Motorcyclists’ Perceptions and Experiences of Riding and Risk and Their Advice for Safety

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Objective: To examine the knowledge, observations, and perceptions of motorcycle riders on the risks of on-road motorcycling and potential safety measures to give insight and guidance in developing policies, programs, and legislation to improve the safety of motorcyclists.

Methods: Individual and focus group interviews were conducted with dealers and a cross section of motorcyclists from selected regions across New Zealand. The interviews were analyzed and coded to identify common themes and diverse perspectives on why people rode motorcycles, riders’ perceptions on risk, and possible safety strategies for on-road motorcycling.

Findings and Discussion: Motorcycling has major benefits for riders, although most riders perceived that the risks could be severe and they were susceptible to injury. Their observations on the threats and barriers to safety focused on 3 components: the rider, the motorcycle, and the environment. Risks included inexperience, not riding to the conditions, choice of motorcycle, protective clothing and conspicuity, and speed. The underlying risk of being on 2 wheels was accentuated by the availability of high-power motorcycles. The threats perceived in the environment included the behavior of other road users, especially car drivers, and the poor road conditions and surrounds encountered.

Conclusions: Riders identified risks that have been recognized in the road safety literature as well as risks for which there are no engineering or scientific solutions. To effectively increase motorcyclist safety, recognition of the commonalities and the differences between motorcyclists’ perspectives and proposed strategies is needed. This approach is more likely to engage riders and thus support positive behavior change among riders and drivers.

Keywords: motorcyclist, injury, road users, safety, risk taking

Introduction

Much has been written about mortality rates for motorcyclists from on-road crashes, which in New Zealand has been calculated to be 23 times higher than the rate for occupants of motor vehicles per kilometre traveled (Ministry of Transport 2011a). Risk factors have been considered and a common solution proposed aligns with Haddon’s first countermeasure regarding hazards (National Committee for Injury Prevention and Control 1989): remove the motorcycle from the road. This is not as simple as it sounds and would be considered an outrageous suggestion by many. Despite the motorcyclist mortality rate, riding motorcycles is a popular recreational activity, a commuting choice, or a commuting necessity.

For some years it appeared that motorcyclists’ injury rate in New Zealand was receding. Between 1988 and 2003, the mortality rate for on-road motorcycle crashes declined, as did the number of motorcycles purchased and licensed (Ministry of Transport 2008). However, motorcycle and moped sales in New Zealand have been increasing since 2003. Fears are that this increase in ownership will mean more motorcycles on the road, which will result in more injuries again. The mortality rate dropped below 1.0 per 100,000 person years for all motorcyclists in 2000 but returned to 1.1 in 2008 (National Injury Query System 2013). The number of riders ≥40 years who died or were injured has been increasing while the number among younger age groups has continued to decrease (Ministry of Transport 2011a). One contention is that older riders are reliving their youth and, having accumulated sufficient disposable income, invest in the bike of their dreams, which unfortunately they do not have the skills to ride. This, however, may be the driving factor for only one sector of the riding population. Economic necessity may be increasing the number commuting to work on motorcycles, especially where public transport does not adequately serve residential and work areas.
A further concern is that if the number of young riders increases to levels previously seen in the 1960s, the death rate could rise again. Though safety features are increasing for motorcycles, riding on the road on 2 wheels carries more risks than traveling in a car.

Injury costs associated with traffic crashes involving cars are considerable, but the convenience and benefits of car use are generally accepted as outweighing the costs. Significant gains have been made in car safety, although normalizing safety features has taken decades to achieve. However, motorcycles, despite their inherent risks, may confer benefits not just to the individual but also to the environment. The impact of vehicle emissions on air pollution, global fuel supplies, and dependence on fossil fuels and the effect on land use and the landscape itself of increased roading (construction of roads, highways) are exercising the minds of planners. The perceived lower environmental impact of motorcycling could be considered an additional benefit to the personal pleasure or convenience people claim they get from riding.

The risk of motorcycling has been examined through analysis of the mortality and morbidity of motorcycling. This has not provided insights, however, into why people continue using a high risk mode of transport. This article explores motorcyclists’ perceptions of the benefits, risks, and consequences of riding and possible resolutions for increased safety when riding.

Methods

A qualitative study was developed to capture in-depth information on New Zealand motorcyclists and their perspectives on safety. It sought to obtain motorcyclists’ opinions, attitudes, experiences, and behaviors with regard to riding a motorcycle, the risks they perceived, and how they felt safety could be improved. To achieve change in how people respond to their environment and interpret the context in which they operate requires more than addressing the statistically significant risk factors. A major limitation of using a positivist approach is that, in the process of determining the aspects of the problem to be examined, what is important is predetermined and there is little room to explore experience or knowledge that has not been defined by the researcher in advance. In the case of the motorcyclists, obtaining insights into their perceptions of what puts them at risk, and perceptions of what increases safety, is necessary to understand and potentially modify behaviour.

An interpretive methodology was adopted to obtain a credible understanding of participants’ perceptions, theories, beliefs, and experiences (Crabtree and Miller 1999; Davidson and Tolich 2003). Taking an interpretive constructivist approach meant seeking not only the common, shared experiences and meaning but also the diverse views, beliefs, and experiences of a selection of motorcyclists. This approach facilitates extending discussion beyond the interview schedule to take account of the current environment. Consensus was not important; the study was not designed to generalize participants’ views to the population, and it was recognized that a single comment might generate solutions to the problem. However, the selection process means that the findings are transferable to riding populations with similar riding patterns and characteristics (Lincoln and Guba 1986).

Selection

The population of interest was motorcyclists riding on-road. Interviews were conducted with people from 2 sources: (1) motorcycle dealers and mechanics (n = 10) and (2) motorcyclists themselves (n = 140; 6 individuals and 23 focus groups including 3–12 members), in 8 regions purposefully selected to obtain a mix of riders and riding patterns. Factors taken into account in the selection included weather, geography, urban/rural, and population density. Participating riders included recreational riders (cruising and touring), sports bike riders, commuters on bigger motorcycles, and commuters on smaller bikes, scooters, and mopeds. Two focus groups were held with younger riders and one with a group of ex-riders. Where necessary, differentiation is made between big bike commuters (>250 cc), smaller bike commuters, and recreational riders. Moped riders are those riding motorcycles ≤50 cc (see Table 1).

Individual interviews were held with dealers and mechanics who ran large businesses and/or had specific markets, such as the urban commuter. These participants were approached for 2 reasons: in planning the research it was evident that dealers and mechanics were themselves experienced motorcyclists and also that they had considerable insight into the behaviors and perceptions of a wide range of riders, some of whom might not engage in focus group discussions. Dealers were purposefully recruited using the telephone Yellow Pages, Internet links, and recommendations from other dealers. Dealers were telephoned, the study was explained, and they were invited to participate. Interviews were conducted either face-to-face or, where this was not possible, by telephone.

Motorcyclist recruitment was also purposeful, operating through (a) motorcycle dealers who were asked to organize groups of riders with common characteristics (for example, scooter riders, dirt bike riders, young riders, older riders); (b) a motorcycle rally that attracts riders from a wide range of subcultures and locations, Internet searches for specific clubs or groups (for example, women riders); and (c) personal invitation (fliers or leaflets left on handlebars) targeting riders less likely to belong to groups or clubs; for example, commuters. One group of women riders was recruited, although many of the other focus groups also included some women. Group membership varied, but overall there was a mix of people who were in training, employed, unemployed, or retired. A number of the groups included members of the same club or people who rode together. However, regardless of whether they knew each other, all but one group was willing to exchange views and amicably agreed and disagreed on points raised by their discussion.

The semistructured, open-ended interviews and focus group discussions were conducted by the first author, recorded, and transcribed by the third author (who was also present at each). The interviews, which took about an hour,
and focus group discussions, which lasted longer, were held at times convenient to the individual or group. All interviews and discussions were recorded digitally and field notes were taken. The transcripts were read by 2 researchers, who also listened to the recordings of all interviews independently. NVivo8 (QSR International 2008) was used for initial analysis of all of the interviews to organize material from the transcripts, recordings, field notes, and memos.

Conducting rider focus groups and dealer interviews separately was intended to obtain different perspectives and increase the reliability of the study’s findings. The focus groups’ information predominantly concurred with that of the dealers, so reporting the findings has been aggregated. The interviews with the dealers (all of whom were male and motorcycle riders) often offered greater clarity on specific issues and raised additional aspects to consider. All of their interviews were transcribed. Because the opinions and experience of many of the groups were the same, discussions from only some of focus groups were transcribed. The researchers listened to the recordings of the groups not transcribed to ensure that their views and experiences were incorporated into the analysis and the themes identified.

Codes were established based on the research questions, and further themes added when additional important aspects regarding culture, perceptions of risk, or views on motorcycle safety were raised in the interviews or discussions. Further analysis and reflection resulted in refinements being made to the identified themes, their interpretation, and their grouping. Where necessary, further information was gathered from sources such as motorcycle Internet blogs and points were clarified by checking with participants. Common issues and diverse perspectives were identified from the transcripts and field notes, and detail was confirmed by additional direct listening to the recordings. Analyses were both deductive, based on the defined discussion points, and inductive, where the narratives extended beyond the basic questions. Where there were different interpretations these were discussed and agreement reached between the researchers. The draft report was sent to the focus group organizers and dealers asking for feedback. There were a few suggested amendments, and these were incorporated into the analysis.

The themes were examined in relation to a systematic review conducted as part of the research program on motorcycle safety, and the same 3 groupings of issues emerged that are critical for examining motorcyclist safety: the rider, the motorcycle, and the environment (riding and physical).

Findings

The following are the participating dealers’ and motorcyclists’ perspectives on riding and safety. Three areas from the discussions are presented: a critical underlying understanding as to why they rode a motorcycle, what they saw as the risks of riding on road, and what could be done to increase safety for motorcyclists.

Why Ride a Motorcycle?

The immediate response from nearly all riders was that they rode for enjoyment. Many of the riders valued the camaraderie of motorcycling and the sense of egalitarianism prevailing within the motorcycling population, something many saw was being lost in contemporary New Zealand society. They valued being outside in the open air, having a sense of freedom (physical and/or psychological), developing or honing riding skills, learning to “work with the bike,” or increasing their ability to manage riding conditions. The exhilaration was described by one rider, who both raced and commuted long distances, as the “element of never fully being in control,” and taking calculated risks was inherent to the excitement for many other riders. Only a few respondents (including small bike commuters) chose to ride solely because it was the easiest, cheapest, or only convenient way to get to work or to their place of study. Few riders reported only negatively on their experience.

Risks of Riding

Motorcyclists considered themselves to be more exposed to injury than car drivers and collectively enumerated ways in which they were susceptible to injury. One rider observed, “You have to go out of your way to hurt yourself when you are in a car, but you can get quite injured on a bike without trying.” This operated in a number of ways: “You can do something really stupid, you can be doing something right but someone else does something stupid, or something happens that you have no control over.”

Riders were generally reticent, however, about highlighting motorcycling risks. This quote was typical of many: “You don’t
tend to think about becoming too seriously injured specifically. You can’t spend your whole life thinking about what’s going to happen.” Denial or a sense of fatalism was relatively common; for example, examining the risks too closely was thought to happen. “I’m a firm believer in when your number’s up, your number’s up. You can do certain things to negate it but at the end of the day, if you’re too scared, you just stay at home, watch Coro St, and do your knitting.”

Many of the conversations with motorcyclists, including some who were the authors of such statements, contradicted this view. It was not uncommon for riders to say that they had not ridden when their children were young or teenagers or when work responsibilities were demanding to reduce their exposure to the risk of serious injury. Older riders from motorcycling families often reflected on the relatives who had been killed or seriously injured through motorcycling. Riding could become seriously disapproved of within these families, and it was not uncommon for stories to emerge of young riders keeping their first motorcyle secret at someone else’s place. However, despite the family losses or injury, the serious consequences of motorcycling were accepted as being “in the blood” by others.

Participants’ responses to what they considered threatened rider safety had 3 overarching themes: the rider, the motorcyle, and the environment (see Table 2). The following are the risks as perceived by riders, which do not necessarily concur with the empirical research; listing them here does not imply that all of the riders shared all of these perceptions.

The Rider

Many riders saw “self” as a risk for rider safety. Riders “push the envelope,” speed, are overconfident, are inexperienced, and ride when they are tired or cold, unfamiliar with the terrain or the bike, or after drinking alcohol. “Only luck” was claimed to avert many injuries. In contrast, one dealer was more direct: “The majority of motorcycle accidents that I have seen are caused by rider ineptitude. You will always hear motorcyclists blame cars. But it’s not the cars. It’s the motorcyclists.” He was not alone in this view. Overestimating one’s ability to manage risk was a threat, and numerous examples were given of (usually other) riders taking calculated, or uncalculated, risks. Being unwilling to heed advice or learn bike handling skills was a risk to the biker and others. Most riders expressed intolerance of going too fast or not riding to the conditions. These risks were considered characteristic of many motorcyclists: young riders, middle-aged males, “born again” riders, and/or city commuters (riding motorcycles ≥250 cc). There was no consensus, however, on what constituted “not riding to the conditions.” Younger riders and sports bike riders were most likely to report traveling at high speeds (or with rapid acceleration). As one sports biker noted: “There seemed little point in paying for such bikes if you did not intend to test their capabilities.” Most participants had traveled faster than the legal limit, especially when they were younger, and a considerable number still did.

Unfamiliarity with conditions was considered a risk, a common example given being urban riders in a rural environment. Some behavior emerged as contentious; for example, fast overtaking and lane splitting (common in urban rush hour traffic) was seen very differently by different riders. Individual-level risks included the danger of riding with very cold hands and feet and losing concentration after riding for some time. It was thought that inexperienced riders were less likely to recognize signs of tiredness. Unlicensed riders were a risk to themselves and others, something not lost on a few who had ridden unlicensed for many years. Their views were summed up by one who said he had not realized “how much I didn’t know that I didn’t know” until he went for his license.

Alcohol was seen as a risk to safe riding, and alcohol abuse was reported to be common among a “hard core” of riders. Some older riders recalled critical events after which they stopped drinking and riding. These included traumatic crashes

### Table 2. Risks perceived by study participants

| Theme              | Perceived risks                                                                                           |
|--------------------|-----------------------------------------------------------------------------------------------------------|
| Rider Skill        | Lack of competence in riding motorcycle                                                                       |
|                    | Not riding defensively                                                                                        |
| Choice of bike     | Buying bikes that are too powerful for the rider’s capability                                               |
| Choice of riding environment | Exposure to risky environment                                                                                   |
| Speed              | Riding too fast or not to the conditions                                                                      |
| Alcohol            | Alcohol misuse among a sector of motorcyclists                                                               |
| Protective clothing| Not using protective clothing                                                                                |
| Conspicuity        | Riders not visible                                                                                           |
| Motorcycle Power   | New Zealand conditions do not warrant the power many big bikes have                                          |
|                    | 250 cc restriction for learners is ineffective: bikes this size are too powerful                              |
|                    | Moped’s top speed inadequate for safety                                                                       |
| Bike conspicuity   | Some bikes are not very visible                                                                               |
| Bike fit maintenance| Bike may be poor fit for the rider                                                                             |
|                    | Bikes need to be well maintained                                                                             |
| Quality of mopeds  | Poor quality from mass imports, particularly from China                                                       |
|                    | Modified mopeds are not picked up as warrant of fitness not required                                         |
| Riding environment | Motorcycles not seen as legitimate road users by other road users                                             |
| Other road users   | Discourtesy of drivers to all other road users including motorcyclists                                      |
|                    | Drivers undertaking unsafe manoeuvres; e.g., tailgating, not giving way, overtaking and not providing adequate room, doing U-turns in front of bikes |
| Physical environment| Hazardous surfaces: gravel, grit                                                                              |
| Road surfaces      | Poorly signed road works                                                                                     |
|                    | Big trucks on road surfaces not designed for their weight causing mirror-like finish on road surface       |
|                    | Legal but unsafe surfaces; e.g., paint used for road markings                                               |
| Roading changes    | Illegal spillage on road; e.g., diesel, effluent                                                           |
| Roadside barriers  | Road design changes not made with reference to motorcyclists safety needs                                    |
|                    | Roadside barriers seen as a risk                                                                             |

*aLegally required check of a vehicle’s roadworthiness and safety.*
in which friends died or “only luck saved them.” Younger riders tended to reflect on their loss of freedom and possibly their job if they lost their license due to drinking and riding. Most riders supported having regulations for low alcohol, speed limits, and wearing a helmet. Older riders often acknowledged their opposition to such constraints when they were younger but now recognized that the serious consequences of taking such risks were not acceptable. More than one older rider offered a comment similar to this: “In the 1960s they used to have [hospital] wards for motorcycle accidents.”

Not wearing protective clothing was considered to be taking an unnecessary risk and the small group of riders who did not wear it were sometimes described as being unnecessarily “macho.” There was less agreement on the use of high-visibility (hi-vis) wear. The view “I’ll wear any colour you like as long as it is black” was common among recreational riders. Efforts to address conspicuity often seemed to be associated with the type of bike ridden. Riders on European cruising or touring bikes or on sports motorcycles were more likely to wear protective clothing with bright or contrasting colors. Commuters on larger bikes were more aware of being invisible and more likely than older recreational riders to report wearing hi-vis clothing or carrying a “fluoro” jacket for poor conditions (although this did not guarantee wearing). A few riders reported attaching fluorescent “mohawks” or Mickey Mouse ears to their helmets for increased visibility. However, it was thought that too many riders doing this would reduce its effectiveness in attracting drivers’ attention.

The Motorcycle

Risks associated with the motorcycle itself were power-to-weight ratio, power, conspicuity, and “bike fit.” There was considerable agreement that the power-to-weight ratio for many 250 cc bikes was too high for learners. Experienced riders were more likely to see motorcycles ≥1000 cc as risky, describing them as being overpowered for New Zealand riding conditions. As one dealer commented “Kiwis [are] besotted with large motorcycles,” and he and others compared New Zealand preferences to the motorcycles popular in Europe (≈600 cc). Of concern was that large bikes were being bought by riders who did not have sufficient skill or experience to ride them or did not choose bikes that suited their physical capabilities. Young riders were more likely to want a motorcycle with good acceleration and more likely to overestimate their capability. Though experienced riders were more likely to recognize it, all riders required time to get to know a new bike and make adjustments to its rider fit.

The invisibility of motorcycles was identified as a risk. Despite motorcycles being well within their visual distance, car drivers often do not see them. Permanent headlights were generally considered helpful for conspicuity, but many incidents discussed indicated that such lights had been insufficient to ensure visibility.

Poor bike maintenance was a commonly identified risk. This was seen as being no different to owning a car, but the consequences of a mechanical failure on a bike could be more serious.

Table 3. Motorcyclists’ perspectives on risky driver behavior

| Intentional | Thoughtless | Unintentional |
|-------------|-------------|---------------|
| Deliberately preventing a rider overtaking | Determinedly passing regardless of speed | Not giving motorcycle full width of lane |
| Crowding the motorcyclist when overtaking | Tailgating | Not seeing motorcycle |
| Tailgating | Using mobile phones | Calculating motorcycle’s speed incorrectly |
| Not using rear-vision mirrors before overtaking | Rushing motorcyclists at road works | Leaving lights on high beam at night |
| Overtaking with insufficient distance when opposing | Intentional |
| motorcycle approaching | Deliberately preventing a rider overtaking |

The Riding Environment

“Tin tops” or “cagers” (car drivers) were described as perpetual risks to motorcyclists. Contact with another vehicle is potentially damaging, but window tinting was an example noted that made it hard for a biker to make eye contact with the driver, something many of the riders considered critical for their survival. Lack of driver courtesy in New Zealand in relation to motorcyclists, and also for pedestrians and pedal cyclists, was often noted. Riders’ comments suggested that a classification of drivers’ risky behaviors was possible on a continuum from unintentional, to thoughtless, to intentional poor behavior (see Table 3).

Motorcyclists reported cases where they had taken evasive action to avoid hitting a vehicle on the road; for some, this had resulted in running off the road or falling off their bike. In some of these cases, the vehicle continued as the driver was unaware of the outcome, and such events were thought likely to be reported as single-vehicle crashes with the rider at fault.

The Physical Environment

Riders identified environmental hazards but considered that these were not systematically recorded at crash sites or were described from a driver’s perspective. Many concerns related to poor road surfacing, such as extraneous gravel, pot holes, corrugations, bumps, grooves, poor patching, road deterioration, road works, gritted icy roads, and loose gravel from driveways. Warning signage for surface problems was poor, with signs often removed after road works were finished but before loose gravel had been swept away. “Legitimate hazards” were also identified: rumble strips, metal plates, and white road-marking paint that is slippery when wet. Illegal hazards were a major threat to rider safety and included spilt diesel, oil, and stock effluent. Built hazards, such as roadside barriers and roadside furniture, were also considered risky. Harm from sliding along a road after coming off the bike could be minimal with proper protective clothing, but hitting a roadside obstacle was likely to result in serious injury. However, the protection offered by roadside barriers in appropriate places was appreciated.
Increasing Safety for Motorcyclists

Respondents suggested a number of strategies to improve motorcycle safety, from changes by the individual rider to changes in policy.

The Rider

While acknowledging that changing behavior is challenging, riders argued for better rider (and car driver) training to reduce the on-road risks to motorcyclists (see Table A1, online supplement). Respondents were clear that safe motorcycling demanded skills over and above those required to drive a car. Current basic skills training required for a motorcycle licence was not considered by more experienced riders to provide sufficient either for riding or hazard detection. Research into engaging riders unwilling to undertake training or who “knew it all” was called for.

Experienced riders and trainers called for motorcycle licensing tests to be conducted by qualified testers who were also advanced motorcycle trainers. Trainers reported seeing rider behaviors indicative of poor skills that would not be recognized unless the tester had considerable riding experience.

A “sober rider” campaign was suggested to address the hard core drinkers. Motorcyclists’ behaviors in relation to alcohol were thought to have improved over time. Respondents indicated that combining alcohol and riding was stupid. Their proposed strategies were mainly directed at individuals and clubs modeling and supporting responsible behavior in their club rides. Few strategies proposed involved the use of environmental strategies or legislation to ensure change.

Requiring all road users to re-sit licenses at regular intervals (perhaps every 10 years) was often proposed to reduce the number of “born again” riders. However, there was a caveat: if obtaining a license was perceived to be too difficult, riders might ride unlicensed. Fifteen years of age was considered too young to be riding any motor-powered machine on the road by all but the youngest participants, and most proposed that the licensure age should be higher for all road users.

Riders considered that the quality and availability of protective clothing had improved, but many called for mandatory standards. Although some riders only wanted leathers, those with experience of modern materials considered that these brought protective advantages during a fall as well as better temperature management. Having a range of affordable protective clothing to meet New Zealand’s variable climatic conditions was also wanted. Riders often mentioned how being cold compromised their ability to manage controls, and being too hot could result in protective layers being discarded.

Some current designs and the look of the affordable hi-vis clothing were not considered to encourage riders to wear it. For some groups, although they voiced concern about hazards, as others have noted, image “trumps” safety. Changes may require an international effort because demand from New Zealand riders alone may not be sufficient to trigger changes in this market. For example, though some dealers reported that black helmets were the most popular, some riders complained that many full-face helmets were only available in black despite brighter colors being more conspicuous.

Different groups reported only wearing black leathers; however, a subset of these riders reported using hi-vis vests as well. Riders advised that working with different motorcycle subcultures to foster the acceptability and use of protective and hi-vis clothing might help because developing an adequate market for protective clothing is dependent on demand from riders. Mandatory regulations for the use of protective clothing were thought to be less welcome to urban commuters (especially moped and scooter riders); however, better street wear designs incorporating lighter weight materials that were easy to wear (and store when the rider was at work) could help.

The Environment

Most of the environment strategies proposed focused on other road users and were New Zealand specific (see Table A3, online supplement). Training material for car drivers designed to increase drivers’ willingness to recognize vulnerable road users such as motorcyclists and pedal cyclists as legitimate road users was often called for. There were suggestions that the law should hold car drivers more accountable when they are involved in crashes with vulnerable road users. All drivers should be required to re-sit their licenses at regular intervals (perhaps every 10 years). In addition to being familiar with the
road code and meeting competencies, other behaviors and attitudes, such as keeping left, being positive toward other road users, and exhibiting general courtesy could be inculcated into driving behavior.

A contentious proposal was that car drivers should be required to ride a motorcycle before they obtained their driver’s license, thereby increasing drivers’ awareness. Other riders argued that this exposed inexperienced riders to greater risk. Being a pedal cyclist was put forward as a less risky option for obtaining experience as a vulnerable road user.

Grit, gravel, or painted road markings were implicated in many motorcycle crashes, yet data on these factors are not systematically collected at crash sites. Riders proposed that data be collected routinely on the state of the road surfacing at the time of a crash. Maintenance of road surfaces on main roads needs to be better for fuel spills, effects of hot weather, or the smooth mirror effect generated by heavy trucks on road surfaces not designed for such weights/vehicles. Roading contracts should be audited to ensure roads were clear of debris (in particular gravel on sealed roads), road works adequately signed at all times, and loose gravel swept up before signage was removed. The use of nonslip paint for all road markings on main roads and on bus lanes would address the risk of painted surfaces becoming slippery when wet. Enforcing existing requirements for downloading of effluent from stock trucks would reduce the risk of spillage and a technical solution to prevent diesel leakage from trucks needs to be found.

Motorcyclists felt that, to date, changes to increase safety on New Zealand roads had only been developed and evaluated with respect to cars and trucks, not motorcycles. A common solution proposed was to introduce impact assessments for new or redesigned roads to improve safety for vulnerable road users as well as drivers. At the least, the road should be no more dangerous to any user than it was before the changes were implemented.

Discussion

Obtaining motorcyclists’ opinions and perceptions on road safety provides a legitimate body of riders’ experiences of, and opinions on, the safety problems and barriers to engagement for change. Regardless of whether these views concur with traffic crash data, implementation and enforcement is more effective when it takes into account rationales within the population of interest.

Three key points emerged in this study. Firstly, many motorcyclists ride because they really enjoy it, so developing strategies that discount this benefit is unhelpful. Secondly, there was considerable agreement between the views on risks reported here and the New Zealand crash data, as well as the findings of studies such as the Hurt Report in the United States (Hurt et al. 1981) and a European case control study (Magazzu et al. 2006; MAIDS 2009. It is likely that some observations and perceptions reported in this paper owe their genesis to these 2 studies.) Thirdly, though riders admitted that they could be at fault some of the time, other road users in New Zealand were considered to be at fault often and improving on-road safety behavior of all road users was important.

For the recreational, large commuting, and sports motorcyclists, the risks of riding were not sufficient to forego enjoyment from riding. Banning motorcycling to reduce injury was seen as an infringement of rights. Banning motorcycles was seen as impractical from an employment perspective, too. If public transport was timely, cost effective, and accessible, some urban motorcycle commuters would use it. It was not uncommon to hear that a small motorcycle or scooter was the most efficient way or, in some cases, the only way, for a worker to get to his or her employment in a timely manner and retain his or her job.

There was little difference in the perceptions of on-road risks from views expressed in this study and those found in the literature, although the degree of perceived risk might differ. For example, though some riders probably understated the use of alcohol among motorcyclists, including their own, they were clear about the value of being sober when on 2 wheels. Similarly, traveling too fast for conditions in crashes was recognized as a risk to a rider’s safety. There was less agreement as to what was too fast, but most qualifying comments included variables involving the skill of the rider, conditions, judgement, and not simply obeying speed limits or advisories. For comparison, New Zealand’s 2010 motorcycle crash analysis indicated that 32% of fatal crashes involved traveling too fast for the conditions and 22% involved alcohol and/or drugs (doing both was a subset of these; Ministry of Transport 2011b). The Hurt report found almost half the fatal motorcycle crashes involved alcohol (Hurt et al. 1981) MAIDS reported that although <5% of cases involved riders under the influence of alcohol, these riders were overrepresented in the accident population in this study (MAIDS 2009).

There was almost universal agreement among riders of motorcycles (but not of scooters) that using protective clothing was necessary (regardless of their actual behavior), and the value of a good quality, full-face helmet was frequently stressed. There was also considerable agreement that conspicuousness of the bike and the rider was important for safety. Technical solutions to increase the bike’s visibility were generally acceptable, with groups spending time discussing various options. The image of self was high among a number of the riders and was discussed in almost all focus groups. It was most consistent among recreational riders who wore black leather. Black leathers (which many older riders related to) carry subtexts about being a renegade, or a bad boy (or girl), and belonging to a group and, as noted earlier, image can trump safety. In addition, the greater comfort, warmth, and waterproof nature of modern materials appeared to lack the appeal of black leather. Most recreational rider focus groups, however, had at least one staunch hi-vis user and it was evident that this point was an ongoing discussion within these groups. The problem remained that even if riders were keen to wear conspicuous clothing, some reported difficulty in finding suitable gear at a price they could afford. The market was not meeting demand, or the demand was insufficient to trigger new designs.

There was little disagreement that good helmets are essential. Big bike riders considered that scooter riders should also wear full-face helmets, although this was not always the view of the scooter riders. A few older recreational riders said
they had, or would, ride helmetless in the United States where it was legal to do so, but most riders who reported traveling overseas said that they would wear their helmet and other protective clothing.

Though most riders were critical of car drivers, many of them, although not all, included motorcyclists among the road users who needed to improve their on-road behaviors and skill in order to contribute to courteous and safe road use. Riders were almost unanimous in their call for better motorcyclist training. The training available was not seen as being consistent, and there was a general despair at those who would not train. A few who had ridden unlicensed for decades and had become licensed were particularly keen for more work to be done to understand how to engage people to become licensed and to attend professional training. The Hurt report noted the overrepresentation of crashed riders who were self-taught or taught by family or friends (Hurt et al. 1981). Many riders thought that young riders were more likely to be in a crash because of factors such as inexperience, insufficient skill, or the overconfidence typical of youth.

Familiarity with one’s bike was noted by the more experienced riders as being important for safety, and the Hurt report noted lower rider experience among those who were in crashes (Hurt et al. 1981). Born again riders were often identified as being unsafe on-road. Experienced riders and dealers characterized the born again rider as having sufficient discretionary income to buy the bike of their dreams, which often meant that they overestimated their capability and bought too powerful a motorcycle. The power of the modern bike was often noted as a problem for this subset of riders. The number of motorcycle deaths and injuries from 2000 to 2010 increased for those 40 years and over by more than for any other age group (Ministry of Transport 2011b).

There was considerable agreement that drivers of other road vehicles were often not sufficiently perceptive of 2-wheeled vehicles on the road. It was commonly noted that drivers who had ridden motorcycles were much more attuned to motorcyclists, which concurred with Magazzu et al.’s (2006) analysis of MAIDS (2009) data. A few riders wanted all drivers to be required to ride a motorcycle before obtaining their vehicle license. Others recognized the inherent conflict in generating a large number of young vulnerable motorcyclists. The riders held the driver of the other vehicle responsible for a crash more often than official New Zealand records indicate, and this view concurred with the findings of the Hurt report (Hurt et al. 1981). This report found that in multiple-vehicle crashes involving a motorcyclist the driver of the other vehicle violated the motorcyclist’s right of way and caused the crash in two-thirds of cases. New Zealand motorcycle crash statistics indicate that 54% of multiple-vehicle crashes involving a motorcyclist were deemed to be no fault of the rider (Ministry of Transport 2011b).

Study riders often reported the road conditions, citing gravel, potholes, and effluent on the road as being of concern, which was unlike the findings from the Hurt report (Hurt et al. 1981) or MAIDS (2009), which identified involvement of roadway maintenance defects in only 3.6% of all cases. Study riders were also concerned about safety in relation to road design, road furniture, road surfacing, and maintenance. They perceived that roads were developed, built, realigned, or maintained with much greater reference to vehicles with more than 2 wheels. Included was criticism of on-road signage paint (slippery when wet) being used extensively in larger cities or metropolitan areas. Data on road conditions at crash events is not routinely collected or reported in New Zealand, although analysis of fatal events includes examination of the environment. For example, road surfacing, the effect of heavy traffic, effluent, and road works that had no signage yet had not been swept were noted as potential hazards to which other vehicles were less susceptible. Motorcyclists argued for analysis for all reported cases to include a motorcycling perspective. Some care is needed in comparing experiences recalled and the official crash data. Many of the former in this study arose from single rider events and near misses that would not appear in official data. A further caution came from a few of the experienced riders and dealers who were of the view that motorcyclists often blame other road users or road conditions for their own shortcomings.

Conclusion

Riders identified most of the hazards for motorcycle riding on road that are recognized in the motorcycle road safety literature. Views on the degree of seriousness or frequency of the hazard might differ between riders and riders and the literature, but the questions in the interviews and discussions covered unsafe on-road experiences, as well as the causes of injury. There was agreement about mechanisms, mostly related to the physical environment, present prior to the injury event and capable of causing harm to riders. Riders were often more concerned, however, about the risks for which there were no obvious engineering solution. These included behavior of others toward riders, whether these were fellow road users or road engineers or the marketplace’s lack of response to their requests, for example, for better clothing, and often included the incompetence of riders themselves. To effectively increase motorcyclist safety, in addition to modifying the recognized risk factors, an increased focus on individual behaviors (including skill, competence, and recognition of personal limitations), and the management of interactive relationships between road users on-road is required. This approach may engage more riders and support positive behavior change among riders and other road users.

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Supplemental Materials

Supplemental data for this article can be accessed on the publisher’s website.

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