Author's response to reviews

Title: Socio-demographic and behavioural characteristics of illegal motorcycle street racers in Malaysia

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Version: 2 Date: 19 April 2011

Author's response to reviews: see over
Responses to reviewers’ comment

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Reviewer's report
Title: Health behaviors, masculinity and social-demographic predicting illegal motorcycle street racing.
Version: 1 Date: 21 March 2011
Reviewer: Nerida L Leal

Reviewer's report:
MAJOR COMPULSORY REVISIONS
1. The research question posed in the final paragraph of the Introduction is not consistent with the title of the manuscript or the research methods. This paragraph builds on earlier arguments about the novel nature of the research by describing the purpose as providing insight into, and understanding of, factors associated with illegal motorcycle street racing. However, the manuscript title and selection of variables of interest imply a much narrower scope of inquiry. The author should amend the manuscript so that the stated aim is more consistent with the study conducted. As it stands in this draft, a qualitative design would be required to address this research question.

Revised the title.

New title is “Socio-demographic and behavioral characteristics of illegal motorcycle street racers in Malaysia”

Revised Introduction section, pg 5

This study sought to investigate socio-demographic and behavior characteristics of illegal motorcycle racers. The behavior characteristics investigated included racing activities, health behavior, and self-rated level of masculinity.

2. The Discussion section mentions a previous study by the author [reference #24], yet description of this research is missing from the Introduction section. A brief description of this research and how it informed the selection of variables of interest in this research is required in the Introduction and perhaps Methods if this research also informed question wording etc. The inclusion of this research in the Introduction will also address the previous comment that the current research question suggests a qualitative approach should have been used. Describing this initial study and how it informed the current quantitative research, including rewording the research question, would be appropriate.

Added the reference following in Introduction pg 4.
The association between car racing and masculinity has been hypothesized [1,18,19,20]. Research on masculinity has suggested that respect, honour, courage, aggressiveness, dominance, toughness, and the willingness to resort to violence to resolve interpersonal conflicts are central characteristics of masculine identity [18]. Causal link between masculinity and speeding has also been demonstrated [19]. Illegal car street racing has been regarded as is a symbol of masculine power, socially constructed as the epitome of masculinity, and a form of manifestation of the norms of masculine culture [8,18].

Additionally, our recent qualitative investigation on a subsample of illegal motorcycle street racers [21] revealed that respect- and honor-seeking for being brave were among the identified characteristics of masculine identity associated with street racing. Considering the important theoretical and practical implication of masculinity in this context, sound research evidence is warranted in the unique phenomena of the illegal motorcycle racing in Malaysia.

3. The Introduction section should include a brief discussion of the motorcycle risk taking, or even driver risk taking, literature. If this is not possible, some mention should be made of why this literature was beyond the scope of the current research, and was not included in the survey.

Added references [18] and [19], findings on car racing (literature on motorcycle risk taking not available)

Causal link between masculinity and speeding has also been demonstrated [19]. Illegal car street racing has been regarded as is a symbol of masculine power, socially constructed as the epitome of masculinity, and a form of manifestation of the norms of masculine culture [8,18]. It has also been suggested that men strive to express their masculinity through risky activity such as reckless driving [20].

Similarly, there is very little discussion of the illegal car street racing literature and why this knowledge base was not used to inform the selection of variables in this study.

Most of the references were about car racing. Therefore, sentences have been rephrased.

“The association between car motor racing and masculinity has also been hypothesized [1,18,19,20].”

Reference [8] and [18] were about illegal car street racing, therefore, rephrase the sentence (removed the word motor and it may indicate motorcycle)

Illegal car street racing Motor racing has been regarded as is a symbol of masculine power, socially constructed as the epitome of masculinity, and a form of manifestation of the norms of masculine culture [8,18].

4. Results, first para: the statement that non-participation was mainly due to other errands rather than the sensitivity of the research topic needs to be justified. Was
this the feedback received directly from the participants, or an assumption of the interviewer/s?

The feedback was received directly from the participants. Rephrased.

The response rate high (89.0%). Reason for non-response was not because of the sensitivity of the study issue. Most of the non-respondents cited lack of time and preoccupied with other errands as the reason for not participating.

5. Results, first para: the statement that illegal street racing was more common among Malays seems contradictory to the data presented in Table 1, where the percentage of Chinese participants reporting street racing is higher than that for Malays.

In Table 1, as indicated most of the illegal street racers were Malays (n=1850, 91.5%), and only a minority (n=68, 3.4%) were Chinese. However, in term of the frequency of racing, among the Chinese, 36.8% reported very often/often, whereas among the Malay, 31.3% reported very often/often compared to sometimes/rarely. (although the percentage is higher among the Chinese, but in terms of number of racers, the Malays outnumbered the Chinese).

6. It is not clear which survey item the Model 2 regression is referring to. In the current version of the survey presented as an Appendix, there is no item that separates racing behaviour from dangerous stunts. Which two groups are being compared in this analysis, and where was this data obtained?

The data is obtained from the question in, Section 2, question B1. The groups that indicated Yes and No

B1  Illegal street racing and perform dangerous stunts  [  ] Yes  [  ] No

7. The final sentence of the first paragraph of the Discussion is not based on the current study, and so this recommendation should not appear in the manuscript.

Removed the final sentence

8. The final sentence of the third paragraph of the Discussion is not inappropriate given that the substance use of this sample has not been compared to any population level data. I would imagine that interventions designed to reduce these behaviours would continue to be targeted at a general population level, rather than illegal motorcycle street racers alone.

Replaced “this specific population” with “youth population”
The coexistence of smoking, alcohol drinking and recreational drug use among the illegal motorcycle racers appear to warrant intervention tailored for youth population to effectively prevent or discontinue these health risk behaviors.

9. Discussion, fourth para: The discussion of the definition of masculinity raises the question of why masculinity scores were correlated with health measures in this study. It seems inevitable that they would be related, as they are measuring the same construct according to your definition?

Agreed that they are measuring the same construct. We apologize for the weakness, but decided to keep the discussion as our finding support the hypothesis that risk behaviours and opposing positive health behaviours as indicated in reference [20], and that the hypothesis also apply to the Mat Rempits,

MINOR ESSENTIAL REVISIONS
1. The terms “stunt driving” and “stunt racing” are used a number of times throughout the abstract and body of the manuscript. As the terminology used in item B1 of the survey is “perform dangerous stunts”, and the research is interested in illegal motorcycle street racing, all uses of these terms should be amended to reflect the nature of the survey question e.g. “performing dangerous stunts while riding” or “stunt riding”.

Thank you for the suggestion, replaced the all the inconsistency in wording with “performing dangerous stunts while riding” or “stunt riding”.

2. Many of the Results presented in the Abstract can be deleted, as they are descriptive in nature and do not directly relate to the research question (factors associated with illegal motorcycle street racing). Suggest deletion of sentences 3 to 6 (i.e. from “The mean health protective…” to “…positively correlated with health risk behaviour scores”).

Removed sentence 3 and 6.

3. Results, fourth and fifth paras: Health protective behaviour scores and health risk behaviour scores for this sample are described as average, but it is not clear whether these statements are referring to comparisons with normative data, or the average of possible scores on these variables. A similar statement is made in the first sentence of the third paragraph of the Discussion.

Removed the word “average”. Rephrased

Pg 9
The mean of health protective behavior score was 4.10 ± 2.1 (possible scores ranged from 0 to 8) and the mode was 4.

Pg 9
The mean of health risk behavior score was 2.10 ± 1.0 (possible scores ranged from 0 to 5) and mode was 2.

Pg 12
The health protective behavior score of 4.1 out of 8 indicates the need for initiatives to enhance health promotion, illness prevention, and preventive health behaviors among the illegal street racers.

4. Results, seventh para: It would be useful to state the two groups being compared in the Model 1 regression analysis – presumably those who race often/very often versus those who race rarely/sometimes?
5. Results, seventh and eighth paras: ORs and other stats should be removed from these paragraphs as they are reported in Table 1 – just describe the results in the remaining text.

Replaced “ricing frequency” with “the odds for racing frequency very often/often vs. sometimes/rarely”.

Add the phrase “Removed the ORs presented in Table 1.

Revised para seventh and eighth

As shown in Table 1, the result of binary logistic regression analysis for variables predicting road racing frequency (Model 1) showed that the variables ethnicity, participant education attainment, occupation, parents’ marital status, household income, maternal education attainment and parental strictness, was statistically significant, $\chi^2 = 172.02$, df =23, $p < 0.001$. The odds for racing frequency very often/often vs. sometimes/rarely increased with health risk behavior and masculinity scores. The Malays and Chinese had higher odds for racing frequency very often/often vs. sometimes/rarely compared to the Indians. The odds for racing frequency very often/often vs. sometimes/rarely decreased as participant education attainment and household monthly income increased. Participants with neither or at least one parent who are strict were more likely to have higher odds for racing frequency very often/often vs. sometimes/rarely than those with both parents who are strict.

The binary logistic regression analysis for involvement in stunt riding (Model 2) showed that only ethnicity, participant education attainment and parental strictness were significant predictors, $\chi^2 = 244.49$, df =14, $P < 0.001$. The results showed that the Malays and Chinese were more likely to race along with performing stunts while riding compared to the Indians. Participants with neither and at least one parent who are strict were more likely to involve in racing along with performing stunts while riding than those with both parents who are strict. Participants with higher education attainment had lower odds of involvement in racing along with performing stunts while riding versus racing only. Health-protective, risk behavior and masculinity scores were also predictive of stunt riding.
6. Normally a Discussion would start by briefly restating the aim of the research before briefly describing the key results in terms of the hypotheses (if any) and linking the results to the literature reviewed in the Introduction. For example, the findings discussed in the third sentence of the first paragraph of the Discussion are consistent with the illegal car street racing literature, so links could be drawn between motorcycle racing and the body of knowledge regarding illegal car racing.

**Added literature reference in the Intro, pg 4**

Study on car racing showed that most of those involved were from a lower to middle class background [8].

**Added the following in the first para of Discussion, pg 11**

This indicates that, similar to those involved in car racing [8], most of the illegal motorcycle racers were also from lower socio-economic backgrounds.

**DISCRETIONARY REVISIONS**

1. Suggest adding “motorcycles” and “risk behaviour” as keywords.

**Added “motorcycles” and “risk behaviour” as keywords.**

2. Introduction, second para: “alcohol drinking” could be changed to “excessive alcohol consumption” or “binge drinking” to better describe the research you are discussing. This clarification is also required in the second sentence of the third paragraph of the Introduction.

**Replaced**

There were some well-publicized empirical studies that showed adolescent and early adult problem behavior tend to co-occur with other risky or problematic behaviors such as excessive alcohol consumption, substance abuse and sexual activity [10-11]. In particular, risky driving behaviors were also shown to be associated with cigarette smoking, binge drinking and drug use [11-12].

For example, men with traditional masculine beliefs reported less likely to practice health protective behaviors [15] and showing greater substance use, including smoking, excessive alcohol consumption, and high-risk sexual activity [16-18].

3. Methods, second para: please report Cronbach’s alpha for street racing and related activities.
Cronbach’s alpha for street racing and related activities were not reported because these domain was not scored.

4. Generally statistical notations (e.g. U, SD, df, n) are presented in italics.

All U, SD, df, n has been italicized.

5. In the Results section, there are a number of occasions when it is not completely clear which participants are being referred to. For example, in the first paragraph it says that “a large number were students…” Is this referring to a large number of the participants? Or a large number of the Malays described in the previous sentence? Or a large number of frequent racers? In the final edit of the manuscript, care should be taken to ensure the reference data for each sentence is clear and unambiguous.

<table>
<thead>
<tr>
<th>Ambiguous phrases</th>
<th>Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illegal racing was more common among the Malays compared with other ethnic groups.</td>
<td>The majority of participants were Malays.</td>
</tr>
<tr>
<td>A large number were students and the majority of those with paid employment have personal monthly income less than RM1000 per month.</td>
<td>A large number of the study participants were students and the majority of those with paid employment have personal monthly income less than RM1000 per month.</td>
</tr>
</tbody>
</table>

6. In the Results section, it is not always clear whether the author is referring to general alcohol use (measured by item C3b) or alcohol use while racing (B2). This should be clarified.

Thank you for highlighting the confusion, rephrased the sentences.

Pg 8
In regard to alcohol used while racing, a total of 35.8% (n= 724) reported racing under the influence of alcohol. The rates for racing under the influence of alcohol were lower among the Malays (34.8%) compared to Chinese (58.8%) and Indian (40.0%) participants (χ²=17.32, df=2, P <0.001). Additionally, participants who were more educated were less likely to race under the influence of alcohol (primary 49.2% vs. secondary 36.2% vs. university 26.8%; χ²=26.70, df=2, P <0.001).

Pg 9
With regard to health risk behaviors, cigarette smoking was highly prevalent (78.3%), followed by general alcohol use (27.8 %) and recreational drug use (18.8%).

7. While there are limitations associated with self-report data, the author could
note in the final paragraph of the Discussion that as the research was designed to gain insight into the factors associated with illegal motorcycle street racing, there were no alternative sources of the required information.

Added, pg 14
Given the sensitivity of the issue investigated, its ethical and practical considerations limit the use of other direct assessment methods.

8. If the author plans to use the survey again in future, consider adding “motorcycle” to questions in section B to avoid confusion with illegal car street racing; consider adding “no injury” as a response option for B5; and consider using interval / continuous response scales (e.g. frequency) for sections B and C.

Thank you so much for the constructive and useful suggestions. We agreed that this is another weakness of our questionnaire. If we were to extend or continue the study, we will certainly take your suggestions into consideration.

MINOR ISSUES NOT FOR PUBLICATION
1. Manuscript title: “social-demographic” should be socio-demographic”; predicting should be “predictors of”.

The title has been changed to “Socio-demographic and behavioral characteristics of illegal motorcycle street racers in Malaysia”

Replaced with socio-demographic. The word “predicting” is no longer in the title.

2. Abstract, Methods sub-section: “survey was conducted in” should be “surveys were conducted”.

Corrected the mistake.

Street outreach interviewer-administered surveys were conducted in from June 2008 to January 2009 in this multi-state study.

3. Abstract, Results sub-section, third line: “them reported” should be “reporting”.

Corrected the mistake.

Mean duration of street racing was 2.65(SD±1.77) years (range: 2 months to 12 years), with 50.1% and 35.8% reporting stunt riding and alcohol drinking while racing, respectively.

4. Abstract, Results sub-section, final sentence: “show” should be “showed”; and “score” should be “scores”.

Corrected the mistake.
The results of the logistic regression analysis showed that sociodemographic variables, risk behavior and masculinity scores were predictive of racing frequency.

5. There is inconsistent use or non-use of hyphens for terms such as “socio-demographic” and “socio-economic” throughout the abstract and body of the manuscript.

Added “hyphens”

6. Introduction, first para: “Street racing threaten the lives” should be “Street racing threatens the lives”; “despite its renown” should be “despite its renowned”; “have been associated to a variety of” should be “have been associated with a variety of”; extra space between “family structure” and “may influence” should be deleted; “problematic behaviours were associated” should be “problematic behaviours are associated”; “motorbike” should be “motorcycle”.

Corrected.

- Street racing threatens the lives of other road users and caused unnecessary nuisance to the public.
- Empirical research on illegal street racing is limited despite its renowned negative consequences and long existence [1].
- Adolescent risk-taking behaviors have been associated with a variety of demographic, parental, social and environmental factors.
- While there is increasing recognition that adolescent problematic behaviors are associated with family-related variables, research examining problem behaviors such as motorcycle street racing remains limited.

7. Introduction, second para: “behaviour tend to co-occur” should be “behaviour tends to co-occur”; “Given this findings” should be “Given these findings”; “never been done” should be “never been conducted”.

Corrected.

- There were some well-publicized empirical studies that showed adolescent and early adult problem behavior tends to co-occur with other risky or problematic behaviors such
- Given these findings, studies examining the association between risky or problematic behaviors and illegal motorcycle street racing have never been conducted and warrant further investigation.

8. Introduction, third para: Start second sentence with “For example,”; “beliefs reported less” should be “beliefs are less”; insert comma after [14]; “and showing greater” should be “and show greater”; “In particular to motor racing, its association with masculinity” should be “The association between motor racing
Masculinity ideology has been shown to be related to health attitudes and problematic behaviors. For example, men with traditional masculine beliefs are reported less likely to practice health protective behaviors [15], and showing greater substance use, including smoking, excessive alcohol consumption, and high-risk sexual activity [16-18].

The association between car racing and masculinity has also been hypothesized [1,18,19,20].

No empirical study to date has assessed the problem behaviors of illegal street racers in Malaysia. “activities and its associated factor” has been removed as suggested.

It is hoped that the findings from this study may provide important insights that will inform the development of behavioral intervention programs to reduce adolescent and young adult risk-taking behaviors associated with illegal motorcycle street racing.

Due to the difficulty in gaining access to the population of illegal motorcycle racers,…”

Inclusion criteria were as follows: (1) self-identified as illegal motorcycle street racer or “Mat Rempit”; and (2) engage in illegal motorcycle street racing at the time of interview.

Sample size was not predetermined because the exact number of illegal motorcycle racers in the country was unknown.
11. Methods, second para: “demographic, illegal racing characteristics, health” should be “demographic characteristics, illegal racing behaviour, health”; “The second section consists of 5-item question that gauges illegal” should be “The second section consisted of 5 items designed to gauge involvement in illegal”; “health behaviour. There were 8 items contribute to the health” should be “health behaviour through an 8-item health”; “This scale had a moderate internal consistency. Cronbach’s alpha = 0.668.” should be “This scale had moderate internal consistency (Cronbach’s alpha = 0.668).”; “Similarly, the 5 items contribute to health risk behaviour scale consists of questions” should be “The 6-item scale measuring health risk behaviour consisted of questions”; “Item responses are scored 1 or 0 (yes = 1, no = 0)” should be “Item responses are scored either yes (1) or no (0)”; do not use italics for “or” when describing the masculinity response scale; “The internal reliability of the masculinity scale” should be “The internal consistency of the masculinity scale”; “(Cronbach’s alpha: masculinity scale 0.869)” should be “(Cronbach’s alpha = 0.869)”.

Corrected

- All consenting participants were interviewed using a standard questionnaire prepared to gather demographic characteristics, illegal racing behavior, health behavior, and self-perceived masculinity (Appendix I).
- The second section consisted of 5-item question designed to gauge involvement in illegal motor racing.
- The third section investigated participants’ health behavior through an 8-item health protective behavior scale (diet and health care).
- This scale had moderate internal consistency (Cronbach's alpha=0.668).
- There were 6 item questions in the health risk behavior section, but only 5 items were scored, this is because question on “sexual experience” is not a risk behavior question. Rephrased “The 5-item scale measuring health risk behavior consisted of questions measuring substance abuse (smoking, alcohol drinking and drug use) and sexual risk (multiple sexual partner and safe sex practices).”
- Item responses are scored either yes (1) or no (0).
- Participants were asked to respond either Strongly Disagree, Disagree, Agree or Strongly Agree.
- The internal consistency of the masculinity scale was high (Cronbach's alpha = 0.869).

12. Methods, Analyses sub-section: delete second sentence as this is repeated
later in this section; Delete “The internal consistency of the scale was assessed using Cronbach’s alpha” as these have already been reported earlier in the Methods; “comparison of mean” should be “comparisons of medians”; “on the priori hypotheses” should be “on the a priori hypotheses”, with “a priori” in italics.

Deleted

- Values of $p < 0.05$ were considered significant.
- The internal consistency of the scale was assessed using Cronbach’s alpha.

Corrected

- The Mann-Whitney $U$ test and the Kruskal-Wallis test were used for comparison of medians.
- All significant variables ($p < 0.05$) associated to frequency of racing and stunt riding in the univariate analyses that were considered important based on the a priori hypotheses were included in the multivariate regression model.

13. Throughout manuscript: “P” should be in lower case and italics.
- Replaced “P” with “$p$”

14. Results, first para: “due to participant preoccupied with other errands and not because of the sensitivity” should be “due to participants being preoccupied with other errands rather than the sensitivity”.
- The sentence was rephrased as suggested earlier “Reason for non-response was not because of the sensitivity of the study issue. Most of the non-respondents cited lack of time and preoccupied with other errands as the reason for not participating.”

15. Results, second para: The final sentence is very unclear. Should be reworded to something like “participants who reported that neither parent was strict or only one parent was strict were more likely than participants who reported that both parents were strict to race while under the influence of alcohol”.
- Participants who reported that neither parent was strict (52.0%) or only one parent was strict (34.4%) were more likely than participants who reported that both parents were strict (22.9%) to race while under the influence of alcohol ($\chi^2=108.50, df=2, p <0.001$).

16. Results, third para: “majority (68.0%) have been involved in illegal road racing between 2 to 4 years” should be “majority (68.0%) reporting involvement in illegal motorcycle street racing of between 2 to 4 years”.

Mean duration of racing was 2.65 ($SD=1.77$) years, ranged from 2 months to 12 years, with the majority (60.8%) reporting involvement in illegal street racing of between 2 to 4 years.
17. Results, fourth para: “The scores were significantly different in the health protective behaviour score between groups” should be “The scores varied significantly between groups”.

The scores varied significantly between groups classified by marital status, educational attainment, family household income, maternal and paternal education attainment, and parental strictness.

18. Results, fifth para: delete space between 27.8 and % in first sentence.

Deleted

19. Results, seventh para: “was statistically significant” should be “were significant predictors”; “Road racing” should be “Illegal motorcycle street racing”.

As shown in Table 1, the result of binary logistic regression analysis for variables predicting road racing frequency (Model 1) showed that the variables ethnicity, participant education attainment, occupation, parents’ marital status, household income, maternal education attainment and parental strictness, were statistically significant, $\chi^2 = 172.02, df = 23, p < 0.001$.

Replaced in manuscript and Table 1 “road racing” with “illegal motorcycle street racing”

As shown in Table 1, the result of binary logistic regression analysis for variables predicting illegal motorcycle street racing frequency (Model 1)

20. Results, eighth para: “and at least one parent” should be “or at least one parent”.

Participants with neither or at least one parent who are strict were more likely to involve in racing along with performing stunts while riding than those with both parents who are strict.

21. Discussion, first para: “Despite the sample was diverse” should be “Despite the sample being diverse”; “household income were notable lower” should be “household income were notably lower”; delete comma from RM3686 national average; “most of the illegal motorcycle races” should be “most of the illegal motorcycle racers”; “concomitantly with illegal street racing” should be “concomitantly with illegal motorcycle street racing”; “alcohol and stunt driving” should be “alcohol and stunt riding”; “over one-third with duration of racing less than” should be “over one-third of those reporting duration of racing of less than”; “illegal motorcycle racer performed stunt driving to gain respect and honour from peers” should be “illegal motorcycle racers performed dangerous stunts while riding to gain respect and honour from their peers”; “that leisure boredom, lack of recreational activity for leisure” should be “that boredom and lack of recreational activities for leisure”; “an effective mean to reduce stress” should be “an effective
means to reduce stress”.

- Despite the sample being diverse, with a range of socio-economic profiles, the majority were students and those with lower levels of employment.
- The average monthly income of those who were in employment and the monthly household income were notably lower than the RM3686 national average monthly household income [26].
- This indicates that most of the illegal motorcycle racers come from lower socio-economic backgrounds.
- Study found a variety of delinquent behaviors exists concomitantly with illegal motorcycle street racing.
- It is important to note that racing under the influence of alcohol and stunt riding were highly prevalent.
- It is also worth noting the worrying fact that slightly over one-third of those reporting duration of racing less than a year reported performing dangerous stunts while riding.
- In our recent in-depth interview study [21], illegal motorcycle racers performed dangerous stunts while riding to gain respect and honour from peers and the street racing community for being brave and tough.
- Many also reasoned that boredom and lack of recreational activities for leisure participation contributed to their involvement in street racing, while a minority viewed street racing as an effective means to reduce stress [21].

22. Discussion, second para: “illegal street racer and additionally there were a number racer of age below 15 years old, early” should be “illegal street racers, and there were a number of racers aged under 15 years, early”; “mentoring at school level may be beneficial.” should be “mentoring at school level, may be beneficial for this group.”; “groups such as the Chinese and Indians” should be “groups, such as the Chinese and Indians, also participate in this high risk activity.”; “Studies suggested that street outreach by trained peer leaders is effective in reducing risk behaviours [25-26]” should be “For example, previous research has suggested that street outreach programs coordinated by trained peer leaders are effective in reducing risky behaviours [25-26]”.

- As students represent a large majority of illegal street racers, and there were a number racers aged under 15 years, early intervention services including education and prevention programs for at-risk adolescent and their families, as well as counseling and mentoring at school level, may be beneficial for this group.
- Although motorcycle street racing is known to be predominant among the Malays, this study found a considerable number of other ethnic groups, such as the Chinese and Indians, also participate in this high risk activity.
- For example, previous research has suggested that street outreach programs coordinated by trained peer leaders are effective in reducing risky behaviours [27-28].
23. Discussion, third para: “Often, adolescents who frequently use cigarettes also were more likely” should be “For example, adolescents who frequently use cigarettes were also more likely”; “illegal racer appear to warrant” should be “illegal racers appear to warrant”.

- For example, adolescents who frequently use cigarettes were also more likely to use alcohol and marijuana [29].
- The coexistence of smoking, alcohol drinking and recreational drug use among the illegal motorcycle racers appear to warrant intervention tailored for youth population to effectively prevent or discontinue these health risk behaviors.

24. Discussion, fourth para: “In logistic regression, variables” should be “In the logistic regression analyses, variables”; “hold permissive were more likely to have higher street racing frequency” should be “hold permissive attitudes were associated with higher street racing frequency”; “permissive were more likely to perform stunt racing” should be “permissive attitudes were more likely to perform dangerous stunts while riding”; “may be more beneficial” should be “may be beneficial”; “motor racing-related risk behaviours” should be “motor racing-related risk behaviours, and presumably many other risky behaviours”; “high masculinity and risk behaviour score were predictive of” should be “high masculinity and risk behaviour scores were predictive of”; “embracing in risk behaviours and against positive health behaviours [28], likewise also shown in this study an inverse correlation” should be “embracing risk behaviours and opposing positive health behaviours [28], which was supported in this study by an inverse correlation”; “masculinity as an important construct for health risk behaviours” should be “masculinity as an important predictor of health risk behaviours”.

- In logistic regression analyses, variables such as low education attainment, low household income, divorced families and households in which parents hold permissive attitudes were associated with higher street racing frequency. Likewise, low educational attainment and households in which parents hold permissive attitudes were more likely to perform dangerous stunts while riding.
- This indicates that street racers from lower socio-economic groups were particularly vulnerable to motor racing-related risk behaviours, and presumably many other risky behaviours.
- In this study, high masculinity and risk behaviour scores were predictive of high street racing frequency and likelihood to perform dangerous stunts while riding.
- Masculinity is defined as embracing risk behaviours and opposing positive health behaviours [20], which was supported in this study by an inverse correlation between masculinity and health protective behaviour scores.

25. Discussion, fifth para: “thus may be subjected to selection bias in the sample selection and the sample may not be representative” should be “which may have resulted in selection bias, and a sample that may not be representative”; insert “However, it was not possible to assess the extent of any bias given that the population of individuals who engage in illegal motorcycle street racing is
unknown” after the sentence ending with “under study”; “being one of a few” should be “being one of few”; “done with very large and a broad samples” should be “conducted with such a large sample”; “margin error although it does not eliminate” should be “margin for error, although it may not completely eliminate”; “internal reliability of the health protective and health risk behaviour scales, Cronbach’s alpha was not up to 0.7.” should be “internal consistency (Cronbach’s alpha) of some scales (e.g. the health protective and health risk behaviour scales) was less than 0.7.”

Corrected
• First limitation of the study includes the use of snowball sampling and street outreach strategy, which may have resulted in selection bias, and a sample that may not be representative of all segments of population under study.

Added
• However, it was not possible to assess the extent of any bias given that the population of individuals who engage in illegal motorcycle street racing is unknown

Corrected
• Nevertheless, the study has the advantage of being one of a few that have been conducted with such a large sample of illegal motorcycle racers, which may reduce the margin for error, although it may not completely eliminate survey bias.
• Thirdly, the internal consistency (Cronbach’s alpha) of some scales (e.g. the health protective and health risk behaviour scales) was less than 0.7.

26. Conclusion: change “street racing” to “illegal motorcycle street racing”; “is a result of interactions of a variety of factors; include participant” should be “is associated with a variety of factors, including participant”; “interventions for the low” should be “interventions for low”; “adolescents and young youths” should be “adolescents and youths”; “interrelated risk behaviour” should be “inter-related risk behaviours”; “may particularly useful” should be “may be particularly useful”.

• The findings from this study have several implications for reaching out to youth known to be associated with illegal motorcycle street racing.
• The study found illegal motorcycle street racing is associated with a variety of factors, including participant, parent and family characteristics.
• There is a need for increasing emphasis on designing health promotion interventions for the low socio-economic individuals as they are particularly vulnerable to becoming involved in illegal street racing.
• Higher level of parental monitoring and control may prevent motorcycle racing-related behaviours among adolescents and young youths.
• Comprehensive behavioural interventions to address simultaneously the multiple and inter-related risk behaviour exhibited by the illegal racer is warranted.
• Findings can inform future program providers for adolescents and young adults and may be particularly useful in developing interventions to eradicate illegal motorcycle street racing.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests

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**Reviewer's report**

**Title:** Health behaviors, masculinity and social-demographic predicting illegal motorcycle street racing.

**Version:** 1  **Date:** 25 March 2011

**Reviewer:** Dan Romer

**Reviewer's report:**

This paper reports on a high-risk behavior, illegal motorcycle racing and stunt driving, in Malaysia. Since little is known about these behaviors in the scientific literature, this study can provide valuable information for those interested in defining strategies to reduce or control the behavior, especially in Malaysia.

Compulsory

Despite the potential interest of the study, it has several weaknesses. There is no description of the actual risks associated with the behaviors of motorcycle racing. Some citations indicating how many deaths or injuries are attributed to the behavior would help to put it in context. Is this a very serious problem in Malaysia or just a nuisance?

We apologize, there are no official statistics available on the number of deaths or injuries attributed to the Mat Rempits’ on themselves of the general public. There were no official records or published literature regarding their activities, and most of the reports were from unofficial sources, therefore inappropriate to be cited as reference in the journal. No reference citation added to the sentences as there are no official reports of the Mat Rempits’ activates. The stated racing behaviors were well-known behaviors reported in the news media.

**Added in the Introduction**

Most of the Mat Rempits race with small capacity motorcycles and without proper safety measures. Most of their motorcycles were modified for higher speed or to increase the noise emitted by the exhaust, which do not meet standard specifications. The Mat
Rempits usually travel in large groups and racings are usually conducted on public roads where it endangers other road users.

There is also no discussion of stunt driving as a separate risk behavior in the introduction despite the inclusion of its correlates in the results.

Added in the Introduction

“In addition to racing, they also weave through moving traffic and perform dangerous motorcycle stunts. They are famous for their "Superman" stunts and other feats performed on their motorcycles. They are also notorious for their "Cilok" or weaving in-between moving traffic at high-speed.”

It is not very helpful to report scores for the risk behavior and protective behavior scales in the abstract or elsewhere in the paper, since there are no norms for these scales.

Although there are no norms for the risk behavior and protective behavior, we develop a series of questions, with relevance to the illegal motorcycle racers in our country, and tested the internal consistency of the questions measuring the respective domains.

It is a bit of an overstatement to say that the findings refer to predictors of illegal motorcycle racing. They are merely correlates.

Replaced “predictors” with “associated with”

In Method section,
Multivariate analysis, using binary logistic regression analysis, performed using the ENTER method, was used to determine factors associated with frequency of racing and stunt riding.

Results section, para 7th
As shown in Table 1, the result of binary logistic regression analysis for variables associated with illegal motorcycle street racing frequency (Model 1) showed that the variables ethnicity, participant education attainment, occupation, parents’ marital status, household income,..

Result section, para 8th
The binary logistic regression analysis for involvement in stunt riding (Model 2) showed that only ethnicity, participant education attainment and parental strictness were significantly associated with performing stunt riding while racing, $\chi^2 = 244.49$, $df = 14$, $p < 0.001$. 
Health-protective, risk behaviour and masculinity scores were also predictive associated with stunt riding.

The author also needs to have someone proofread the paper, which is filled with grammatical errors.

The grammatical errors have been pointed out by Reviewer 1 and have been addressed.

Discretionary
If the authors are interested in the factors that are associated with this risk behavior, it would help to identify the attributable risk associated with each significant correlate in the table. For example, although primary school education is highly related to engaging in the behavior, increasing everyone’s education would not reduce this behavior by much because so few young people (9.9%) have less than a secondary education.

We agreed, as it is indicated as discretionary changes, we decided not to make any changes. Removing the primary educated participants required major modification of the manuscript, which include rerun the logistic regression analyses for both models and rewrite entire results, and discussion. We believed readers will interpret the findings based on this limitation.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Not suitable for publication unless extensively edited
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
I declare that I have no competing interests