

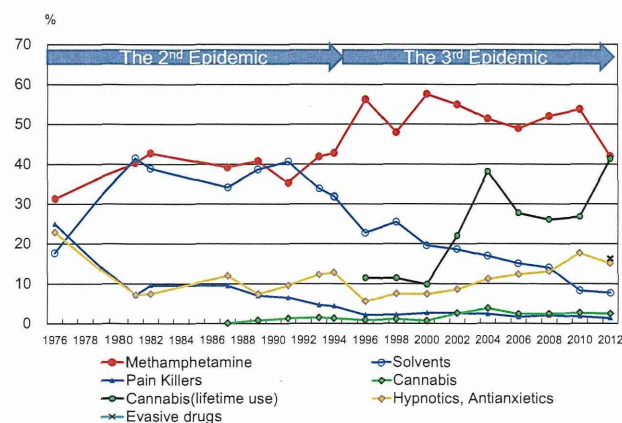
**Fig. 4 – Lifetime prevalence of drug use (aged 15 and over). Data source: The Nationwide General Population Survey on Drug Use.**

accounts for only a small percentage in terms of being a main inducing factor for mental hospitalization. However, the rate of ever having used cannabis tremendously increased from 10% in 2000 to 40% in 2012 among those admitted to mental hospitals. Cannabis abuse seems to have spread much more widely than expected.

These changes imply that drug abuse in Japan changed from a “Solvent Dominant Type,” which symbolizes a Japanese mode of drug abuse, to a “Cannabis Dominant Type,” which symbolizes a Western mode of drug abuse.

#### 4.2. Emerging evasive drug problem in 2011

Another noticeable change for this period is the evasive drug problem. This is a serious social issue for today's Japan. Evasive drugs are manufactured, sold, and used at large and are not controlled by law, although they have psychotropic effects. Evasive drugs first came to the public's attention in



**Fig. 5 – The ratio of “drugs as a main inducing factor” for users becoming outpatients and inpatients in mental hospitals. Data source: The Nationwide Mental Hospital Survey.**

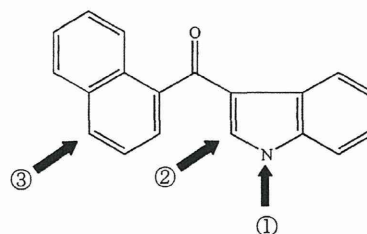
1988, with “magic mushrooms”. Magic mushrooms were specified as a narcotic material substance in 2002. That was the first epidemic of evasive drug use in Japan.

After that, several kinds of designer drugs were produced in order to evade various controls and thwart strengthened countermeasures. These kinds of drugs had chemical formulas that were partially changed from those of regulated substances. In those days, we detected three major kinds of evasive drugs: tryptamines, MDMA analogs, and “2C series.” Five-methoxy-*N,N*-diisopropyltryptamine (5MeO-DIPT) especially became popular in gay communities. This second epidemic of evasive drug use occurred between 2002 and 2006.

To control these kinds of drugs, we had to collect and prepare a large amount of scientific data in order for the drug to be recognized as a “narcotic,” based on the Narcotics Control Law. However, this takes much time and money. Therefore, the Ministry of Health, Labor and Welfare revised the Pharmaceutical Affairs Act and introduced a new concept of “Designated Substances” in 2006. We can now categorize a new drug as a “Designated Substance” using comparatively fewer data. Once the drug is recognized as a Designated Substance, the manufacture, sale, and purchase of the drug can be controlled. As a second step, we can then proceed to prepare the data needed to be recognize a drug as a narcotic and therefore controlled under the “Narcotics Control Law.” For several years after introducing the new concept of Designated Substances, we did not have a social problem with “evasive drugs”, and so we thought that the problem of evasive drugs had disappeared.

However, in 2011, we suddenly had a new serious social problem with evasive drugs. Many kinds of health accidents frequently occurred involving these drugs. This is the third epidemic of evasive drug use. New evasive drugs, named “evasive herbs”, expanded rapidly in Japan. We can see the rapid expansion of this drug use by looking at the number of shops in the Tokyo metropolitan area that sell them. There were only two shops in 2009, but their number increased to 74 in 2011.

“Evasive herbs” are herbs with evasive drugs, usually synthetic cannabinoids. Herbs are not the problem. The evasive drugs that are mixed into the dry herbs are a problem. We can categorize evasive drugs into three types according to their forms. The first is “herbs”, the second is “liquids”, and the third is “powders”. Originally, “herbs” contained depressants such as synthetic cannabinoids. “Liquids” and “powders” contained mainly stimulants. Synthetic cannabinoids are agonists to cannabinoid receptors, CB<sub>1</sub>. Users take them, hoping to have similar effects to those of Δ<sup>9</sup>-THC.



**Fig. 6 – Basic structure, (1H-indole-3-yl)(naphthalene-1-yl)methanone, for “Comprehensive control” of evasive drugs.**

However, the chemical formulas of synthetic cannabinoids are different from those of  $\Delta^9$ -THC. Synthetic cannabinoids cannot be detected using a cannabis detection kit. This implies that users cannot be arrested. The chemical mechanisms and effects of most synthetic cannabinoids are not known. Marijuana and synthetic cannabinoids look alike, but the substances are different.

Today, the components of evasive drugs are complex. Most packages of today's "herbs" contain not only synthetic cannabinoids as a depressant but also stimulants. Representative stimulants are synthetic cathinones.

As for synthetic cannabinoids, there are too many derivatives to recognize them, one by one, as Designated Substances. The Japanese government established the "Comprehensive control" system on March 23, 2013. Under this system, all of the derivatives indicated in Fig. 6 are basically prohibited. This basic structure comes from the JWH-018 structure. Using this system, we can theoretically control about 770 synthetic cannabinoids.

## 5. Conclusion

We can summarize the current situation of drug abuse in Japan as follows: there has been: (1) a remarkable decrease of solvent abuse; (2) a stabilization of MAP abuse; (3) a penetration of cannabis abuse; (4) an emergence of evasive drug abuse; and (5) a silent increase in medical drug dependence. This implies that there has been: (1) a change from a "solvent dominant type" to a "cannabis dominant type" of drug use,

that is, from a "Japanese type" to a "Western type"; (2) a shift to drugs which do not have a high potential to cause drug-induced psychosis; and (3) a shift from conduct that leads to arrest to conduct that does not lead to arrest.

Regardless of whether a drug is illicit or not, drug dependence is a mental disorder. Japan is urged to deal with drug abuse and dependence using not only the criminal model, but also the medical model.

---

## Acknowledgments

This study was supported in part by Health and Labor Sciences Research Grants for Research on HIV/AIDS and Research on Regulatory Science of Pharmaceuticals and Medical Devices, the Ministry of Health, Labor and Welfare, Japan.

---

## REFERENCES

- [1] Wada K, Kobori E. Drug dependence and HIV/HCV infection in Japan: the current situation and the countermeasure. *J AIDS Res* 2011;13:1–7 [in Japanese].
- [2] Wada K. The history and current state of drug abuse in Japan. *Ann NY Acad Sci* 2011;1216:62–72.
- [3] Wada K, Rumi KP, Fukui S. Cigarette smoking and solvent use among Japanese adolescents. *Drug Alcohol Depend* 1997;46:137–45.

# 医学的介入の研究デザインと統計

ランダム化/非ランダム化研究から傾向スコア、操作変数法まで

訳 木原 雅子 / 木原 正博

INTERVENTIO

Outcome

Intervention



Evaluating Clinical and Public Health Interventions  
A Practical Guide to Study Design and Statistics

Mitchell H. Katz

1

2

Year

メディカル・サイエンス・インターナショナル

# 医学的研究のデザイン

研究の質を高める疫学的アプローチ

第4版

DESIGN

訳 木原 雅子 / 木原 正博

Designing Clinical Research

Fourth Edition

Stephen B. Hulley  
Steven R. Cummings  
Warren S. Browner  
Deborah G. Grady  
Thomas B. Newman

メディカル・サイエンス・インターナショナル

# 疫学と人類学

医学的研究におけるパラダイムシフト

訳 木原 正博 / 木原 雅子

Epidemiology and Culture

James A. Trostle

メディカル・サイエンス・インターナショナル

# 現代の医学的研究方法

質的・量的方法、ミクストメソッド、EBP

訳 木原 雅子 / 木原 正博

Research Methods in Health  
Foundations for Evidence-Based Practice

Edited by Pranee Liamputong

mixed methods

メディカル・サイエンス・インターナショナル

厚生労働科学研究費補助金エイズ対策政策研究事業  
「高リスク層のHIV感染監視と予防啓発及び内外のHIV関連  
疫学動向のモニタリングに関する研究」  
平成 24-26 年度総合研究報告書

---

2015 年 3 月 31 日 発行

代表者 木 原 正 博

連絡先 京都大学大学院医学研究科  
社会健康医学系専攻社会疫学分野  
〒606-8501 京都市左京区吉田近衛町  
TEL 075-753-4350 FAX 075-753-4359

---

©2015

印刷 トーブラ

本報告書に掲載された論文及び調査票  
には著作権が発生しておりますので利  
用にあたりご注意ください。

