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Compliance with Smoke-Free Legislation and Associated Factors: A Serial Survey in Bali, Indonesia

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ABSTRACT

This study aims to describe the compliance to the smoke-free legislation and to identify the associated factors. A cross-sectional study was conducted to assess the compliance at all smoke-free venues. A number of 5,500 smoke-free venues were involved. The data was collected on a six monthly basis through observation and interviews. The study observed 6,670 buildings. The compliance was 11.8% in the second semester of 2013 (1st) as the baseline, which increased to 62.0% in 2015 (5th). Meanwhile, the most common violations of smoke-free legislation were found to be cigarette butts, the provision of ashtrays and smoking. Factors that were associated with compliance were awareness, knowledge and support of the legislation and the presence of internal monitoring. The compliance with Bali's smoke-free legislation remains suboptimal, despite showing increasing trends over time. Hence, continuous education and supervision should be conducted for venue managers to increase compliance.

Keywords*: smoke-free legislation, smoke-free venue, compliance, Bali Indonesia*

INTRODUCTION

The tobacco epidemic and its products are one of the biggest challenges to public health in the world. Indonesia is the fourth highest country for the population of smokers in the world [1]. The Basic Health Research Data in Indonesia (*Riskesdas*) in 2010 showed that the prevalence of smokers aged ≥15 years was 34.7% and this increased significantly in 2013 to 39.5% [2]. According to the WHO's official report, it is estimated that the prevalence of smokers in Indonesia will increase again to 42.7% by 2020, where the prevalence of men is estimated to reach 82.5% and women 3.0% [3]. Also, the prevalence of smokers is also high in Bali, which was 24.9% in 2007, which increased to 31.0% in 2010, and slightly decreased to 28% in 2013 [2].

The WHO reported that cigarettes kill more than 7 million people per-year in the world, of which 6 million were active smokers and approximately 890,000 were non-smokers but exposed to second-hand smoke. It shows that the smoke not only endanger smokers, but also non-smokers [3]. Indonesia is the only country in Asia that has not ratified the WHO's FCTC. Nevertheless, tobacco control efforts have been undertaken and the establishment of smoke-free venues in 2011 was one of the important regulation in Indonesia. The legislation is important to reduce the harm from smoking among non-smokers and to provide healthy air to the community. There are seven venues which ruled as smoke-free: health facilities, schools, places of worship, children's playgrounds, work places, public places and public transportation [4].

Since 2011, Bali also implemented smoke-free legislation, which was the first smoke-free legislation at the provincial level in Indonesia. After 3 years of

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implementation, the legislation has never been evaluated, particularly regarding compliance. Accordingly, this study aimed to describe the compliance to the Bali provincial smoke-free legislation and to identify the associated factors.

METHOD

A cross-sectional study was conducted to assess all smoke-free legislation criterias across five periods, from July 2013 to August 2015. The study was located in Bali, Indonesia, which has more than 14,700 smoke-free venues spread across the nine districts of Badung, Gianyar, Klungkung, Bangli, Karangasem, Tabanan, Jembrana, Buleleng, and Denpasar.

The sample size was determined based on the cluster recommendation [6]. A total of 5,500 smoke-free venues (1,100 in each period) were included. The sample from each venue was determined by there being 150 schools, 100 health facilities, 400 public places, 100 children's playground, 150 places of worship, 150 work places, and 50 public transportation vehicles and using systematic random sampling.

The data was collected using a form containing eight indicators: observed smoking (main indicator), the provision of designated smoking venues, the provision of ashtrays, the availability of no-smoking signs, observed cigarette butts, the observed smell of tobacco smoke, observed cigarette selling, and tobacco advertisements, promotions and sponsorships (secondary indicators) [6]. Smoke-free venues were considered to be compliant if they met the eight compliance indicators, except for public places which were permitted to sell cigarettes and promote them through advertisements. Interviews were conducted with all venue managers. The data was collected by 44 trained enumerators, and was inputted using Epi-Data 3.1, analysed descriptively using STATA-SE 12.1, and tested using the Chi-square test.

RESULTS

Compliance with Smoke-free Legislation in the Provinces and Districts: The study observed 6,670 buildings from within 5,500 non-smoking venues in Bali over five periods. Generally, the surveys indicated an increasing trend of compliance over time, but not all having yet reached the target (80%). For the first period of the survey, compliance remained (11.8%). However, in the next periods, compliance showed an increasing trend (2nd=17.2%, 3rd=25.9%, 4th=37.8%, and 5th=62.0%). Districts also showed a positive trend in compliance, with the highest being Tabanan (78.3%). There were two districts that showed low compliance; Badung (44.8%) and Gianyar (52.8%). Both districts have more public places such as hotels, restaurants and other public places (Figure 1).

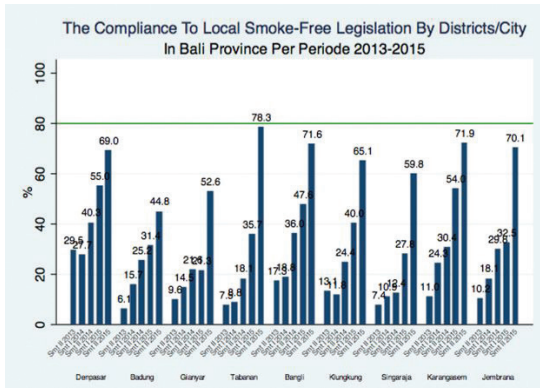

Figure 1: The compliance with smoke-free legislation in Bali by district

Compliance with Smoke-Free Legislation by Venue Type: Figure 2 shows that the type of venue that has the highest increasing trend of compliance were children playgrounds (6.5%-90%), followed by health facilities (54.2%-88.8%), and education places or schools (12.4%-83.2%). Increased compliance was also shown in public places, although it was not as high as other venues. For example, compliance in restaurants increased from 0.7% in the first survey to 15.6% in the fifth survey. Hotels also showed improved compliance from 0.6% in the first survey to 38.4% in the fifth survey. Traditional markets showed compliance in the fifth survey at 32.3%, while the modern market had the highest compliance among the public places (10.3%-71.7%).

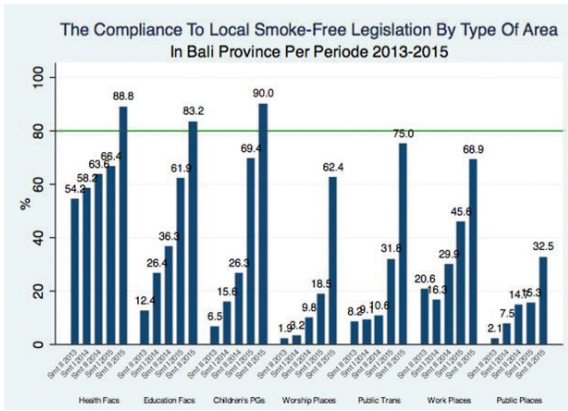

Figure 2: The compliance with smoke-free legislation in Bali by venue

No-Smoking Sign Coverage: In this study, we found that no-smoking sign coverage increased over the five periods of the survey (from 21.2 % to 77.8% respectively). However, compliance had not yet reached the target (100%).

Violations on the Implementation of Smoke-Free Legislation: The violations that were assessed in this study were also based on 8 indicators. The most common 3 violations were the cigarette butts found indoors, the provision of ashtrays and observed smoking indoors. Moreover, no decreasing trend in the violations was found in the five periods of the survey (Figure 3).

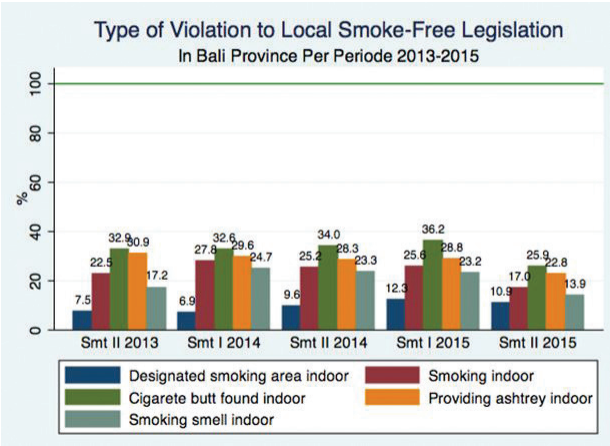

Figure 3: Type of Violation and the Smoke-Free Legislation in the Bali Provinces

Factors Associated with Compliance: The results showed that the factors associated with compliance were awareness regarding the presence of the legislation (PR=3.0), knowledge (PR=3.0), support of the legislation (PR=3.0) and the presence of internal monitoring (PR=2.1) (Table 1).

Table 1: Factors associated with the compliance to Bali's smoke-free legislation

Factor	Comply		Prevalence Ratio (PR)	95% CI
	No	Yes		
Socialised				
No	2,093 (86.2)	334 (13.8)	ref	
Yes	2,326 (58.9)	1,625 (41.1)	3.0*	2.7-3.3
Knowledge				
Less	3,275 (82.3)	703 (17.7)	*ref*	
Good	1,142 (47.7)	1,254 (52.3)	3.0*	2.7-3.2
Support				
No	637 (89.1)	78 (10.9)		
Yes	3,770 (67.7)	1,876 (32.3)	3.0*	2.5-3.8
Internal monitoring				
No	1,961 (74.8)	662 (25.2)		
Yes	845 (45.8)	1,001 (54.2)	2.1*	2.0-2.3

*p<0.01

DISCUSSION

The results showed that after three years, the overall compliance in Bali was suboptimal. Bali province is a famous tourist destination. Thousands of public places were built to support tourism. Meanwhile, public places are a very challenging venue in terms of policy implementation. Thus, the study was concerned with public places and workplaces [7] in which the low compliance was not only taking place in developing countries [8]opinions and compliance related to Uganda's comprehensive smoke-free law among hospitality venues in Kampala Uganda. DESIGN This multi-method study presents cross-sectional findings of the extent of compliance in the early phase of Uganda's comprehensive smoke-free law (2 months postimplementation; pre-enforcement, but also in developed countries [9].

The type of venues that had better compliance were health facilities, schools and children's playground. The factors associated with compliance were including were strong commitment from the manager, the presence of an internal monitoring system, and better knowledge of the employees regarding smoking harm as well as concerns over patient safety and disruptions to care [10].

Compliance in public transportation, workplaces and places of worship showed a significant improvement despite still being below target (80%). It has proven that the awareness of community regarding the legislation has started to increase. Waddell et al emphasised the importance of contextual information for community education efforts on smoke-free legislation [11]. It is also necessary to change the individual perception regarding the legislation and the harm of second-hand smoke among community, which can affect the compliance and people's health status [12]. In some schools, many teachers and administration staff members were found to smoke. This is ironic because they are a role model for the students, even though one study showed that the majority of students disagreed with the teachers' smoking in the classroom and in their offices [13].

The venue that had compliance that was as low as public places was places of worship. In Bali, the places of worship were mosques, churches, monasteries, and pagodas. Temples in Bali are a semi-open venue, and many violations occurred, particularly observations of smoking and cigarette butts. Involving religious leaders and local wisdom could be an appropriate strategy in a social religious community like Indonesia, particularly in Bali [14].

One of the most important indicators in the policy is the availability of no-smoking sign. A study showed that smoke-free compliance in public places was suboptimal due to the absence of no-smoking signage [15]smoking aids, cigarette butts/bidi ends and smoking smell. Moreover, no-smoking signs being displayed had an effect on curbing smoking behaviour in public places [16]. However, our study showed that the coverage of the signs remains below the target (100%). The absence of no-smoking signs could make visitors not aware of and thus violates the legislation, and indicates the absence of an internal monitoring system. Thus, installing no-smoking signs, removing ashtrays, and sweeping away cigarette butts is important to inform society of the descriptive norm that smoking is not a normal behaviour in the community [17]. Other studies have emphasised that enforcement agencies should focus on the comprehensive removal of ashtray equivalents that could act as cues for smoking within a venue [18].

The better level of compliance in Denpasar, the capital of Bali, was because of the majority venue type being health facilities and government offices. It indicates that the performance of the tobacco control program in Denpasar was better than in other districts. Moreover, the communities in the urban venues had a better education level, were exposed to updated information, and were relatively more controlled. It corresponds with a study stating that the higher potential exposure to policy, the better the compliance level, because exposure to policy is one of the moderators to compliance [19]. However, other studies showed that rural residents were more likely than those in urban settings to support local smoke-free legislation [20].

Based on the interview, the managers exposed to smoke-free legislation had better knowledge, showed more responsibility and supported the legislation's implementation through an internal monitoring system. The system became the significant factor in increasing compliance. Thus, it is necessary to strengthen the enforcement infrastructure and efforts as well as investing in minimal but essential enforcement resources [21]. This finding should be followed by innovative monitoring and an implementation program for each type of venue. Another study also emphasised that the education level of the managers was an important determinant to ensure compliance with the smoke-free legislation [22].

Some of the managers, particularly from hospitality venues, were also worried regarding the economic impact of the smoke-free implementation. It was reasonable despite several studies that showed that banning smoking in the business sector has had no significant negative economic impact [23]. However, a study in the US stated that despite clear public health arguments and strong public support, the passing of smoke-free laws had stagnated and exemptions were being used to weaken the existing laws. Hence, the capability to make both a health and business case in support of smoke-free air laws may also bolster the case for expansion [24].

CONCLUSIONS

The compliance with the local smoke-free legislation in Bali remains suboptimal, despite increasing over time. The suboptimal compliance is associated with education coverage, knowledge and the support of managers as well as their responsibility to conduct internal monitoring. The continuous and appropriate approach of education, supervision and mentoring should be done by and for managers and the community. Each district is recommended to establish an effective tobacco control team, which could educate and provide assistance regarding the implementation of smoke-free legislation in its region.

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REFERENCES

1. Drope J, Schluger NW, Cahn Z, Drope J, Hamill S, Islami F, et al. The Tobacco Atlas [Internet]. Atlanta, Georgia; 2018 [cited 2018 Sep 27]. Available from: www.tobaccoatlas.org

2. NIHRD. Indonesia Basic Health Research 2013 [Internet]. Jakarta, Indonesia; 2013. Available from: http://www.litbang.depkes.go.id/

3. World Health Organization. WHO global report on trends in prevalence of tobacco smoking 2015 [Internet]. Geneva; 2015 [cited 2018 Sep 27]. Available from: www.who.int

4. Pusat Data dan Informasi. Perilaku Merokok Masyarakat Indonesia Berdasarkan Riskesdas 2007 dan 2013. Hari Tanpa Tembakau Sedunia. Jakarta, Indonesia: Kementerian Kesehatan Republik Indonesia; 2015. p. 2–12.

5. Centers for Disease Control and Prevention. Evaluation Toolkit for Smoke-Free Policies [Internet]. Atalanta; 2008 [cited 2018 Sep 27]. Available from: http://www.cdc.gov/tobacco

6. International Union Against Tuberculosis and Lung Disease. Assessing Compliance with Smoke-Free Laws A "How-to" Guide for Conducting Compliance Studies Second Edition [Internet]. Edinburgh, UK; 2014 [cited 2018 Sep 27]. Available from: https://www.theunion.org/what-we-do/publications/technical/english/compliance-guide_v4smallerfile.pdf

7. Hyland A, Barnoya J, Corral JE. Smoke-free air policies: past, present and future. Tob Control [Internet]. 2012 Mar 16 [cited 2018 Sep 27];21(2):154–61. Available from: http://www.ncbi.nlm.nih.gov/pubmed/22345239

8. Gravely S, Nyamurungi KN, Kabwama SN, Okello G, Robertson L, Heng KKC, et al. Knowledge, opinions and compliance related to the 100% smoke-free law in hospitality venues in Kampala, Uganda: cross-sectional results from the KOMPLY Project. BMJ Open [Internet]. 2018 Jan 5 [cited 2018 Sep 27];8(1):e017601. Available from: http://www.ncbi.nlm.nih.gov/pubmed/29306880

9. Navas-Acien A, Çarkoğlu A, Ergör G, Hayran M, Ergüder T, Kaplan B, et al. Compliance with smoke-free legislation within public buildings: a cross-sectional study in Turkey. Bull World Heal Organ [Internet]. 2016 [cited 2018 Sep 27]; Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4750436/pdf/BLT.15.158238.pdf

10. Schultz ASH, Finegan B, Nykiforuk CIJ, Kvern MA. A qualitative investigation of smoke-free policies on hospital property. Can Med Assoc J [Internet]. 2011 Dec 13 [cited 2018 Sep 27];183(18):E1334–44. Available from: http://www.ncbi.nlm.nih.gov/pubmed/22042991

11. Waddell EN, Farley SM, Mandel-Ricci J, Kansagra SM. Public Support for Smoke-Free Air Strategies Among Smokers and Nonsmokers, New York City, 2010–2012. Prev Chronic Dis [Internet]. 2014 Jan 30 [cited 2018 Sep 27];11:130263. Available from: http://www.ncbi.nlm.nih.gov/pubmed/24480633

12. International Agency for Research on Cancer. Evaluating the effectiveness of smoke-free policies. [Internet]. Vol. 13, 13. 2009. 374 p. Available from: http://w2.iarc.fr/en/publications/pdfs-online/prev/handbook13/handbook13.pdf

13. Erdogan N, Erdogan I. Smoking at school: views of Turkish university students. Int J Environ Res Public Health [Internet]. 2009 [cited 2018 Sep 27];6(1):36–50. Available from: http://www.ncbi.nlm.nih.gov/pubmed/19440268

14. Byron MJ, Cohen JE, Gittelsohn J, Frattaroli S, Nuryunawati R, Jernigan DH. Influence of religious organisations' statements on compliance with a smoke-free law in Bogor, Indonesia: a qualitative study. BMJ Open [Internet]. 2015 Dec 14 [cited 2018 Sep 27];5(12):e008111. Available from: http://www.ncbi.nlm.nih.gov/pubmed/26667011

15. Kumar R, Goel S, Harries AD, Lal P, Singh RJ, Kumar AMV, et al. How good is compliance with smoke-free legislation in India? Results of 38 subnational surveys. Int Health [Internet]. 2014 Sep 1 [cited 2018 Sep 27];6(3):189–95. Available from: http://www.ncbi.nlm.nih.gov/pubmed/24876270

16. Goel S, Sharma D, Gupta R, Mahajan V. Compliance with smoke-free legislation and smoking behaviour: observational field study from Punjab, India. Tob Control [Internet]. 2018 Jul [cited 2018 Sep 27];27(4):407–13. Available from: http://www.ncbi.nlm.nih.gov/pubmed/28798264

17. Byron MJ, Cohen JE, Frattaroli S, Gittelsohn J, Jernigan DH. Using the theory of normative social behavior to understand compliance with a smoke-free law in a middle-income country. Health Educ Res [Internet]. 2016 Oct 10 [cited 2018 Sep 27];31(6):cyw043. Available from: http://www.ncbi.nlm.nih.gov/pubmed/27923863

18. Thrasher JF, Pérez-Hernández R, Swayampakala K, Arillo-Santillán E, Bottai M. Policy support, norms, and secondhand smoke exposure before and after implementation of a comprehensive smoke-free law in Mexico city. Am J Public Health [Internet]. 2010 Sep [cited 2018 Sep 27];100(9):1789–98. Available from: http://www.ncbi.nlm.nih.gov/pubmed/20466952

19. Fong GT, Cummings KM, Borland R, Hastings G, Hyland A, Giovino GA, et al. The conceptual framework of the International Tobacco Control (ITC) Policy Evaluation Project. Tob Control [Internet]. 2006 Jun 1 [cited 2018 Sep 27];15(suppl_3):iii3-iii11. Available from: http://www.ncbi.nlm.nih.gov/pubmed/16754944

20. Rayens MK, Hahn EJ, Langley RE, Zhang M. Public Support for Smoke-Free Laws in Rural Communities. Am J Prev Med [Internet]. 2008 Jun [cited 2018 Sep 27];34(6):519–22. Available from: http://www.ncbi.nlm.nih.gov/pubmed/18471589

21. Peruga A, Hayes LS, Aguilera X, Prasad V, Bettcher DW. Correlates of compliance with national comprehensive smoke-free laws. Tob Control [Internet]. 2017 Dec 5 [cited 2018 Sep 27];tobaccocontrol-2017-053920. Available from: http://www.ncbi.nlm.nih.gov/pubmed/29208739

22. Gupta VK, Arora M, Sharma I, Nazar GP, Modi B, Singh D, et al. Knowledge and opinion about smoke-free laws and second-hand smoke among hospitality venue managers in Gujarat and Andhra Pradesh, India. WHO South-East Asia J public Heal [Internet]. 2013 [cited 2018 Sep 27];2(3):174–80. Available from: http://www.who-seajph.org

23. Tauras JA, Chaloupka FJ, Moor G, Henderson PN, Leischow SJ. Effect of the Smoke-Free Illinois Act on casino admissions and revenue. Tob Control [Internet]. 2018 Jan 19 [cited 2018 Sep 27];tobaccocontrol-2017-053966. Available from: http://www.ncbi.nlm.nih.gov/pubmed/29351930

24. Yousefzadeh MJ, Schafer MJ, Noren Hooten N, Atkinson EJ, Evans MK, Baker DJ, et al. Circulating levels of monocyte chemoattractant protein-1 as a potential measure of biological age in mice and frailty in humans. Aging Cell. 2018;17(2).