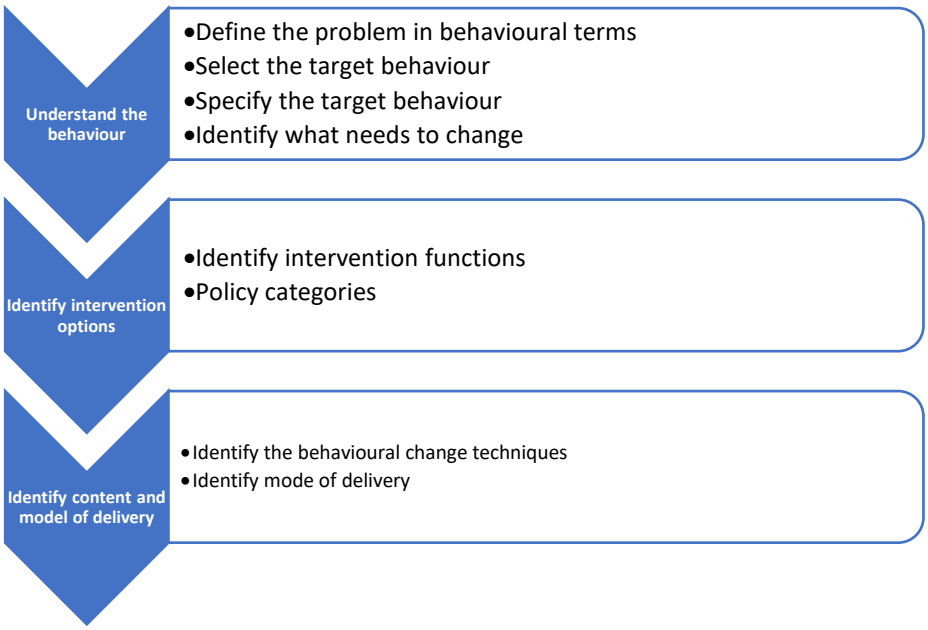

Figure 1: Outline of the Behaviour Change Wheel Intervention Design Process

3.2.1 Understanding the behaviour

A comprehensive literature review confirmed whilst decision-making is highly complex which involves numerous areas of the brain, the focus of the intervention should target the pre-frontal cortex and the limbic system. The pre-frontal cortex is an area of the brain associated with a group of functions referred to as executive functions. Executive functions include emotional control, planning and goal setting. The limbic system is associated with emotions and fast impulsive decisions. In a safe environment, decision making is seen as a top down process (Glendon, 2011), where the higher-order executive functions influence control of the more primitive limbic system. However, in emotionally taxing situations where there is anxiety or social pressure for example, the limbic functions can overrule the less developed executive functions in the frontal lobe and unconscious impulses take control over behaviour, initiating thoughtless decision processes. Therefore, the current thinking behind the poor decision-making often seen in adolescents is conceptualised in the dual-systems model of adolescent brain development. In this popular model (Casey, Jones and Somerville, 2011; Steinberg, 2008), the limbic system, which is associated with sensation-seeking, anxiety and reward, outstrips the development of the self-regulatory executive functions. This disparity between the two systems manifests itself in poor levels of impulse control. Much research has provided evidence executive functions can be fast-tracked enabling the facilitation of more appropriate conscious decision making (see below).

As the BCW model calls for the problem to be clearly defined in behavioural terms, the following statement was developed:

The behaviour to be changed is unsafe impulsive decision-making by 14 to 18-year olds, as a passenger or a driver.

3.2.2 Select and specify the target behaviour

The next stage of the method is to select the target behaviours. As already identified, impulsive decision-making is associated with situations of heightened anxiety. Often these situations occur as the result of a perceived threat or reward, for example the gaining of, or loss of, social status. Based on this premise, the behaviours identified for targeting were:

To increase the participant's ability and intention:

- To maintain control over their instinctive impulsive decision-making at times of anxiety
- To identify situations where they may be prone to make inappropriate impulsive decisions.

3.2.3 Identify what needs to change

In order to identify what needs to change, the peer reviewed research literature was again consulted in order to identify what approaches have been successfully used in the past to improve impulse control and the intention for young people to make better decisions by planning how they could control their behaviour in difficult situations. It is hoped that by impacting intention, that behaviour can be changed, and road traffic incidents in young people can be reduced in the target group. Within this review, a wide range of studies were identified relating to the use of mindfulness, and mindfulness based cognitive behavioural therapy (CBT)[1].

Mindfulness has been defined as an:

> "*Awareness that emerges through paying attention in a particular way: on purpose, in the present moment and non-judgmentally to the unfolding of experience moment by moment"* (Kabat-Zinn, 2003, p. 145).

Cognitive Behavioural Therapy (CBT) is a talking therapy that aims to help the individual to break down large problems into smaller parts.

[1] https://www.rcpsych.ac.uk/mentalhealthinformation/therapies/cognitivebehaviouraltherapy.aspx)

These parts are often linked to:

- A situation
- A thought
- An emotion
- A physical feeling
- An action

An important road safety related study was then identified, which clearly demonstrated a positive and sustained impact on safety related behaviours using a short CBT based intervention. This study completed by Paaver et al. (2013), evaluated an impulsive control intervention, delivered as part of the normal Estonian driver training process.

The class-based intervention covered four areas:

1. Impulsiveness as a personality feature.
2. Different types of impulsiveness.
3. Identification of potential situational factors that trigger impulsive behaviours.
4. Self-monitoring and self-regulation.

The teenagers for this training were drawn from 24 driving schools from Tallinn or Tartu in Estonia. The study allocated 517 participants to the control group and 1058 participants to the intervention group. Both groups were initially assessed on several questionnaire measures, including the Adaptive and Maladaptive Impulse Scale (AIMS) with no significant differences found between groups at baseline.

Whilst there were no significant improvements in collision rates or drink-driving offences there was a significant improvement in speed offences 12 months post-intervention. For speed offences, 6.4% of the control group were caught committing a speed offence compared to 3.3% for the intervention group. A Chi-square test showed this to be statistically significant (Chi-square = 8.0, p =.0005). The authors concluded:

> *"That a brief psychological intervention in driving schools targeting the acknowledgement of impulsivity is an efficient strategy for decreasing the likelihood of speed-related traffic violations among novice drivers during their first year in traffic. This result may have practical value for planning driver training." (Paaver et al., 2013)*

These significant effects were further supported by Eensoo, et al. (2018) who found that they could still be identified 4-years post-intervention, and there was also a significant reduction in passive collisions over the period compared to the control group.

These results would indicate that a short, well designed impulsivity intervention can have positive and sustained benefit.

Within the wider health literature further evidence was found for the use of mindfulness linked to a cognitive behavioural approach. Several studies relating to Attention Deficit Hyperactivity Disorder (ADHD), obesity, stress, and substance abuse were identified. All the behaviours mentioned would be regarded as having some element of impulsivity associated with them.

3.2.3.1 ADHD

Zylowska et al. (2007), found attention and cognitive inhibitions were improved with an eight week mindfulness course for adult ADHD sufferers. The mindfulness course was delivered in a group setting. However, it should be noted the sample was very small at 21 adults and eight adolescents. This finding was supported by a systematic review completed by Lee et al. (2017) that concluded:

> *"There were six studies concerning adults with ADHD. The results all showed significant improvement in attention in this age group. Moreover, three of the studies were randomized control trials, posing a strong evidence that the positive results were due to treatment effect. This result echoes with the previous systematic review by Mitchell et al. (2015) that mindfulness-based intervention is an effective treatment approach for ADHD in adulthood to improve attention deficits. For adolescents with ADHD, three studies concerning the effectiveness of mindfulness-based intervention were included in this review. Again, the findings of these three studies provided preliminary evidence that MBI has benefits for adolescents with ADHD." (p.39)*

3.2.3.2 Obesity

O'Reilly, et al. (2014) review of the literature of mindfulness-based interventions (MBI) for obesity related disorders found that out of the 21 interventions that passed their threshold for inclusion 18 reported positive effects. "The outcomes from the reviewed studies provide evidence to support the use of MBIs for obesity-related eating behaviours, including binge eating, emotional eating and external eating." (p 459).

3.2.3.3 Controlling Diabetes

In a randomised control trial (N=81) (Gregg, et al., 2007) a combination of mindfulness training and commitment therapy was successfully used to improve the management of type II diabetes. Commitment therapy aims to address negative emotions through acceptance, choices and action, and is closely aligned to CBT.

Both groups received an educational intervention but the group who also received the mindfulness training and commitment therapy were significantly more likely ($p<.05$) to self-

report better management and acceptance of their condition. They were also more likely to have glycated haemoglobin values within the target range compared to the control group, although this was not statistically significant.

3.2.3.4 Sexual health

Borawski et al., (2005) investigated the effectiveness of an abstinence till marriage intervention. This intervention is a five day class-based intervention using a CBT based approach in that it stressed the physical, emotional and economic benefits of abstinence till marriage. The authors concluded that the interventions did influence knowledge, beliefs, and intentions. It also reduced the prevalence of casual sex amongst more sexually experienced students. It should be noted they did highlight some concerns about a decrease in condom use, a subject not covered in the intervention.

3.2.3.5 Substance abuse

Chiesa and Serretti (2013) included 24 studies in their literature review that looked at substance abuse. They concluded that:

> *"Current evidence suggests that MBIs [Mindful based interventions] can reduce the consumption of several substances including alcohol, cocaine, amphetamines, marijuana, cigarettes and opiates to a significantly greater extent than wait-list controls, non-specific educational support groups, and some specific control groups." (p.492)*

3.2.3.6 Stress

Findings relating to stress may be of relevance to our proposed intervention as stress is a form of anxiety and, as highlighted earlier in this paper, there is a strong relationship between impulsiveness and anxiety. Erbe and Lohrmann (2015) literature review into the use of mindfulness-based school health programmes that targeted stress concludes that:

> *"Results from the identified studies appear to be promising for MM [mindfulness meditation] to reduce stress and positively affect well-being amongst adolescents." (p.15)*

Whilst it should be noted the authors highlighted a few limitations in the studies they had reviewed, namely small sample size and lack of randomised control trials (RCT), the review did contain two meta-analyses and one RCT.

3.2.3.7 Summary of findings

There is support for a class-based mindfulness / CBT intervention which would have a positive influence on impulsive related decisions in a road safety setting. This approach should improve the intention for young people to make better decisions by planning how they could control their behaviour in difficult situations. It is hoped that by impacting intention, that behaviour can be changed, and road traffic incidents in young people can be reduced.

3.2.4 Theoretical Domain Framework

Within the BCW model an option is given to apply the Theoretical Domain Framework (Cane et al., 2012). This framework is shown in Table 1 and was used as a way of conceptualising the key issues needed to be considered when developing an impulse control intervention which aimed to improve the intention for young people to make better decisions by planning how they could control their behaviour in difficult situations.

Table 1: Theoretical Domain Framework applied to the development of an impulse control intervention

Domain	Working hypotheses
Knowledge	The participants have no or little knowledge of: • How the brain responds to anxiety. • What the brain may consider to be a threat (loss of social status, etc.). • How the brain makes impulsive decisions. • How impulsive decision-making can impact on safety-related decisions. • Situations where they are more prone to make poor impulsive decisions. • The role maturity has on impulse control. • Strategies to reduce inappropriate impulsive decision-making.
Skills	The participants may have limited skills: • To control impulsive decision-making. • Metacognitive skills. • To implement coping strategies.

Memory, attention and decision process	May not: • Recognise when they are acting impulsively. • Recognise times and situations where they may be more prone to impulsive decision-making. • Recognise when others are acting impulsively.
Beliefs about capabilities	May: • Not feel they are able to choose a safe course of action, for example, in peer settings. • Overestimate their ability to control their emotions • Underestimate their ability to deal with fatigue, alcohol, drugs, etc. • Overestimate ability of: themselves, others and the vehicle.
Optimism	May: • Lack confidence in their ability to alter their behaviour. • Feel rewarded in group settings for impulsive behaviour. • Not see the benefits of resisting an immediate reward for a safety benefit.
Beliefs and consequences	May: • Not foresee negative consequences. • Be fearful of losing group status or fear loss of immediate rewards. • See little benefit in controlling their impulses.
Intention	May have positive intentions to behave safely but be willing to behave unsafely in specific contexts.
Goals	May not have identified which safety goals need to be set and may not have a plan to achieve these goals.
Reinforcement	May lack incentive to behave differently.
Emotions	Could be concerned about what others will think of them if they are going against the group – this is likely to generate anxiety.
Environmental context	Peer group, purpose of journey, time of day, etc. The presence of alcohol and drugs.
Social influence	Peer group and peer acceptance.

To address the issues identified in the Theoretical Domain Framework a list of behavioural change techniques (BCTs) that have been used successfully were identified. Sullman (2017)

reviewed the use of BCTs across a wide range of health behaviours based upon Abraham and Michie (2008) taxonomy of 26 behavioural change techniques (BCT) and the BCTs in Table 2 were applied in the development of the intervention.

Table 2: Application of Sullman's review (2017) to the Who is Driving You? Intervention

Behavioural change technique BCT	**BCT Description**
1. Provide information about behaviour-health links.	General information about behavioural risk, for example, susceptibility to poor health outcomes or mortality risk in relation to the behaviour.
2. Provide information on consequences.	Information about the benefits and costs of action or inaction, focusing on what will happen if the person does or does not perform the behaviour.
3. Provide information on other approvals.	Information about what others think about the person's behaviour and whether others will approve or disapprove of any proposed behaviour change.
4. Prompt intention information.	Encouraging the person to decide to act or set a general goal, for example, to make a behavioural resolution such as "I will take more exercise next week"
5. Prompt barrier identification.	Identify barriers to performing the behaviour and plan ways of overcoming them.
6. Provide general encouragement.	Praising or rewarding the person for effort or performance without this being contingent on specified behaviours or standards of performance.
7. Provide instruction.	Telling the person how to perform a behaviour and/or preparatory behaviours.
8. Prompt specific goal setting.	Involves detailed planning of what the person will do, including a definition of the behaviour specifying frequency, intensity, or duration and specification of at least one context, that is, where, when, how, or with whom.

9. Teach to use prompts and cues.	Teach the person to identify environmental cues that can be used to remind them to perform a behaviour, including times of day or elements of contexts.
10. Prompt practise.	Prompt the person to rehearse and repeat the behaviour or preparatory behaviours
11. Plan social support or social change.	Prompting consideration of how others could change their behaviour to offer the person help or (instrumental) social support, including 'buddy' systems and/or providing social support.
12. Prompt self-talk.	Encourage use of self-instruction and self-encouragement (aloud or silently) to support action.
13. Stress management.	May involve a variety of specific techniques (e.g. progressive relaxation) that do not target the behaviour but seek to reduce anxiety and stress.

The original taxonomy of 26 BCT, used in Sullman review has now been expanded to 93 BCTs (Michie, et al. 2013), many of which would appear to be more detailed descriptions of the original 26. Fylan (2017), looked at the larger 93 BCT taxonomy and produced a set of guidelines for the use of BCT in road safety. Fylan suggests a few other BCTs that could be effective in road safety interventions. Table 3 contains the BCTs from Fylan's (2017) guideline used in the intervention design.

Table 3: Additional BCTs applied to the "Who is driving you?" intervention based on Fylan (2017).

Behavioural change technique BCT	**BCT Description**
1. Problem solving.	Analyse or prompt a person to analyse factors influencing the behaviour and generate or select strategies that include overcoming barriers and / or increasing facilitators.
2. Action planning.	Prompt the client to make a detailed plan of exactly how they will achieve the target behaviour, e.g. specifying where, when, for how long and how much.

3. Information about antecedents.	Provide information about things that trigger the behaviour. This can include events, situations, thoughts and feelings.
4. Anticipated regret.	Get the person to imagine how regretful they would feel if they perform the unwanted behaviour and something negative happens.
5. Incompatible beliefs.	Draw attention to discrepancies between current or past behaviour and self-image, in order to create discomfort.

The COM-B model, contained within the BCW, was then applied to the intervention. As this is an educational intervention some elements of the model were difficult to apply (Table 4).

Table 4: Application of the COM-B model to the "Who is driving you?" intervention

Capability	Opportunity	Motivation
To understand what impulsive decision-making is and why it occurs To understand how environmental context can impact on impulsive decision-making To have the skills to implement coping strategies To understand how impairment (alcohol, drugs and fatigue) impact on impulsive decision-making To have the skills to recognise impulsive decision-making in themselves and others	To have coping strategies that will help them to resist impulsive decision-making To be able to recognise when they need to control their impulses	To maintain personal safety To maintain safety of friends Avoiding feelings of regret To see impulse control as being a strength and sign of greater maturity Increased self-worth and self-esteem To avoid feeling of cognitive dissonance To identify how improved levels of impulse control can help them in other areas of their life

Have the skills to implement appropriate coping strategies		

3.2.5 Identify intervention options

All the interventions identified within our review that used a mindfulness/ CBT approach were group-based, which would suggest the social support offered in a group may be an important ingredient for the success. Therefore, it was decided we would develop a class-based intervention to improve intention to make better decisions by planning how to control themselves in difficult situations. The next step in the process was to synthesise the analyses completed to define the intervention aim together with a clear and measurable set of learning objectives.

Aim

To reduce inappropriate road safety related impulsive decision-making in the targeted age group

Learning objectives

To increase the students':

- Understanding of impulsive decision-making
- Understanding of why their age group is prone to impulsive decision-making
- Ability to recognise situations when they are likely to engage in unsafe impulsive decision-making
- Motivation to develop their ability to control impulsive decision-making
- Intention to make better decisions by planning how to control themselves in difficult situations
- Ability to draw on inner resources for assisting them to reduce impulsive decision-making.

3.2.6 Identify content and model of delivery

As already identified the model of delivery to be used is class-based intervention as this has been used successfully in the past.

3.3 Description of the "Who is driving you?" intervention

A description of the intervention is given using the TIDieR framework described by Hoffman et al (2014). The elements of the intervention are described in Table 5.

Table 5: Breakdown of the "Who is driving you?" intervention

Element of the intervention	Description of the intervention
Brief name	
1. Provide the name or a phrase that describes the intervention	The intervention is called "Who is driving you?". It is a road safety intervention designed to help young people make better decisions by planning how to control themselves in difficult situations
Why	
2. Describe any rationale, theory, or goal of the elements essential to the intervention	The intervention was developed using cognitive behavioural, acceptance and commitment, insight, and cognitive based brief therapies. 15 BCTs were incorporated into the design.
What	
3. Materials: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed. 4. Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities	The intervention was delivered via an interactive powerpoint presentation in which young people were asked to give their views and opinions regularly. Pen and paper was used for some activities to enhance the presentation. Two main elements were focussed on a) how decisions are made and b) how to make better decisions by planning how to control ourselves in difficult situations. Topics included decision making, impulse control, mindfulness, and application of this to analysing crash scenarios. One video was used to illustrate impulse control. Young people were encouraged to ask questions thoughout. More details can be found by contacting the developers via gary.doggett@extern.org
Who provided	
5. For each category of intervention provider (such as psychologist, nursing assistant), describe their expertise, background, and any specific training given	The intervention was delivered by two facilitators trained in the delivery of the intervention and was supervised by a teacher at the school.
How and where	
6. Describe the modes of delivery (such as face to face or by some other mechanism, such as internet or telephone) of the intervention and whether it was	Delivery was face to face in classroom groups in the school attended by the young people taking part. Class sizes varied.

provided individually or in a group **7.** Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features	
When and How Much	
8. Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity, or dose	The intervention was delivered once over a two hour period with a comfort break in between.
Tailoring	
9. If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when, and how	The intervention was not tailored to individual members of the group.
Modifications	
10. If the intervention was modified during the course, describe the changes (what, why, when, and how)	The intervention was not modified during the delivery
How well	
11. Planned: If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them 12. Actual: If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned	The intervention was delivered as intended to all three groups in the pilot evaluation. All elements were covered. This was assessed through observation of a researcher tasked with the evaluation process.

4 Intervention Evaluation

As described in Section 3, the intervention was independently developed by Ian Edwards and Dr Robert Isler with Gary Doggett. An independent evaluation was commissioned by Extern, and conducted by Dr Rhonda Burns, Professor Cherie Armour, and Dr Gillian Shorter. These researchers were not involved in the development of the intervention, nor the literature review which informed its development. Ethical approval to conduct this independent evaluation was granted by Ulster University (UREC) in May 2019 (Reference: REC.19.0027 - Evaluation of an impulsivity intervention: "who is driving you?").

4.1 Background information to inform the evaluation

4.1.1 Road traffic accidents and young people

Road traffic injuries have been identified as the leading cause of death globally in young adults aged 15 to 19 years (World Health Organization, 2018). In the European Union, estimates suggest more than 40,000 people were killed because of road traffic accidents with a further 1.7 million injured. As a result, the European Commission introduced measures to cut road death numbers by half by 2020 (European Commission, 2010) including seven strategic objectives. These are a) improved safety measures for vehicles, b) building safer infrastructure, c) boosting smart technology, d) better enforcement, e) establishing a road injuries target, f) a new focus on motorcyclists, and particularly related to this project g) strengthening education and training for road users. As such the development of a novel intervention and its preliminary evaluation for effectiveness is in line with priorities in Europe and for the Road Safety Trust.

Figures from the UK in 2017 show that across car and motorcycle drivers, under 24-year-olds are at considerable risk with males particularly vulnerable. There were 25,187 drivers aged 24 years or under involved in a road traffic accident in the UK, 15,538 of whom were young males (Department for Transport, 2018). Information gathered by the Police Service of Northern Ireland relating directly to road traffic injuries in Northern Ireland in 2017 show a similar pattern to that of the UK. Of all the casualties recorded in road traffic accidents, 52.8% were male, where these road traffic accidents included individuals killed or seriously injured, males make up 64.4% (Police Service of Northern Ireland, 2018).

In Northern Ireland, the 16 to 24-year-old age group had the highest proportion of those killed or seriously injured on our roads in 2017/18. This accounts for 22% of the 811 deaths recorded on NI roads (Police Service of Northern Ireland, 2018). The human cost of

accidents is incalculable, and the economic cost is enormous. The opportunities to reduce this need to be explored. Young people in Northern Ireland can apply for a provisional licence at 16 for mopeds and tractors, and at 17 for cars, motorcycles, and up to medium sized vehicles. As such, young people who are thinking about driving aged 14 to 18 years old, and males are a key target group for improving road safety and reducing accidents, injuries, and deaths on the road.

Risky driving and inattention or divided attention are some of the highest cited causes of road traffic collisions in Northern Ireland (Police Service Northern Ireland, 2018). Risky driving in young people can be explained by inexperience, impulsivity, and immaturity among other factors (Ivers et al., 2009; McCartt, Mayhew, Braitman, Ferguson, and Simpson, 2009). Inexperience can lead to mistakes in vehicle manoeuvres or recognising hazards both on and off the road. Immaturity may contribute to young drivers' engaging in behaviours they know to be risky (Hatfield and Fernandes, 2009) and impulsivity or lack of self-control may result in an inability to resist impulses to engage in risky behaviour (Hatfield, Williamson, Kehoe, and Prabhakharan, 2017; Paaver et al., 2013).

Adolescence covers the time between childhood and adulthood and sees rapid developmental change in physical, psychological and social domains (Ernst, Pine, and Hardin, 2005). It is a time of rapid development, when young people seem to be more at risk of a variety of negative behaviours and face many cognitive and social challenges on the road to adulthood. Several neurodevelopmental hypotheses have been associated with behavioural changes in adolescence and attempt to explain why young people engage in risky and impulsive behaviours such as an increase in prefrontal activity (Durston et al., 2006; Rubia et al., 2006). However, Casey, Jones and Hare (2008) argued these developmental changes in isolation are not sufficient to explain adolescent risk taking or impulsive behaviours. Rather, they suggest adolescence is a time of fluidity and that risk and impulsivity are governed by different neurological developments and are therefore distinct concepts in their cognitive development and developmental trajectories within individuals. They may however work in tandem to produce behavioural outcomes.

Adolescent populations have been shown to exhibit increased reckless driving behaviours (Chen, Baker, Braver and Li, 2000); a lack of on road driving experience compounded by neurodevelopmental changes in the pre-frontal cortex may impact hazard perception, emotion regulation, and impulse control behaviours and abilities (McKnight and McKnight, 2003). Reduction in impulse control in adolescence may be attributable to many factors however it is argued that in general, a reduction in the ability to control impulsiveness and sensation seeking is central to risky decision making.

Impulsivity has been linked closely to sensation seeking behaviours and defined as a propensity to respond rapidly in pursuit of reward without regard to potential negative outcomes. This has also been argued to be a core trait in the impulsive sensation seeking personality dimension (Burnett-Heyes et al., 2012). Indeed, Haque, Chin and Lim (2010) examined 120 motorcyclists in Asia on impulsive sensation seeking, aggression and risk-taking behaviours in relation to motorcycle rider behaviours. They found that all three behaviours occurred more frequently in those who had been involved in a previous crash.

An intervention which targets impulsive behaviour in young adults, based on the work of Paaver et al. (2013) appears to be a useful target to reduce risky driving behaviours in young people. The development of the "Who is driving you" intervention is driven by a belief that impulsivity in driving behaviours may increase risk and risky behaviours to young adults regarding their road safety behaviours. In order to understand if young people's attitudes and beliefs about their impulsive behaviours has changed as a result of the intervention a standardised measure must be utilised. This allows robust conclusions to be drawn about any changes observed.

A theory which has the potential to shape road safety interventions is the Theory of Planned Behaviour (Ajzen, 1985; 1991; Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). According to the Theory of Planned Behaviour participants' intentions and behaviour are a function of four factors: attitudes, subjective norms, self-efficacy, and perceived behavioural control. This is illustrated in Figure 2. The theory suggests the best way to target a given behaviour such as safe considered driving, is to measure behavioural intention, which in turn is influenced by attitudes, subjective norms, perceived behavioural control, and self-efficacy.

To change behaviour with this theory, it is important to identify the target for change. In this instance, based on discussions with the intervention developers, the target for change was agreed as young people making better decisions by planning how to control themselves in difficult situations. The overview slide presented during the intervention clearly states, "We are going to look at a) how we make decisions, and b) how to make better decisions by planning how to control ourselves in difficult situations". This statement was then used to construct a questionnaire based on the guidance from the theory developers (Ajzen and Fishbein, 1980; Ajzen, 1991; 1985; 2006). The use of the questionnaire allows those evaluating an intervention to identify the relative importance of the determinants of the target behaviour, and the intervention can be used pre- and post- test to determine preliminary effectiveness of the intervention.

Attitude refers to the participants' evaluation of the behaviour. The subjective norm refers to the perceived social pressure associated with the behaviour, perceived behavioural control refers to perceived ability to control the behaviour, self-efficacy refers to a person's belief about perceived ability to carry out the behaviour under investigation. Interventions can be targeted at these behavioural determinants, with changes in these psychological components expected to produce a change in intention and behaviour (Ajzen, 2006). A review of 185 studies demonstrated that the Theory of Planned Behaviour model accounts for 39% of variance in intentions and 27% of variance in behaviour (Armitage and Conner, 2001). The TPB has been successfully utilised in studies examining blood donation intention (Giles, Mcclenahan, Cairns, and Mallett, 2004), career self-efficacy (Giles and Rea, 1999), attitudes to speeding (Parker, Stradling, and Manstead, 1996) and breast feeding (Giles et al., 2007). It has also been shown to work well when used with children as young as 9 to 10 years when assessing tooth brushing behaviours (Davison, McLaughlin, and Giles, 2017).

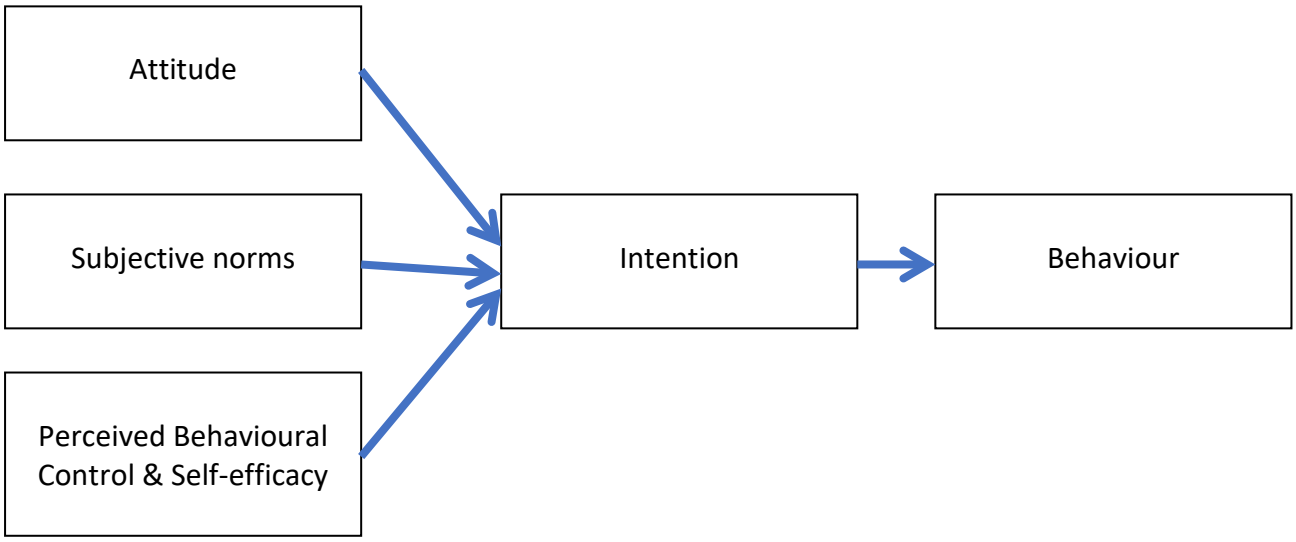

Figure 2: Diagram showing the relationships in the theory of planned behaviour

To compliment the quantitative methodology used in the Theory of Planned Behaviour, focus groups and interviews were used to enhance findings. As a novel intervention, these mixed methods allow teachers, facilitators, and young people to provide feedback on their experience of the intervention without necessarily restricting an individuals' answer to that of a standard questionnaire. Focus groups for young people allow the discussion of thoughts about the intervention in a similar format to the delivery of the intervention. Individual interviews with facilitators of the "Who is driving you?" intervention and teachers who were present during the delivery of the intervention enabled an assessment of the delivery and fit

of the intervention within the Northern Ireland curriculum. The focus groups and interviews transcripts were analysed using content analysis.

4.2 Evaluation methods and aims

The overall aim was to evaluate the externally generated intervention designed and delivered by Extern or their contractors. There were three distinct data collection phases of the research. Each of these has a specific aim to better understand the impact of this novel intervention on young people's intentions to make better decisions by planning how to control themselves in difficult situations. The three phases are visually summarised in Figure 3.

Phase 1: Questionnaire with adolescents/young adults

The aim of Phase 1 was to evaluate changes in attitudes, intention, perceived behavioural control, self-efficacy, and social norms in all students who consented to take part in the intervention evaluation. It was achieved using a questionnaire delivered pre- and post-intervention delivery and analysed quantitatively.

Phase 2: Focus Groups with adolescents/young adults

The aim of Phase 2 was to explore changes in the intentions to make better decisions by planning how to control themselves in difficult situations using short focus groups with young people. It allowed us to understand how and why young people feel their behaviour might change in relation to road safety and how they felt about the intervention.

Phase 3: Interviews with teachers and those who deliver the programme

The aim of Phase 3 was to discuss the implementation of this novel intervention in short interviews with those responsible for programme delivery and teachers to understand their views on acceptability and curriculum integration.

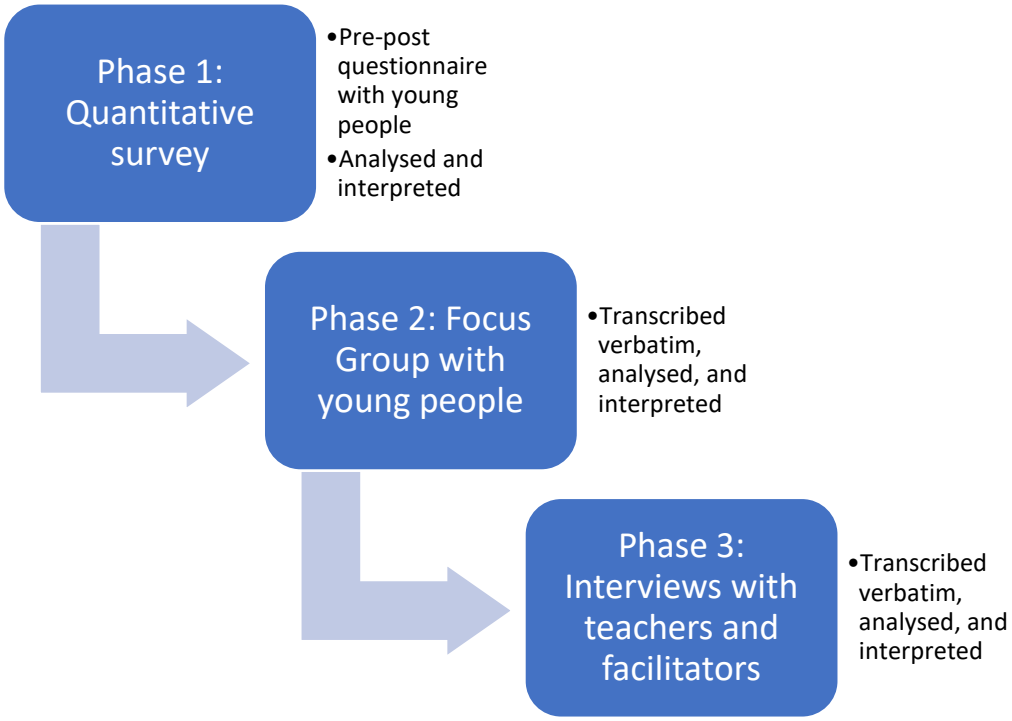

Figure 3: Illustration of the evaluation process for the "Who is driving you?" novel road safety intervention

4.2.1 Recruitment of Schools and the Delivery of the Intervention

Ethical approval of the methods to evaluate the intervention was granted in May 2019. Following this, post-primary schools were approached by Extern in May and June 2019 to host the intervention facilitators and allow the pilot of this novel road safety intervention. Three schools agreed to make classes available for the delivery of the intervention, representing a convenience sample of young people aged 15 and 17 years. The “Who is driving you?” intervention was delivered to around 147 young people across these three classes. All facilitators either working for or representing Extern were trained in the intervention delivery to ensure consistent delivery across locations. A teacher was present at all sessions. Schools were also informed that there would be an evaluation of this intervention, and separate (written) permission was requested to ensure schools were happy to host Ulster researchers for this purpose. All three schools provided this permission.

For Phases 1 and 2, schools were required to send out information and consent forms to the parents of the children who would be taking part in the intervention. Dr Burns sent out enough packs containing consent forms and information sheets for distribution to parents and guardians of the young people, with the aim to collect these in approximately one week after they had been sent to parents. Consent could be given by the parents for the

questionnaire, focus group, or neither. Young people were asked to assent to their participation. Young people had the option to withdraw from the evaluation on the day even if they had parental consent in line with good ethical practice.

Two of the Schools were in separate urban cities, one was in a rural town setting, all were in Northern Ireland. Names of the Schools are withheld in line with ethical procedures.

School 1 was in a city setting and provided the largest number of the respondents for the survey in the smallest class size (45 young people). The intervention was delivered in a classroom that the students regularly use. This session was conducted under the supervision of a teacher that the young people knew well, and there was a good rapport between the teacher and the students. Young people in this session were very engaged and interested in what was going on. They completed all the tasks and interacted well with the facilitators and researcher. This encouragement and engagement probably facilitated the higher recruitment levels for this school on both Phase 1 and Phase 2 elements of the evaluation. Students were all around 15 years old.

School 2 was in a rural, small town setting with young people aged 15 years. The intervention was delivered in a familiar classroom to the young people. The intervention took place under the supervision of a teacher that normally works with the lower age groups in the school as the teacher who had been involved with preparation for the intervention was on a school trip with other students. This was likely to have impacted the uptake of the students in the assessment of the intervention. Seven consent forms were returned, but five individuals who had provided consent were absent from the session for various reasons. The annual sports day was also being held on that day and many students were involved. There were several lively debates with the facilitators as the students challenged what they were being taught to better understand the rationale behind different aspects of the intervention. This was skilfully handled by the facilitator, who kept the intervention on track.

School 3 was also in a city setting, with young people aged 17 years. The intervention was delivered in a sixth form centre classroom, which the students were familiar with. However, the acoustics of the room provided a challenge to students, not all young people could hear the facilitators, and often asked for elements to be repeated. The facilitators moved around the room to engage the class and to help with the delivery. Several factors may have impacted the return of the parental consent forms, students were on various school trips over the previous week and the teacher who had been involved in the planning for this session was also out of the school on a field trip with another group of pupils therefore, the

teacher supervising the students was not aware of the information exchange or communications that had previously taken place. Given the difficulties with the room and the size of the group the facilitators made an excellent job in the circumstances, all the young people engaged and took part in the discussions. Of note, the teacher supervising was in the room during the intervention however, at the end of the delivery she dismissed the young people before the data collection was complete. The students were asked to complete another task at her request, and this impacted the completion of the post intervention questionnaires.

4.2.2 Phase 1: Questionnaire with adolescents/young adults

4.2.2.1 Methodology

Data and participants

There were 21 individuals who took part in the quantitative evaluation. This represents 14.3% of those to whom the intervention was delivered to. In the sample, around one fifth were male (n=4; 19.0%), the remainder identified as female (n=17; 81%). One school had 71.4% of participants (n=15), another school had 19% (n=4) and the final school had two participants (9.5%). Only one respondent had a full driving licence (4.8%), two held a provisional licence (9.5%), and the remainder had no licence (n=18; 85.7%). No participant held a moped/motorbike licence. The majority were aged 15 years (n=17; 81.0%), with four individuals aged 17 (19.0%).

Questionnaire

Basic demographic information was collected from participants of the questionnaire. Exact age in years was recorded, and gender was recorded as either Boy, Girl, Other or Prefer not to say. We also asked the driving status of each of the young people who took part. Young people were asked if they held a driving licence for a car or a moped/motorbike. This could be recorded as none, provisional, or full licence for either question.

A questionnaire was devised based on the theory of planned behaviour (Fishbein and Ajzen, 1975) and used the applied example from McClenaghan et al. (2006) and the use of the Theory of Planned Behaviour in young people by Davison et al (2012). There are five constructs in the Theory of Planned Behaviour; intention, attitude, subjective norms, perceived behavioural control and self-efficacy. This was chosen as we are not actually measuring risky driving behaviour but the planning of behaviour around driving.

Intention is a measure of the motivation a person has towards planning to control themselves. This was assessed by three items within the questionnaire. These included 'I intend to make better decisions by planning how to control myself in difficult situations', 'I will try to make better decisions by planning how to control myself in difficult situations' and 'I have decided to make better decisions by planning how to control myself in difficult situations'. In each case, a seven-point scale from strongly agree to strongly disagree was used.

Attitude represents the person's feelings and beliefs towards planning to control themselves. Attitude was assessed by one question 'Making better decisions by planning how to control myself in difficult situations would be…' but this had three variant responses. The responses were measured on seven-point scales from extremely harmful to extremely beneficial, extremely unpleasant to extremely pleasant, extremely bad to extremely good.

Subjective norm is a measure of the degree to which a person perceives how important people in their life approve of the young person planning to control themselves. This was assessed by three items within the questionnaire. These included 'Most people who are important to me think that I should make better decisions by planning how to control myself in difficult situations', 'Most people who are important to me would approve of me making better decisions by planning how to control myself in difficult situations' and 'Most people who are important to me would want me to make better decisions by planning how to control myself in difficult situations'. These items were assessed on seven-point scales from strongly agree to strongly disagree.

Self-efficacy is an assessment of the level of belief a person has in their confidence and capability to plan to control their behaviour. Self-efficacy was assessed by three items. These included ' I am confident that I can make better decisions by planning how to control myself in difficult situations', 'I believe I have the ability to make better decisions by planning how to control myself in difficult situations' and 'I feel capable of making better decisions by planning how to control myself in difficult situations'. These items were assessed on a seven-point scale from strongly disagree to strongly agree.

Perceived behavioural control is a measure of the extent to which a person believes that their decision to plan to control themselves is influenced by aspects beyond their control. This was assessed by three items within the questionnaire. These included 'Whether or not I make better decisions by planning how to control myself in difficult situations is entirely up to me', 'Making better decisions by planning how to control myself in difficult situations is beyond my control' and 'It is mainly my decision to make better decisions by planning how

to control myself in difficult situations'. These were assessed on a seven-point scale from strongly disagree to strongly agree.

The questionnaire was piloted in a School in England with around 22 children aged 14-15 years prior to use in the Northern Ireland evaluation. This was conducted on the 6th February 2019 by one of the facilitators. Some amendments were made to the questionnaire submitted for ethical approval including adding "please circle the correct answer for you" and formatting of the questionnaires. Some changes were made to the wording of the consent and assent forms to aid readability. Whilst we understand the questionnaire may still pose a challenge for young people, the researcher on site was prepared to answer any questions and explain any of the questions or responses.

Finally, in the post-questionnaire there were some open boxes for young people to state what they liked, what they did not like, and any other suggestions for improvement. The two questionnaires for administration pre and post intervention delivery are given in Section 7.1.

Analysis plan

Data was entered in SPSS. Frequencies were to be used to examine the answers to each question, and a summary score calculated for each of the elements of intention, attitude, subjective norms, perceived behavioural control and self-efficacy will be calculated. Changes in individual responses and each of the different factors were presented as means and standard deviations. Data was recoded such that a lower number is a more favourable outcome (e.g. strongly agree, or extremely easy are at the lowest end of the scale and strongly disagree or extremely difficult at the highest end of the scale). Power analysis (using G-Power V3.1.9.2) was conducted prior to data collection and suggested a sample size of 45 to be appropriate power (at 0.95 level, with effect size of 0.5, and alpha of 0.05). Post-hoc power, although only given here as a rough guide given known issues with post-hoc power being applied to findings suggests power with n=21 to be 0.71.

4.2.2.2 Findings

Table 6 illustrates the findings from the pre and post questionnaires on each of the different items of the scale and the subscale scores. For each of the subscale scores, intention was the only subscale showing a significant decrease in scores suggesting young people were more likely to strongly agree or agree with their intentions to make better decisions by planning how to control themselves in difficult situations. For attitude, subjective norms, perceived behavioural control, and self-efficacy, the change was in a positive direction as

hoped by the design of the intervention, however, none of these changes were significant. The largest change was in self-efficacy with a decrease in 2.5, but these and other changes were quite highly variable, and a clearer picture may have emerged with larger numbers of pupils up to and over the required sample size of 45.

Regarding specific questionnaire items, changes were all in the expected direction with the exception of two items "Most people who are important to me would approve of me making better decisions by planning how to control myself in difficult situations" and "Whether or not I make better decisions by planning how to control myself in difficult situations is entirely up to me" which had minor increases (i.e. towards strongly disagree). This may have been a consequence of the content of the intervention, particularly for the latter item, as issues around decision making and peer pressure when in groups are discussed as part of the intervention. The largest single change of one unit or greater was found in "Making better decisions by planning how to control myself in difficult situations would be (extremely easy- difficult)" and "I am confident that I can make better decisions by planning how to control myself in difficult situations", suggesting that young people felt empowered by their participation in the "Who is driving you?" intervention.

Correlation analyses were conducted to explore the relationships between intention and each of the theory of planned behaviour variables. The results of this analysis are summarised in Table 7. The largest correlation with intention to make better decisions by planning how to control themselves in difficult situations was attitude, followed by perceived behavioural control, and subjective norm. Self-efficacy was not significantly correlated with intention. The statistical analyses should be interpreted with caution given that the achieved sample was too small to draw anything conclusive from the data using inferential statistics/statistical significance.

The open text responses in the post-questionnaire (see Section 7.1.2) were summarised. Regarding the things that individuals liked from the "Who is driving you?" intervention, three individuals explicitly stated it was all good and four stated that they learned a lot from the session. There were also some specific comments about the content, one individual liked learning how to control themselves in situations. Whilst three individuals mentioned the session was interesting, one considered that the "helpful and interesting information" would be considered when they were driving in the future. Two individuals mentioned they liked the marshmallow video, another mentioned the learning outcome from that video about learning to wait or control impulses with the result of obtaining potentially better things. Two people liked the ability to make your own decisions, or simply the *"decision*

making" part. One commented that it taught young people how to relax. Finally, the last comment related to going into things into detail as what they liked about the intervention.

When asked about things that they did not like about the intervention, five stated there was nothing they disliked. Four individuals raised issues around too much writing, one simply stated "*all the writing"*, with the remainder talking about filling out forms, doing the questions, or the questionnaire. Five young people suggested that it was too long, one of these mentioned there was too much talking. Related to this, one person spoke of how many lessons it took as being an issue for them.

Finally, the last question asked if there were any further comments to add, and particularly on how the presentation could be improved. Ten stated there were no comments on how it could be improved, some stating that they enjoyed it, or that it was great. Of the other comments, two related to timing, one stating it "*could be shortened"* or *"just speed it up"*. Any other comments related to adding in more interactive components, or games to get the group more involved or add fun.

Item description and scale	n	Pre-Mean(SD)	Post-Mean(SD)	Mean difference (SD)	t-test (df) p value
Intention (strongly agree – strongly disagree)	20	5.3 (2.2)	4.1 (2.4)	1.2 (1.9)	**3.0 (19) 0.01***
I intend to make better decisions by planning how to control myself in difficult situations	20	1.9 (0.9)	1.4 (0.8)	0.5 (1.1)	1.9 (19) 0.07
I will try to make better decisions by planning how to control myself in difficult situations	20	1.8 (1.0)	1.5 (0.9)	0.3 (0.9)	1.5 (19) 0.16
I have decided to make better decisions by planning how to control myself in difficult situations	20	1.8 (0.9)	1.5 (0.8)	0.3 (0.8)	1.7 (19) 0.11
Attitude (responses below, lower number is a more positive response)	10	7.0 (5.2)	4.7 (2.5)	2.3 (5.6)	1.3 (9) 0.23
Making better decisions by planning how to control myself in difficult situations would be (extremely easy-difficult)	14	2.3 (1.5)	1.2 (0.6)	1.1 (1.6)	-2.5 (13) 0.03
Making better decisions by planning how to control myself in difficult situations would be (extremely positive/negative)	10	2.6 (1.9)	2.0 (1.3)	0.6 (2.3)	-0.8 (9) 0.43
Making better decisions by planning how to control myself in difficult situations would be (extremely good/bad)	13	2.0 (1.7)	1.5 (0.6)	0.5 (1.7)	-1.1 (12) 0.27
Subjective norms (strongly agree – strongly disagree)	20	8.6 (4.9)	7.1 (4.2)	1.6 (5.1)	1.4 (19) 0.18*
Most people who are important to me think that I should make better decisions by planning how to control myself in difficult situations	20	3.1 (2.2)	2.7 (2.0)	0.5 (1.9)	1.1 (19) 0.30
Most people who are important to me would approve of me making better decisions by planning how to control myself in difficult situations	20	2.3 (1.5)	2.4 (1.6)	-0.2 (2.0)	-0.3 (19) 0.74
Most people who are important to me would want me to make better decisions by planning how to control myself in difficult situations	20	3.2 (2.1)	2.4 (1.8)	0.8 (2.1)	1.7 (19) 0.11
Perceived behavioural control (strongly agree – strongly disagree)	20	13.8 (3.1)	12.9 (3.4)	0.9 (4.4)	0.9 (19) 0.40
Whether or not I make better decisions by planning how to control myself in difficult situations is entirely up to me	20	5.8 (1.7)	6.1 (1.5)	-0.3 (2.5)	-0.4 (19) 0.66
Making better decisions by planning how to control myself in difficult situations is beyond my control	20	3.9 (2.1)	3.6 (2.3)	0.4 (1.2)	1.3 (19) 0.20
It is mainly my choice to make better decisions by planning how to control myself in difficult situations (strongly disagree to strongly agree)	20	4.1 (2.4)	3.3 (2.5)	0.8 (3.7)	0.9 (19) 0.38
Self-efficacy (strongly agree to strongly disagree)	20	9.5 (6.6)	7.0 (5.8)	2.5 (8.3)	1.3 (19) 0.18
I am confident that I can make better decisions by planning how to control myself in difficult situations	20	3.5 (2.5)	2.3 (2.1)	1.2 (3.4)	1.5 (19) 0.14
I believe I have the ability to make better decisions by planning how to control myself in difficult situations	20	3.4 (2.3)	2.6 (2.2)	0.8 (2.9)	1.2 (19) 0.26
I feel capable of making better decisions by planning how to control myself in difficult situations	20	2.9 (2.3)	2.5 (2.0)	0.5 (3.0)	0.7 (19) 0.51

N= number; mean= average; SD= standard deviation a measure of variability; t-test compares the difference between two means; df=degrees of freedom for the t-test; p value estimates the significance of the statistic.

Table 6: Questionnaire items and subscale scores pre and post intervention for the evaluation of the "Who is driving you?" intervention

	Intention	Attitude	Subjective norm	Self-efficacy	Perceived behavioural control
Intention	1				
Attitude	0.8**	1			
Subjective norm	0.4*	0.7**	1		
Self-efficacy	0.2	0.5	0.6**	1	
Perceived behavioural control	0.6**	0.7**	0.4*	0.5*	1

Correlation significant at the*P < 0.05, **P < 0.01 levels.

Table 7: Correlations between each of the different theory of planned behaviour variables

4.2.3 Phases 2 and 3: Focus Groups with adolescents/young adults and Interviews with teachers and intervention facilitators

4.2.3.1 Methodology for Phase 2: Focus Groups with adolescents/young adults

Data and participants

Participants were formed of one school class for which 12 individuals provided consent and assent to participate. We aimed to have at least two focus groups with six individuals each in line with recommendations from Guest, Namey and McKenna (2016) and had pre-planned for two separate sessions over lunch break. However, whilst this would be theoretically possible to do, it was the preference of the young people to participate together. This request was therefore accommodated. The young people were very co-operative and engaged throughout. They self-arranged in a circle with their chairs and ensured each person had enough space to participate. Every person in the group spoke, although understandably one individual took a leadership role. Half of those present spoke more than five times, the remainder less than five times. The facilitator Dr Burns encouraged participation through smiling, nodding, and making eye contact with each young person, to ensure they all felt equally able to contribute. Where some statements were responded to by non-verbal gestures such as nodding, this was noted by the researcher on the transcripts. All those participating in the focus group were female.

We did seek to hold additional focus groups in other schools, however, only one individual in each of the classes volunteered to take part. When they became aware that they were the only participant they wished to join their friends over the lunch break and withdrew their assent. This too was accommodated. All of those participating in the focus group were provided with a lunch (including sandwich, snack, fruit, and a drink). On the consent form, the young person's preference was indicated, and this was brought to the session in advance. This was to ensure that young people were not hungry during the short focus groups as they were to be run during lunch time at each school.

Focus Group Schedule

The interview schedules for focus groups and interviews (Phases 2 and 3) mirror each other although there are small differences in language and tone. The interview schedule for the young people aimed to cover their perceptions of the intervention. Young people were asked what they considered take home messages to be and to discuss what they felt the intervention aimed to deliver. They were asked about elements that they liked and did not like. Issues of implementation and wider roll out were also discussed including if they would

recommend the course to others, and they were asked if they had any other information they would like to add. An interview schedule is provided in Appendix 2 (see Section 7.2).

Analysis

Themes and subthemes were generated which represent the views of those participating in the focus groups. The focus group was transcribed verbatim and analysed using content analysis using Vaismoradi et al. (2016). To allow for comparison and discussion of key aspects of the findings the results are discussed in line with Phase 3. Initial coding of themes relating to the findings were derived by Dr Burns and refined with Dr Shorter. Divergent views on themes were discussed and resolved by agreement.

4.2.3.2 Methodology for Phase 3: Interviews with those who deliver the programme (facilitators) and teachers

Data and participants

The teacher present during the delivery of the intervention was asked to participate in the interviews. Written consent was obtained on the day, and for two of the interviewees, it was conducted after the "Who is driving you?" intervention was delivered. The other teacher was interviewed via Skype at a time more convenient to them. One teacher was interviewed per school, and two of the teachers were female, one was male. For three facilitators of the intervention, individuals were interviewed by telephone at a mutually agreed time. Two of the facilitators were present at all sessions, the final facilitator was only present at School 3. All interviewees were aged over 18 years. All interviews were recorded and transcribed verbatim.

Interview schedule

The interview schedule for the teachers aimed to cover the teachers' perceptions of the intervention and how they felt their students reacted to the intervention. Teachers were asked what they considered the take home messages to be and to discuss what they felt the intervention aimed to deliver. Issues of implementation and wider roll out were also discussed including how this intervention related to other road safety initiatives, barriers or facilitators, or any other factors they considered important in either the delivery or wider use of the intervention. The interview was concluded with an option to add any other information to the record. An interview schedule is provided in Section 7.3.

Analysis

Themes and subthemes were generated which represented the views of those participating in the interviews. The interviews were transcribed verbatim and analysed using content analysis using guidelines from Vaismoradi et al. (2016). To allow for comparison and discussion of key aspects of the findings the results are discussed in line with Phase 2. Initial coding of themes relating to the findings were derived by Dr Burns and refined with Dr Shorter. Divergent views on themes were discussed and resolved by agreement.

4.2.4 Findings

Themes and subthemes were identified by the researchers in the analysis of data collected during phases two and three. These themes and subthemes are summarised in Figure 4. Each of the themes and subthemes will be discussed and evidenced below with the findings merged between the phases to highlight similarities and differences by the different groups.

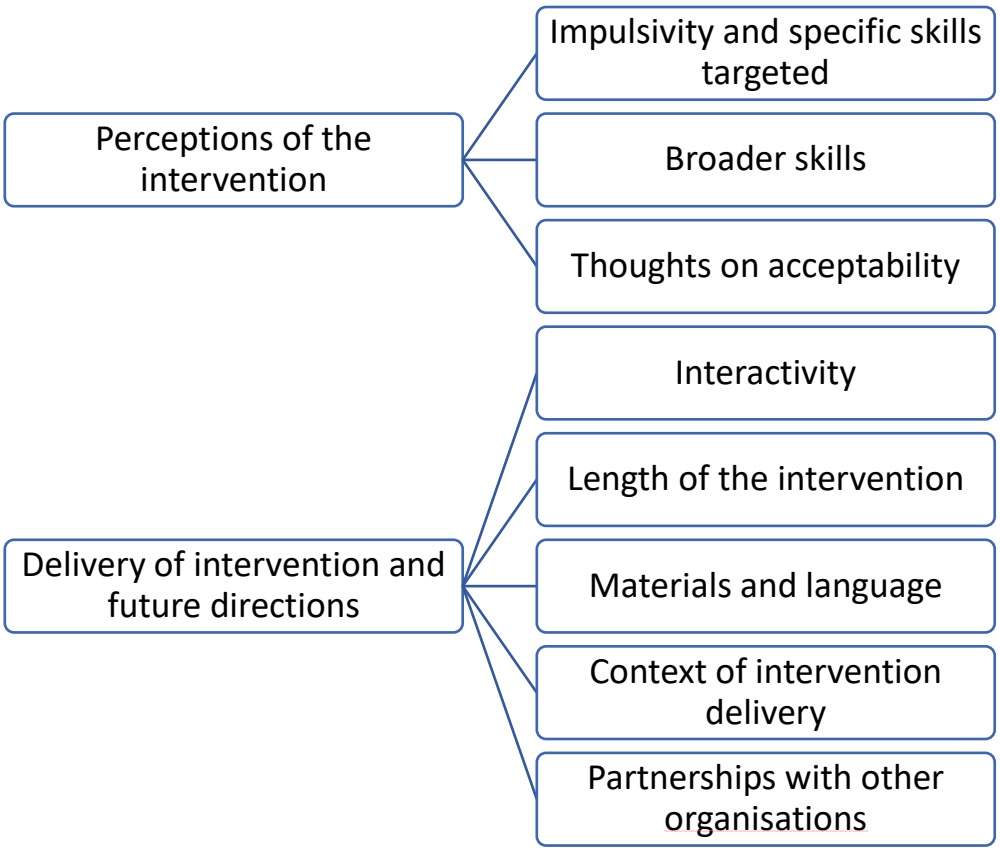

Figure 4: Themes and subthemes arising from the focus group with young people and interviews with teachers and facilitators regarding the "Who is driving you?" intervention

4.2.4.1 Perceptions of the intervention

A clear theme emerging from phases 2 and 3 related to the perceptions around the intervention. The first subtheme was the understanding of what the intervention was about, what it aimed to do, and whether it achieved this aim. The target for change was around facilitating young people to make better decisions by planning how to control themselves in difficult situations. Teachers and facilitators were more likely to indicate the transferability of the training to other aspects of young people's lives than the pupils themselves.

4.2.4.1.1 Impulsivity and specific skills targeted

This was discussed when participants were asked about what the intervention aimed to do, and what it had changed in young people. For the young people in the focus group, they alluded to the intervention aiming to target "impulsivity" but did not use the word directly. When they were asked what the session aimed to do, young people tended to use language around controlling yourself, with one young person stating, *"I think they aimed to, like, control yourself" (Young person 10).* One other young person extended this illustration:

> *"like when you do something, like to think about the outcome" (Young person 11)*

As the target of the intervention was to help young people make better decisions by planning how to control themselves in difficult situations, the researcher prompted the young people as to whether this was what they felt they gained from the session and there was universal agreement (through nodding, and through confirmation with "*aye*" *(Young person 1, 4, 6)*. Young people were also asked to confirm what they thought had changed as a function of the intervention. For some, this was simply a greater awareness *"more aware" (Young person 5)* or thinking more *"maybe think more in the future" (Young person 8).* Two young people noted that it would help them be less impulsive and think before they act. For these two individuals there were opposing consequences. One person spoke of reward for impulse control, and one spoke of regret because of not engaging in impulse control, they stated:

> *"If we wait, we then, we might get … rewarded" (Young person 7)*

> *"[think] like before you do things that you'll regret" (Young person 3)*

Other young people mentioned control which maps on to what young people thought the intervention was about. *Young person 2* was more general stating *"it showed you like you need to control yourself"*. For others, more specific elements were discussed, with *Young*

person 4 stating it related to emotions "*like your emotions and all"*. Other people noted the role of others in control:

> *"… and that other people control what you do" (Young person 3)*

> *"aye, a wile lot of your behaviour is to do wi' the people you're around" (Young person 7)*

For young people, this information was novel to them. They had mentioned that previous road safety information had focused on being a pedestrian, although it was also mentioned in a class called "Learning for life and work":

> *"learning about traffic lights and stop, look, and listen" (Young person 6)*

Other road safety information had centred on not drinking and driving, neither of which they were the legal age to engage in:

> *"aye learning not to like drink and drive" (Young person 9)*

The final take home message from one of the students about the intervention was that this was their first time considering the role of being in a car and the associated responsibilities:

> *"this is like the first one I've had like about like actually being in a car and like thinking about what you have to do in a situation" (Young person 8)*

It is worth noting there was no specific driving "situation" or "difficult situations" relayed back as part of the feedback from young people. For young people the main changes were in thinking but the link to a specific behaviour this would change was not evident from their answers.

For teachers, all were confident about what the session was about. As with the young people, there was a clear link between making better decisions by planning how to control themselves in difficult situations and driving. *Teacher 3* illustrated this in two separate excerpts when they said:

> *"I think that they got the link between… the thought processes and had paired that skill to the driving…"*

> *"I think that it aimed to give young people the, the tools to maybe to think… to have a thought process and think about what was going to happen and think of consequences and transfer that skill if they are behind the wheel although coming up behind the wheel didn't always come… as what they were trying to do it was very subtly added in." (Teacher 3)*

Teacher 2 noted that the session helped young people think more broadly on road safety matters, and particularly noted for their students, this may be the first time they have thought more carefully about the legal implications of driving. They stated:

> *"it made them think outside the box, I think some of them are still quite young in trying to… figure out a proper answer y'know in terms of the law, in terms of you know… driving specifically" (Teacher 2)*

As with the young people, two of the teachers did not specifically mention any driving scenarios, however, *Teacher 1* mentioned road rage and losing a driving licence.

> *"it was interesting hearing about road rage (laugh) but I found it… I found it good because there was quite, there was a situational question about the … losing the licence for six months and how people react and how people behave, and I found that the children's responses to that really interesting because one of them the fact that… your peers would judge you." (Teacher 1)*

Finally, another key point mentioned by the teachers was the role of groups in helping shape young people's behaviour. A key take home message from the intervention was exploring the role of the group in decision making, and as *Teacher 2* illustrates, this was something they had picked up from the session.

> *"I think we all… do things differently when we are either individual or in a group and certainly in a group setting y'know how you react to certain situations but that's really the thing that has affected me most "(Teacher 2)*

The views of those who facilitated were more comprehensive as might be expected. The core elements that were emphasised were understanding the brain development process and how this related to impulsivity by all facilitators, for example:

> *"I know it aimed to do is to first of all give a better understanding to young people about the brain development process and I think we have, need to be a bit more umm… ah… y'know… the learning about how the brain works in a sense, they are learning the fact that OK, … as we are growing older... the, we have better control over ourselves, so impulse control and finally then you want them to then understand that there is a way around this, that we are not just tied to our impulses because we we're young" (Facilitator 1)*

> *"I think they probably y'know learned something … about their own impulsivity and … y'know some strategies to stop and think before acting … and hopefully that's something that they can take away with them and implement in relation to future driving behaviours" (Facilitator 2)*

> *"I think it aimed to show young people there is… with the way things… with your brain… that there is that kind of… there's impulses to do things and sometimes it's about trying to control those impulses and I think they done that in a very good way and were able to explain about how our brains used to work whenever we were y'know years and years and years ago so and how that kind of changed and they were able to kind of bring in theory" (Facilitator 3)*

Facilitator 2 extended this to link brain development and impulsivity to risky situations as per the target of change. They stated:

> *"the impulsive side of the brain and the more rational kind of thinking part of the brain, to help them to understand that sometimes … decisions are made … very quickly without thinking … because that's the way that we're programmed … but that sometimes those decisions can result in … y'know risky situations and getting involved in, in risky behaviour so I think kinda, the aim of the session was to heighten awareness of that and help the young people kinda realise that they can practice to have things be different, that they can kinda take control, they don't have to be … driven by their emotions, that they can kinda manage their own emotions and y'know make good, well thought out plans, decisions as well" (Facilitator 3)*

It was noted whilst impulse control may be a target for the young, it is not exclusively a young person issue. *Facilitator 1* notes:

> *"I think it's probably important to, to say to, that impulse is not solely confined to young people … impulse control is, is, is understandably a little bit more difficult for younger people because they are developing yeah, but yeah, there are adults too with poor impulse control unfortunately, so anyway" (Facilitator 1)*

4.2.4.1.2 Broader skills

Of note, while the intervention was targeted to making better decisions by helping young people with planning how to control themselves in difficult driving situations, the teachers and facilitators acknowledged a very positive impact on young people more generally. As such, they considered the intervention to be positively impacting on broader life skills, not just road safety. *Teacher 2* comments:

> *"…you could take it into any aspect of life and I think that came across very well … it's not just in terms of road users y'know in any aspect of life y'know and reacting without thinking y'know and I think that's one thing that most students really hung on to as well." (Teacher 2)*

> *"we are looking at changing our year 8 curriculum at the minute … and going down the road of action based learning and problem solving and things like that, and we're looking at ah… we're looking at this type of thing, you know where they can relate everything to skills that they need for life rather than education." (Teacher 1)*

Improving reacting without thinking was also indicated as a benefit of the intervention by *Teacher 3*. They particularly noted this was an issue for young men they taught:

> *"I think that they, especially being all males, they would be very, very much very reactive anyway. So, having a strategy, or thinking of consequences would particularly appeal to them and I would put that into everyday life." (Teacher 3)*

Finally, *Teacher 1* noted the universality of the skills gained and this would make the intervention suitable for a range of ages. They even noted that staff could potentially benefit from a reminder:

> *"I actually made the comment… that basically we could all get it (laughs) at the beginning of the year because I think it's…it's information that they could use in all areas of their life not just driving … but from what I saw, excellent" (Teacher 1)*

The facilitators, as those carrying out the intervention, had some other additional thoughts based on the input of the young people. Some application of these thinking skills had been applied to overspending for example, with the link generated between impulsivity and money by the young people themselves.

> *"I would have said "Here's some examples, can you relate to any of that" and there's a lot of them come up with some great stuff, I mean we were talking about … y'know spending on impulse" (Facilitator 1)*

Facilitator 1 also continued by stating that impulse control, and potentially knowing when to act on your impulses was a useful source of innovation.

> *"we are not just tied to our impulses because we are young … a lack of impulse control is no, in young people can actually be a really good thing ahh…in, in the sense that a .. young people are the ones who lead the way in innovation … I think we should probably emphasise that a bit more in the course as well" (Facilitator 1)*

4.2.4.1.3 Thoughts on the acceptability of the intervention

A core component of the intervention is the acceptability of the intervention to all stakeholders. For young people, although there may have been some minor suggestions for improvement (see section 4.2.4.2), it was universally agreed this had been an enjoyable session. The opening question of the focus group requested participants to indicate whether they liked the intervention or not, and as an opening question the young people were a little hesitant stating it was

> *"alright" (Participant 4)*
>
> *"ok" (Participant 6)*
>
> *"aye, it was interesting" (Participant 9)*

As the group progressed, the young people were less shy, and the evaluation of the intervention overall progressed to more enthusiasm speaking of specific strengths of the intervention, and a nodding acknowledgement from all participants that they enjoyed the session (and interactive elements in particular).

Teachers on the other hand appeared to be enthusiastic from the outset. They were asked firstly to give their views on the intervention, and then what they thought the young people felt about the intervention. Regarding the teacher's own views, *Teacher 1* called the session brilliant:

> *"Well ah, the part that I saw I thought was brilliant you were doing, you were doing information on your brain and how your brain grows and reacts and training your brain and responses and impulsivity, I thought it was brilliant" (Teacher 1)*

For Teacher 2, their views centred on the skills of the presenters delivering the intervention

> *"I thought it was well presented y'know amm… the two representatives were easy to get on with y'know they could gel very quickly with the group" (Teacher 2)*

Teacher 3 agreed, praising not just the facilitators but the content and materials of the intervention

> *"I thought that it was well presented, I thought the facilitators were well organised, I thought that the … materials they used were well pitched for the ability and the audience…. Overall I was very happy with the session" (Teacher 3)*

For those who facilitated, there was a similar view. All were complimentary. Two examples are given below.

> *"I thought the sessions went well overall, I thought there was a good level of engagement … by the young people who participated and … I was really pleased with how … everything went and the results with the young people" (Facilitator 2)*

> *"I think it was a very good session, I think the material was very much easy for the young people to be able to be and understand, I think the content as well was very good because there was scope to explain things and then they were able to kind of put it into the right kind of context for what the overall presentation was about." (Facilitator 3)*

For the facilitators, they shared a view that the sessions were interesting, novel, and an opportunity for reflection.

> *": I think they probably thought … that they were useful, that they were interesting … that they will kind of reflect a wee bit on what they've learnt as well." (Participant 2)*

> *"I think they thought it was good" (Participant 3)*

Teachers held a slightly different view, particularly discussing the motivation of the students. One teacher noted

> *"I think they were interested in the thought of actually possibly stopping their thought process to actually change something about their reaction." (Teacher 3).*

Another noted how the session may have initially been of interest to get out of ordinary classes, but that in the end, young people were engaged and enjoyed the session. They stated:

> *"I think initially I… I kind of it was an excuse to get out of lessons but (laughs) but… … and agreeing to take part in… and agreeing to bring back their letter you know … but anyway, from observation simply because I haven't spoken to them yet, ah… they did take part and they were really engaged and… and were answering questions and talking among themselves and took part in group work and that, they seemed to be very engaged, they don't… I didn't notice anybody who wasn't engaged so I would take from that, that they enjoyed it." (Teacher 1)*

One other teacher was a little more cautious about giving their perspective on what young people's thought of the intervention:

> *"Well I suppose I didn't get their feedback so I can't really answer that in a nut shell" (Teacher 2)*

From the qualitative data analysed here it is evident the "Who is driving you?" intervention was received very positively by the young people in the focus group and the adult interviewees. *Teacher 1* called it a *"very worthwhile program"* that *"would be fantastic rolled out in a lot of schools".* Evidence suggests the intervention may not only benefit young people in their thought processes and impulsivity in relation to driving behaviours but that as a further consequence, they potentially improve their decision-making abilities in general and enhance their life skills. Finally, during the interviews and focus groups, participants were asked "Would you recommend the intervention to other schools?" and in every case the answer was unequivocally positive.

4.2.4.2 Intervention delivery and future directions

As this intervention was novel, it was important to consider issues around implementation and wider roll out of the intervention. Five subfactors were highlighted by young people, teachers and facilitators which were interactivity, length, materials, environmental factors, and partnership with other organisations. Each of these will be discussed in turn.

4.2.4.2.1 Interactivity

During the intervention, a video was used showing a delayed gratification task first developed and published by Mischel and Ebbesen (1970). Pre-school children are given a marshmallow and told if they do not eat it, they will receive a second when the adult returns. However, if they eat the marshmallow, they will not get a second one. This video was well received by the young people in the focus group. All pupils nodded to indicate they enjoyed this element, and one young person commented:

> *"I liked, do ya know like not tasks but like, d'you know like the marshmallow and stuff… like if you were sitting there with a marshmallow and then someone was to aww like would you like it and then someone was to come back and give you like two like, it's the tasks, to do stuff like that there, that was good" (Young person 3)*

The teachers were also positive about this element. One of the teachers suggested that this aided their understanding of the aim of the intervention, that this helped their students 'get it'. They stated:

> *"I liked the use of the video, the marshmallow video. I think that was a concept that the young people really got… I could see the engagement on the video with the kid and the marshmallows, that really worked… very well" (Teacher 2)*

Another teacher agreed. They tied it directly to ideas around impulsivity and confirmed it helped young people understand the theory behind the intervention:

> *"I liked the fact that they were able to use the practical examples with the marshmallows and how they were able to bring that back later to kind of show the young people that there is that kind of impulsivity, as you get older you can kind of become more or it can become less…*
>
> *…the marshmallows [inaudible] the fact that they were able to explain the mind for the group and their peers, the scenario is different and a good example of explaining to them what the theory meant" (Teacher 3)*

The success of this video in supporting young people's learning how to make better decisions by planning how to control themselves in difficult situations prompted *Teacher 2* to consider this as a useful learning tool which could be expanded. They stated:

> *"There was only the one video there …they were all listening to it y'know so I think if there was more interaction that way y'know it might of… presented it. I'm not being critical but those things might have helped" (Teacher 2)*

They further considered other aspects of interactivity such as having someone there who had lived through the consequences of risky driving. They also mention the use of shocking videos which are commonly used as road safety advertisements in Northern Ireland, but not common in the rest of the UK. They stated:

> *"I think it would be nice if they listened to someone who maybe was through some of the… who was a law breaker and has come out the other end, and y'know who could share their experience y'know of what happened when they lost their licence, y'know how that impacted on them, their job, their family, their life, y'know some shock videos I think to captivate them." (Teacher 2)*

Other teachers were also encouraging about more interactivity but stopped short of indicating what might be useful. They had noted that the session would have been enhanced if there were more activities as part of the content. *Teacher 3* stated:

> *"… I do think that maybe it was quite long for the boys to sit seeing as it maybe more (inaudible) activities in between or a little bit more fun activities to get them back engaging again that could be some of the boys, especially in*

> *the last 20 minutes were just starting to zone out, drift off and not engage as much as they had at the start" (Teacher 3)*

Facilitators were keen to offer practical solutions regarding interactivity. *Facilitator 1* noted that young people *"seemed to engage well with the video, that was a nice way to tell the story".* This facilitator also noted that the use of additional videos may help span the age difference between facilitators and young people:

> *"one or two more little videos in there wouldn't hurt, y'know, it's nice to mix it up … I think that it's an easier way to, of explaining … the situation rather than coming from an old geezers' point of view, I think, y'know watching the room when the video was playing … y'know they all seemed to be glued to it and to respond well to it" (Facilitator 1)*

Facilitator 2 noted that both small group exercises and more interactive videos may have helped maintain concentration and engagement.

> *"I think that possibly the sessions were too long. It was difficult at times to … maintain the young people's focus and concentration … y'know particularly in kinda small group exercises … so I think maybe the use of kinda more interactive videos or something like that maybe would be helpful going forward just to keep young people engaged" (Facilitator 2)*

One of the pupils concurred with this assessment. *Young person 3* stated:

> "if they give us more tasks like tasks to do, that would keep us like … occupied" *(Young person 3)*

Facilitator 1 offered the suggestion of using Qwizdom software to ask questions in real time during the session. This has an additional benefit of not identifying young people and putting them on the spot. Other suggestions were for different elements:

> *"if 25% think it's y'know and so on, you can feedback that and we are not be picking on anybody in particular"*
>
> *"the crash analysis thing we could have done… everybody could have done all three scenarios at the same time"*
>
> *"there are a lot of games you can do within Qwizdom… it's a lot less complicated and a lot more fun for the young people" (Facilitator 1)*

4.2.4.2.2 Length of the intervention

Another theme which was extracted from the data related to the length of time for the session. This may have been either the intervention delivery being too long in general, or it may have been a perception based on the delivery. As noted above in Section 4.2.4.1.3, the intervention was universally well received, and given that the interactive elements such as the marshmallow video were particularly well regarded, it could be that more interactivity would allow the content to be delivered in full but in what appeared to be a shorter length of time. Three young people stated it was *"wile [translate: very] long" (Young person 8)*, another young person agreed with *"aye" (Young person 9),* and finally, *Young person 5* stated *"aye there were some parts of it were just like boring".*

The view of the teachers and facilitators mirrored this. All the teachers noted the length. Views expressed included:

> *"…it's perhaps a wee bit long for the attention span of the wee ones" (Teacher 1)*

> *"I think, I think it was just about right I think, size wise, probably a little bit long but it was OK" (Facilitator 1)*

And the solutions were the same about greater interactivity and visuals to keep the young people occupied and engaged with the content.

> *"it's a good thing for young people to be listening to y'know … but there is ways I think practically at that age they need a wee bit more visuals to try and stimulate them a wee bit longer" (Teacher 2)*

One of the teachers would welcome participation in a longer follow up to understand longer-term implications of the learning.

> *"if there was some sort of follow-up, at another point if they would come back in and actually maybe see if anything does, y'know has stuck with the boys or has… embedded in their mind to change anything" (Teacher 3)*

4.2.4.2.3 Materials and language

The materials used during the delivery of the intervention drew comment from many of the participants. One of the facilitators noted that the materials worked well across the different ages and would perhaps be suitable even for a younger cohort:

> *"it's a good age range and the material that's there they would definitely be able to understand, and I think if, even if you were to bring some of the*

younger years up they could present through this and understand it as well for the fact that it's very clear, very precise" (Facilitator 3)

One teacher noted they would recommend it and saw it useful for a wide range of age groups:

> *"I was only sorry that we couldn't do it with our year 13's, or our year 12's even because some of them are of an age at year, in year 12 that the year 13 and 14's, I was only sorry we couldn't get, get them and got the year 11's but d'you know what you get the year 11's before they go for the provisional and they can relate the information to other aspects of their life, it would be fantastic." (Teacher 1)*

One participant felt that more information should have been supplied as a take home for the students to refer to later. They said:

> *"So there was no material that they could kind of go away and perhaps look at at a different time and links to websites and so forth. That kind of thing is always quite good especially males don't like to show that they are interested or listening at that point but sometimes, from previous experience they would kinda maybe go off and do a bit of research on their own at a later stage and they wouldn't be able to do that, they weren't directed anywhere to do that"(Teacher 3)*

The pupils were not overly keen on the questionnaires. Young persons 7 and 8 indicated the questionnaires were the part they did not like. They stated:

> *"I didn't like y'know the forms, y'know like the questionnaires" (Young person 7)*

> *"yeah the questionnaires" (Young person 8)*

Teachers that commented stated they considered it suitable for their cohort (aged 15 years). *Teacher* 2 stated *"a lot of the questions were answerable y'know with that age group."* However, one of the facilitators felt that a more digitised delivery rather than a pencil and paper style delivery would be of benefit.

> *"what I think personally would work better than all the paper sheets and things like that is genuinely the 'Qwizdom' software … it anonymises answers … the thing about putting any kids on the spot, which is something I would be conscious of is they get an answer wrong … the anonymity. … for a lot of paperwork, … it cuts down on time and energy if you go round giving them out and it's much more fun and interactive" (Facilitator 1)*

Although three individuals said the session was easy to understand, the language used was highlighted as an issue for two individuals. One stated with prompting from the researcher that the words were a little over complicated. However, another individual was much clearer with their stance. They stated:

> *"ah it was more like words that we didn't really understand, like what was the wee table we had to do" (Young person 9)*

One of the facilitators noted this is an issue when developing interventions. They noted that it is not just the language used, but the issues referred to. *Facilitator 3* also noted that having young people part of the development team would also be helpful to overcome language barriers.

> *"… relatable language because sometimes … when we're involved with the academic work of creating interventions we sometimes forget about the accessibility of the language for young people. So I feel we could use really some help from the younger people to look at the language we are delivering in and to maybe start y'know talking about relevant social media things for instance … we give the example the scenario, y'know road, y'know looking at the social media but what social media… so looking at snap chat, is it some of these, y'know because they are different and they may be more relevant in their own way so… that's an example of where I think we could… make it more age appropriate in that direction" (Facilitator 1)*

Teachers were also keen to offer solutions to the problems of language where they occurred suggesting that classroom assistants may be able to assist with delivery.

> *"…some of the students who participated would be on the code of register so maybe processing might be an issue for those students ah… it might be, it might be useful to have a classroom assistant in with them to you know… rephrase questions possibly to differentiate questions." (Teacher 1)*

4.2.4.2.4 Context of intervention delivery

A number of key barriers (and potential facilitating solutions) were discussed by the teachers and facilitators to allow wider roll out of the intervention as it is further developed and used. The time of the year the intervention was delivered was a concern for teachers and facilitators. At the end of the year staff and students are tired and looking forward to the summer holiday break. As term comes to a close there are many things to do before young people leave.

> *"I think there was a difficulty around the time of year that we were delivering … y'know but at the end of a long year, the summer holidays are in sight and I think both staff and students are tired and I think that's a bit of a barrier and I think, had we been delivering in September or October… y'know energy levels*

would have been different, engagement would have been different, and that kind of thing so y'know one of the barriers is around timing." (Facilitator 2)

"… timing is an issue y'know and I think it is certainly an issue for today for us, the timing wasn't right" (Teacher 2)

"challenges is the classes … getting the ahh… slots, the hours in the day for students, the time of year likely important, and nail down the classes that are not going to have huge commitments in relation to exams and so on because we want them fully engaged, possibly even time of year that we are going out is, is very important as well." (Facilitator 1)

For one school there was an issue that sports day was also on at the same time as the session. It was thought by one teacher that young people may have preferred to be outside in the sunshine:

"I think the students weren't really engaged you know that could be a couple of factors, could be the time of year, you know the fact that it's sports day in school maybe not the best timing… and they wanted to be outside on the rare occasion that it actually was a sunny day" (Teacher 1)

One facilitator noted that the buy in from teachers could vary (and of course this is in the context that schools are busy and teachers and balancing competing priorities). The challenges of the time of year have also been raised above and in Section 4.2.1 discussed in the context of how this affected the consent process (and low response rate).

"Barriers might also be around what staff you have in the room, again there was a different kinda level of engagement with staff depending on which school we were in … some of them were more kind of engaged in the, the whole … topic and the whole kinda program. Others were a wee bit more removed and were y'know a bit of a block in terms of engagement … y'know maybe just encouraging the children to be quiet when we were wanting them to engage in discussion, that kind of thing." (Facilitator 2)

Several other topics of conversation were raised during the interviews. The physical environment in which the intervention was an important factor and could prove to be a barrier to the smooth deliver of the intervention. Issues raised were temperature, crowding, and sound projection

"it all depends on the environment y'know if you have a, a room that's too hot or too cold kids aren't gonna be able to concentrate, y'know the way if they are all kinda squashed as well … they're not going to be able to concentrate either, the room should be laid out in such a way that there's a

good enough gap between each table if they're kinda working more in groups" (Facilitator 2)

"I do think they would have been benefited a little more with a little bit of kind of voice projection possibly with our own facilities I don't think they were always heard by all the tables and maybe the layout… just make sure their voice projection is happening all over the hall or the room or hall or whatever they are doing it. Make sure they are heard." (Teacher 3)

Related to this, the size of the group the intervention was being delivered to impacted the delivery. All suggestions from facilitators were for smaller class sizes if possible. For example:

"well the differences with class sizes for instance… the ease of delivery … for class sizes around about 30 or so … but anything above … in the 50's or that it becomes a little bit more difficult because it a… it works so much better I feel, when you have a lot more … connection with the young people so the smaller the groups the much easier it was to make a connection and hold control over the- the whole situation too" (Facilitator 1)

"I think it was a kind of big group so I think we should split some of those groups to be a bit smaller" (Facilitator 2)

One of the teachers echoed how the group size impacted on the delivery. They stressed the larger class size may have impacted the interaction from the children, that in a larger group young people may be less inclined to speak out.

"Size of the group, I actually probably would have stripped of ten of the pupils if not more of that group just so, I think there was some things that maybe boys were saying that maybe were, or responses they were giving that I could see the facilitators would have liked maybe to get a little bit more from them but because the group was so big that perhaps they weren't able to do that so I think possibly slightly smaller groups" (Teacher 3)

Finally, one facilitator noted the influence of driver status on the interactions with the group. The context of the driver status was discussed as an influence on what young people would get out of the session.

"I think it was getting some of them to think especially some of the ones who are either driving or learning how to drive cause it kind of puts things into perspective because whenever you're learning how to drive they are only really teaching you how to pass the test and it's a very controlled y'know, it's you and the instructor but it's completely different when you're driving about

with your friends and I think the fact that they honed in on the fact that the peer relationship has an influence whenever you are driving" (Facilitator 3)

4.2.4.2.5 Partnerships with other organisations

Several of the interviewees were aware that the Northern Ireland Fire and Rescue Service deliver a road safety intervention into post primary schools.

"again, in my role in school I would have the fire service in" (Teacher 3)

Called the 'Your Choice' program, young people are exposed via a virtual reality headset to a crash scenario and this forms part of the Northern Ireland Fire and Rescue Service strategy for road safety (Northern Ireland Fire and Rescue Service, 2019). Indeed, one school confirmed that the Northern Ireland Fire and Rescue Service deliver the intervention to their school, and one of the facilitators thought this could work well alongside this intervention:

"one of the best ones that I know of is the 'your choice' program which is run by the Northern Ireland fire and rescue service … so it uses a combination of … videos, … discussion, virtual reality glasses as well and … they have a mock-up of a car … going through a crash scenario, so again it's really kind of interactive for the young people and I know that that program is offered to all post primary schools and all youth and community groups across Northern Ireland…. I think the two could work hand in hand" (Facilitator 2)

Other interviewees did not specify a partnership agency suggesting that it might work with the police, fire service, insurance agencies, Road Safety NI, or with other organisations. The benefits of partnership were outlined as reinforcing the message at different stages from thinking about driving to owning and driving a car:

"I just feel that we should maybe be considering coming together with ahh… these organisations and saying look, … let's put together, y'know, … a curriculum in a sense that's joined up thinking so you're talking about what it is to own a car, now part of what it is to own a car is around impulsivity and, and if we are able to do that we could possibly follow each other around the circuit delivering so that it's joined up thinking y'know" (Facilitator 1)

One of the teachers noted that different interventions were suitable for different times of year, and directed at different types of road user.

"I am a year head in the junior school so I'm not really familiar with what's done further up but I know there was a year 13 course … I'm not sure who delivered it, whether it was the fire brigade or fire safety and there is road safety talks, the PSNI come in couple of times a year as well at strategic

locations, Hallowe'en and maybe certain other interventions and they do road safety talk as well but that is aimed at actual road users." (Teacher 2)

This reminds us that the greatest partnership should really be with the schools and teachers who support young people's learning throughout the year. Any changes to the curriculum need to have teacher buy in:

"so it's really about I suppose … making sure we have buy in from the staff within the schools before we go in so they're very clear what their role is, what our role is, and they're very clear about the purpose of the program" (Facilitator 2)

Finally, it was noted that although a partnership model would be suitable and perhaps overcome some of the challenges around funding, this intervention offered something a little different. Other agencies covered issues around virtual reality and what to do in the moment, but by taking a positive approach, and one focused on emotions and cognitions, this may be more of a prevention model:

"It's a lot about positivity, doesn't dwell so much on negativity… what I like is the fact that there's not, well not talking about or showing any horror videos to people… the fire service going round and they do their VR sets and things like that, that's the kind of things that we need to know to be working together but we, we've steered away from that, we have gone in a completely different direction… we start talking about the emotions 'cause that's, that's the thing in my mind that is missing quite often, we, we get the technical skills of driving, the licence, we know how to drive from A to B but socially, emotionally, all those things and, and that's what strikes me as dominant and, and it as great to work with the co-operation of the schools, it's been fantastic" (Facilitator 1)

4.2.5 Potential adjustments based on this pilot evaluation

Whilst the intervention was highly regarded and well received by all parties, below the key recommendations for change are summarised from the evaluation.

4.2.5.1 Timing

The length of time the intervention takes to deliver was mentioned several times in the data. It is advised to reduce the time burden on the young people particularly if the intervention is to be delivered in a single session. This can be achieved by adjusting the length of time the intervention takes to deliver to the young people by reducing the content of the program. Another possible solution may be to deliver in two sessions with a full lunch break in the middle. Evidence suggests that students cannot maintain concentration for long periods of time therefore each session should be closer to 30 minutes in duration for optimum impact and retention of information (Stuart and Rutherford, 1978). Shorter sessions may have greater impact and by allowing the young people a substantial break from the classroom in the middle, this may increase engagement.

4.2.5.2 Interactivity and digitisation

Young people requested more interactive tasks. While the intervention was well received in general the developers should enhance and include more interactive and active tasks. One potential active task that could be included compliments the delayed gratification task included via the video used in the intervention. Each young person could be given a paper plate with one large marshmallow at the beginning of the session with instructions that it is theirs to eat, but if they wait, they will receive a second marshmallow at the end, in line with direction taken from the 'marshmallow' video included in the intervention. They can then be given a second marshmallow after the video. This could be a simple, fun and cost-effective activity that would enhance the experience for the young people (caution must also be included here where food allergies are concerned). Other videos were welcomed by young people, teachers, and facilitators.

Delivery of the intervention may be further digitised, although the cost of this in comparison to 'pencil and paper' style may need to be considered. The use of digital platforms such as 'Qwizdom' could be advantageous particularly if the intervention is to be delivered on a regular basis across many schools. It is recommended that a cost analysis be carried out to ensure this is economically viable. Schools may also have access to mobile tablets which could facilitate and support face to face learning. A web page or app could be developed

that the young people could access in real time during the intervention and thus access the software necessary. This may reduce the need for investment in hardware.

Utilising appropriate technology may enhance the intervention and make it more relevant for the young people thus, enhancing interaction and the success of the intervention. The digitisation of the intervention would allow for a smooth delivery in a more anonymised way, where students do not have to raise their hand to answer a question so increasing engagement and interaction. This method of delivery could also be used to ensure ongoing evaluation (see below) via short quizzes and questionnaires for the young people.

Finally, it was recommended that young people have something to take away with them following the intervention. A web page, digital platform or app developed for the intervention could facilitate this. Young people could engage during the intervention but also, access key messages after the intervention, in their own time, to review the material they covered in the intervention.

4.2.5.3 Language

Language was highlighted as a potential problem. It is recommended that a small consultation group be engaged, representative of 14 to 18-year-old demographic to examine the language used in the materials and the delivery. Adjustments to the program in line with information gained in this process will allow all the young people to benefit. Given the vast differences in cognitive development in adolescence as highlighted by the developers themselves, and considering the recommendation below regarding partnership in the delivery of the intervention, it is advised that the language used, and thus, the intervention be targeted at the cognitive abilities of 14-year olds. It is also advised that prior to delivery, it should be established through the schools that any young people with learning difficulties i.e. those that require classroom support during lessons are able to access their support during the session.

4.2.5.4 The Physical environment and delivery

For the delivery of the intervention to be as successful as possible, it is advisable to borrow from the work of Maslow (1943) and ensure the basic needs of the participants and facilitators are met before delivery begins. For example, Maslow's *'Hierarchy of Needs'* is most often characterised as a triangle with the basic human needs at the bottom which must be satisfied before a person can be motivated to move up the layers of the triangle and achieve ultimate

learning and change. In the case of the “Who is driving you?” intervention, motivation could impact learning and intention to change impulsive behaviour. To this end it is important that the young people are comfortable and that the facilitators can be heard and can move freely around the room. Detailed discussion with the schools prior to delivery should ensure that the room the intervention will take place in is suitable. Facilitators may wish to bring portable audio support to allow a microphone to be used in all delivery rooms.

Two further considerations need attention to ensure interaction and impact are optimal. Firstly, the time of year of delivery should be in the first semester of the school year, somewhere approximating the Hallowe’en period. Delivering at the end of the school year was highlighted as a challenge given young people are looking forward to the school holidays, staff may be busy preparing for the long summer break and exams and other school activities such as sports day are taking place. A second consideration should be to limit the number of students taking part in each session. Large numbers of students receiving the intervention was highlighted as problematic given the nature and style of the intervention therefore, setting a limit on the number of young people would ensure the facilitators can maximise the impact of the intervention. It is recommended that a limit of 30 young people receive the intervention at any one time.

4.2.5.5 Partnership

It is clear from the comments made during the interviews that, with the minor adjustments made as recommended here, this intervention could offer potentially, a substantial benefit to the young people who receive it, both in terms of impulsive driving behaviours and road safety skills but also in other aspects of life skills. As such, it would complement the Northern Ireland Fire and Rescue Service “Your Choice” intervention. However, the NIFRS intervention contains graphic scenes and is suitable for more mature young people therefore this intervention should be specifically targeted at 15 to 16-year-olds prior to the delivery of the NIFRS intervention.

A key recommendation therefore, is that the developers and Extern foster a relationship with the Northern Ireland Fire and Rescue Service and potentially other partners to develop this intervention as part of a curriculum or suite of delivered interventions. Given that the

Northern Ireland Fire and Rescue Service are already established in the schools and working with the older students to deliver their "Your Choice" intervention, it may be useful to consider optimal timing for young people's benefit by liaising with the Northern Ireland Fire and Rescue Service. By adopting this collaborative ethos, the delivery of both interventions would become complimentary and mutually beneficial to the students and all concerned, thus increasing the chances of effecting a lasting change in the young people in terms of impulsivity and road safety behaviours. Again, integrative solutions or other changes to the intervention should be discussed in a co-design framework with young people's input to ensure the best quality intervention.

4.2.5.6 Evaluation

The evaluation of a second version of the "Who is driving you?" intervention should be a priority for future research. The timing of the evaluation was less than optimal and resulted in challenges getting schools to send out and return consent forms. Teachers were not in their usual role, some were covering classes that they did not usually take whilst their colleagues were taking on other roles. Some year groups were not suitable for evaluation due to the examination period. The percentage of those who took part in the evaluation was low compared to those who took part in the intervention. Whilst regrettable, it is vital that ethical principles are adhered to, and no-one took part who did not have consent prior to session start. Young people were asked if they would like to take part on the day as part of an assent process, and appropriate adjustments were made (such as not holding the focus groups with only one participant). Future evaluation should also consider teacher buy in. Several completed consent forms were found by a teacher after the session was over (despite researcher prompting), and of course it was too late for these pupils to participate.

We invite individuals to use these findings with caution and recommend a fully powered evaluation using a randomised control trial across a wider range of schools. We have tentative evidence that the intervention improves intention to make better decisions by planning how to control themselves in difficult situations. As such we recommend longer follow up which measures driving behaviours in addition to cognitions in the Theory of Planned Behaviour. It is recommended that the stage of driving is also considered. At age 14-16 years, individuals

may be thinking about driving and/or obtaining provisional licences. At 16-18 years, individuals may have obtained these licences and so their needs may be different. The digitisation as suggested above may well facilitate longer term follow up through apps or websites. Any future evaluation should be kept short (questionnaires were two sides of A4, or less than 20 questions in total).

5 Conclusions

There were three elements to the evaluation presented here. The first of these, phase 1, the quantitative survey showed a small and measurable improvement in the intentions of young people to make better decisions by planning how to control themselves in difficult situations. Issues with the time of year and competing pressures led to a lower than hoped response rate from pupils and their families, however, all changes were in the expected direction of empowering young people's decision making and impulse control.

In phase 2, young people decided that they would like to hold only one focus group and worked together to provide positive and negative feedback on the intervention and what they had learned. There was an equivocal enjoyment of the intervention, and suggestions for improvement were mostly centred on less paper and more interactivity. All of the focus group participants made a contribution to the discussion.

In phase 3, three teachers and three facilitators present during the delivery of the intervention gave their views on the success of the intervention and any improvements to the presentation or that would affect wider roll out. Again, the intervention was equivocally well received with some key recommendations.

As phase 2 and 3 had similar interview schedules, themes and subthemes identified and triangulated through content analysis could be combined. The first theme on perceptions of the intervention noted that many of the young people identified the key learning from the intervention around impulsivity, impulse control, and driving as outlined in the development of the evaluation (see Section 3). It was noted that these skills around impulse control, understanding thinking, and planning how to control yourself could be applied to other difficult situations other than driving. Finally, there was considerable evidence in this theme to indicate that the novel intervention "Who is driving you?" was acceptable across young people, their teachers, and the facilitators who led sessions.

As with any novel intervention developed and piloted, there were suggestions for improvement. These are evidenced in the intervention delivery and future direction theme. There were interactivity highlights (such as the marshmallow video), and requests for additional activities. The length of the intervention was an issue for some, and this may be partly alleviated by incorporating additional interactivity into the presentation without losing the integrity of the learning objectives set in Section 3. Whilst the materials were found helpful for some, there was some indication that maybe less paper would have been welcomed, and language may have been an issue for some pupils. Contextual factors were an influence here, the time of year affected ethical engagement with the evaluation, and there were issues around lighting, room size, class size, and sound. Finally, for the sustainability of the intervention, it may be helpful to partner with other organisations such as the Police Service of Northern Ireland or the Northern Ireland Fire and Rescue Service to create a curriculum which compliments and maps each other. This intervention was novel as it considers thinking, rather than just the implications of poor impulse control or risky driving.

In summary, this was a highly regarded and recommended intervention which appears to deliver the stated aims of helping young people to make better decisions by planning how to control themselves in difficult situations. Evidence presented here shows a measurable improvement in the awareness of issues surrounding impulsive behaviour and road safety in young people. Some minor adjustments and improvements are recommended that will further enhance the experience of the young people. These should also improve the impact of the intervention and the goal to improve impulsivity control and road safety behaviours, to reduce the number of killed or seriously injured young people on the roads.

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7 Appendices

7.1 Appendix 1: The pre and post questionnaire

7.1.1 Pre-intervention questionnaire

Instructions for the course facilitator/researcher

[Under 18's] If you have got a signed consent form from your parent or guardian, and you are happy to take part, please also sign the form yourself.

Fill out the number on the top of your form on the questionnaires in front of you. There are two of these, the first is for now, and the second is for after the session. Place the consent form into the envelope marked consent form when you have put the number at the top of the questionnaire.

When you are ready, please read the questions carefully and fill out the questionnaire. When you are finished put the questionnaire into the questionnaire envelope in front of you. Please answer as honestly as you can, it is important to understand your view as it is now, and there are no right or wrong answers.

Reference number____

Questionnaire 1:
Who is driving you intervention

I am a boy____ girl _____ other _____ or rather not say ____

I am aged _____ years

I hold a driving licence for a car:

none_____provisional_____full_____

I hold a driving licence for a moped/motorbike:

none_____provisional_____full_____

Please circle the correct answer for you

I intend to make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

I will try to make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

I have decided to make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Making better decisions by planning how to control myself in difficult situations would be

Extremely harmful	Mostly harmful	Somewhat harmful	Neither harmful nor beneficial	Somewhat beneficial	Mostly beneficial	Extremely beneficial

Extremely unpleasant	Mostly unpleasant	Somewhat unpleasant	Neither unpleasant nor pleasant	Somewhat pleasant	Mostly pleasant	Extremely pleasant

Extremely bad	Mostly bad	Somewhat bad	Neither bad nor good	Somewhat good	Mostly good	Extremely good

Most people who are important to me think that I should make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Most people who are important to me would approve of me making better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Most people who are important to me would want me to make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Whether or not I make better decisions by planning how to control myself in difficult situations is entirely up to me

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Making better decisions by planning how to control myself in difficult situations is beyond my control

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

It is mainly my decision to make better decisions by planning how to control myself in difficult situations

Strongly disagree	Mostly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Mostly agree	Strongly agree

I am confident that I can make better decisions by planning how to control myself in difficult situations

Strongly disagree	Mostly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Mostly agree	Strongly agree

I believe I have the ability to make better decisions by planning how to control myself in difficult situations

Strongly disagree	Mostly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Mostly agree	Strongly agree

I feel capable of making better decisions by planning how to control myself in difficult situations

Strongly disagree	Mostly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Mostly agree	Strongly agree

Thank you for your answers

7.1.2 Post-intervention questionnaire

Instructions for the course facilitator/researcher
Can you just double check you have a reference number on the top of the questionnaire. When you are finished, please place this in the envelope on the table. Please give your honest answer to each of the questions, not what you think we might want to hear. Thank you for your time.

Reference number____

Questionnaire 2:
Who is driving you intervention?

Thank you for taking part in the session today. We just have a few more questions before you go. We would be grateful if you could take a few minutes to complete these. Please circle your answer:

I intend to make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

I will try to make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

I have decided to make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Making better decisions by planning how to control myself in difficult situations would be

Extremely harmful	Mostly harmful	Somewhat harmful	Neither harmful nor beneficial	Somewhat beneficial	Mostly beneficial	Extremely beneficial

Extremely unpleasant	Mostly unpleasant	Somewhat unpleasant	Neither unpleasant nor pleasant	Somewhat pleasant	Mostly pleasant	Extremely pleasant

Extremely bad	Mostly bad	Somewhat bad	Neither bad nor good	Somewhat good	Mostly good	Extremely good

Most people who are important to me think that I should make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Most people who are important to me would approve of me making better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Most people who are important to me would want me to make better decisions by planning how to control myself in difficult situations

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Whether or not I make better decisions by planning how to control myself in difficult situations is entirely up to me

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

Making better decisions by planning how to control myself in difficult situations is beyond my control

Strongly agree	Mostly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Mostly disagree	Strongly disagree

It is mainly my decision to make better decisions by planning how to control myself in difficult situations

Strongly disagree	Mostly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Mostly agree	Strongly agree

I am confident that I can make better decisions by planning how to control myself in difficult situations

Strongly disagree	Mostly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Mostly agree	Strongly agree

I believe I have the ability to make better decisions by planning how to control myself in difficult situations

Strongly disagree	Mostly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Mostly agree	Strongly agree

I feel capable of making better decisions by planning how to control myself in difficult situations

Strongly disagree	Mostly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Mostly agree	Strongly agree

What did you like about the presentation?

What did you dislike?

Do you have any further comments on how the presentation could be improved?

Thank you for your help

7.2 Appendix 2: The Focus Group Schedule for young people

Introduction to the focus group:

Hello, my name is Rhonda. Thank you for agreeing to take a few minutes to discuss your thoughts on the session and please feel free to eat during the time we are talking today. I will be recording this using a Dictaphone, and we will use what you say to improve the intervention, in reports, and other publications, but every care will be taken that you cannot be identified by your answers. The questions today will ask you what you think about the intervention, so we can make it better. You are welcome to say as much or as little as you would like, our focus is your thoughts on the session today so please do not feel you need to share personal experiences. So, let's get started:

1. What did you think of today's session?
    a. Prompts include: Did you like it and what did you like? What aspects did you not like as much?
2. How easy or difficult did you find the information?
    a. Prompts include: What was good or bad about attending today?
3. What do you think the session aimed to do? Do you think it did this?
4. What do you think changed for you as a result of the session today?
    a. Prompts: What might you do differently? Did it change how you think in any way?
5. What road safety information has been covered in school before this session?
6. What road safety information did you get from the session?
7. Would you recommend the course to other students like you?
    a. Prompts: if so why? If not, why not?
8. Is there anything else you would like us to know?

Thank the young people for their time and insights

7.3 Appendix 3: The interview schedule for teachers and facilitators

Introduction to the focus group: Hello, my name is Rhonda. Thank you for agreeing to take a few minutes to discuss your thoughts on the session, our focus is your thoughts on the session today so please do not feel you need to share personal experiences. I will be recording this session using a Dictaphone, and we will use what you say to improve the intervention, in reports, and other publications, but every care will be taken that you cannot be identified by your answers. The questions today will ask you what you think about the intervention, so we can make it better. You are welcome to say as much or as little as you would like. So, let's get started:

1. What did you think of today's session?
    a. Prompts include: Did you like it and what did you like? What aspects did you not like as much?
2. What do you think the students thought of today's session?
    a. Prompts include: What do you think they liked or did not like?
3. What do you think the session aimed to do? Do you think it did this?
4. What do you think the barriers or facilitators might be to hosting the intervention in other schools or with other students?
   Prompts: Do you think it may be affected by resources, planning, sustainability, teacher or other delivery, demand, practicality, etc?
5. What road safety information did you get from the intervention?
6. Would you recommend the intervention to other schools?
    a. Prompts: if so why? If not why not?
7. What road safety information/interventions are embedded in the curriculum to date? Prompts: How might this intervention work alongside other initiatives?
8. Do you have anything else you would like to add?

Thank the staff for their time and insights