

## Measuring Effects of Pharmacists' Training on Smoking Cessation Using Mystery Shoppers

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### ABSTRACT

**Background:** Pharmacists' role in smoking cessation is unique as they are easily to be accessed by public. Supporting evidences revealed that trained pharmacists improved their self-efficacy and ability in smoking cessation counseling. This study aimed to investigate whether pharmacists able to perform smoking cessation counseling at 4 weeks after training.

**Methods:** Trained mystery shoppers instructed to play ready-to quit smoking scenario, visited 241 pharmacists (consisted of 127 pharmacists in training group and 114 pharmacists in control group). Scenario of 5A's smoking cessation counseling was presented by mystery shoppers (MS). MS documented the counseling process using standardized observation tool immediately after pharmacy visit. MS acceptability survey was delivered via postmail after MS visited pharmacies.

**Results:** In training group, nearly all of pharmacists (90%) asked patient whether he smokes, 80% of pharmacists advise patient to quit and assess patient readiness to quit. However, less than half of pharmacists (46%) perform in assisting patient by facilitating quit process. Only 25% of pharmacists able to set quit date and discuss key issues, and 15% of pharmacists offered follow up counseling. A significant different between intervention and control group in assisting patients at 4 weeks post-training follow up showed the effectiveness of training (P<0.001). **Conclusions:** Pharmacists able to retain the skills in ask, advise, and assess readiness to quit within 4 weeks after training, but need more advance training to improve their skills in assisting and follow up counseling. The efforts to nationally disseminate the training are steps forward to enhance pharmacists' involvement in tobacco control.

**Keywords:** Tobacco cessation, pharmacists, training, mystery shopper, Indonesia

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### INTRODUCTION

Smoking continues to be a public health problem globally. Smoking is a risk factor for six of the eight leading causes of death in the world<sup>1</sup>. In order to reverse the tobacco epidemic, concerted efforts are needed from a wide range of sectors with national health systems. Health professionals have several roles to play in comprehensive tobacco control efforts<sup>2</sup>. In countries where public health funds and efforts not established yet, increasing awareness among health professionals should be a priority<sup>3</sup>. Pharmacists are in the unique position in helping tobacco users as they are the most accessible health professional and could be expected to provide advice on cessation to customers. Community pharmacists can play an instrumental role in smoking cessation in most countries, since nicotine replacement therapy (NRT) are available without prescription. However, for countries where NRT is not available, non-pharmacological therapy is also effective<sup>4</sup>. Previous studies, evaluating effectiveness of training for pharmacists, demonstrated that community pharmacists improved the knowledge and self-efficacy in smoking

cessation counseling after training session<sup>5,6</sup>. However, training led to better improvement in counseling among physicians compared to pharmacists counterpart. Low levels of counseling performance were seen among pharmacists<sup>7</sup>. In Indonesia, pharmacy based smoking cessation is a new professional role. Therefore, the pilot project of cessation training was introduced in Yogyakarta Province, Indonesia on 4-5 October 2013. A 6-hour workshop was developed and delivered for 127 community pharmacists. The workshop comprised four sequential modules (3-hour lecture) and three cases scenario (3-hour role-play). The 4 modules focus on the following issues; (1) epidemiology of tobacco use and its health related consequences; (2) pharmacology of nicotine and pathophysiology of tobacco dependence; (3) different types of pharmacotherapy and their use especially NRT and varenicline; and (4) brief intervention of tobacco cessation using the 5A's framework. A 3-hour role-play session, three cases scenario were emphasized on situations specifically related to tobacco cessation counseling in Indonesia. The expected outcomes of the workshop were increased knowledge, attitude, and ability

Table 1: Characteristics of pharmacists

Sociodemographic variable	Intervention (127) N (%)	Control (114) N (%)	P Value
Sex			0.019
Female	121 (95.3)	114 (100)	
Male	6 (4.7)	0 (0)	
Age (years)			0.612
< 25	12 (9.4)	11 (9.6)	
25-30	52 (40.9)	48 (42.1)	
31-40	51 (40.2)	45 (39.5)	
41-50	6 (4.7)	5 (4.4)	
51-60	6 (4.7)	5 (4.4)	
District			0.801
Yogyakarta	36 (28.3)	35 (30.7)	
Sleman	42 (33.1)	36 (31.6)	
Bantul	35 (27.6)	35 (30.7)	
Kulonprogo	5 (3.9)	4 (3.5)	
Gunungkidul	9 (7.1)	4 (3.5)	
Education			0.403
Pharmacist degree	117 (92.1)	108 (94.7)	
Master degree	8 (6.3)	6 (5.3)	
Doctoral degree	2 (1.6)	0 (0)	
Job position			0.723
Head of pharmacy	83 (65.4)	72 (63.2)	
Co-head	44 (34.6)	42 (36.8)	
Working experience			0.515
< 1 year	7 (5.5)	4 (3.5)	
1-5 years	74 (58.3)	65 (57.0)	
6-10 years	27 (21.3)	26 (22.8)	
11-15 years	12 (9.4)	13 (11.4)	
16-20 years	2 (1.6)	2 (1.8)	
>20 years	5 (3.9)	4 (3.5)	
Counseling practice			0.000*
No practice	2 (1.6)	3 (2.6)	
<2 hour	17 (13.4)	9 (7.9)	
2-4 hours	23 (18.1)	24 (21.1)	
4-6	43 (33.9)	43 (37.7)	
6-8	41 (32.3)	35 (30.7)	
No answer	1 (0.8)		
Tobacco cessation training experience			0.315
Yes	5 (3.9)	2 (1.8)	
No	122 (96.1)	112 (98.2)	

\*significantly different at  $p < 0.05$

of cessation counseling<sup>8</sup>. Endpoint outcome of this research was measuring pharmacists' skills in providing cessation service in practice site. The difficulties in recruited patients who want to quit and following up patients' consultation in community pharmacy settings were become main obstacles when measuring pharmacists' performance. Hawthorne effect also potential attributed to false observation if pharmacists' performance was directly observed<sup>9</sup>. The use of covert mystery shoppers (MS) approach may address these issues. MS method is widely used in evaluating the consultation in community pharmacies<sup>10,13</sup>. The present study investigated whether the skills derived from training can be translated into changed practice using a mystery shopper approach.

## METHODS

### Study design

An observational study design was used. Prior the MS (mystery shopper) study, the TE training program (described in elsewhere) was designed for practicing pharmacists. Pharmacists' provision on cessation counseling was measured 4 weeks after training using mystery shopper method.

### Subjects

A total of 241 pharmacists involved in MS study. 127 pharmacists from 119 pharmacies in the Yogyakarta province (from 5 districts) were selected for training group and were each compensated 100,000 IDR after program completion. Meanwhile 114 pharmacists from 114 pharmacies were selected for control group without compensation. The control group of pharmacists was

Table 2: Pharmacy characteristics during mystery shopper encounter

Encounter characteristics	Training group	Control group	P value
Number of visit			0.000*
First visit	108 (85)	18 (15.8)	
Second visit	16 (12.6)	74 (64.9)	
Third visit	3 (2.4)	22 (19.3)	
Provide cough product			0.000*
no	57 (44.9)	15 (13.2)	
yes	70 (55.1)	99 (86.8)	
Counseling minutes			0.000*
Mean (SD)	3.75 (0.85)	1.48 (0.56)	
Refer to physician			0.000*
no	106 (83.5)	47 (41.2)	
yes	21 (16.5)	69 (58.8)	

\*significantly different at  $p < 0.05$

selected based on similarity with training group in term of volume of services, busyness and location.

*Mystery shopper scenario*

This scenario required pharmacists to offer help for patient who have intention to quit. MS was male age ranged 30-45 years old, middle class status, and intent to quit within this month. During pharmacy visit, MS was required to hold cigarette pack in hand to give a signal to pharmacist. He was only actively seeking for advice and direct to cessation counseling when pharmacist initiates the conversation. He got a cough and did not relieve since 2 week ago. He smoked for 15 years and attempted to quit 2 times but failed due to anxiety caused by withdrawal symptoms. The MS scenario required pharmacists to use their skill from identify whether patient smokes, offering assistance to arranging follow-up counseling. Pharmacists were considered as just "perform" each of 5A's if they did each of counseling process. More precisely, pharmacists were deemed to be "good perform" in cessation counseling if they can practice 3A's (ask, advise and assess) or more than 3A's (plus assist and arrange) in appropriate order. In opposite, pharmacists were considered to be not practicing cessation counseling if they did not ask patient's smoking status, or just offer cough products or refer to physician without giving advice in quit smoking.

*MS training*

About 10 men (lay persons) aged between 30-45 years old and have intention to quit were recruited as MS. A 2-hour training performed by researchers was conducted 1 week prior to pharmacy visit. During training session they were showed the videos of cessation counseling, trained for their interpersonal skills as MS, performed role play to act based on the scenario, be taught to complete observation tools and to note counseling process immediately after visiting pharmacies. One day prior and within period of to pharmacy visits, the researcher rehearsed with MS to obtain best performance of MS.

*Procedure*

Throughout the study, cessation provision was evaluated by MS visit. The MS went to assigned pharmacies and seeking pharmacist on duty for helping him in quitting. MS was not directly to ask the advice on quitting, otherwise they ask the pharmacists' suggestions on cough symptom. Notes summarizing the encounter were recorded outside each pharmacy immediately after completion of each visit. Pharmacists did not know they would be visited and no consent signed by pharmacists in this study. Notice of exemption from Gadjah Mada University's ethical review board was received. The 10 MS accompanied each other during 241 pharmacy visits (each MS visit 12 training and 12 control pharmacies within 1 month) to ensure consistency of the scenario protocol and data collecting process. MS were instructed to provide information about details of smoking history only if pharmacist inquired. In order to reach the target pharmacists available for patient services, person assigned by researcher was contacting pharmacists by phone or text messaging and ask their availability in pharmacy before MS action. MS was required to visit target pharmacies within 5 p.m-9 p.m on working days. Second or third visit can be applied in case they failed to meet pharmacist on duty at first visit. Within one week after visit, researcher sent the pre-paid postal questionnaire survey to pharmacists to identify the acceptability of MS methodology. To minimize bias, the responses were anonymous. Only 51 and 54 pharmacists in training and control group consecutively were send back the questionnaire survey of MS acceptability.

*Measures*

A validated observational tool was developed. Items in the checklist were generated from the 5A's. Since the training program is entirely new for pharmacists, we provide a checklist "yes" or "no" only. Observation checklist and scenario were validated by 4 faculty members. The experts assessed content validity of scenario by rating each item's relevance on a scale from 0 to 4 (0, not relevant at all; 4, high relevant). Items were considered relevant when the median for each variable was greater than 2.0. Content validity index (CVI) was used to assess the degree of this validity (range from 0-1). As a result, MS scenario retrieved 0.9 CVI. Covert MS have face validity when the target pharmacist does not know or suspect that they are being confronted by a MS. Only 4.7% and 5.6% of MS visits were detected and reported by pharmacists in training group and non-training group respectively. A question about MS detection was embedded in a set of MS acceptability survey. MS serve as observers received training by researcher specifically for using the validated observation tool. The primary and secondary observers viewed, scored and coded 20% of the MS encounter in order to assess inter-rater reliability using kappa statistics. Observation tools resulted the value of kappa 0.9. The Kappa was greater than 0.8, as it desirable to use the checklist. The study hypotheses were analyzed using a single, primary observer's data.

Table 3: Cessation service provision 4 weeks follow up in intervention group

Domain	Criteria	After program ( <sup>8</sup> ) n (%)	4 weeks follow up n (%)
Ask	Ask patient whether he/she smokes or not	125 (98.4)	113 (89.0)
Advise	Advise patient about health impacts of smoking (give leaflet if needed)	115 (90.6)	104 (81.9)
	Advise patient to quit smoking personally related to his/her disease	109 (85.8)	101 (79.5)
Assess	Assess tobacco use history (past and current use) and quit efforts in the past	111 (87.4)	102 (80.3)
	Assess readiness to quit within one month	117 (92.1)	106 (83.5)
Assist	Facilitate quit process by discussing intervention methods to quit	77 (60.6)	59 (46.5)
	Set a quit date	93 (73.2)	29 (22.8)
	Discuss key issue of stress related to quit and strategies to relieve withdrawal symptom	95 (51.2)	38 (29.9)
Arrange	Arrange for follow-up contact (next week)	60 (47.2)	19 (15)
	Good criteria in overall performance	83 (65)	62.2)

*Data Analysis*

The primary analysis was to determine the effect of the training. Frequency distributions were compiled. Chi-square test was used to compare the sociodemographic variable between intervention and control group. Mann-whitney test was used to determine whether any difference between intervention and control group. SPSS 21.0 (Chicago,IL) was used for all analysis.

**RESULTS**

*Pharmacists' characteristics*

Among 241 pharmacists involved in the program, majority of them were female and aged mostly ranged from 25 to 40 years, 81.1 % and 81.6% for training and control group respectively. Additional pharmacist demographics are reported in Table 1. Only 52.3% of MS was success to meet pharmacists at first visit, while the other MS take 2-3 times to see pharmacists. Mostly (70.1%) MS received OTC cough medicines after counseling process, and 35% pharmacists suggested referral to physician. The average duration of each interaction was 2.6 minutes (range 1-5) (as shown in Table 2).

*Four weeks post training pharmacists' performance scores*

At the 4 weeks post training performance scores of pharmacists in training group were analyzed. Table 3 shows the percentage of pharmacists performed each item in 4 weeks after training in practice site. Based on previous data, pharmacists' counseling performance after training showed good ability as most of pharmacists perform 5A's (65%)<sup>8</sup>. However, the overall scores were decline on 4 weeks follow up (62.2%). We assumed that pharmacists did not have cessation skills before training as they stated in demographic information. Therefore, comparing the results with baseline, it showed that counseling performance was good after training as most of pharmacists performed 5A's. These results were consistent with training objectives. When we compared the desired outcome post training<sup>8</sup> and 4 weeks follow up, it revealed that the effect of training was still good. In 4 weeks after training, almost pharmacists (90%) asked patient whether he smokes, 80% of pharmacists advise

patient to quit and assess patient readiness to quit. However, less than half of pharmacists (46%) perform in assisting patient by facilitating quit process. Only 20% set quit date and 30% discuss key issues. In addition, only 15% of pharmacists offered follow up counseling. The performance was initially high in training phase but decayed over time (week-4 follow up). It can be analyzed that pharmacists able to retain the skills in ask, advise, and assess, but need more advance training to improve their skills in assisting and follow up counseling. *Tobacco cessation service provision among training and control group pharmacists*

Based on direct visit by mystery shoppers to the pharmacies and checklists containing 5A's fulfilled during 4 weeks period, almost pharmacists who completed the training program attempted to implement a tobacco cessation service at their practice sites. Of those, 79.5% of pharmacists try to ask, advise, and assess patient. A mann-whitney test for comparison found a significant different between intervention and control group in assisting patients at 4 weeks post-training follow up (P<0.001) (as shown in Table 4).

*MS acceptability*

Out of 241 questionnaires sent to pharmacists in the training group and control group, 105 were sent back to the researchers (44% response rate). Pharmacists were asked to rate on a 4-point likert scale how much they accepted the MS methodology, containing five statements (0 = strongly disagree and 4 = strongly disagree). Ratings had a mean of 3.04 (Range = 2.77-3.35).

**DISCUSSION**

This study figures the first mystery shopper study assessing community pharmacists' response to request smoking cessation advice by patients at ready to quit smoking in Indonesia setting. The results answered the hypothesis that interactive training improve pharmacists' skill in cessation counseling and enhance provision in daily practice. Trained pharmacists showed significant differences in all components of 5A's compared with control pharmacists. Consistent with previous study, there was a decrease in the rate of provision in follow up study<sup>10,14</sup>. This may be because of the skill retention is

Table 4: Tobacco cessation service provision, comparison between training and control group

Measures	Training group n (%)	Control group n (%)	P value
Ask patients whether he/she smokes or not	113 (89.0)	6 (5.3)	0.000*
Advise patient about health impact of smoking (give leaflet if needed)	104 (81.9)	4 (3.5)	0.000*
Advise patient to quit smoking personally related to his/her disease	101 (79.5)	0	0.000*
Assess tobacco use history (past and current use) and quit efforts in the past	102 (80.3)	0	0.000*
Assess readiness to quit within one month	106 (83.5)	0	0.000*
Facilitate quit process by discussing intervention methods to quit	59 (46.5)	0	0.000*
Set a quit date	29 (22.8)	0	0.000*
Discuss key issue of stress related to quit and strategies to relieve withdrawal symptom	38 (29.9)	0	0.000*
Arrange for follow-up contact (next week)	19 (15)	0	0.000*
Ask, advise, assess in appropriate order	101 (79.5)	0	0.000*

\*significantly different at  $p < 0.05$

lower all the time without follow up training. This indicates that continuous intervention skills may retain an enhance practice behavior. However questions about the long term impact of training are still need to be answered. The results revealed that most of pharmacists able to ask whether patient smokes, advise the effects of smoking and suggest to quit, assess the history of smoking and readiness to quit. As suggested by Coleman 2004 and Sylagy 2008, simple advice about smoking cessation benefits generates modest cessation and considered as one of the most cost effective cessation interventions<sup>15,16</sup>. However, it must be considered that many of pharmacists' lack of skills in assisting quitting specifically in offering alternative quitting methods, setting quit date, discuss key issues such managing stress related to quitting and relieving withdrawal symptoms, and arrange follow-up counseling. Nevertheless, when a patient request to see pharmacist for consultation about his symptoms, counseling was provided immediately about product recommendation and the ongoing cessation offered were adequate. It seems that many pharmacists more likely to offer products first, followed by providing cessation counseling later on. It is thus perhaps unsurprising in Indonesia context that most of them prefer in recommend product rather than giving advise only<sup>17</sup>. Consistent with a survey in Canada, a greater number of pharmacists providing information on smoking cessation aids during cessation counseling compared with the other health-care providers<sup>18</sup>. According to Chiang and Chapman, sale motives seem involved in cessation because of a wide variation in practice both efficacious and non-evidence based cessation products<sup>19</sup>. It was noticeable that pharmacists were less competence at deriving patient's smoking history as compared to recommend a cough relieving products as highlighted by Schneider 2011<sup>20</sup>. While many pharmacists probed for smoking history and previous attempts in quitting, few enquired about dealing with withdrawal symptoms or other issues in quitting and arrange schedule for follow-up counseling. These findings also strengthen the results of other studies, which point out pharmacists' weaknesses in assisting patients quit smoking<sup>14,21</sup>. Therefore, study

demonstrates that pharmacists are better at cessation service provision when dealing with direct product requests, as opposed to responding to patient symptoms<sup>20,22,23</sup>. Efforts should be directed to enhance pharmacists' skills in behavioral cessation therapy focusing in assisting and facilitating quit process, thus can be followed by patient's quitting status monitoring. It can be highlighted that control pharmacists' provision in smoking cessation counseling was poor, where 59% of control pharmacists as compared with 16% of trained pharmacists suggested referral to a physician rather than insist to focus on cessation counseling with patients. This depicts low self-efficacy and lost opportunity in recruiting patient who wants to quit. Factor attributed to this phenomenon may be lack of confidence, lack of skills or lack of experience in helping patient quit<sup>14</sup>. Another possible reason behind why community pharmacists may refer patients to physicians could be the reluctance of taking risks and conflicting with other health professional<sup>24</sup>, particularly in patients with chronic symptoms, as was the case in this study<sup>25</sup>. Increasing competence of pharmacists in cessation toward effective quitting strategies should be an important area for pharmacists. Many evidences revealed that training programs help pharmacists to identify smokers and increase cessation rate<sup>21,26-28</sup>. Therefore measuring cessation rate for further outcome in this study is need to considered. These rates could translate into a substantial public health benefit if consistently provided. In order to increase the pharmacists' willingness to involve in cessation practices, the product registration of NRT as over-the-counter cessation aid in Indonesia is crucial along with the high prevalence of Indonesian smokers. Areas for improvement and future training requirements should strategically developed by IPA, include better assisting skills, improved awareness of patients' symptoms and enhanced confidence in suggesting smoking cessation strategies.

#### MS Acceptability

A high proportion of pharmacists accepted the MS method. Participants identified they would also benefit from the procedure by further developing their

professional skills. This MS study showed that only 4-5% of MS visits were detected by pharmacists, although greater number of pharmacists (56%) did not return the mailed survey. However, it is demonstrated that covert mystery shoppers have face validity. We perform the document notes rather than recording the interaction process, even many trials assessed reliability and validity by audio-taping MS visits<sup>29,30</sup>. This method was not used in this study, due to lack of resources and too many pharmacists must be visited. It would be considered for future studies when we train more intensive skills in assisting patients with specific cases, as example smokers with potential drug interactions.

#### Limitation

Several limitations should be kept in mind when interpreting the results of this study. First, caution must be exercised in generalizing results because of select and small sample size of Yogyakarta pharmacists' participation. Participants were specifically invited to participate due to their previous involvement in continuing education held by IPA. However, control group was included in the study design, then we are able to state with certainty that any observed changes are, in fact, due to the training program. Due to 5% of MS was detected by pharmacists, Hawthorn effect may produce the awareness for the trained pharmacists and positively affected their performance<sup>31</sup>. It also should be pointed out that the observations may have been inflated by the fact that all pharmacists in the training group were self-selected. However, MS scenario allowed pharmacists to perform in natural environment. In addition, this study did not provide direct feedback after MS visits. Many studies suggest corrective feedback or coaching that addressed how pharmacists could improve performance further<sup>10,23</sup>. as feedback is most effective when provided immediately after performance<sup>23,32</sup>. However, our study did not emphasize on direct feedback, but focus on training intervention and then conducted MS visits to ensure transfer of skills.

#### CONCLUSIONS

The findings demonstrate that pharmacists responded adequately for tobacco cessation counseling. The rates of provision of cessation were quite high. In particular, advance training in assisting and arrange follow up cessation counseling is needed. Therefore, we should recognize that urgent need to widely disseminate the training among Indonesian pharmacists to improve their involvement in cessation counseling.

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