

Development and Evaluation of an On-ride Motorcycle Coaching Program in Victoria: How well was VicRide implemented and received by the target novice motorcycle riders?

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Abstract

VicRoads initiated a large-scale trial of a newly developed ‘VicRide on-road coaching program’ for recently licensed motorcyclists in Victoria. The George Institute for Global Health was commissioned to evaluate VicRide primarily to determine its effectiveness in reducing crash rates for the target group via a randomised control trial. A process evaluation was also conducted to examine program delivery in parallel with the outcome evaluation. The objective of this paper is to present the process evaluation results. Data were sourced from the coaches, the program delivery organisation, and VicRide participants. Willingness to pay for VicRide was also obtained from the target novice motorcyclists. Overall the results suggest that VicRide was delivered as intended by the design on most aspects. However, the trial also identified numerous barriers to achieve high completion rates for both the preparation activity and program attendance and VicRide as a road safety intervention was valued significantly less by program participants than control riders who had not yet completed the program. Though the low completion rates may have negatively impacted the program outcomes, the barriers to completion may also reflect that individualised programs such as VicRide are practically challenging to standardise and implement as a state-wide intervention. These may be improved if all learning opportunities are contained within program attendance and the program is made mandatory. Nevertheless, these considerations are meaningful only if and when VicRide and other similar programs demonstrate detectable road safety value including crash and casualty reductions, reduced risk taking behaviours and improved safety attitudes.

Background

VicRoads commissioned Monash University Accident Research Centre (MUARC) to develop an assisted ride program for riders in Victoria in collaboration with Honda Australia Rider Training (HART) and Learning Systems Analysis (LSA). VicRoads initiated a large-scale trial of this newly developed program in Victoria for recently licensed motorcyclists. The program was named the ‘VicRide on-road coaching program’ (VicRide) for the purpose of the trial. The underlying principle of the VicRide teaching method was ‘coaching’ to influence cognitive processes of riders instead of ‘instruction’ to influence rider skills. The George Institute for Global Health (TGI) was commissioned to evaluate VicRide primarily to determine its effectiveness in reducing crash rates for novice motorcycle riders in Victoria (topic of another paper in this symposium). A process evaluation was also conducted to examine program implementation in parallel with the outcome evaluation.

The objective of the present paper is to present the results of the process evaluation. Its scope covered all aspects of the implementation, including the training of the VicRide coaches and the VicRide delivery. Data were sourced from the coaches, HART, and the VicRide participants. Willingness to pay value for VicRide was also obtained from the target novice motorcyclists.

VicRide on-road coaching program

The aim of the VicRide on-road coaching program was to assist newly licensed riders to become safer riders and to reduce their involvement in risk-taking behaviour and crashes. VicRide consisted of a series of short rides (15-20 minutes) on a planned route and pre- and post-ride discussions over four hours in a group of up to three newly licensed riders and an experienced riding coach. The route included both rural and urban riding environments, which were selected to expose riders to the types of situations identified as potentially hazardous for motorcyclists. Stops between ride sections were programmed to allow for discussion and review of these situations and how different riders approached them.

VicRide coaches were experienced riding instructors who volunteered for the program and undertook an intensive eight day coach training course to develop their ability to perform the role of a coach and mentor. The coaches' training course and materials were developed as a part of VicRide by MUARC, LSA, and HART. HART independently delivered the coach training.

VicRide adopts a learner centred approach (Zepeda, Parylo et al. 2013) and insight training (Gregersen 1996, Symmons, Mulvihill et al. 2007, Rowden and Watson 2008). The focus of VicRide was on higher order riding skills including cognitive strategies for safe riding, especially in relation to road craft, hazard perception, motivations and experience. The coaching process was to encourage riders to express their opinions and give feedback to each other. The role of the coach was to facilitate these discussions, intervening only as necessary and by using questions rather than answers to re-focus discussion. At the end of the route, the coach facilitated a final group discussion for the riders to review their own learning from the day and determine what each needed to do to keep improving their safe riding skills.

On enrolling in VicRide, participants were sent an information booklet about the program and prerequisites for their participation. Prerequisites included becoming familiar with the hand signals to be used by their coach, and completion of a short survey designed to stimulate reflection on their riding experiences to date. Their responses also provided an indicator of their crash risk profile. On the day of the VicRide, participants were required to demonstrate to the coach that their motorcycle was in sound mechanical condition and that they had basic competence in braking, cornering and obstacle avoidance.

Methods

Coach training and survey

On the last day of the coach training, the coaches were asked to complete an anonymous paper-and-pen survey developed by TGI. The survey contained questions about the coach training and VicRide program using rating scales and open-ended questions. Each coach put the completed survey in an envelope and handed it to the HART trainer of the coaches. HART then sent all the completed surveys in the envelopes to TGI by mail.

VicRide delivery data recorded by HART

The aim of the VicRide delivery data collection by HART was to monitor the degree of adherence of the actual delivery to the intended program design. Data were recorded by the coaches on the key delivery components of VicRide (e.g. reason for non-completion, duration, weather, etc) for every participant specified for the evaluation. These data were sent to TGI in Excel at the end of each month.

VicRide booking and participant survey

Participants completed three surveys via telephone interviews over the course of the evaluation study. At the completion of the baseline interview, participants were randomly assigned to either the VicRide group or control group. Those assigned to the control group were advised that they could take part in VicRide at the completion of the final interview in about 12 months' time. All riders were provided with a phone number for HART and a reference number for them to use when booking with HART. Riders allocated to the VicRide group were to call and book with HART within six weeks of the baseline interview and control riders were offered to call and book with HART after completing the final interview. HART had these reference numbers from TGI to cross check that HART was booking in only VicRide riders who had completed the baseline interview (but not the two follow-up interviews) and control riders who had completed all the three interviews. HART also had from TGI the baseline interview date and contact details of the VicRide riders so that they could call the riders for booking into the program if the riders had not called after a week since the baseline interview date.

Subsequent interviews were conducted at three months (Interview-2) and 12 months (Interview-3) after the date of VicRide participation for the VicRide group and at similar timeframes after the baseline interview for the control group. At Interview-2, the VicRide group only were asked questions for the process evaluation. They were asked 16 questions about their VicRide experience with a four-point rating scale (strongly agree; agree; disagree; strongly disagree) to assess overall participant satisfaction with the program. This produced a total satisfaction scale from one to four with higher scores indicating higher satisfaction with VicRide. Open-ended questions were also used for some questions about the experiences of VicRide participation because VicRide is a new program that was trialled for the first time and it was not possible to pre-categorise possible responses.

Willingness to pay for VicRide among novice motorcyclists

At Interview-2, both VicRide and control riders were also asked about their willingness to pay (WTP) for VicRide. Although VicRide was offered for free as part of the trial the WTP was asked in a hypothetical scenario as a measure of motorcycle riders' perceived value of VicRide as a road safety intervention. The WTP amount was modelled with a simple linear regression adjusting for age, gender, and riding exposure (riding hours in an average week) reported at baseline as well as time to follow-up (i.e. days between baseline and Interview-2) to examine any differences in the values placed by the two study groups.

Results and Discussion

Process evaluation data consisted of categorical and continuous variables as well as free responses. Categorical variables were summarised by frequencies and percentages. Continuous variables were summarised using mean and standard deviation as well as minimum and maximum values. Human coding of the free responses was conducted rather than computer coding because many responses were expressed in a convoluted manner. Response category names were developed and refined following multiple steps of coding and theory-driven and data-driven coding rules based on the common themes identified in the free responses.

Coach training and survey

Of the 22 coaches who completed the coach training, 18 (82%) completed the survey after the coach training. Characteristics of these coaches are summarised in Table 1.

Table 1. VicRide Coach Characteristics

Characteristics	Coach survey (N = 18)
Age (years)	
Mean (SD)	44.8 (6.84)
Min Max	32.0 57.0
Gender	
Female	1 (5.6%)
Male	17 (94.4%)
Riding years	
<1 year	0 (0.0%)
1 - 5 years	0 (0.0%)
5 - 10 Years	0 (0.0%)
>10 years	18 (100.0%)
Riding frequency on public roads	
Less than once each month	0 (0.0%)
At least once a month	0 (0.0%)
At least one day a week	0 (0.0%)
2-3 days a week	4 (23.5%)
4-6 days a week	6 (35.3%)
Everyday of the week	7 (41.2%)
2 or 3 days per month	0 (0.0%)
Riding hours per week	
Mean (SD)	9.0 (5.43)
Min Max	2.0 25.0
Riding km per week	
Mean (SD)	472.9 (191.40)
Min Max	190.0 900.0
Motorcycle instructor years	
Mean (SD)	7.4 (5.55)
Min Max	0.8 23.0
Motorcycle instructor employment status	
depends on the season	0 (0.0%)
part-time	7 (38.9%)
full-time	11 (61.1%)
Working days as a motorcycle instructor in the last 12 months	
Mean (SD)	143.9 (95.43)
Median (Q1, Q3)	121.5 (50.0, 250.0)
Min Max	12.0 260.0

Coach views of the coach training and VicRide are summarised in Table 2 and Table 3 respectively. The coaches were also asked about their views of the differences between ‘instruction’ and ‘coaching’ and identified two themes: 1) Instruction is telling the students “how to” while coaches facilitate the students to find the answers themselves; 2) Instruction is focused on skills but

coaching is focused on influencing the cognitive processes. These suggest coaches had grasped the underlying principle of the VicRide teaching method.

Table 2. Coach Views of Coach Training

Characteristics	Coach survey (N = 18)
VicRide coach training duration	
too short	8 (44.4%)
about the right length	8 (44.4%)
too long	2 (11.1%)
VicRide coach training delivery pace	
much too slow	0 (0.0%)
a bit too slow	1 (5.9%)
about right	13 (76.5%)
a bit too fast	3 (17.6%)
much too fast	0 (0.0%)
Coach rating of coach training out of 10 - delivery skills	
Mean (SD)	7.8 (0.83)
Min Max	6.2 8.9
Coach rating of coach training out of 10 - coaching skills	
Mean (SD)	8.3 (1.24)
Min Max	5.0 10.0

Table 3. Coach Views of VicRide

Characteristics	Coach survey (N = 18)
VicRide discussion-ride balance	
Not enough discussion and too much on-road riding	0 (0.0%)
About the right balance	17 (100.0%)
Too much discussion and not enough on-road riding	0 (0.0%)
Coach rating of VicRide out of 10	
Mean (SD)	7.6 (0.60)
Min Max	6.6 9.0

The VicRide coaches were experienced riders and trainers with an average of over 10 years of riding experience and an average of 7.4 years of being rider trainers. Most coaches believed the coach training was either too short or just right, but they generally rated the training highly with average scores of 7.8 out of 10 for delivery skills and 8.3 out of 10 for coaching skills. The coaches generally rated VicRide highly with an average score of 7.6 out of 10.

All these results suggest that the coach training was delivered adequately to equip the coaches with the required delivery and coaching skills and good understanding of the 'coaching' style as opposed to 'instruction' style of teaching.

VicRide delivery data recorded by HART

Of the 748 VicRide riders for whom HART provided delivery records, 28 of them were recorded as 'did not complete the VicRide program'. The reasons recorded by HART for not completing the program included ineligible (n=20), bad weather (n=5), and voluntary withdrawal by the rider (n=3). The program delivery adherence was assessed on the delivery records for the 720 riders who HART recorded as having completed the entire program (Table 4).

VicRide was designed to be run over four hours and delivered in a group of two to three riders. The actual program duration ranged from three to five hours with an average of four hours, and the actual group size ranged from one to three. The majority (93.2%) of the riders participated in the program in a group of two (42.2%) or three (51.0%) riders, but a small percentage (6.8%) participated on their own. Most (94.3%) of the riders participated in metropolitan locations. All VicRide riders should have received a preparation activity booklet from HART before the actual program delivery date. Only 71.1% of riders who attended the program completed the preparation activity before the actual program participation. Reasons for not completing the preparation activity were only reported for 36.1% of those who did not complete the activity. The reasons were either that the riders did not receive the preparation activity booklet (48.6% of those who provided reasons) or riders did not have enough time (51.4%).

The coaches rated the participants' overall engagement during the program on a scale from one (never) to four (always). The coaches assessed 80.6% of the rider participants to be always engaged, 17.2% most of the time, and 2.2% half the time. The coaches also rated the rider participants' level of following hand signals during the course on a scale from one (never) to four (always). The coaches assessed 78.7% of the rider participants to follow hand signals all the time, 19.9% most of the time and 1.4% some of the time. This relatively low rate of following hand signals may be likely due to almost 30% of the riders not having had received or completed the preparation activity before the program participation. All the participants completed the rides in light traffic conditions, heavy traffic conditions, and in metropolitan environments. Most of the participants (99.3%) also completed rides in rural environments but a small percentage (0.7%) did not.

VicRide booking and participant survey

A total of 1232 riders were randomised into the VicRide group. The majority (81.2%) were males and the average age was 35.3 years (SD=11.27). Of the 1232 VicRide riders, 1061 (86.1%) were successfully followed up for the second interview and 704 riders (57.1% of the original VicRide riders) reported they had completed VicRide. The 357 (29.0%) VicRide riders who were successfully followed up for the second interview but had not completed VicRide were asked in an open-ended question about the main reason for non-completion. Although the reasons varied widely, the top three reasons for not completing the program were work (23.1%), no bike (18.8%), and lack of time (17%).

Those VicRide riders who reported they completed the program (n=704) were asked a series of questions about their experience of VicRide participation. The results are summarised in Table 5. The total satisfaction score ranged from 1.94 to 4 with a mean of 3.2 (SD=.42). This mean equates to eight out of 10. Most riders believed the program duration, the speed of the on-road rides, and the balance of discussion and on-road riding were about right. When asked about what the VicRide participants liked about the program, though the views varied widely, the top three comments were

‘coach quality’ (20.1%), ‘receiving feedback’ (17.4%), and ‘group discussion’ (16.1%). These features are in line with the intended design of the VicRide program.

Table 4. VicRide delivery based on HART records

Characteristics	VicRide program (N = 720)
HART program duration	
Mean (SD)	4.0 (0.21)
Median (Q1, Q3)	4.0 (4.0, 4.0)
Min Max	3.0 5.0
VicRide group size	
1	49 (6.8%)
2	304 (42.2%)
3	367 (51.0%)
VicRide delivery location	
Bendigo Rural	37 (5.1%)
Warragul Rural	5 (0.7%)
Somerton Metro	292 (40.6%)
Kilsyth Metro	238 (33.1%)
Cranbourne Metro	148 (20.6%)
VicRide prep activity completed by participant	
No	205 (28.9%)
Yes	505 (71.1%)
VicRide prep activity non-completion reason	
None provided	19 (20.4%)
Book not received	36 (38.7%)
Not enough time	38 (40.9%)
VicRide hand signals followed	
Never	0 (0.0%)
Some of the time	10 (1.4%)
Most of the time	142 (19.9%)
All the time	562 (78.7%)
VicRide participant engagement	
Never	0 (0.0%)
Half the time	16 (2.2%)
Most of the time	123 (17.2%)
Always	578 (80.6%)
VicRide metro route completed	
No	0 (0.0%)
Yes	719 (100.0%)
VicRide rural route completed	
No	5 (0.7%)
Yes	714 (99.3%)
VicRide light traffic condition completed	

No	0 (0.0%)
Yes	719 (100.0%)
VicRide heavy traffic condition completed	
No	0 (0.0%)
Yes	719 (100.0%)

Table 5. VicRide participant feedback

Characteristics	VicRide group (N = 1061)
Program completed or not	
No	357 (33.6%)
Yes	704 (66.4%)
VicRide participant satisfaction scale score out of 4	
Mean (SD)	3.2 (0.42)
Min Max	1.9 4.0
VicRide course duration	
Too long	17 (2.4%)
About the right length	573 (81.4%)
Too short	114 (16.2%)
On-road riding speed	
Much too fast	0 (0.0%)
A bit too fast	5 (0.7%)
About right	613 (87.2%)
A bit too slow	77 (11.0%)
Much too slow	8 (1.1%)
Discussion-ride balance	
Not enough discussion and too much on-road riding	26 (3.7%)
About the right balance	620 (88.1%)
Too much discussion and not enough on-road riding	58 (8.2%)

Willingness to pay for VicRide among novice motorcyclists

All the Interview-2 respondents provided a WTP value for VicRide. The WTP ranged from 0 to 1000 with a mean of \$175 (SD=137.8). The certainty of the WTP choice ranged from one to ten with an average of 8.1 (SD=2.0). The certainty level was very high across all study participants and did not differ between the two groups. Therefore all WTP values were used in subsequent analyses.

The average WTP was lower amongst the VicRide riders (\$162; SD=127.3; n=1061) than the control group riders (\$188; SD=146.33; n=1067). Further analyses showed that the highest WTP amount for VicRide was statistically significantly lower for the VicRide group than the control group, even after accounting for age, gender, and riding exposure (adjusted beta coefficient=-0.277; $p < .0001$). That is, the VicRide group valued VicRide significantly less than the control group.

Table 6. WTP for VicRide for VicRide vs Control Groups

Variables	Univariate estimates		Adjusted estimates	
	coefficient (95% CI)	P-value	coefficient (95% CI)	P-value
VicRide vs. Control	-.264 (-.381, -.148)	<.0001	-.277 (-.393, -.161)	<.0001

Age	0.019 (0.014, 0.024)	<.0001	0.018 (0.013, 0.023)	<.0001
Gender (Male vs. Female)	-.130 (-.278, 0.019)	0.0880	-.051 (-.200, 0.098)	0.5000
Riding exposure (hours/week)	-.031 (-.047, -.015)	0.0001	-.027 (-.042, -.011)	0.0010

These results are shown in Table 6. Changes in perceived value from pre to post intervention experience are not uncommon in relation to transport policy, such as congestion charges (Schuitema et al. 2010) and random breath testing (Job et al. 1997).

Implications

Overall the results suggest that the VicRide program was delivered as intended by the design on most aspects. However, the trial also identified numerous barriers to achieve high completion rates for both the preparation activity and program attendance and VicRide was valued significantly less as a road safety intervention by program participants than control riders who had not yet completed the program. Though the fact that almost 30% of the participants had not completed the preparation activity before the program participation may have negatively impacted the program outcomes, the barriers to completion for both the preparation activity and program attendance may also reflect that individualised programs such as VicRide are practically challenging to standardise and implement as a state-wide intervention. These may be improved if all learning opportunities are contained within program attendance and the program is made mandatory to maximise control of the delivery and ensure completion to cater for all levels of motivation. Nevertheless, these considerations are meaningful only if and when VicRide and other similar programs demonstrate detectable road safety value including crash and casualty reductions, reduced risk taking behaviours and improved safety attitudes.

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