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# Brief Report: The Utilization of Influencing Tactics for the Implementation of Infection Control Policies

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## INTRODUCTION

In the prevention of nosocomial infection, it is important to understand its epidemiology and pathogenesis. Only then are we able to formulate appropriate preventive methods for the various types of infection. However, in recent years there has been growing recognition that the implementation of preventive measures is often only possible when behavioral change occurs.<sup>1</sup> In fact, an appreciation of behavioral change principles is critical for infection control nurses (ICNs) because most preventable nosocomial infections are related to inappropriate patient care practices.<sup>2</sup> Procedures for prevention are often simple (e.g., washing hands), but compliance can be extremely difficult to enforce in the hospital.

The pioneers in applying such social psychological principles in the context of infection control were workers in the SENIC (Study in the Efficacy of Nosocomial Infection Control) project.<sup>1,3,4</sup> These workers investigated nurses' compliance to infection control recommendations in response to different types of power influence. The classifications of power used in the SENIC study were the six bases of power first described in 1959 by French and Raven<sup>5</sup> and included coercive, reward, legitimate, referent, expert and informational. These classifications however, were rationally organized and based on armchair theorizing.

As a result, several inherent problems are present. One difficulty is that people often do not exercise influence in ways predicted by a rational classification scheme.<sup>6</sup> Another concern is that the bases of power do not describe the actual influence tactics, but only the resources that a powerholder can exploit to effect influence on the target.<sup>7</sup> This distinction is important because powerholders with access to similar bases of power may not necessarily use the same influencing tactics. Further discussion on the above problems can be found elsewhere,<sup>8,9</sup> but these difficulties have instigated recent investigators of power to pursue the methodology of free response and self reporting. The most relevant study for organizational personnel is the investigation by Kipnis, et al. on intraorganizational influencing tactics.<sup>10</sup> In this study, managers were requested to describe actual incidents in which they attempted to change workers' behavior. From these essays, 58 influencing tactics (defined as the actual means used by powerholders to change the behavior of the target person<sup>8</sup>) were identified. These studies have been replicated in other countries (United Kingdom and Australia), enhancing the validity of their findings.<sup>11</sup>

To evaluate the effectiveness of these 58 tactics in the context of infection control, a study involving 20 hospitals in Hong Kong was conducted with the following objectives:

- To identify the influencing tactics that are most frequently used by ICNs;
- To assess how nurses will evaluate their compliance to infection control policies when these frequently-used tactics are employed by the ICNs; and
- To assess the ability of ICNs to predict nurses' compliance in their hospitals when these frequently-used tactics are employed.

## METHODS

In the study on influencing tactics by Kipnis, et al.,<sup>10</sup> after identifying the 58 tactics, a question-

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naire also was constructed with these tactics and offered to 754 managers. These managers were requested to describe how frequently they used these tactics in influencing others at work during the previous six months. Factor analysis (FA) of the data from the entire sample yielded six interpretable factors, while two additional factors emerged from the separate subanalysis of the responses to superiors (labeled "Blocking") and to subordinates (labeled "Coalition"). A ninth group consisting of "unclassified items" was also given in the report by Kipnis, et al.<sup>10</sup>

This present study was conducted in 20 hospitals in Hong Kong, which altogether had 14,411 beds and employed 9,500 nurses. The breakdown of these hospitals according to the number of hospital beds was: six hospitals with more than 1,000 beds, five with 500 to 1,000 beds, seven with 100 to 500 beds and two with less than 100 beds.

The study was conducted in February 1988 and had three phases.

### **Phase I: Identification of Frequently Used Influencing Tactics**

A panel of 45 ICNs was used for Phase I. These nurses had about six months of experience in the field and were attending an infection control course organized by the authors. They were all experienced nurses and had an average of 13.3 years of nursing practice. The panel members were requested to describe how frequently they had used each tactic to influence other nurses in their work during the past six months. This was, in fact, a repeat of the study by Kipnis, et al.,<sup>10</sup> and a similar five-point Likert scale was used to anchor their responses: usually (5), frequently (4), occasionally (3), seldom (2), never (1). They were also requested to indicate tactics that could not be used in their position (e.g., promising salary increases) as ICNs.

From the panel's responses, the more frequently-used tactics were selected. If more than 20% of the panel (i.e., more than nine nurses) indicated that a tactic could not be used by ICNs, it was excluded as irrelevant for ICNs. Half of the tactics with the highest frequency scores remaining in each of the nine groups were selected, resulting in a list of 21 tactics.

Using the frequency scores given by the panel, the 21 influence tactics were factor analyzed. It was important to assess whether or not the latent structure described by Kipnis, et al.<sup>10</sup> was still valid when these 21 tactics were used by ICNs. Hypothetical factors corresponding to Kipnis' classification of influence tactics were first generated. Similarity between these hypothetical factors and factors from the sample data was assessed by confirmatory factor analysis.

### **Phase II: Survey of Nurses' Evaluation of Tactics' Effectiveness**

In Phase II, a questionnaire was constructed with

the 21 influence tactics selected in Phase I. Two more tactics, "doing it for the patient's good" and "writing guidelines," classified in Table 1 under group B (labeled as "Professional" tactics) were added because the panel felt the tactics were frequently used by ICNs. A description of the 23 tactics can be found in Table 1. For each of these tactics, randomly listed in the survey, respondents were asked to indicate if they would "willingly comply," "reluctantly comply" or "not comply" after the following instructions:

"A new policy on a ward procedure for preventing infection is introduced in the hospital. Will the following tactics by the ICN be effective in getting you to comply?"

Respondents also were told to assume that the new policy was appropriate and legitimate. The questionnaire was pilot tested and evaluated before being administered in the final survey. After the pilot survey, examples were added to tactics 2, 6, 7 and 21 (Table 1) for clarification.

The nurses surveyed were working on a three-shift rotation: morning, afternoon and night. Only nurses actively involved in direct patient care were included in the sampling frame, and thus all nursing supervisors were excluded. From the duty roster, a stratified sample consisting of 10% of each rank was randomly selected with the help of a random numbers table. The survey was conducted through personal interviews by the 45 nurses on the panel who had just received training in interview techniques as part of the infection control course. The entire survey was completed within one week.

For the data analysis, a weight of 2 was given for every response of "willingly comply" and 1 was given for "reluctantly comply." The summation of all the marks thus obtained for each tactic was designated the tactic effectiveness score.

### **Phase III: Prediction of Compliance to Influencing Tactics by ICNs**

Two weeks after Phase I and before the survey in Phase II, the questionnaire with the 23 tactics was administered to the 45 nurses on the panel. They were requested to predict how most (i.e., more than 75%) of the nurses in their hospital would respond to the questionnaire. The same procedure was repeated on 20 more ICNs who had at least two years of experience in infection control.

### **STATISTICAL METHODS**

For the factor analysis in Phase I, the same method used by Kipnis, et al. was adopted.<sup>10</sup> The factors were extracted by principal component analysis with varimax rotation. When factors were compared in the confirmatory factor analysis, the Cattell's salient similarity index,  $s^{12}$  was calculated as described by Tabachnick and Fidell.<sup>13</sup> In Phase II the average tactic effectiveness scores for each group of tactics were compared by analysis of variance (ANOVA). The predictions of the two groups of

**Table 1**  
**Compliance With Influence Tactics Predicted by ICNs and Self-Reported by Nurses**

Influencing Tactics*	s Index for Confirmatory FA	Average Usage Frequency	Predicted by ICNs (%) n=65			Reported by Nurses (%) n=881			Tactic Effectiveness Score†
			Willingly Comply	Reluctantly Comply	Not Comply	Willingly Comply	Reluctantly Comply	Not Comply	
<b>A) Rationality: Use of facts and data</b>	.5 ( <i>p</i> <.027)								
1. Explained the reasons (why the hospital decided) for the policy		4	89	11	0	98	2	0	1,738
2. Presented information to support policy (e.g., from journals and books)		3.5	86	14	0	94	5	1	1,705
3. Demonstrated his/her competence to you before making request		3.3	82	18	0	88	11	1	1,640
<b>Average:</b>		<b>3.6</b>	<b>86</b>	<b>14</b>	<b>0</b>	<b>93</b>	<b>6</b>	<b>1</b>	<b>1,694**</b>
<b>B) Professional: Specific for infection control</b>	NA††								
4. Told you that it was for the good of the patient		NA	82	18	0	93	6	1	1,697
5. Wrote up a procedural guideline for the policy		NA	75	20	5	89	10	1	1,661
<b>Average:</b>		<b>NA</b>	<b>79</b>	<b>19</b>	<b>3</b>	<b>91</b>	<b>8</b>	<b>1</b>	<b>1,679**</b>
<b>C) Bargaining: Exchange of benefits or favors</b>	.67 ( <i>p</i> <.003)								
6. Offer to help if you comply (e.g., getting needed resources)		2.5	78	22	0	94	5	1	1,692
7. Offer to make a personal sacrifice if you comply (e.g., work late)		1.9	68	31	2	76	15	9	1,474
<b>Average:</b>		<b>2.2</b>	<b>73</b>	<b>27</b>	<b>1</b>	<b>85</b>	<b>10</b>	<b>5</b>	<b>1,583**</b>
<b>D) Ingratiation: The creation of good will</b>	.73 ( <i>p</i> <.0005)								
8. Asked in a polite way		4.3	77	21	2	89	9	1	1,655
9. Showed that she/he needed your help		3.5	38	54	8	73	23	3	1,493
10. Made you feel important (related to the request e.g., "You can do this well")		3.5	69	26	5	67	22	10	1,386
11. Sympathized with you about the added problems that the policy caused		3.4	48	45	8	59	34	7	1,338
12. Praised you (on qualities not related to request e.g., "you're such a good person")		3.3	46	40	14	50	36	14	1,189
<b>Average:</b>		<b>3.6</b>	<b>56</b>	<b>37</b>	<b>7</b>	<b>68</b>	<b>25</b>	<b>7</b>	<b>1,412**</b>

ICNs for each tactic were compared by chi square, and the differences between tactics in the tactic effectiveness scores for each group were assessed by a *t* test. When correlation analyses involving the three ratings of tactic effectiveness (either predicted or reported by nurses) were done, the ratings

involved in the correlation were given a weight of 1 while the remaining ratings were given a weight of 0. Statistical significance for the difference between two correlation coefficients was tested by the Hotelling's test if they were correlated, and by calculating the standard error (after Z transformation of the

**Table 1**  
**Continued**

Influencing Tactics*	s Index† for Confirmatory FA	Average Usage Frequency	Predicted by ICNs (%) n=65			Reported by Nurses (%) n=881			Tactic Effectiveness Score‡
			Willingly Comply	Reluctantly Comply	Not Comply	Willingly Comply	Reluctantly Comply	Not Comply	
<b>E) Coalition-mobilizing other staff</b>	NA††								
13. Obtained support of other nurses to back policy		3.1	60	35	5	63	31	6	1,386**
<b>F) Upward Appeal: Support of higher authorities</b>	.57 (p<.003)								
14. Make a formal appeal to higher levels to back policy (in person or in writing)		2.2	72	25	3	68	27	4	1,434
15. Obtained the informal support of higher-ups		2.4	25	66	10	42	45	12	1,138
<b>Average:</b>		<b>2.3</b>	<b>49</b>	<b>46</b>	<b>7</b>	<b>55</b>	<b>36</b>	<b>8</b>	<b>1,286**</b>
<b>G) Assertive: Direct and forceful approach</b>	.44 (p<.027)								
16. Pointed out that the rules required your compliance		3.0	49	49	2	63	33	3	1,407
17. Told you that work must be done as ordered or you propose a better way		3.1	35	58	6	57	36	6	1,332
18. Set a deadline for you to comply		3.1	38	49	12	49	43	8	1,240 <sub>a</sub>
19. Simply ordered you to comply		2.9	18	72	9	50	39	10	1,220 <sub>a</sub>
20. Kept checking on you		3.4	35	62	3	35	52	13	1,069
<b>Average:</b>		<b>3.1</b>	<b>35</b>	<b>58</b>	<b>6</b>	<b>51</b>	<b>41</b>	<b>8</b>	<b>1,254**</b>
<b>H) Manipulative: Insincere or unfair influence</b>	.57 (p<.003)								
21. Provided you with benefits that you wanted (not related to request e.g., free journals)		2.1	23	29	48	30	29	40	779
22. Ignored you and went ahead to implement anyway		1.8	6	41	52	12	55	32	694
23. Ignored you or stopped being friendly until you complied		1.2	2	34	65	7	38	54	453
<b>Average:</b>		<b>1.7</b>	<b>10</b>	<b>35</b>	<b>55</b>	<b>16</b>	<b>41</b>	<b>42</b>	<b>642**</b>

\* Except for title of groups B and H; and tactics 4 and 5, description was from Kipnis, et al.<sup>9,10</sup>  
 † s is Catell's salient similarity index.  
 ‡ In each group, except for scores with same subscript, all differ significantly by t-test (p<.05).  
 \*\* Average tactic effectiveness scores differ significantly between groups by ANOVA (p<.0005, F = 629.570).  
 †† Structure not validated by confirmatory factor analysis.

coefficient) if they were not correlated.

**RESULTS**

Data from all three phases of the study are shown in Table 1. Except for the random arrangement, the influence tactics in Table 1 were in the form in which

they were administered in the survey in Phase II.

**Usage Frequency of Influence Tactics**

The more frequently-used tactics selected in Phase I with their average frequency scores are shown in Table 1. One factor, labeled "Sanction" by

Kipnis, et al.,<sup>10</sup> that is the use of "organizationally-derived rewards and punishments" (e.g., salary increase, loss of promotion, etc.) was judged to be inapplicable by more than 20% of the panel in Phase I and was excluded. Five factors from the FA of the 21 influence tactics were found to be significantly similar ( $p < .05$ ) by confirmatory factor analysis to the hypothetical factors generated according to the factors of Kipnis et al.<sup>10</sup> These factors, labeled as "Rationality," "Bargaining," "Ingratiation," "Upward Appeal" and "Assertive," together with their definitions and Cattell's  $s$  indices are shown in Table 1.

In Kipnis' study, tactic 21 was classified under the factor "Blocking" and tactic 13 under "Coalition" in two separate subanalyses of the data. Confirmatory factor analysis was not able to validate the two factors in the FA of this study. However, a hypothetical factor consisting of tactic 21 with tactics 22 and 23, classified under "Unclassified Items" by Kipnis, et al.,<sup>10</sup> was found to be significantly similar ( $s = .57, p < .003$ ) to a sixth factor generated from the FA of the 21 influence tactics. Because these three tactics were related to the use of insincere or unfair influence, the factor was labeled "Manipulative" (group H in Table 1). Tactics 4 and 5 ("Professional") were added only in Phase II and were not involved in the above factor analysis. Therefore, like the classification of tactic 13 under the factor "Coalition," there was no confirmation that these two tactics were intercorrelated under a single factor. Nevertheless, in Table 1 tactic 13 was classified under "Coalition" (group E) and tactics 4 and 5 under "Professional" (group B) for heuristic purpose.

### Nurses' Ratings of Tactics' Effectiveness

Of the 890 nurses in the random sample, there was no refusal of interview reported, but nine nurses could not be contacted because they were on emergency or sick leave. The remaining 881 nurses included in the denominator consisted of 12% nursing officers, 54% registered nurses, 17% enrolled nurses and 17% student nurses. This constituted 10.1% of the nurses on duty in the 20 hospitals during the week of the interview. The tactic effectiveness rating scores in Table 1 were highest for "Rationality" followed (in order) by "Professional," "Bargaining," "Ingratiation," "Coalition," "Upward Appeal," "Assertive" and "Manipulative." The level of noncompliance was generally low (lower than 15%) except for the "Manipulative" tactics (group H).

### ICNs' Prediction of Compliance

Table 1 shows the predictions of the 65 ICNs in the three categories of compliance. The predictions of the two groups of ICNs (i.e., 45 in the panel and the 20 more experienced ICNs) were pooled, as no statistical difference was found between them for all 23 tactics. The correlation of the ICNs' predictions and the survey results are shown in Table 2. The highest

correlations were found between the predicted and the nurse-reported compliance for "not comply" ( $r = 0.96$ ) and "willingly comply" ( $r = 0.94$ ); while the correlation between the predicted and the nurse-reported compliance for "reluctantly comply" was significantly lower ( $p < .05$ ) with a Pearson  $r$  of 0.80.

It was noted that the correlation between the ICNs' predictions and the nurse-reported compliance for "willingly comply" ( $r = 0.94$ ) was significantly higher ( $p < .001, t = 4.9$ ) than the correlation between the ICNs' predictions for "willingly comply" and the average usage frequency ( $r = 0.55$ ) (Table 2). The frequency was measured by a noninterval Likert scale because studies have shown that such scales approached linear relationships<sup>14,15</sup> and are commonly treated as such in sociology research. This is not altogether unexpected because using certain tactics will require extra effort on the part of the ICNs. For example, the offer to help (tactic 6) or provision of benefits (tactic 21) usually will require effort to obtain the resources needed for the utilization of these tactics.

In comparison, simply ordering a person (tactic 18) and asking in a polite way (tactic 8) will just be a matter of execution. Thus, the tactics may be divided into those requiring extra effort and those that do not. Although effort is often required to gather information (tactic 2) and reasons (tactic 1) to support a policy, they were not included with the "extra effort" tactics. This is because gathering such data is often already completed when a new policy is introduced, and the utilization of such tactics at that time again will be mainly that of execution. As shown in Table 2, the correlation between the usage frequency of these "extra effort" tactics to the ICNs' predictions for "willingly comply" was drastically lower ( $r = 0.36$ ); while for tactics not requiring "extra effort" the same correlation between the usage frequency and the ICNs' predictions was found to be much higher ( $r = 0.84$ ). No significant difference ( $p = .18, Z = 1.35$ ) was found between this latter coefficient when compared with the correlation between the ICNs' predictions and the nurse-reported compliance for "willingly comply" ( $r = 0.94$ ).

### DISCUSSION

The initial study on influencing tactics by Kipnis, et al.<sup>10</sup> was conducted outside the context of the hospital. To ensure that attention would be given in this study to tactics that were relevant in the hospital setting, the panel in Phase I was used to select the more frequently-used tactics from the inventory of Kipnis, et al.<sup>10</sup>

The confirmatory FA showed that five factors emerging from the FA of the 21 influence tactics were significantly similar to the hypothetical factors generated according to the structure described by Kipnis, et al.<sup>10</sup> This suggests that to a certain extent, the usage of these tactics by ICNs was similar to the managers studied by Kipnis, et al. How-

**Table 2**  
**Correlation of ICN-Predicted Compliance and Nurse-Reported Compliance and Tactic Usage Frequency**

Description of Variables	Correlation Coefficient (r)	p
<b>A. ICN-predicted and nurse-reported compliance</b>		
1. Predicted and reported compliance for "Willingly Comply"	0.94	<.001
2. Predicted and reported compliance for "Reluctantly Comply"	0.80	<.001
3. Predicted and reported compliance for "Not Comply"	0.96	<.001
<b>B. ICN-predicted compliance and average usage frequency</b>		
1. Usage frequency of all tactics and predicted "Willingly Comply"	0.55	<.01
2. Usage frequency of tactics (3, 6, 7, 13, 14, 15, 21) requiring extra ICN effort and predicted "Willingly Comply"	0.36	.21
3. Usage frequency of tactics not requiring extra ICN effort and predicted "Willingly Comply"	0.84	<.001

ever, there were also differences, and the factor labeled "Manipulative," for instance, was identified specifically from the analysis of ICNs' responses.

In the survey of Phase II, the three ratings of tactic effectiveness, i.e., willingly, reluctantly and noncompliance, were actually a measure of their behavioral intent, which has been shown to be a precise predictor of actual behavior.<sup>16,17</sup> These three ratings of tactic effectiveness should have practical implication. Tactics with comparable levels of noncompliance reported may induce an initial response that could be deceptively similar. But if the compliance is given reluctantly, the response may not be as effectively sustained and the tactic could even provoke the ill-will of the target person. For example, "Assertive" tactics (group G) with an average of 8% noncompliance reported may be as effective as "Ingratiation" tactics (group D) with an average of 7% noncompliance reported, if the targeted response is only required once (e.g., pinning up a poster). However, if sustained compliance is required, "Ingratiation" may be more effective, as the average for "reluctantly comply" is only 25% as compared to 41% for "Assertive."

Many of the findings in the survey should have applicational value for ICNs. It was clear that the best response was to "Rationality" tactics (group A) with an average tactic effectiveness score of 1694. Note that explaining the hospital's reasons for a policy (tactic 1) was significantly better than just giving general supportive information (tactic 2). It was interesting to observe that "Professional" tactics (group B) was given a high effectiveness rating and that writing guidelines (tactic 5) would not only offer guidance for ward procedures, but was also an effective means for inducing compliance (1% noncompliance). As expected, the response to "Ingratiation" tactics (group D) was fairly positive. However, compliments given must be related to the request, as shown by the poor response to tactic 12 (praising on qualities unrelated to request) that had the fourth highest noncompliance rate in the survey (14%). Note that for "Bargaining" tactics (group C),

it was better to offer actual help (tactic 6) than to make a personal sacrifice (tactic 7). For "Upward Appeal" (group F), formal support (tactic 14) was better than an informal one (tactic 15) and in "Assertive" tactics (group G), the response was significantly better if it was perceived as "hospital rules" (tactic 16) as compared to an order from the ICN (tactic 18). Also, setting a dateline (tactic 19) would be a better tactic for monitoring compliance than regularly checking on a person (tactic 20). It was important to realize that "Manipulative" tactics (group H) were extremely ineffective and should be avoided by ICNs.

Some potential biases ought to be recognized in the study. The survey in Phase II was conducted by the ICN panel who had previously rated the usage frequency of the various tactics. However, the method of personal interviews would minimize the volunteer effect with a higher response rate than an anonymous questionnaire. Also, the ICNs were available as interviewers for the survey. The ICNs in the panel had only an average of six months of experience in infection control. Therefore, their responses on usage frequency might not be representative of all ICNs. Nevertheless, these ICNs were a convenient sample because they were attending an infection control course. It should be noted however, that there was no difference between their predictions of compliance and those of the more experienced ICNs.

One finding in this study was the ability of the ICNs to predict accurately the responses of the nurses. The correlation coefficients between the ICNs' predictions and the compliance reported by the nurses were all higher than 0.8. This was probably caused by the vast nursing experience of the ICNs, that would have been invaluable in selecting effective tactics in the hospital. In contrast, correlation between usage frequency and predictions for compliance was rather low. This suggests that for ICNs, the compliance of nurses was probably not the only criterion influencing the usage frequency of tactics. Because the correlation between the usage

frequency for the 14 tactics not requiring extra effort and the ICNs' compliance predictions was higher ( $r = 0.84$ ) than the correlation between usage frequency and ICNs' predictions for tactics requiring effort ( $r = 0.36$ ), the effort needed for tactic implementation was probably an important factor affecting the frequency of use.

Although direct comparison cannot be made, the results of this study basically correlate well with the report by Raven and Haley on the use of social power in infection control.<sup>4</sup> Information and expert power were reported to be most effective, correlating well with the good response to "Rationality" and "Professional" tactics. The poor response to "Coercive Power" in Raven and Haley's report perhaps correlated with the poorer response in this study to "Assertive" tactics. In Raven and Haley's report, the lowest response was to "Reward Power," that perhaps was expressed by the comparatively negative response to tactic 21 (provision of benefits) in this study.

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