

Emotions and Two-Wheeler Riding: Perspectives of College-Going Youth Riders

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Motorized two-wheeler riders are one among the most vulnerable Indian road users. However, there is limited research on psychological factors that are likely to influence riding behaviours of youth. The present paper focuses on exploring and documenting emotional states associated with two-wheeler riding in urban Indian youth. The study sampled 1,650 youth, aged between 17-30 years, from 30 educational institutes in Bangalore and Delhi. A Riding Survey developed during the pilot phase was used for data collection. Positive emotional states were commonly reported to be associated with riding and a sense of freedom was one of the commonest factors that were linked to the same, from the perspectives of the youth. Other than commuting, riding for fun (54%) and riding for relaxation (30%), relief from boredom (22%) and getting away from distress (17%) were endorsed as some of the reasons for taking out the two-wheeler.. Seeking a sense of power and control, seeking joy, seeking relief from anger or feeling upset were reported by varying proportions of young riders as some of the reasons for speeding. This exploratory survey highlights an urgent need for addressing the role of emotions in preventive intervention programs that target young two-wheeler riders.

Keywords: Aggressive riding, Road safety, Two-wheeler riders, Emotions on roads.

A major proportion of motor vehicles on the Indian roads, especially in metropolitan cities comprise of motorized two-wheelers (Singh, 2012). Indian statistics reveal that two-wheeler riders are amongst the most vulnerable road users and get into road traffic injuries very often; these mostly involve young drivers (Dandona, & Mishra, 2004; Gururaj, 2005, 2008). More than one third of fatal and nearly half of non-fatal road traffic injuries involve two-wheeler riders in India and the majority of the injured are in the age range of 20–30 years (Gururaj & BRSIPP, 2011). These figures underscore the need to examine various factors implicated in road-safety of two-wheeler riding in Indian youth.

While behavioural factors such as speeding have been widely recognized as some of the key factors in influencing road traffic accidents (Mehrotra, Sharma & Sudhir, 2008; Dandona, Anil Kumar, & Dandona, 2006), there is a paucity of published research on the same in India, especially with reference to young two-wheeler riders. The role of personality as well as socio-

cognitive variables in risky two-wheeler riding was examined in a sample of Italian adolescents (Falco, Piccirelli, Girardi, Corso & De Carlo, 2013). Risk perception emerged as an important mediator between personality, social norms and riding behaviours. In a qualitative study of male motorcyclists from Iran (Bazargan-Hejazi, Zamani-Alavijeh, Hindman, Mohamadi & Bazargan, 2013), it was noted that different kinds of rationalizations were used to justify risky riding such as practical needs, perception of competence, and utility in avoiding road crashes as well as positive experiences such as thrill and peer recognition. An analysis of narrative text from Coroners' records, based on thirty-four road traffic collision fatalities among young people in England uncovered themes such as social driving, driving experience, interest in motor vehicles, perception of driving ability, and emotional distress (Pilkington, Bird, Gray, Towner, Weld & McKibben, 2014).

Negative emotions experienced during driving (e.g. frustration, anger, jealousy, and

risk taking behaviours) have been classified as forms of dangerous driving (Dula & Geller, 2003). Developmental research indicates that young adults as compared to older adults display more violation of safe driving norms, slower perception of risk, more dangerous errors and violations (e.g. Retting & Williams, 1996). They have also been reported to experience more irritation and annoyance and display aggressive behaviours when faced with traffic congestions (Shinar, 1998). Research, consistently, indicates that young male drivers are more vulnerable to road traffic injuries as compared to their female counterparts. In a sample of Turkish drivers, male gender as well as higher the masculinity scores (gender- role) were associated with number of offences, and aggressive behaviours on the road and rule violations (Ozkan & Lajunen, 2005). Gender differences in young drivers including the association between substance use and environmental influences and risky driving have been examined by a few researchers (Elliot, Shope, Raghunathan, & Waller, 2006). It has been theorized that certain risk taking behaviours in young males serve developmental functions though they may not be health promoting (Jessor, 1991; Moller & Gregersen, 2008).

The review of literature points at the possibility that several psychological variables such as emotional experiences, emotional regulation efficacy, perceived safety, beliefs and motives related to speeding, sensation-seeking and attitudinal factors can play a role in driving/riding behaviours, including speeding and aggressive riding (Begg & Langley, (2001); Mehrotra, Sharma & Sudhir, 2008). However, their relevance in the context of two-wheeler riding Indian youth is unknown.

It was hence planned to explore selected psychological variables in two-wheeler riding Indian youth. The study was restricted to college going youth for two reasons: a) it forms a sizable proportion of two-wheeler riders in the vulnerable age range; b) college settings can provide an important forum for implementing a road safety intervention program. The present paper, which is based on the larger study, limits itself to exploring the emotional experiences associated with riding and emotional factors associated with speeding, as perceived by youth themselves.

Method

The sampling was purposive and an attempt was made to recruit a heterogeneous group of youth from different educational settings in Bangalore and Delhi. The final selection was based on availability of permission from colleges and availability of students in varied courses during the data collection phase. The final sample included both undergraduate and postgraduate level, English medium, male and female students from 30 colleges across various disciplines such as arts, science, computer and management studies, professional courses, and vocational training courses who reported that they used a motorized two-wheeler and provided written informed consent. A total of 1,650 participants were included in the two-wheeler rider survey across the two cities (Bangalore: N= 1,090; Delhi: N= 561). The protocols of each of the participants were manually scrutinized for each individual for patterns suggestive of erroneous or haphazard responding. This step resulted in exclusion of 226 protocols, reducing the total sample size for analysis to 1,425.

Tool:

Basic Data Sheet: This was used to elicit basic socio-demographic information.

Riding Survey: This survey was developed during the pilot phase of the study. It was developed based on review of literature as well as the findings based on three focus group discussions (FGD) with a convenient sample of thirty five young two-wheeler riders. The FGD participants were within 18-28 years of age range and there were 11 to 13 participants per FGD. The key themes that came up across the FGDs and are relevant for the present paper are highlighted below. The participants enumerated multiple factors leading to frustration and irritation on the road including excessive use of horn, violation of traffic rules by others, air pollution, slow riding that obstructs others' way, etc. According to them, young two wheeler riders respond to these situations in multiple ways such as brooding while riding, muttering to self, offensive gestures, shouting, verbal argument, and behaviours such as halting in front of the other or speeding in order to frustrate the other driver/rider who is viewed as troublesome. The

FGD participants observed that a sense of relief from congested traffic, engaging in competition, confidence in one's skill, motive of impressing others and relief from negative emotions and boredom were some of the factors that lead to speeding behaviours in youth. Moreover, both positive and negative emotions were reported to be linked to taking out one's two-wheeler for a ride. Yet another FGD theme was that two-wheeler riding youth often considered themselves to be safe even though others might view them as taking gratuitous risks. The FGD participants expressed their perception that young two wheeler riders often make external attributions for making sense of accidents or mishaps. The survey items explored a variety of domains of relevance for the larger project such as the nature of riding patterns, self-presentation motives linked to riding, interpersonal triggers for competition while riding, emotional states associated with riding, emotional states desired through speeding, problematic perceptions of safety, etc., and occurrences of narrow escapes, mishaps and accidents. Likert type response items, open ended items, multiple choice items, and check lists type items were used in the survey. The present paper is, however, limited to examining the role of emotional states while riding and these items are described below. One of the items inquired as to how the respondent generally feels while riding a two-wheeler. The respondent had to mark how often he/she felt on the six emotion states while riding (calm, happy, irritable, impatient, angry, tense or anxious) on a four point Likert scale (rarely, a few times, several times, and most of the times). These options were also accompanied by percentages (0-10%, 10-30%, 30-60% and more than 60%) to minimize individual differences in interpreting the verbal options. Another item enquired about reasons for experiencing positive emotions while riding by using a checklist format. The checklist included six options and the respondent had to mark all the options applicable to him/her (experiencing a sense of power and sense of control, sense of independence or freedom, sense of thrill or excitement when speeding, riding with friends and any other). Another checklist type item was used to elicit reasons for taking out the two-wheeler (riding) other than

commuting. Various options were given and the respondent had to tick all those applicable to him/her. The options provided were: to get away from distressing situation, go on a fun ride with friends, get relief from boredom, get relaxation by riding and to practice stunts as well as none of these or any other reason. Yet another four-point Likert type item was meant to elicit as to how often the respondents tended to ride faster than usual on a two-wheeler in order to experience five different states (relief from boredom, relief from something that upset me, relief from anger, a sense of power and control and a sense of joy).

Results

Background information on the sample

In the overall two-wheeler riding survey sample, a majority of the participants (74%) were men while women formed about one fourth of the sample. Field observations indicated that this is unlikely due to reasons such as different refusal rates by the two genders for participation in the study. There is no relevant statistics available regarding the proportion of college going men and women in Bangalore and Delhi who use two-wheelers for commuting. In the present study, it was observed across colleges and courses that there is more number of young men as compared to young women who reported the use of two-wheelers. In keeping with the sampling plan, roughly three fourth of the sample of two-wheeler riders were from Bangalore while one third were from Delhi. The age of an average participant was 20 years (range: 17 to 30 years, Mean = 20.15, SD= 1.87). Slightly more than fifty percent of the participants had two years or less of college education after PUC, whereas the remaining had three to five years of college education following their PUC. On an average, the survey participants had about four years of riding experience and reported riding about 17 kilometres a day, on an average. A bulk of the sample (70%) constituted of two-wheeler riders who reported riding at least a few days every week. Typical speed in the city was reported by these riders to be 45 kilometres per hour. Majority reported using the less powered models of two-wheelers with about 41% using vehicles without gear and 56% using vehicles with less than 125 CC. Somewhat less than 20% reported

Table 1. Emotional States Generally Experienced While Riding a Two-Wheeler

Emotional state	General Frequency							
	Rarely		A few times		Several Times		Most of the times	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Calm (n=1411)	102	7.2	266	18.9	527	37.3	516	36.6
Happy (n=1413)	75	5.3	201	14.1	537	38.0	600	42.5
Irritable (n=1407)	646	45.9	505	35.9	167	11.9	89	6.3
Impatient (n=1404)	612	43.6	462	32.9	226	16.1	104	7.4
Angry (n=1412)	740	52.4	408	28.9	168	11.9	96	6.8
Tense/anxious (n=1410)	699	49.6	480	34.0	162	11.5	69	4.9

Note: The frequencies and percentages have been shown after excluding missing data for the respective items

using high power models (in terms of higher CC and/or five stroke models).

Reports of emotion-states experienced while riding in general:

It is observed that positive emotions states were reported to be more frequent as compared to negative emotion states in the overall sample. "Feeling happy" emerged as the most frequently experienced positive emotional state while riding a two-wheeler with about 80% of the sample reporting the same on several/most of the occasions while riding. A sizable minority (approximately 17% to 23%) reported experiencing negative emotions frequently (several times or most of the times).

Self-reported factors associated with positive emotion-states while riding

As evident from the table, a sense of freedom emerged as the commonest factor that was endorsed as being linked to experience of positive emotions while riding a two-wheeler. The other reasons listed (e.g. sense of control, thrill) were also endorsed by a sizable proportion of participants (33.5% to 24.3%)

Self-reported reasons for riding (other than commuting):

People use their vehicles for commuting as well as for other reasons. Amongst young two-

Table 2. Perceived Reasons Associated with Positive Emotional States While Riding Two-Wheeler (n = 1422*)

Perceived reason	Frequency of endorsement	Percentage
A sense of power	346	24.3
A sense of control	476	33.5
A sense of freedom	627	44.1
Riding with friends	423	29.7
A sense of thrill / excitement when speeding	437	30.7

*Data missing from 3 participants

wheeler riders, reasons for taking out their bikes other than commuting were explored. Riding for fun (54%) and riding for relaxation (30%) were the most commonly endorsed reasons. Explicitly emotional reasons in terms of coping with negative emotions were also reported with slightly less than a quarter reporting relief from boredom (22%) and about 17% reporting getting away from distress as reasons for taking out their two-wheelers. Taking out the bike for practicing stunts was reported by a minority (6.4%) of youth in the present study.

Table 3. Reasons for Taking out the Two-wheeler (Other than Commuting)

Perceived reason	Frequency of endorsement	Percentage
To get away from distress (n=1422)	248	17.4
To have fun (n=1421)	768	54
To feel relaxed (n=1422)	430	30.2
To overcome boredom (n=1421)	310	21.8
To practice stunts (n=1420)	91	6.4

Speeding and emotion-states:

Whether youth seek certain emotional states by speeding their two-wheelers was explored through a survey item with a 4-point frequency format as mentioned earlier. Seeking a sense of power and control and seeking joy were the topmost reasons reported to be associated with speeding. Relief from anger or feeling upset were reported as frequent reasons for speeding by almost a quarter of the sample.

Gender comparisons:

In a supplementary set of analyses, gender differences were also examined on all the variables described above. Only a few

differences emerged between genders and the same are briefly described below.

As far as emotion-states experienced while riding a two-wheeler is concerned, there was a significant gender difference on 'irritability' with women reporting this more frequently than men [$\chi^2(1, N = 1407) = 4.99, p = 0.03$].

In terms of reasons associated with positive emotions while riding, women more often reported a sense of freedom as compared to men [$\chi^2(1, N = 1422) = 77.64, p = 0.00$]. A significantly higher proportion of men reported taking out their bikes for fun [$\chi^2(1, N = 1421) = 5.51, p = 0.02$] and for practicing stunts ($\chi^2(1, N = 1420) = 7.98, p = 0.005$) as compared to women, while other reasons such as getting away from distress, seeking relaxation, relief from boredom, were endorsed equally by the two genders.

There were no differences between genders in terms of the following reasons associated with speeding: relief from boredom, relief from feeling upset or deriving joy. On the other hand, a higher proportion of men reported frequently speeding in order to experience a sense of power and control [$\chi^2(1, N = 1390) = 7.22, p = 0.007$] and in order to get relief from anger [$\chi^2(1, N = 1396) = 5.52, p = 0.02$].

Discussion

The findings of the exploratory survey suggest that both positive and negative emotions

Table 4. Motives Associated with Speeding

I seek... by speeding	Rarely		A few times		Several Times		Most of the times	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Relief from boredom (n=1398)	664	47.5	474	33.9	173	12.4	87	6.2
Relief from feeling upset (n=1387)	554	39.9	486	35	251	18.1	96	6.9
Get a sense of power and control (n=1390)	447	31.2	378	27.2	372	26.8	192	13.8
Get a sense of joy (n=1398)	251	17.6	338	24.2	460	32.9	349	25.0
Relief from anger (n=1396)	695	49.8	365	26.1	184	13.2	152	10.9

are associated with two-wheeler riding in youth, as noted from the perspectives of the youth themselves. It has been considered important to understand riders' own views about what influences how they ride (Shope, 2006; Tunnicliff, Watson, White, Lewis, & Wishart, 2011) and thus, the present study was a step in this direction. By and large, two-wheeler riding seems to be associated with positive emotion states in the sampled youth. A sense of freedom, a sense of control and a sense of thrill appear as the commonest factors that shape the experience of such positive states. This complies with the reports that having fun is often the motive for riding the two-wheeler other than commuting from one place to another. Social driving is defined as a group of related behaviours such as 'driving as a social event in itself', 'driving without a pre-specified destination', 'driving to or from a social event', 'driving with accompanying passengers', 'driving late at night', etc. has been associated with young drivers in another study mentioned earlier (Pilkington et al., 2014) and taking out the two-wheeler for fun and relaxation reported in the present study tend to mirror such findings. These findings are understandable in view of the fact that the sample consisted of youth with only a modest experience of riding, and young riders are likely to exhibit psychosocial motives for riding (Jessor, 1991). Youth are likely to use a variety of means or tasks to achieve the developmental goals such as acquiring a sense of mastery and control, and a sense of autonomy. Having a two-wheeler may provide youth an avenue to experience fulfilment of some psychological needs through riding though it may also carry the risk of harmful consequence (Moller & Gregersen, 2008). There were very few gender differences observed in the age group that was sampled. Interestingly, a sense of freedom was more commonly reported by women as a reason for experiencing positive emotional states while riding. This is at least partly likely to reflect gender differences in experience of autonomy in the Indian socio-cultural context. It is plausible that men experience fulfilment of autonomy needs more easily in a variety of contexts in life as compared to women and hence the sense

of freedom while riding becomes a powerful generator of positive emotions in women. This speculation is supported by gendered nature of socialization experiences highlighted in the data from a large scale survey across six Indian states carried out between the years 2006 and 2008 (Ram, Strohschein & Gaur, 2014). In this survey, female youth reported more restrictions than their counterparts (lower independence in decision making, more restrictions on mobility and lesser access to money) while harbouring more gender egalitarian attitudes. However, it is to be noted that women also had shorter duration of riding experience in our sample as compared to men (a difference of one year). The role of number of years of riding in influencing the experience of freedom while riding, needs to be examined in future studies. Women in the present study sample reported more frequent experience of irritation as compared to men while riding two-wheelers. It is difficult to distinguish the factors that may have contributed to this difference. Some of the plausible factors include differences in riding experience and different standards of expectations from other road users. Lesser experience in riding might be associated with lower confidence in handling road hassles and thereby experiencing higher irritability on the roads. Apart from these, differences in actual road experiences due to variations in road behaviours of other road users towards young women riders also require examination.

A sizable minority in the overall sample reported relief from boredom (22%) and getting away from distress (17%) as reasons for taking out their two-wheelers. Taking out the two-wheeler for "having fun" as well as for practicing stunts were more commonly endorsed by men than women. The association of these motives for riding with speed and other risk-taking behaviours by young men on the Indian roads is also worth examining.

From the overall sample, almost one fourth of the youth reported relief from anger and feeling upset as frequent reasons for speeding. Anticipating desirable emotional states may serve more strongly as motives for speeding in those two wheeler youth riders who are inclined to

ride faster than their peers as compared to those who do not report such an inclination (Michael et al., 2014). According to existing literature drivers with a high propensity to experience anger while driving are more likely to experience anger triggers, aggression, hostile thinking, risky behaviours than others (Deffenbacher, 2009). These findings are unlikely to be limited to those who have a low threshold for anger provocation on the roads but, may also apply to those with a predisposition to speeding when angry. However, this hypothesis needs substantiation. Anger and driver's aggression are likely to have negative implications for road safety.

Men, in the present sample, frequently reported riding faster in order to experience a sense of power and control as well as to get relief from anger. These patterns suggest that youth in general and men in particular may use speeding on two-wheeler as a means of dealing with negative emotions. This is a high risk behaviour as speeding is one of the most prominent factors in road traffic injuries (Elliott et al., 2003). In a study by Raithel (2001), adolescent risky road behaviours were to some extent predicted by psychological stress examined in terms of scholastic pressures. It remains to be seen to what extent psychological stress and difficulties in managing the same influence risky riding in Indian youth. Falco et al. (2013) had described the types of risk takers amongst motorcyclists. In combination with the earlier observation that a minority of the sample reported taking out their bikes in order to get away from distress or boredom, the present study data points towards another type of risk takers in the sample of motored two-wheeler riders, i.e., those who take out their bikes or engage in speeding in order to manage their negative emotions. Most of the existing literature focuses on emotional triggers on the road and how these are cognitively and behaviourally dealt with. There is a need to study in depth the extent to which emotions off the road may also influence two-wheeler riding in young men and women, as this would have implications for road safety research.

On the whole, the present study, though exploratory in nature, points toward the role of

both positive and negative emotional states in riding behaviours of two-wheeler riding youth. This, in turn, implies that road safety intervention programs must address the role of emotions in road behaviours and incorporate elements of emotional regulation skills training to the extent feasible. On the other hand, preventive and promotive programs that target emotion regulation, particularly in youth, may benefit from generating awareness about the repercussions of ineffective emotional regulation on road behaviours and road safety.

Limitations

The present paper was exploratory and descriptive and limited to the reports of the youth themselves and their own perceptions about the role of emotions in their riding behaviours. An in-depth examination of the role of emotions in influencing riding behaviours through utilization of other methods such as qualitative interviews or experience sampling may be undertaken in further research. The sample of women in the present study was modest in size as compared to the sample of men and the two genders were significantly different on mean number of years of riding experience. Although, this difference was only of one year, its role in confounding the result on gender differences cannot be ruled out. The study sample was limited to college going urban youth and the generalizability of the findings to youth in other contexts and across developmental years needs to be tested.

Conclusion

The study highlights the salience of positive and negative emotions in riding behaviours of two-wheeler Indian youth riders, and points to the need for inclusion of emotion and emotional management components in road safety intervention programs that target youth.

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