



## Neurologists' attitudes toward driving among persons with epilepsy in China: A pilot electronic survey

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### ABSTRACT

**Purpose and methods:** Persons with epilepsy (PWE) remain completely and permanently prohibited from driving in China currently. Previous studies have shown that a considerable proportion of PWE with uncontrolled seizures in China continue to drive motor vehicles. Discrepancy between Chinese policy and driving practices for PWE is potentially concerning. We conducted a preliminary online electronic questionnaire (e-questionnaire) survey among neurologists in China aiming to explore neurologists' attitudes toward the issue of driving among PWE.

**Results:** A total of 358 neurologists completed the e-questionnaire with a response rate of 75.8%. 50.3% of neurologists stated that they knew the driving restriction law in China. With respect to reporting of cases to relevant driving authorities, 82.4% of neurologists never directly report PWE, and 90.8% consider that it is PWE's responsibility to report themselves. 87.4% of physicians surveyed indicated that the lack of clearly-articulated guidelines is a major impediment to their routine discussions of driving fitness for PWE. Subgroup analysis indicated that 76.2% of epileptologists were of the opinion that persons with well-controlled epilepsy should be allowed to drive versus 56.2% of general neurologists ( $P < 0.05$ ).

**Conclusion:** Currently, neurologists in China have a low awareness of the legal driving restriction for PWE and have highly varying practices with respect to counseling PWE about driving. According to our preliminary results, a clearly-articulated published national document for medical fitness for driving in China is necessary in order to standardize physicians' practices.

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### 1. Introduction

Epilepsy is a chronic neurological disorder characterized by unpredictable recurrent seizures, and the condition can affect a person's ability to safely drive a motor vehicle [1]. In 1988, the "Regulations of the People's Republic of China on Road Traffic" stated that 'those who have one of the following shall not obtain a driver's license: organic heart disease, epileptic disease, Meniere's disease, vertigo, hysteria, paralysis agitans, mental illness, dementia and nervous system diseases influencing physical activities.' Although laws were revised in 2004 [2], persons with epilepsy (PWE) remain permanently prohibited from driving regardless of whether their epilepsy is active or not. No additional guidelines beyond the statement of law are currently available

in the country. As currently constructed, the legal regulation is simply based upon the disease name, ignoring the fact that epilepsy is a disorder that can potentially be controlled with well-tolerated medicines. Some have argued that strict driving restrictions promote poor compliance with driving laws, and recent studies have shown that a considerable proportion of PWE having uncontrolled seizures continue to drive and are at high risk for having vehicle collisions [3]. A study assessing the social, economic, and psychological perceptions related to driving restrictions in PWE found that 34% of patients continued to drive during the time when they were legally restricted; further analyses indicated that nearly 80% of all patients believed that driving restrictions reduced their quality of lives, and 70% believed that these restrictions carried social stigma [4]. Authors suggested that tightening legal driving restrictions may not be effective in reducing vehicular crashes but instead pose the risk that patients will not adhere to onerous driving laws.

China has experienced rapid and profound socioeconomic development in recent years that has led to a great proliferation of drivers on the road as a consequence. The country is confronting potent traffic

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safety challenges as data released by the Ministry of Public Security indicates that China had 363 million motor vehicle drivers by the end of 2018, and currently the number of drivers has an annual growth rate of over 10% [5]. However, there are no published documents targeting physicians that advise how to assess driving risk and communicate driving restrictions for PWE in the country. Physicians in China are neither required to report drivers with epilepsy to the Ministry of Transportation nor are they legally required to inform their patients to report themselves. One survey conducted by West China Hospital in Sichuan province focusing on driving among PWE in west China [6], showed that only one-third of driving patients acknowledged knowing about driving restrictions, and 19.5% of surveyed patients had driven recently (during the past year); among them, 80 (62.5%) experienced at least one seizure in the previous year. Considering that approximately 9 million people have epilepsy in China [7], we can speculate that a great number of PWE are inappropriately operating motor vehicles and are thus at significant risk of a having a road traffic accident in China.

The existence of these contradictions suggests that this driving issue among PWE is an important social problem in China. We therefore conducted a preliminary online electronic questionnaire (e-questionnaire) survey among neurologists in China aimed to collect physicians' attitudes, and the advice they provide about driving for PWE.

## 2. Methods

### 2.1. Study design and survey subjects

This cross-sectional survey was carried out from June 1st to July 1st 2018. Epilepsy specialists and general neurologists were targeted; eligible participants were practicing adult neurologists having a medical practitioner qualification certificate of more than 3 years of clinical work experience. Potential participants were invited through WeChat social communication groups including members of the China League Against Epilepsy and Chinese Neurological Association.

After contacting neurologists via WeChat, we informed them about the purpose of the study and then asked those who agreed to participate in our WeChat investigation group. Online e-questionnaires were sent to the neurologists through this WeChat group. Participation in the study was voluntary, and no incentives were provided. All of the procedures were approved by the ethics committees of The Fourth Affiliated Hospital, Zhejiang University School of Medicine.

### 2.2. Questionnaire

The e-questionnaire was published and available for all members in the group (website <https://www.wjx.cn/jq/24483095.aspx>). No participant identifiers were collected, hence anonymity and confidentiality of the respondents were ensured throughout the study. Data obtained were automatically uploaded in the online database.

Seventeen questions were formulated and were divided into three domains: (1) basic demographic information (Q1–3); (2) physicians' practice patterns when they encountered PWE that are driving (Q4–8) (self-assessed answers were rated as never, sometimes, usually and always, pointed from 1 to 4); and (3) attitudes and advice on the topic

of driving in PWE (Q9–17) (dichotomous questions were asked with Agree/Disagree, or Yes/No responses required). The last question was open-ended, in order to collect more nuanced suggestions from respondents. Given that the e-questionnaire was designed not to skip to the next question until a previous one was answered, missing responses were avoided except for the last optional question. Approximately 3 min were needed to complete the questionnaire; the primary version of the questionnaire was in Chinese, with the English translation version provided (see Appendix 1).

### 2.3. Data analysis and statistics

Statistical analysis was performed using SPSS version 23.0 (Statistical Package for Social Science, Chicago, IL, USA). The descriptive statistics and frequency of responses were initially calculated. Subscales for some questions were used as ordinal data for which Mann Whitney test was conducted to compare between groups. The enumeration variables between groups were compared with a chi-square test;  $p < 0.05$  was regarded as statistically significant.

## 3. Results

### 3.1. Respondents' characteristics

A total of 472 neurologists were contacted and invited to join our e-survey. Of these neurologists, 358 responded and completed the e-questionnaire with a response rate of 75.8%. Of respondents, 164 (45.8%) were epilepsy specialists, and the remaining were general neurologists. Two hundred sixty two (73.2%) respondents worked in tertiary general hospitals. All of the surveyed neurologists managed PWE; 69.0% had less than 10 PWE every week in their current practice, 14.0% had 10–20 PWE every week, and 7.8% had more than 50 PWE every week. Respondents' geographic locations covered 27 provinces in China. The mean time to complete the questionnaire was 193.4 s.

### 3.2. Neurologists' practice patterns regarding driving fitness

The question "Do you know the Road Traffic Safety Regulation in China stating that persons who have epileptic disease shall not obtain a driver's license?" revealed that 180 (50.3%) respondents were aware of the law. Respondents' practice patterns and their recommendations for driving restrictions are shown in Table 1. Most neurologists (81.0%) indicated that for patients who are newly diagnosed with epilepsy and driving a motor vehicle currently, they always or most of the time will inform such patients not to drive. However, since there are currently no guidelines in China instructing physicians how to facilitate driver fitness concerns with transportation authorities, when asked how often they instruct these patients to report themselves to the Ministry of Transportation, 7.0% of respondents answered that they always do, and 82.4% of respondents stated that they never directly report their patients. More than half of respondents (57.2%) stated that for patients with active epilepsy and who still drive, neurologists always or most of the time will follow up the driving issue at future visits and

**Table 1**  
Neurologists' practice patterns regarding driving fitness for PWE.

Item	Never N (%)	Some of the time N (%)	Most of the time N (%)	Almost always N (%)
Q5 For driving adult patients with a new diagnosis of epilepsy, how often do you inform them not to drive?	14(3.4)	56(15.6)	137(38.3)	153(42.7)
Q6 For driving adult patients with a new diagnosis of epilepsy, how often do you tell them to report themselves to Ministry of Transportation?	160(44.7)	101(28.2)	72(20.1)	25(7.0)
Q7 For driving adult patients with a new diagnosis of epilepsy, how often do you directly report these patients to Ministry of Transportation?	295(82.4)	37(10.3)	20(5.6)	6(1.7)
Q8 For driving adult patients with active epilepsy, how often do you discuss driving issues at follow-up visits?	40(11.2)	113(31.6)	119(33.2)	86(24.0)

**Table 2**  
Neurologists' opinions about driving regulations for PWE in China.

Item	Agree n(%)	Disagree n(%)
Q9 Do you agree with the current regulation of a total and permanent prohibition of driving among PWE in China?	226(63.1)	132(36.9)
Q10 Do you agree that patients with uncontrolled epilepsy should be restricted from driving?	339(94.7)	19(5.3)
Q11 Do you agree that patients with well-controlled epilepsy should be allowed to drive?	234(65.4)	124(34.6%)
Q13 Do you agree that it is the PWE's responsibility to report themselves directly to the Ministry of Transportation in China?	325(90.8)	33(9.2)

give patients their recommendations regarding driving risk and information about relevant regulations.

**3.3. Neurologists' opinions about driving regulations in China**

With regard to driving laws for PWE, 63.1% of neurologists agreed with the current regulation of a total and permanent prohibition of driving among PWE in China. A consensus (94.7%) stated that PWE with uncontrolled seizures should not be allowed to drive. However, divergence was revealed about whether driving should be permitted for those with controlled seizures. Most neurologists (90.8%) took for granted that it was the PWE's responsibility to report themselves to the Ministry of Transportation, and when asked whether they agree with mandatory (physician) reporting, 39.7% of respondents indicated that they did. Overall, 91.6% of neurologists declared they would be more inclined to discuss driving fitness with PWE if specific legal norms with clear explanations were provided in China. Details are shown in Tables 2 and 3.

Neurologists' opinions regarding a minimum seizure-free period before resuming driving varied. 32.1% of neurologists felt a minimum length of more than 5 years was reasonable, 28.2% of respondents thought 2 years of seizure-free was enough, and 21.8% of respondents would like to accept one year or less seizure-free period as the precondition of regaining driving rights while 17.9% preferred PWE would never be allowed to drive (Fig. 1).

Neurologists' difficulties with assessing driving fitness among PWE were attributed to the following (ranked by frequency): lack of clear guidelines (84.6%), insufficient resources for assessment (71.5%), fear of legal implications (59.2%), and inadequate experience on this issue (49.2%).

**3.4. Comparison of the attitudes between general neurologists and epileptologists**

Table 4 shows a subgroup comparison between epileptologists and general neurologists. A higher percentage of epileptologists knew about legal driving restrictions in China ( $P < 0.05$ ) than general neurologists. With respect to maintaining the current permanent prohibition regulation in China, 55% epileptologists disagreed while 70.1% general neurologists supported this recommendation ( $P < 0.05$ ). Also, 76.2% epileptologists suggested patients with well-controlled epilepsy should be allowed to drive, while 56.2% general neurologists agreed with this recommendation ( $P < 0.05$ ).

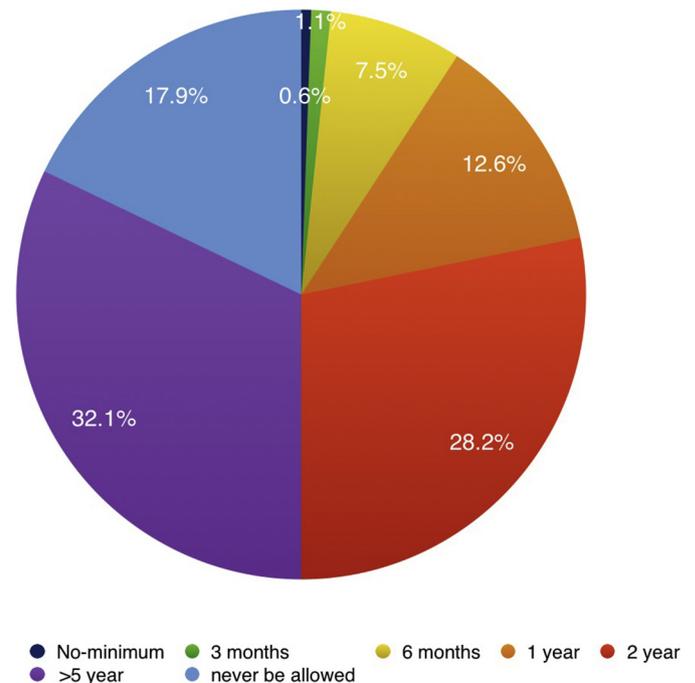
**Table 3**  
Neurologists' opinions about driving regulations in China.

Q12. Do you agree that it is the physician's responsibility to report PWE to Ministry of Transportation in China?	
Agree, n(%)	142(39.7)
At discretion, n(%)	76(21.2)
Only if the patient continues to drive against medical advice, n(%)	140(39.1)
Q15. If specific legal norms were clearly defined on this issue, would you be more likely to routinely discuss driving fitness with your patients with epilepsy?	
Yes, n(%)	328(91.6)
No, n(%)	30(8.4)

**4. Discussion**

We conducted a preliminary electronic survey among neurologists from diverse regions of China, most of whom were tertiary and epilepsy practitioners, in order to better understand attitudes toward the assessment of driving fitness for PWE and also to help provide information as a basis for further legislation in the country. Our study is the first to investigate this issue from a physician's perspective, and to characterize neurologists' practice patterns and attitudes toward driving among PWE. Key findings of our survey were as follows: (1) almost half of neurologists state that they are not familiar with current driving laws for PWE in China; (2) most neurologists will inform drivers with a new diagnosis of epilepsy not to drive but rarely will reporting procedures to relevant driving authorities be addressed; and (3) a considerable proportion of neurologists in China support the current regulation of a total and permanent prohibition from driving for PWE, with others having highly varying opinions regarding optimal seizure-free intervals for PWE.

Globally, driving regulations for PWE have existed for around a century since shortly after the advent of the motor vehicle [8]. In the past, lifetime bans were common until 1956 when the United Kingdom set a precedent by allowing PWE to drive if they had been seizure-free for 5 years [9]. In the 1970s, American PWE could drive legally if they met criteria for adequate seizure control [10]. Thus, driving restrictions have trended to become more liberated, and lifelong bans have become less common in the world. In China, the complete lifelong prohibition of driving among PWE has not changed since 1988, and no regulation has specifically addressed driving issues among PWE since. Discrepancies



**Fig. 1.** The opinions regarding a minimum seizure-free period before resuming driving.

**Table 4**  
Comparison of the attitudes between epileptologists and general neurologists.

	Epileptologists (N = 164) n (%)	General neurologists (N = 194) n (%)	P-value
Q4 Know the legal driving restriction for PWE in China			<0.001
Yes	100(61.0)	80(41.2)	
Q5 Inform driving adult patients with a new diagnosis of epilepsy not to drive.			0.628
Never	4(2.4)	8(4.1)	
Some of time	23(4.0)	33(17.0)	
Most of the time	67(40.9)	70(36.1)	
Almost always	70(42.7)	83(42.8)	
Q8 Discuss driving issues with adult PWE with active seizures at follow-up visits			0.003
Never	10(6.1)	30(15.5)	
Some of time	46(28.0)	67(34.5)	
Most of the time	64(39.0)	55(28.4)	
Almost always	44(26.8)	42(21.6)	
Q9 Agree with a total and permanent prohibition of driving among PWE in China			0.003
Agree	90(54.9)	136(70.1)	
Q10 Agree that PWE with uncontrolled epilepsy should be restricted from driving in China			0.889
Agree	90(54.9)	136(70.1)	
Q11 Agree that PWE with well-controlled epilepsy should be allowed to drive in China			<0.001
Agree	125(76.2)	109(56.2)	
Q12 Agree that it is the physician's responsibility to report PWE to Ministry of Transportation			0.018
Agree	52(31.7)	90(46.4)	
At discretion	40(24.4)	36(18.6)	
Only if the patient continues to drive against medical advice	72(43.9)	68(35.1)	
Q13 Agree that it is the PWE's responsibility to report themselves to the Ministry of Transportation			0.012
Agree	142(86.6)	183(94.3)	

between the provisions of law in China and laws in other countries are of potential concern to physicians advocating for PWE in China. Physicians' attitudes toward the subject can provide important impetus to improve medical fitness laws in China.

An e-survey approach was applied to this study and completed on a smartphone, representing a new data collection technique. This emerging method shows potential for applications that obliterate time and geographical constraints, although it has some weaknesses (e.g., lack of systematic evaluation) [11]. In our study, the response rate was 75.8%, which was higher than the email response rate of 36.8% reported in one review [12], mainly because of the convenient response method and our particular study population, who was willing to take and familiar with the e-survey approach.

Our survey suggests that many neurologists in China are overlooking the complete legal restrictions upon driving among PWE. Most neurologists inform drivers with newly-diagnosed epilepsy not to drive, which indicates neurologists' ignorance of the law does not alter their confidential advice given to PWE. The neurologists surveyed in our study rarely directly report PWE to the Ministry of Transportation nor do they advise PWE to report themselves to authorities; we consider the reasons as follows: (1) the currently-constructed law in China does not specifically address reporting requirements; and (2) within the context of a potentially complete and permanent restriction upon driving, reporting of the diagnosis of "epilepsy" to authorities is likely to be intrusive to the doctor–patient relationship, potentially giving rise to disruptive legal pressures. By contrast, in most developed countries, such as in Canada, there have been considerable efforts to standardize the decision-making of driver fitness among physicians. Currently, there are two published documents targeted at physicians,

which provide Canadian medical fitness guidelines for driving [13] representing remarkable efforts to promote the education of neurologists regarding regulations and risk evaluation of driving. In our subgroup analysis, we showed that Chinese epileptologists are more inclined to suggest that patients with well-controlled epilepsy should be allowed to drive than general neurologists. As mentioned previously, lifelong driving restriction for PWE become less common globally, and epileptologists in China appear to have more in common with the viewpoint of current international trends [14,15].

Our study suggests that physicians are generally reluctant to agree with the proposal of mandatory physician reporting PWE to transportation authorities, in favor of self-reporting by PWE. Regarding this issue, we agree with the comments that physicians have an obligation to inform patients about the nature of their condition, associated risks, and an individual's legal obligations. If the patient continues to drive against medical advice, specialist physicians should consider reporting this patient to authorities [16]. We must keep in mind that mandatory reporting has not been shown to have safety benefits to the public or to patients, and instead, it can have a strongly negative effect on the doctor–patient relationship [17,18].

Regarding the minimum length of seizure freedom before regaining driving licensure for PWE, optimal seizure-free intervals have yet to be established and vary widely across the globe, typically from 3 months to 24 months [19]. The majority of the neurologists in our survey would like to accept a longer seizure-free interval before permitting PWE to drive. On the other hand, our survey demonstrated that most neurological physicians find that properly assessing driving fitness for PWE to be difficult and that lacking clear guidelines was an almost unanimous reason for this. Our findings are similar to previous results, which described physician attitudes toward psychogenic nonepileptic seizures and driving [20]. Herein, we suggest that legislators and medical associations in China pay greater attention to this issue. The tracking of motor vehicle accidents caused by drivers having a seizure warrants greater study using motor vehicle registries as well as medical databases, which will help better inform Chinese lawmakers. Moreover, the education of physicians regarding the risk evaluation of driving in PWE needs to be better addressed through the coordinated efforts of driving regulators, medical authorities, and clinician researchers.

## 5. Limitations

Our survey focuses on the knowledge and attitudes of tertiary and epilepsy specialty neurologists, and whether the survey results represent physicians' perspectives across the country needs to be further clarified. Another limitation is that the reliability of the e-survey based on online completion through a smartphone has not been verified. To increase the e-questionnaire completion rate, we retained only 17 items of the e-questionnaire for brevity, and we did not explore how to assess the driving abilities of PWE with special conditions such as PWE with predictable auras and nocturnal seizures. Many survey questions were unidirectional, rather than neutral, which may implicate results bias. Despite these limitations, the findings of this survey are provocative and indicate the need for further study regarding the issue of driving for PWE in China.

## 6. Conclusion

In brief, our survey indicates that currently, neurologists in China are not uniformly knowledgeable of Chinese driving law for PWE and have highly varying practices with respect to counseling PWE about driving. We suggest that a clearly-articulated published national standard for medical fitness for driving in China is urgently necessary, and that legislators as well as other authorities in China should pay heed to this issue.

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.yebeh.2019.02.023>.

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## Declaration of interest

None of the authors has any conflict of interest to disclose.

## References

- [1] Kang JY, Mintzer S. Driving and epilepsy: a review of important issues. *Curr Neurol Neurosci Rep* 2016;16:1–5.
- [2] Law of the People's Republic of China on road traffic safety. Available from: [http://www.fdi.gov.cn/1800000121\\_39\\_1739\\_0\\_7.html](http://www.fdi.gov.cn/1800000121_39_1739_0_7.html), Accessed date: 12 October 2018.
- [3] Willems LM, Reif PS, Knake S, Hamer HM, Willems C, Krämer G, et al. Noncompliance of patients with driving restrictions due to uncontrolled epilepsy. *Epilepsy Behav* 2018. <https://doi.org/10.1016/j.yebeh.2018.04.008>.
- [4] Jayagopal LA, Samson KK, Taraschenko O. Driving with drug-resistant and controlled seizures from a patient's perspective: assessment of attitudes and practices. *Epilepsy Behav* 2018;81:101–6.
- [5] The Ministry of Public Security of the People's Republic of China. Available from <http://www.mps.gov.cn/n2255079/n2256030/n2256031/c6314462/content.html>, Accessed date: 3 January 2019.
- [6] Chen J, Yan B, Lu H, Ren J, Zou X, Xiao F, et al. Driving among patients with epilepsy in West China. *Epilepsy Behav* 2014;33:1–6.
- [7] Song P, Liu Y, Yu X, Wu J, Poon AN, Demaio A, et al. Prevalence of epilepsy in China between 1990 and 2015: a systematic review and meta-analysis. *J Glob Health* 2017;7:e020706.
- [8] Fisher RS, Parsonage M, Beaussart M, Bladin P, Masland R, Sonnen AE, et al. Epilepsy and driving: an international perspective. Joint commission on drivers' licensing of the International Bureau for Epilepsy and the International League Against Epilepsy. *Epilepsia* 1994;35:675–84.
- [9] Krumholz A, Fisher RS, Lesser RP, Hauser WA. Driving and epilepsy. A review and reappraisal. *JAMA* 1991;265:622–6.
- [10] Ooi WW, Gutrecht JA. International regulations for automobile driving and epilepsy. *J Travel Med* 2000;7:1–4.
- [11] Simsek Z, Veiga JF. The electronic survey technique: an integration and assessment. *Organ Res Methods* 2000;3:93–115.
- [12] Sheehan KB. E-mail survey response rates: a review. *J Comput-Mediat Commun* 2001;6:e621.
- [13] Jirsch J, Gross DW, Jette N, Federico P, Dubeau F, Tellez-Zenteno JF, et al. Canadian epileptologists' counseling of drivers amidst guideline inconsistencies. *Can J Neurol Sci* 2014;41:413–20.
- [14] Imataka G, Yoshihara S. Sociological histories on epilepsy as "causes for disqualification" stipulated in the Japanese Road Traffic Act of 1960 and Revised Road Traffic Act of 2001. *Eur Rev Med Pharmacol Sci* 2017;21:3098–104.
- [15] Bielen I, Hajnšek S, Krmpotić P, Petelin Ž, Sušak R, Šepić-Grahovac D, et al. Impact of partial liberalization of driver's license regulations on the driving behavior of people with epilepsy: experience from Croatia. *Epilepsy Behav* 2011;21:459–61.
- [16] Krumholz A, Hopp JL, Sanchez AM. Counseling epilepsy patients on driving and employment. *Neurol Clin* 2016;34:427–42.
- [17] Drazkowski JF, Neiman ES, Sirven JI, McAbee GN, Noe KH. Frequency of physician counseling and attitudes toward driving motor vehicles in people with epilepsy: comparing a mandatory-reporting with a voluntary-reporting state. *Epilepsy Behav* 2010;19:52–4.
- [18] McLachlan RS, Starreveld E, Lee MA. Impact of mandatory physician reporting on accident risk in epilepsy. *Epilepsia* 2007;48:1500–5.
- [19] Devlin AL, Odell M, Charlton JL, Koppel S. Epilepsy and driving: current status of research. *Epilepsy Res* 2012;102:135–52.
- [20] Farooq U, Ahmed S, Madabush J, Kolli V, Esang M, Kotapati VP, et al. Survey of physician attitudes towards psychogenic nonepileptic seizures and driving. *Epilepsy Behav* 2018;83:147–50.