

Evaluation of the Learn2Live Road Safety Intervention for Young People

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Research by

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Executive summary

Road traffic collisions are the leading cause of death amongst 15-24 year-olds in the UK (ONS, 2011). The presence of adolescent passengers in vehicles driven by adolescents is associated with a significant increase in crash likelihood (e.g. Simons-Morton, Learner and Singer, 2005). However, it has been demonstrated that the presence of a passenger can encourage road-safety appropriate behaviours in young drivers (Simons-Morton et al, 2011). Thus, influencing young peoples' behavior when they are travelling as passengers in cars driven by one of their contemporaries is likely to result in positive road safety outcomes.

Method

The current study evaluates the Learn2Live road safety intervention for young people, using an online survey. The study set out to assess the effects of attendance on young peoples' intentions to behave in a road safety-appropriate manner when travelling as a passenger. Measures were collected in the two weeks prior to attendance at Learn2Live (T1) and within a two-week period following attendance (T2). The measures were based on components of the Theory of Planned Behaviour (Ajzen, 1991) in order to assess the effect of attendance on the behavioural intentions reported by attendees (please see the Explanatory Notes, p.7, for descriptions of the TPB components).

1500 6th form college students attended the Learn2Live presentation evaluated in this study. Of those, 900 students completed the pre-intervention (T1) questionnaire. Once respondents with incomplete or inappropriate responses were removed, 529 valid cases were available at T1. Of these respondents, 126 students provided complete data sets for the post-intervention measure at T2.

Thus 126 participants contributed to the study, 65 female and 61 male, with a mean age of 16.27 years. Only 6 participants reported having a driving license, but over three-quarters of the sample reported travelling as a passenger in a car at least 3 times per week or more. Only 37 participants had ever been involved in a road traffic collision.

Results

The effectiveness of the intervention was assessed using a paired samples t-test comparing scores on the T1 scale and T2 scale, for each factor of the TPB. Lower scores on questionnaire items represented less risky and more safety-appropriate responses. Thus significantly lower scores at T2 than at T1 suggest road safety-appropriate changes occur as a result of the Learn2Live intervention in the behavioural intentions, perceived control, subjective norms, beliefs, and attitudes of its attendees (Table 1).

In order to explain why attendance to the Learn2Live intervention increased safety appropriate behavioural intentions we conducted two regression analysis using changes in components of the TPB as regressors. The first was conducted to determine the relative contributions of changes in the perceived social norms of friends and family and changes in behavioural beliefs on changes in attitudes. While controlling for change in social desirability, the regression model described 32.2% of the variance in change in attitude ($R^2_{adj}=29\%$) and was statistically significant ($F_{4,90}= 10.21, p= <.001$). The second regression model then determined the contribution of attitude change and changes in perceived behavioural control, on changes in behavioural intention. The model containing these factors described 37.2% of the variance in behavioural intent ($R^2_{adj}=35.3\%$) and was again, statistically significant ($F_{3,102}= 19.57, p= <.001$). Both models excluded case 588, which was shown in preliminary analysis to be a significant outlier. The relationships and respective contributions of each factor of the TPB are graphically represented as a path analysis in Figure 1 (overleaf; please see Explanatory Notes, p.7) and summarized in Key Findings, p.6.

Variable	T1 Mean (s.d.)	T2 Mean (s.d.)	N	Lower confidence interval (95%)	Upper confidence interval (95%)	t	d.f.	p
Behavioural Intention	15.25 (4.55)	13.37 (4.81)	126	1.09	2.67	4.71	125	<.001
Perceived Behavioural Control	19.1 (4.84)	17.15 (5.32)	125	1.18	2.71	5.01	124	<.001
Behavioural Beliefs	16.95 (3.9)	14.92 (4.22)	123	1.35	2.72	5.86	122	<.001
Social Norms of Friends	18.12 (4.45)	15.93 (5.1)	121	1.41	2.99	5.5	120	<.001
Social Norms of Family	13.15 (3.81)	12.23 (4.16)	122	.333	1.50	3.11	121	<.001
Attitude	28.00 (5.08)	24.78 (6.11)	120	2.14	4.31	5.91	119	<.001

Table 1. Change in TPB component scores, T1 to T2.

High score indicates risky response, low score indicates road safety-appropriate response

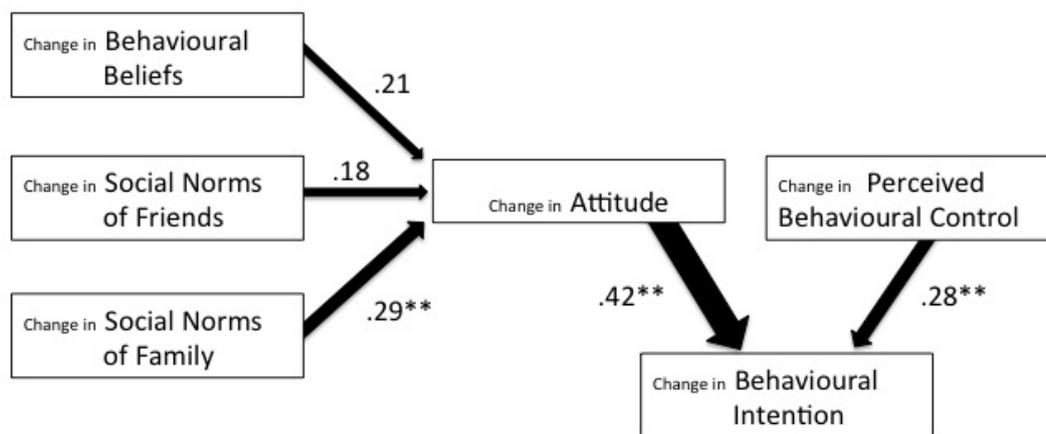


Figure 1. Path-analysis showing the relative contributions of the TPB components to behavioural intention.

** = $p < 0.01$, * = $p < 0.05$.

Generalisability

Although these findings are based on only 8.7% of the target population (126 of circa 1500 attendees), there is some evidence that suggest the respondents were representative of the T1-only sample ($n=529$, 35% of attendees), thus widening the generalisability of these findings to the T1-only group.

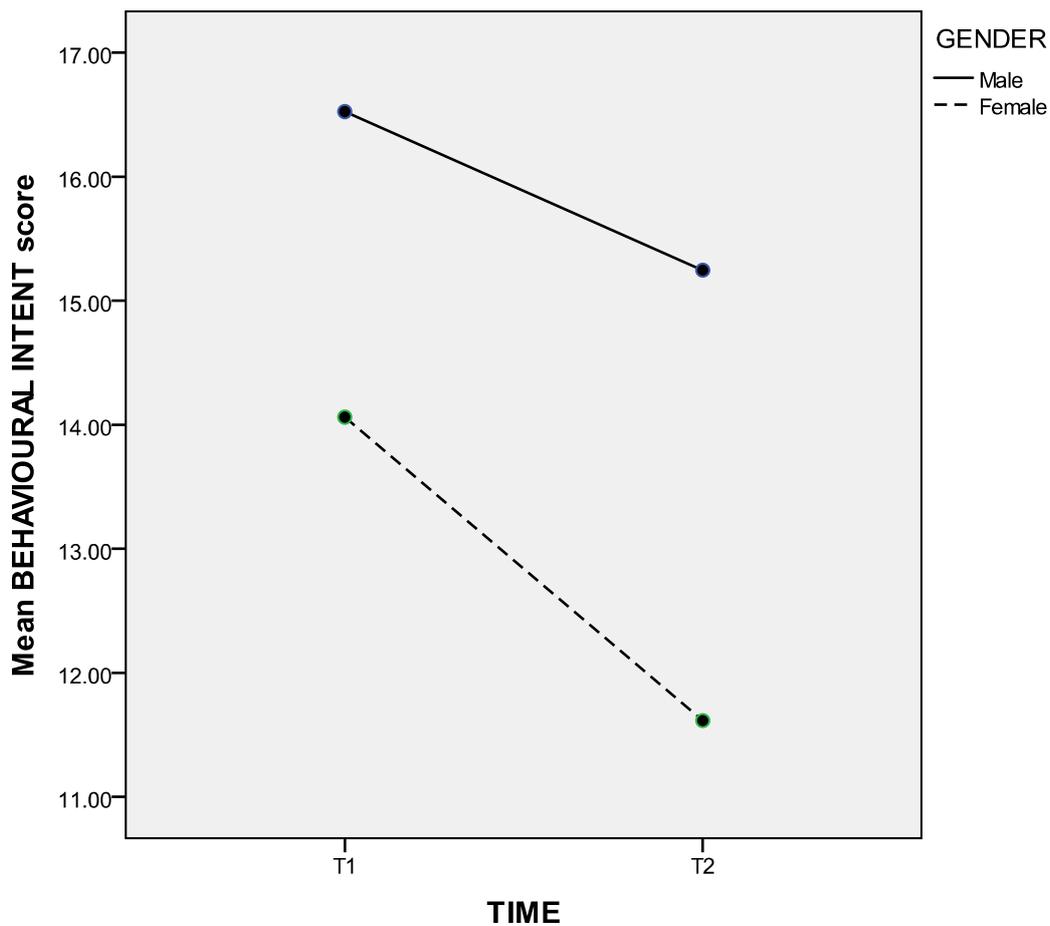


Figure 2. Behavioural Intention scores, T1 (before intervention) vs T2 (after intervention), by gender

Gender Differences

Male respondents report significantly less appropriate Behavioural Intention scores than girls before attendance at Learn2Live (Boys: $M=17.5$, $s.d.=5.1$; Girls: $M=15.1$, $s.d.=4.7$; $t_{527}=5.74$, $p<.001$). In addition, female respondents report larger appropriate change in behavioural Intention scores (Figure 2), though the difference between male and female respondents in terms of this change is not statistically significant ($F_{1,124}=2.15$, $p=.145$, n.s.).

In order to confirm the effect of gender on Behavioural Intention, a regression analysis was conducted. This showed that while gender explained just 7.4% of the variance in Behavioural Intention ($R^2_{adj}=6.6\%$), the model was statistically significant ($F_{1,125}=9.87$, $p=.002$). Females were found to have scores significantly lower by 2.46, than men ($t_{125}=3.14$, $p=.002$). This gender difference was also significant at T2 ($F_{1,166}=17.77$, $p<.001$), with females reporting scores 2.86 lower than males, suggesting that males had less appropriate Behavioural Intentions after the intervention.

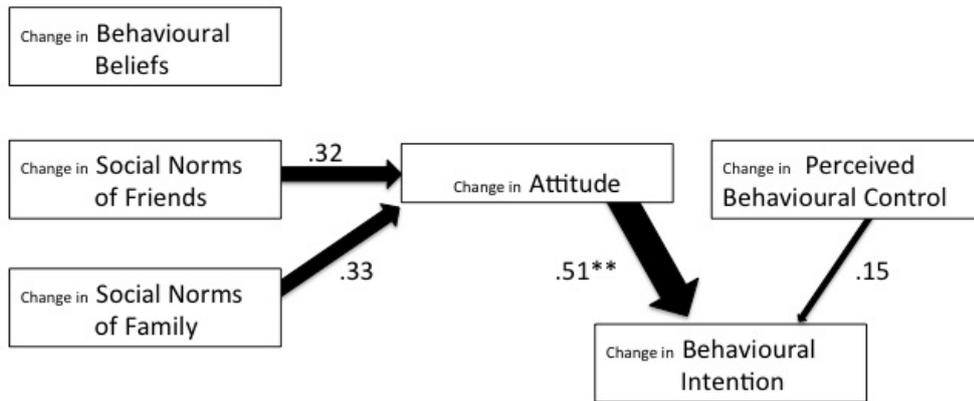


Figure 3. Path-analysis showing the relative contributions of the TPB components to behavioural intention, for only male participants (n=61).

** = $p < 0.01$, * = $p < 0.05$.

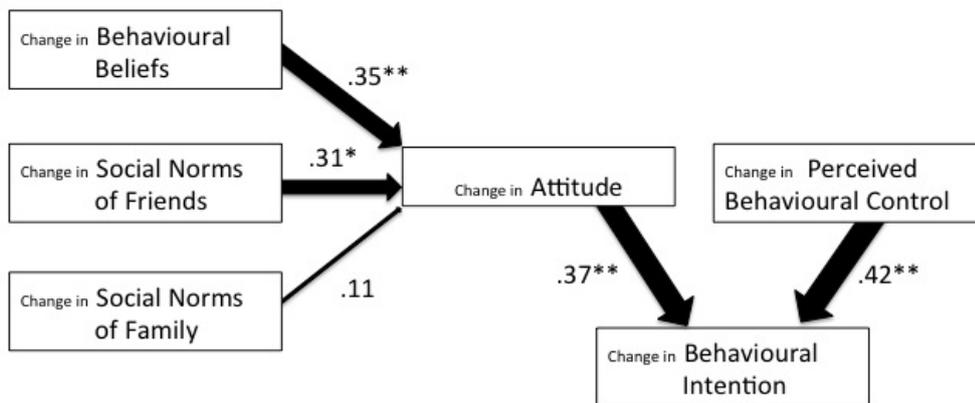


Figure 4. Path-analysis showing the relative contributions of the TPB components to behavioural intention, for only female participants (n=65).

** = $p < 0.01$, * = $p < 0.05$.

Separate path analyses carried out for males and females indicate that the influences on Behavioural Intentions are rather different for each gender (Figures 3 and 4). Whilst males report a strong influence of perceived norms (both friends and family) on attitudes, resulting in changes in intentions, females report a greater influence of behavioural beliefs and perceived behavioural control. Female respondents report being less influenced by changes in the perceptions of the social norms of their family than do males.

Key findings

Does Learn2Live work?

Results suggest that the Learn2Live intervention was successful in appropriately modifying the behavioural intentions of attendees in relation to their passenger-related behaviours. The mean difference is relatively small, but consistent across the sample. The proportion of variance in change in behavioural intentions arising from TPB components (37.2%) is comparable with the 39% found by Armitage and Connor (2001).

Why does it work?

Gender differences are apparent, with the male respondents consistently more risky than females at both stages of the research. The changes in the behavioural intentions of males are mainly due to more appropriate attitudes towards road safety after Learn2Live attendance, those due to changes in perceived subjective norms of friends and family members. Females appear more influenced by greater perceived behavioural control, as well as changes in attitudes, themselves due to changes in perceived subjective norms of their friends.

The attitudes of male respondents become more appropriate as a result of changes in the perceived norms of family and friends in almost equal measure. They care what both groups think of them and appear to follow what is seen by them as 'normal'. However, the effect of perceived norms on female respondents appears to rest entirely on their friends, possibly revealing differences in social independence in the relatively young sample. In addition, female respondents' behavioural beliefs influence their intentions. They appear to be more certain after the intervention that if they ask the driver to behave appropriately, the driver will respond positively to the request. As well as this, the intervention appears to increase the sense in female respondents that they are able to make requests of the driver to drive more safely, what may be described as 'empowerment'. This is likely a reflection of gender differences in social confidence and self-efficacy in the specific environment of a moving vehicle that is reflected here. The intervention appears to have increased that social confidence in female respondents.

Future research

The major improvement would be the inclusion of a control group: a sample of young people who do not experience any form of intervention between T1 and T2. The addition of a longer-term follow-up measure would assess the degree of effect attenuation noted by Poulter and McKenna (2010) within their evaluation of the young driver-focused Safe Drive Stay Alive intervention. Also, the literature reports gender differences in behavioural intentions when a same- or different-sex driver is at the wheel and future evaluations could investigate this possibility, thus providing more specific focus for some of the material in Learn2Live. In addition, the TPB component of anticipated regret should be included, along with a valid measure of habitual responding, shown to have a substantial influence on actual behavior. Finally, a longer-term follow-up would indicate the longevity of the effects of attendance at Learn2Live.

Explanatory notes

Attitude	Generally defined as a cognitive orientation towards an attitude object, either strong or weak, positive or negative, in support of or not.
Behavioural beliefs	The extent to which a respondent believes that behaving in a particular way will result in certain consequences. In this context, the extent to which respondents believe that they can have a positive influence on the behaviour of the driver.
Behavioural intention	How the respondent believes he/she will behave in future, how he/she intends to behave in a given situation.
Norms	How respondents believe people close to them view particular behaviours, whether they approve or disapprove.
Path analysis	A technique used here to present the statistical relationships between TPB components. The arrow indicates the direction of influence, the thickness of the arrow represents the strength of influence and the sign of the coefficient (+ or -) shows whether the influence is positive or negative.
Perceived behavioural control	The extent to which a respondent believes his/her behavior is purely voluntary, compared with, for example, peer pressure to behave in a particular way, threat of embarrassment or ridicule.

References

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