

CHAPTER 4: RESEARCH RESULTS

4.1 Summary Statistics of Respondents

4.1.1 Geographical Region

A total of 73 replies were received. The response rate was 29.2 percent. The response rates according to region were 34 percent (17 out of 50) for North and South Peninsular Malaysia, 40 percent (20 out of 50) for East Peninsular Malaysia and 19 percent (19 out of 100) for Klang Valley region. The Klang Valley region has the lower response rate compared to other regions.

4.1.2 Gender

There were 26 (36 percent) female respondents and 47 (64 percent) male respondents.

4.1.3 Ethnic Group

Among the 73 respondents, 21 (29 percent) were Malay, 35 (48 percent) were Chinese, 15 (20 percent) were Indian and 2 (3 percent) were from other minor ethnic group.

4.1.4 Years of Practice

Table 1 shows the frequency and percentage of respondents according to their year of practice. The number of respondents with year of practice 1 to 5 years was low because a doctor usually requires several years to become a specialist after working as a general doctor. Most of the respondents have practiced between 6 to 20 years (68.7 percent). Only 26.8 percent of respondents practiced more than 20 years.

Years of Practice	Frequency	Percentage
1 to 5	3	4.1
6 to 10	15	20.5
11 to 15	18	24.7
16 to 20	18	24.7
21 to 25	7	9.5
26 to 30	8	11.0
31 and above	4	5.5
Total	73	100.0

Table 1 – Year of Practice of the Respondents

4.1.5 Specialty

Table 2 shows the frequency and percentage of respondents according to their specialty. Majority (85.1 percent) of the respondents were under the specialty of general surgery, Obstetric & Gynecology, internal medicine and paediatric.

Specialty	Frequency	Percentage
Paediatric	22	30.1
Internal Medicine	18	24.7
Obstetric & Gynecology	14	19.2
Surgery	8	11
Dermatology	3	4.1
Urology	3	4.1
ENT	2	2.7
Ophthalmology	1	1.4
Nephrology	1	1.4
Orthopedic	1	1.4
Total	73	100.0

Table 2 – Specialty of the Respondents

4.2 Results

4.2.1 Direct Mail

Respondents were asked how often they received direct mail from pharmaceutical companies. Table 3 and Table 4 show how often respondents received direct mail and how often they read the direct mail received. Fifty-five percent of the respondents answered “often” or “very often”, another 28 percent answered “sometime”. These showed pharmaceutical companies commonly use that direct mail as a channel to communicate information to physicians. Direct mail has the advantage of convenient, low cost and relatively fast reaching maximum physicians in minimum time frame. However, less than half of the respondents (43.3 percent) read most of the mail or all the mail they received. The rest of the respondents answered that they “sometime” read the direct mail. And almost 15 percent of the respondents “seldom” read the direct mail they received.

Direct Mail Received	Percent	Cumulative Percent
Very Often	14.9	14.9
Often	40.3	55.2
Sometime	28.4	83.6
Seldom	16.4	100.0

Table 3 – How Often Respondent Received Direct Mail

Read The Direct Mail	Percent	Cumulative Percent
All of Them	3.0	3.0
Most of Them	40.3	43.3
Some of Them	41.8	85.1
Never Read	14.9	100.0

Table 4 – How Often Respondents Read the Direct Mail

4.2.2 Frequency of Visit by Sales Representative

Table 5 shows how frequent the respondents preferred the visit of sales representatives. There was study showed that number of visit correlated with the increase of sales (Randerson 2003). However, what is the physicians' preferred frequency of visit? The answers from respondents showed that they prefer monthly visit to 3 monthly visits. There was 13.4 percent of respondents preferred half-monthly visit.

Frequency	Percent	Cumulative Percent
Half Monthly	13.4	15.8
Monthly	28.4	49.1
2 Monthly	11.9	63.2
3 Monthly	13.4	78.9
4 Monthly	9.0	89.5
6 Monthly	7.5	98.2
12 Monthly	1.5	100.0
Total	85.1	

Table 5 -- How Frequent Respondents Prefer the Visit of Sales Representative

4.2.3 Reading the Clinical Papers

All pharmaceutical sales representatives use published clinical papers in detailing. Clinical paper is scientific document and regarded as non-commercial source of information. Therefore it is the best information source used by pharmaceutical companies that give "undisputable" support to their pharmaceutical product and induces favorable physicians' opinion toward their product. A sales representative has to explain more than one clinical study and to guide the physician's attention to certain points in the clinical papers that give support to their product during their short visit. Very often some of the clinical papers were left to the physician without sufficient

detailing. Therefore, there is always a question of whether the physician read the clinical papers that given by sales representative after the sales representative leaves.

Table 6 shows how often respondents read the clinical papers after the sales representative detailing session. Majority of the respondents (62.1 percent) answered that they read “most of them” or “all of them” However, they was more than one third of the respondents answered that they read “some of them”

Read the Clinical Papers	Valid Percent	Cumulative Percent
All of Them	3.0	3.0
Most of Them	59.1	62.1
Some of Them	36.4	98.5
Never Read	1.5	100.0

Table 6 – How Often Respondents Read The Clinical Papers After A Sales Representative Detailing Session

4.2.4 Drug Sample

Sampling is a common tactic in pharmaceutical product promotion. Sampling can give a stronger and more vivid impression to the physician because the sample gives more visual and touch sensory input compared to just pictures and words in detailing aids and clinical papers. Sample also gives experience to physician towards a drug when he prescribes them or tries them on their own. Sample has shown to increase prescribing behavior.

Table 7 and Table 8 show how often respondents received sample from pharmaceutical companies and how often they prescribed the sample they received. Majority of the respondents (68.2 percent) answered that they “often” or “very often” received sample for new drug from pharmaceutical

companies. Thirty point three percent answered “sometime” and only 1.5 percent answered “seldom” received sample.

Among the sample received, not all respondents prescribed them. Almost 35 percent of the respondents answered they “sometime” or “never” prescribed the sample they received.

Sample Received	Valid Percent	Cumulative Percent
Very Often	13.6	13.6
Often	54.5	68.2
Sometime	30.3	98.5
Seldom	1.5	100.0

Table 7 – How Often Respondents Received Sample for New Drug

Prescribe Sample	Percentage	Cumulative Percentage
All of Them	7.6	7.6
Most of Them	57.6	65.2
Some of Them	31.8	97.0
Never Prescribe	3.0	100.0

Table 8 – How Often Respondents Prescribed The Sample They Received

4.2.5 Usefulness of Source of Drug Information

Two methods were used in analyzing the data. First, the data was analyzed by identifying the mode of answers and the percentage of answers in the “useful” region (Likert scale 5, 6 and 7) and the “not useful” region (Likert scale 1, 2, 3 and 4). Table 9 shows that the sources of information with mode of answers that falls under the “useful” region are,

- 1 Medical Guidelines
- 2 Symposia/Conference
- 3 Medical Journal
- 4 Other Physician

- 5 Medical Book
- 6 Seminar / Lecture Organized by Pharmaceutical companies
- 7 Free Sample

The percentage of answers falls under “useful” region for the above items are also more than 50 percent. Symposia/Conference scored highest of 93.9 percent, followed by Medical Journal with 90.9 percent, Medical Guidelines with 89.2 percent, Seminar / Lecture Organized by Pharmaceutical companies 83.3 percent, Medical Book with 70.8 percent and lastly Free Sample with 59.1 percent.

The ranking above indicates that the useful sources of information are majority from sources that pharmaceutical companies have minimum control or so called “non-commercial” source, e.g. Symposia/Conference, Medical Journal, Medical Guidelines and Medical Book. The exceptions are Seminar/Lecture Organized by Pharmaceutical companies and Free Sample. Sometimes the Seminar/Lecture Organized by Pharmaceutical Companies can be viewed as non-commercial because the speakers/lecturers are professional researchers.

The items that fall under “not useful” region are Advertisement in Medical Journal and Pharmaceutical Sales Representative. Both of them are clearly commercial source of information. The advertisements of pharmaceutical product in medical journal are usually furnished with the technical product information (approved by regulatory agency), which can be regarded as non-commercial information. However, the advertisement in medical journal scored low in usefulness could be caused by the ease of retrieving such advertisement (from whole series of medical journal).

Sales representatives scored lowest in usefulness in terms of source of information. The finding indicates that sales representatives are not able to satisfy respondents’ needs for medical product information.

Factor analysis was performed to identify the underlying factors that explain the pattern of usefulness for the source of information. Table 10 shows the component matrix of the factor analysis.

Source of Drug Information	Percentage of Likert Scale Score (%)							Means of Likert Scale Score
	Not Useful						Useful	
	1	2	3	4	5	6	7	
Medical Guidelines	0	1.5	6.2	3.1	21.5	32.3	35.4*	5.83
	(10.8)				(89.2)			
Symposia/Conference	0	0	4.5	1.6	19.7	48.4*	25.8	5.89
	(6.1)				(93.9)			
Medical Journal	0	0	6.1	3.0	18.2	39.4*	33.3	5.91
	(9.1)				(90.9)			
Other Physicians	0	0	12.3	29.2	26.2	27.7*	4.6	4.83
	(41.5)				(58.5)			
Medical Books	1.5	1.6	6.1	20.0	23.1	26.2*	21.5	5.26
	(29.2)				(70.8)			
Seminar, Lectures Pharmaceutical Companies	1.5	1.5	0	13.7	39.4*	28.7	15.2	5.35
	(16.7)				(83.3)			
Free Samples	4.5	6.1	7.6	22.7	24.3*	21.2	13.6	4.74
	(40.9)				(59.1)			
Advertisement in Medical Journal	4.5	10.7	9.0	31.9*	18.1	13.7	12.1	4.38
	(56.1)				(43.9)			
Pharmaceutical Sales Representative	1.5	6.1	12.1	30.3*	28.8	15.1	6.1	4.48
	(50.0)				(50.0)			

* Mode of Likert scale scores for respective Source of Information.

Table 9 – Usefulness of The Source of Information

Source of Drug Information	Component		
	1	2	3
Advertisement in Medical Journal	.211	-.222	.844
Sample	.506	.408	.430
Medical Book	.583	-.533	-.110
Medical Guideline	.807	-.449	5.987E-02
Medical Journal	.754	-.467	-3.757E-02
Other Physician	.615	-2.764E-03	-.287
Sales Representative	.376	.691	.350
Seminar / Lecture by Pharmaceutical companies	.462	.758	-.124
Conference	.588	.439	-.424
% Of variance explained	42.87%	13.81%	11.37%

Extraction Method: Principal Component Analysis

Table 10 – Component Matrix and percentage of Variance Explained for Usefulness of Source of Information.

The first identified component comprised of Medical Guidelines, Medical Journal, Other Physician, Conference and Medical Book. The second identified component comprised of Seminar/ Lecture Organized by Pharmaceutical companies and Sales Representatives. The third component is Advertisement in Medical Journal.

The first component is in general non-commercial source and the second and third component are of commercial source. These findings are consistent with phenomena of “non-commercial source” and “commercial source” of information observed in the previous section.

4.2.6 Influence on Prescribing Practice

Two methods were used in analyzing the data. First, the data was analyzed by identifying the mode of answers and the percentage of answers in the “influential” region (Likert scale 5, 6 and 7) and the “not influential” region (Likert scale 1, 2, 3 and 4). Table 11 shows that the items on influences on prescribing practice with mode of answers falls under the “influential” region are.

- 1 Personal Experience with Drug
- 2 Recommendations by Colleagues
- 3 Clinical Papers of the Related Drug
- 4 Seminar/Lecture Organized by Pharmaceutical companies

The percentage of answers the falls under the “influential” region almost has the similar ranking, where Personal Experience with the Drug scored highest of 89.6 percent followed by Clinical Paper of the Related Drug with 83.5 percent. The third and fourth are Recommendation by Colleagues in Informal Discussion and Seminar/Lecture Organized by Pharmaceutical Companies both scored 79.1 percent.

The items with mode of answers fall under “not influential” region are,

- 1 Sales Promotional Material by Pharmaceutical Companies.
- 2 Sample
- 3 Sales Call / Detailing by Sales Representative
- 4 Advertisement in Medical Journal
- 5 Direct Mail Advertising

Source of Influence on Prescribing Practice	Percentage of Likert Scale Score (%)							Mean s of Likert Scale Score
	Not Influential \longrightarrow Influential							
	1	2	3	4	5	6	7	
Personal Experience With the Drug	0	1.4	3	6	9	49.3*	31.3	5.96
	(10.4)				(89.6)			
Recommendations by Colleagues	1.5	1.5	6.0	11.9	23.9	47.8*	7.5	5.28
	(20.9)				(79.1)			
Clinical Papers of the Related Drug	1.5	3	1.5	10.4	31.3	38.8*	13.4	5.37
	(16.4)				(83.5)			
Seminar, Lectures Organized by Pharmaceutical Companies	3.0	0	1.5	16.4	41.8*	32.8	4.5	5.1
	(20.9)				(79.1)			
Sales Promotional Material by Pharmaceutical Companies	13.4	14.9	23.9	34.3*	7.5	6.0	0	3.25
	(86.5)				(13.5)			
Samples	6.0	3.0	7.5	29.9*	23.8	23.8	6.0	4.58
	(46.4)				(53.6)			
Sales Call / Detailing by Sales Representatives	6.0	9.0	17.9	28.4*	25.4	13.4	0	3.99
	(61.3)				(38.8)			
Advertisement in Medical Journal	7.7	26.2*	7.7	24.6	21.5	9.2	3.1	3.66
	(66.2)				(33.8)			
Direct Mail Advertising	16.7	22.7*	21.2	21.2	15.2	3	0	3.05
	(81.8)				(18.2)			

* Mode of Likert scale scores for respective Item
Table 11 – Influences on Prescribing Practice

The percentages of answers for the above items that fall under “not influential” region are,

- 1 Sample (46.4 percent)
- 2 Sales Call / Detailing by Sales Representative (61.3 percent)
- 3 Advertisement in Medical Journal (66.2 percent)
- 4 Direct Mail (81.8 percent)
- 5 Sales Promotional Material e.g. calendar, pens, note pad, etc. (86.5 percent)

These showed that the promotional tactics common employed by pharmaceutical companies general scored low in the influence on respondents' prescribing practice.

Factor analysis was performed to identify the underlying factors that explained the pattern of influences on prescribing practice. Table 12 shows the component matrix of the factor analysis.

The first component comprised of,

- 1 Samples by Pharmaceutical Companies
- 2 Recommendation by Colleagues in Information Discussion
- 3 Sales Call/ Detailing by Sales Representatives
- 4 Sales Promotional Items by Pharmaceutical Companies
- 5 Direct Mail Marketing

The second component comprised of Advertisement in Medical Journal and the third component comprised of Clinical Papers of the Related Drug. In the first component, all are controllable by pharmaceutical companies except Recommendation by Colleagues in Informal Discussion.

Source of Influence on Prescribing Practice	Component		
	1	2	3
Advertisement in Medical Journal	.433	.620	-.182
Clinical Papers of the Related Drug	.162	.474	.808
Direct Mail Advertising	.703	.432	-7.451E-02
Personal Experience With the Drug	.615	-.281	.456
Recommendations Made by Colleagues in Informal Discussions	.777	-.318	4.067E-02
Sales Call / Detailing by Pharmaceutical Company Representatives	.776	2.991E-02	-.179
Sales Promotional Material Received from Pharmaceutical Companies, Such As Calendars, Diaries, Pens, Note Pads, Etc.	.755	.239	-.252
Samples Provided by the Pharmaceutical Companies	.802	-.260	-8.137E-02
Seminar, Lectures Organized by Pharmaceutical Companies	.594	-.377	.140
Percentage of Variance Explained	42.9	13.8	11.4

Extraction Method: Principal Component Analysis.

Table 12 – Component Matrix and Percentage of Variance Explained for Influences on Prescribing Practice

4.2.7 Testing of Hypothesis A: Usefulness of Source of Information

T-test was performed to compare the means Likert-scale score between commercial and non-commercial sources of information.

Table 13 shows the result of the T test.

Paired Differences					t	df	Sig. (2-tailed)
Mean*	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
.83	1.15	.14	.55	1.10	5.972	68	.000

* Mean of Non-Commercial Sources of Information = 5.57, Commercial Source of Information = 4.74.

Table 13 – Result of T test Comparing Means of Likert-score Score Between Commercial and Non-Commercial Sources of Information

The difference in mean for commercial and non-commercial sources of information is 0.83, significant at $p < 0.05$ levels.

Thus Hypothesis A (H_0) is rejected. The non-commercial sources of information are more useful compared to commercial sources of information.

4.2.8 Testing of Hypothesis B: Influences on Prescribing Practice

T-test was performed to compare the means Likert-scale score between commercial and non-commercial sources of influence.

Table 14 shows the result of the T test.

The difference in mean for commercial and non-commercial sources of influence is 1.65, significant at $p < 0.05$ levels.

Thus Hypothesis B (H_0) is rejected. The non-commercial sources of influence are more influential compared to commercial sources of influence.

Paired Differences					t	df	Sig. (2-tailed)
Mean*	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
1.65	.89	.11	1.44	1.86	15.676	70	.000

* Mean of Non-Commercial Sources of Influence = 5.52, Commercial Source of Influence = 3.87.

Table 14 – Result of T test Comparing Means of Likert-scale Score Between Commercial and Non-Commercial Sources of Influence

4.3 Discussion and Recommendations

4.3.1 Usefulness of Commercial and Non-commercial Sources of Information

The respondents rated non-commercial sources of information more useful compared to commercial source of information.

This finding suggests that pharmaceutical companies should review their function as drug information provider, particularly the Sales Representative as a source of information should be improved. If the pharmaceutical companies could establish themselves as more useful source of information, their chances of conveying their promotional message would be increased.

4.3.2 Influences of Commercial and Non-commercial Sources of Influence on Prescribing Practice

The respondents rated the commercial sources of influence as less influential compared to the non-commercial sources of influence.

The two findings on pharmaceutical companies as source of information and influence indicate that the pharmaceutical companies should review their

business relationship with the physicians. The Creyer and Hrsistodoulakis (1998) study gave hints to the pharmaceutical companies on how they can improve in this area. Although majority of the physicians believed sales representatives provided accurate information concerning medicine, but less than half of the physicians felt that sales representatives were trustworthy. When the physicians doubt the trustworthiness of a sales representative, it is reasonable to say that the physicians would doubt the truth of the information provided by the sales representatives. On the other hand, physicians' perceptions on pharmaceutical companies were bad too. Majority of the physicians felt that pharmaceutical companies do not understand their needs and majority of the physicians felt that pharmaceutical companies' sales tactics were too aggressive and pushy. Furthermore, most physicians believed that pharmaceutical companies would do what was best for the company and worry about the consumer impact later.

Therefore, the business conduct of the pharmaceutical companies could be the main issue in their relationship with the physicians.

The subsequent sections discussed the implications of the research findings to each of the promotional tactics.

4.3.3 Direct Mailing Marketing

As the interest of respondents in reading direct mail is low, pharmaceutical companies should be cautious when employing this tactic in promotion. There should be attractive tag line printed in the envelopes to increase the chance of physicians continue reading the mail and the content should be short and precise. Due to the low chances of being read, the function of direct mail in most of the time can only serve to announce or to inform. For example, launching of product and promotional activities.

4.3.4 Clinical Papers

Majority of the respondents read most of the clinical papers that given by sales representatives. However, there was more than one third of the respondents answered that they read only some of clinical papers. Clinical papers are also viewed as useful source of information and influential to respondents prescribing practice.

In view of the importance of clinical papers to a pharmaceutical product, the findings suggest that sales representatives should pay emphasis to clinical papers, however they should limit their numbers of clinical papers per visit. A pre-prepared script to explain the important points in clinical paper is a good tactic to ensure the main message and selling points are properly conveyed and discussed. The sales representatives should avoid leaving clinical papers to physicians without explaining them.

4.3.5 Drug Sample

Although sample is free, not all sample are prescribed. Almost one third of the respondents answered they “sometime” or “never” prescribed the sample they received. Slightly more than half of the respondents thought that sample was influential to their prescribing practice, and personal experience of the drug scored high in influential of prescribing practice. Therefore, pharmaceutical companies should continue to use sample as a promotional tactics. Availability of free sample certainly enhances the chances of physicians’ personal experience with the drug. However, as the chances of prescription is not very high, pharmaceutical companies should optimize their sample tactic to suit to the marketing strategy to achieve favorable cost-benefit ratio.

4.3.6 Recommendation by Colleagues

Recommendation by Colleagues scored high in influential in prescribing practice, at the same time Seminar/Lecture Organized by Pharmaceutical Companies also being rated as “influential” in respondents’ prescribing practice. Pharmaceutical companies should capitalize these two findings by organizing more Seminar/Lecture that targets to specific group of physicians in their promotion. The speakers should be obviously from their product supporter and preferably reputable or opinion leader in their field. With the presence of supportive speaker and some of existing prescribing physicians, the chances of convincing non-prescribing physicians would be increased.

4.3.7 Sales Representative

Although sales representatives are vital connection between pharmaceutical companies and physicians, findings showed that sales representatives scored low in both usefulness as a source of information and influences in prescribing practice.

The findings indicate that sales representatives are not able to satisfy respondents’ needs for medical product information. This could be caused by the fact that most of the sales representatives serving physicians in hospitals are not equipped with proper medical education background. The common education background of this group of sales representatives is life science, chemistry and other science disciplines, which are still lacking in overall medical knowledge. Physicians might view the sales representative more as an ordinary salesperson than a pharmaceutical representative, which their main objective is to generate sales in every call and detailing sessions.

The findings suggest that pharmaceutical companies should pay more emphasis in the quality of their sales representatives. The personal selling

scale of a sales representative should be back up with sufficient product and related medical knowledge.

4.3.8 Symposia / Conference

Symposia / Conference scored high in the usefulness as a source of information. In a conference, many medical opinion leaders and reputable physicians are available to give lectures and chair discussions. The attending physicians are usually in the same specialty or medical field. Therefore, conference provides the best venue for information exchanges and discussions.

Pharmaceutical companies can capitalize the conference as one of their promotional tactics. The findings from this study, particularly the usefulness of source of information and influences of physicians' prescribing practice provides few guidelines for the pharmaceutical companies in participating in conference.

- 1 They should invite speaker(s) that give favorable opinions about their products.
- 2 They should generate high level of attention and interest among physicians about their pharmaceutical products.
- 3 They should induce and facilitate the discussions among the attending physicians, e.g. by organizing formal or informal small group discussions that lead by their supportive physicians.
- 4 They should have clinical papers to support they main promotional message.
- 5 They should have well-trained sales representatives and product managers to give good detailing and participate in the informal discussions or that may arise any time during the conference.

4.3.9 Promotional Materials

Promotional materials scored very low in influencing the physicians' prescribing practice. However, the promotional materials, e.g. calendars, diaries, pens and notepads still served the function for publicity and reminder among the physicians their supportive staff.