

Influence of Pharmacology Concepts on Medical Representative Sales Outcomes and Corporate Equity

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ABSTRACT

Aim: To understand pharmacological concepts, usefulness for Medical Representatives' sales outcomes, and corporate brand equity outcomes. **Background:** Teams of medical representatives are deployed by pharmaceutical companies for drug promotion. Pharmaceutical selling is a significant job creator in India – an estimated six lakh plus medical representatives/field personnel are employed in this sector. The Life Sciences Sector Skills Development Council (LSSSDC) has also laid down National Occupational Standards (NOS) for the medical representative job function. The medical representative is a crucial link to the market for pharmaceutical companies involved in drug promotion and making products available. A vital role of the medical representative is to create product presentations by detailing and providing collaterals. In detailing and collateral content, pharmacology talking points are crucial. In this study, we gather feedback through a questionnaire based on a Likert scale from doctors, pharmacists, medical representatives, and field managers (total sample = 1008) regarding the pharmacology talking points. **Materials and Methods:** The present survey analyzes the influence of pharmacological concepts with doctors, pharmacists, field managers, and medical representatives on sales outcomes. To develop a pharmacological model for product promotion based on the type of product (novel, new and old), niche, and mass me-too brand). Successful pharmaceutical marketing is the key to product and therapy success. **Conclusion:** This study reiterates the importance of pharmacology in pharmaceutical product promotion and its benefits to the pharmaceutical company for improved corporate image and sales outcomes.

Keywords: Pharmacology, Posology, Novel new products, Niche products, Me-too mass products, Drug promotion.

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INTRODUCTION

The 'diffusion of innovation' is a challenge – one may invent a drug or therapy; however, it is another aspect to overcome objections and create wide acceptance at the target doctor and patient level. For example, famotidine, a well-known superior H₂ receptor blocker in managing acid peptic disorders, was invented in Japan by the Yamanouchi company.¹ Famotidine is superior to ranitidine in terms of efficacy (7.5 times more potent on an equimolar basis) and has lesser adverse effects.² Yet, ranitidine (Zantac) has been a blockbuster above 1 billion USD in sales across the world.³ The famotidine market is lesser in millions of dollars in annual sales. Only in 2020 – ranitidine - due to NDMA impurity problem has been withdrawn in USA and UK. Otherwise, ranitidine has ruled

the roost in the H₂ receptor market despite famotidine having a superior pharmacological profile. This indicates the challenges in making a drug innovation successful.

Pharmaceutical companies' approach to making a product successful in the real world is pharmaceutical marketing that incorporates drug promotion. World Health Organization (WHO) defines drug promotion as: "all informational and persuasive activities by manufacturers and distributors, the effect of which is to influence the prescription, supply, purchase or use of medicinal drugs".⁴ Overall, pharmaceutical marketing is the management process that provides product availability and value to the target audience on the pharmaceutical product profile along with information on safety, efficacy, quality, and supply. Pharmaceutical marketing makes the theoretical concepts of the product practical and ensures doctors make informed choices to treat patients adequately.⁵

Pharmaceutical marketing is unique in that other than in America and New Zealand, direct-to-consumer advertising is not allowed



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anywhere in the world for pharmaceutical formulations.⁶ Hence, pharmaceutical companies depend on medical representatives appointed to engage doctors in detailing, persuasive activities, and making promoted products available.⁷ Pharmaceutical manufacturing and marketing operations have played a key role in making India 'PHARMACY TO THE WORLD'. From being an importer in the 1950s, today, the Indian pharma industry stands tall as a significant net exporter.⁸ A vital activity of the medical representative is messaging product information, where the MR meets the target doctor and persuasively conveys the product promotional messages with the help of marketing collaterals. This process is called detailing—usually done by sampling the detailed product.⁹ The doctor is a significant influencer for the consumption of pharmaceutical products. A systematic review has shown that in physician-pharmaceutical interaction, gifts to doctors also influence pharmaceutical sales.¹⁰ To know the effectiveness of detailing by a medical representative, instruments like the AIDD: Assessment Instrument for Drug Detailing has been used to assess the quality of detailing.¹¹ The Frick study¹⁰ also points out that the pharma industry spent 89.50 billion USD on doctor-MR interactions, 60% of global sales and marketing spending. There is a significant impact of these interactions on sales outcomes. Still, there are no studies, particularly in the Indian context, as to what the doctor, pharmacist, field manager, and medical representative expect and think - should be the pharmacological aspect of detailing. Private medical practitioners' knowledge, attitude, and practice for drug promotion have seen the impact of gifts and ethics, mainly.¹² This pharmacology talking point gap, in the Indian context, is being met by the current study to understand the influence of pharmacology talking points on the sales outcomes of MR.

This study also generates data that shall contribute to the more efficient and effective functioning of the medical representative. Over six lakh medical representatives and other field personnel promote products to doctors in India.¹³ The National Occupational Standard (NOS), as per the Life Sciences Sector Skills Development Council (LSSSDC) of Govt. of India, lays down the job profile aspects of a medical representative as follows (LFS/Q0401):

To gather data about company products and competitors.

Promote and sell products to potential customers and provide after-sales service.

Organize promotional events and medical seminars/conferences.

The medical representative profession is a significant job creator in India; hence, this study contributes to knowledge on how to make the medical representative more relevant, effective, and efficient in the limited time between medical representative and doctor interaction time from pharmacology detailing point of view, meeting the unmet need of pharmaceutical communication and marketing strategists.¹⁰ So the study: influence of pharmacology

concepts on medical representative sales outcomes and corporate equity shall give inputs to pharmaceutical strategists on which pharmacological points are of relative importance in drug detailing for improved MR sales outcomes and corporate equity. The study results can be used to strengthen MR job functioning. MR jobs will be continuously created and made relevant in the industry, alleviating underemployment and unemployment in India.¹⁴

MATERIALS AND METHODS

To arrive at a suitable instrument for measuring the attitude of doctors, pharmacists, field managers, and medical representatives on the influence of pharmacology concepts on medical representative sales outcomes and corporate equity, one-to-one in-depth discussions with doctors, pharmacists, and colleagues, to draw up a pool of questions - for making the items of the questionnaire was done. Totally 23 items were identified for the scale preparation.

Questionnaire Design

A pilot questionnaire on a Likert scale was prepared and statistical tool: Cronbach's alpha, was done to ensure scale validity and reliability. Calculation of Cronbach alpha has been done for the pilot questionnaire and found to be reliable as the value is 0.97, between 0 and 1. The questionnaire is common to doctors, pharmacists, field managers, and medical representatives, so the common issues are favorably answered for analysis, and accurate data is available for conclusions. The well-established protocol of ethical collection of data was followed in the administration of questionnaire - in fact the questionnaire process did not proceed if voluntary consent was not given. Confidentiality is maintained and personal data has not been shared; this point being vital - questionnaire collected personal information only with consent.

Data Collection

The sample size is approximately 10% of the population or sample frame of the pharmaceutical company database of about 10,000 nos. A random number table made the selection of doctors and pharmacists; field managers and MRs selected via lottery method. The responses collected were through mixed sampling though the process started as simple random sampling. Responses were collected from only those respondents who gave their consent. The Likert scale-based questionnaire was administered to 1025 doctors, and after the removal of inappropriate submissions, 1008 submissions were considered (98.34% response rate). The breakup of responses: doctors (250 nos.), pharmacists (250 nos.), field managers (258 nos.), and medical representatives (250 nos.). The Inclusion criteria for subjects for the Likert scale-based questionnaire implementation of Minimum work experience of 1 year, shall have requisite job qualification, should comprehend and have a working knowledge of English, and Shall be in active service. Exclusion criteria of subjects for the Likert scale-based

questionnaire implementation of unconfirmed employees shall be excluded. The duration of the study was 14 months (2021 to 2022). Tables, figures, pie chart, and bar diagrams presented data. Analysis and interpretation of data have been carried out to deduce the conclusion with the help of appropriate statistical tool: Chi square is used from question no. 16 below.

RESULTS AND DISCUSSION

From the 1008 responses: 250 doctors, 250 pharmacists, 258 field managers, and 250 Medical Representatives (MRs) (Figure 1).

The question-wise responses are given below, along with the discussion and inference of each point.

Question 1

Knowing pharmacology concepts helps Medical Representatives (MR) improve their confidence and do good detailing that produces better sales.

The most strongly agreed respondents (85.66%) are the highest among all four categories of respondents, and the field managers' responses are the highest. Field managers are accountable for MR performance.

Inference

Clarity of pharmacology concepts in a MR improves their confidence and does good detailing to produce better sales; pharmaceutical companies need to train and strengthen MRs in pharmacology. Many companies focus on non-pharmacology detailing and marketing practices, but pharmacology detailing matters as per respondents.

Question 2

Pharmacology concepts help medical representatives improve their involvement in the field due to an empowered feeling.

Everything depends on involvement; 92.56% respondents are in agreement with this preposition. When pharmaceutical companies empower MRs with easily assimilated relevant pharmacology knowledge, the MR's response from doctors and pharmacists will qualitatively improve. This will help the MR produce better results.

Inference

Pharmaceutical companies should provide training on pharmacology concepts to their field personnel to ensure empowerment and involvement in fieldwork.

Question 3

High sales and good image companies appear to have MRs who are well-trained in the pharmacological concepts of their products.

Jeremy Rifkin has said people do not buy products: they believe in solutions and images. By this, he means purchases are meant to solve the buyer's problem, and there should be aspirational value to the brand or product. 85.20% of MR respondents believe an excellent image of companies is due to pharmacology training given to MRs, along with those, other aspects are vital (such as soft skills).

Inference

It is wise for pharmaceutical companies to give good training to field personnel on pharmacology concepts, the MRs are brand ambassadors, and their pharmacological training empowerment contributes to a good image and high sales.

Question 4

Pharmacological concepts detailed by medical representatives are helpful to clarify any doubts of doctors, pharmacists and others.

Let's take the consolidated responses of all four segment respondents. 69.84% strongly agree with the proposed statement, and 18.95% agreed that pharmacological concepts detailed by medical representatives help clarify any doubts of doctors, pharmacists and others.

Inference

Pharmaceutical companies should invest in training MRs and field managers on pharmacology concepts so they may clarify product or therapy-related doubts of doctors, pharmacists, and others.

Question 5

Medical Representatives with good pharmacology knowledge have better transactions with doctors and pharmacists.

Knowledge is always respected; this is the import. Companies should emphasize that pharmacology knowledge is very important

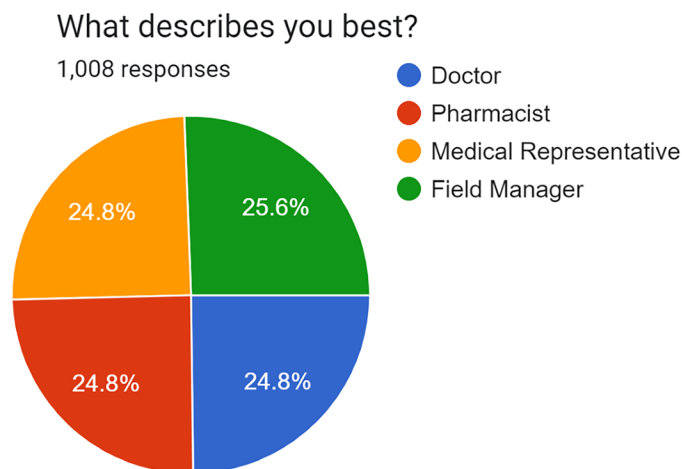


Figure 1: Valid responses from doctors, pharmacists, field managers, and medical representatives.

in training and that field personnel should use the same tactfully and not be shy to use the same. The above is evident from the fact that consolidated responses are strongly agreed at 71.63% and agree on answers at 17.86%, the total being 89.49%.

Inference

Field personnel can confidently use pharmacology in their transactions since it will give better mileage and improve their dealings with doctors and pharmacists; companies should strengthen this trait in MRs and field managers through training and appropriate collaterals.

Question 6

Pharmaceutical companies should give their field personnel adequate training in pharmacological concepts and knowledge.

Pharmacology concepts and knowledge need to be imparted to all field personnel; this was felt across all segments: MRs, field managers, pharmacists, and doctors - strongly agree people are 75.69%; and agreed people are 17.06%, a total of 92.75% respondents.

Inference

There is a hunger for pharmacology training in MRs. This opens a window for pharmacologists (doctors and pharmacists, including PharmD) to provide training modules and fill the vacuum.

Question 7

My gut feeling is that clarity of pharmacology concepts helps each medical representative improve sales by...'.

The stellar response is from MR respondents, the actual prescription, and sales generators. 38.00% have said sales will increase by 75% and above due to the training and clarity on pharmacology matters. Another 29.20% of MR respondents have noted that sales increase due to pharmacology training interventions will be between 50% and 75%, which is very high indeed. Another startling observation is that doctors, who are the core recipients of all the pharmacological messages: 35.20% of doctors felt good pharmacological training of MRs and field personnel would increase sales by 75% and above. Another highest percentage of doctor respondents, 36.80%, felt that sales would increase by 50% to 75% if there were clarity of pharmacological concepts and appropriate detailing by field personnel. The realism reflected by field managers - above 50% and below 75%, the percentage of manager respondents is 24.42%, and in the above 75% category, we have 24.03% of the manager respondents. So, it means that the right way of positioning and meaningful phrases of product pharmacology useful in product marketing will tremendously impact the acceptance of the product. So, talking about drug behavior in the body, including

vis-à-vis competitor products contextually, will enable improved sales outcomes (Table 1).

Inference

We see that clarifying pharmacology concepts in frontline personnel will improve sales, as per surveyed doctors and MRs in particular. An average of 33.43% of respondents state the increase in sales due to pharmacology clarity will be above 75.00% of sales. Hence, pharmacology clarity should be created through training.

Question 8

Medical representatives who are well grounded in pharmacological concepts of their products can be allowed to speak in CMEs etc., for their products.

Group meetings and product presentations at CMEs (continuing medical education), where a group of doctors is present, or at CPEs (continuing pharmacist education), where again pharmacists are there in a group, provides an excellent drug promotion opportunity for medical representatives and other field personnel who are well versed in product pharmacology. Doctors are the highest in the agree category of respondents (32.80%), and there is overall support in other respondent groups that MRs can tap into this group promotional opportunity.

Inference

Pharmaceutical companies will be at an advantage if field personnel are well trained in product pharmacology since field personnel can participate in group product promotion during CMEs and CPEs. This will synergize face-to-face selling efforts and improve engagement by field personnel.

Question 9

Medical representatives who know good product pharmacology can compare their products against competitor products better than those who do not know good pharmacology.

In pharmaceutical selling, it is crucial to do comparative selling, usually indirectly, to provide a competitive edge to the promoted product. Overall, for all respondent segments, 66.37% 'strongly agree' responses are there and 22.02% agree responses (total = 88.39%) for the statement that MRs who know good pharmacology know how to compare products than medical representatives who do not know good pharmacology. Field managers most strongly agree: 72.87% of field manager respondents say, MRs who know their product pharmacology concepts fare well in comparative selling.

Inference

It is a perfect approach to strengthen pharmacology concepts in MRs - to ensure better sales outcomes through comparative selling in day-to-day calls.

Question 10

Medical Representatives with good pharmacology knowledge command respect in society and among peers and colleagues. This helps MRs become more professional for better sales.

Being a part of the healthcare profession, the medical representative should have the propensity to gain drug information and know how to present the same. A medical representative well-versed in drug information will naturally have lively conversations on health issues and be seen as a bearer of authentic details. This enhanced prestige due to drug knowledge and health information makes field personnel better accepted among target audiences; this multiplier effect will improve sales outcomes. In agree category of responses, the highest percentage of respondents are doctors (30.00%). So overall, the knowledgeable MR is an asset!

Inference

As per respondents': medical representatives with good pharmacology knowledge command respect in society and among peers and colleagues, this helps MRs become more professional for better sales.

Question 11

Medical Representatives with good pharmacology knowledge are more stable in the company, which helps in steady and growing sales.

Employee stability of the productive field person is essential for the enduring success of a pharma company. Many factors are required, including working conditions, salary, incentives, etc. However, what about the knowledge of pharmacology? Will it contribute to field personnel stability in a company? MRs in the strongly agree respondent category is the highest percentage at 62.40%, followed by doctors at 56.00%. Hence, good, professionally managed companies ought to provide training in pharmacology knowledge and all other employment benefits – this will help ensure MR stability for stable growing sales.

Inference

While HR departments should focus on hygiene factors, the product management and training department can play a high-impact role by creating a robust pharmacological platform for collaterals and training of field personnel that will enable stable employment of MRs, which is vital for sustained sales performance.

Question 12

Pharmacology knowledge combined with soft skills and commercial expertise gives the best sales outcomes for a MR.

In creating sales, hard-skill pharmacology with excellent soft skills is an effective combination; this is usually accepted truth

in the pharmaceutical sales and marketing profession. 72.48% of field manager respondents support the statement 'strongly agree', followed by MRs (69.20% of MR respondents) and then remaining segments. The total agreement respondent percentage is 91.07%.

Inference

Pharmacology detailing skills, soft skills, and commercial knowledge (all three things) are essential for the best sales outcomes of MR.

Question 13

Pharmacology knowledge and training will help the medical representative grow professionally and are also required for the image of the medical representative profession.

Career track growth is a crucial component of an employee's life. The next milestone and the metrics are the career track approach. Pharmacology knowledge and detailing skills are vital for approximately 91.07% of all respondents, who either strongly agree or agree with the proposed statement.

Inference

Pharmacology knowledge and skills shall provide impetus to the career track of the field person, provide career growth and boost the MR profession image.

Question 14

Pharmacology knowledge and training will help the medical representative provide good corporate brand equity of the company.

Approx. 89.38% of all respondents aver that those medical representatives who are well-trained in pharmacology knowledge and skills shall improve the corporate brand equity of pharmaceutical company. Thereby, across all segments, respondents believe that pharmacology knowledge and training will help MR provide an excellent corporate image and equity and, consequently, sales outcomes.

Inference

The corporate image boost helps improve sales outcomes, and pharmacology training for MRs shall also strengthen the corporate image.

Question 15

Pharmacology knowledge and training will help the medical representative do electronic detailing through WhatsApp calls and/or smartphones.

Due to the pandemic and increasing internet penetration, pharmaceutical marketing hybridization is occurring, and this phenomenon is termed "phygital." Doctors also find this

Table 1: Percentage of respondents for Question 7.

Response	% of Doctor Respondents	% of Pharmacist Respondents	% of Field Manager Respondents	% of MR Respondents	Total (%)
10% to 25%	8.80	10.40	19.38	10.40	12.30
Above 25% and below 50%	17.60	17.20	28.68	18.80	20.63
Above 50% and below 75%	36.80	32.00	24.42	29.20	30.56
Above 75%	35.20	36.80	24.03	38.00	33.43
Positive and misc	1.60	3.60	3.49	3.60	3.08
TOTAL	100	100	100	100	100

communication non-intrusive and accept digital communication since face-to-face detailing endangers doctors and MR/field personnel in pandemic times. 75.60% of respondents say digital marketing and electronic detailing are helped by the pharmacology knowledge of the MR and field personnel; neutral respondents indicate that more clarity is required on how to use digital technologies.

Inference

Pharmacology knowledge and training are essential for meeting contemporary marketing challenges and indulging in 'phygital' marketing, including e-detailing products.

Market behavior divides products into three main categories: (a) Novel new products like the latest antimicrobials like antiviral favipiravir, (b) Niche products that serve a narrow segment of patients due to the nature of the disease, for instance, tocolytic agent isoxsuprine, and (c) Me-too mass market products a more significant segment of famous no. of brands; this includes paracetamol and diclofenac markets.

Marketers and medical department professionals cannot treat the pharmacological talking points of these categories of products on equal footing – hence the questionnaire took the feedback of doctors, pharmacists, field managers, and MRs for these three product categories. The respondents have given their opinion on the importance of different pharmacological talking points for novel new, niche, and mass me-too product categories.

Question 16

Importance of pharmacological product positioning statement (e.g., 1. Gold standard first-line hemostatic wound healer; 2. Shield against hypersensitivity tooth pain).

Maximum respondents favor pharmacological product positioning detailing for novel new products, and in the case of niche products and me-too products, there is lesser importance. Another insight is neutral respondents are in large numbers. This means people are unsure or not taking a stand on whether it is essential to detail product positioning or not. One has to educate marketers and target audiences on the importance of a pay-off

statement or product positioning statement, as this is the one that creates attention in the target recipient's mind and ensures brand registration.

The data were subjected to Chi-square analysis to draw unbiased conclusions. The critical value is 15.507 (8 degrees of freedom, 0.05 level of significance). H_0 = product positioning statement is unimportant for pharmaceutical products (all three types). H_A = product positioning statement is essential for pharmaceutical product promotion (all three types).

The calculated test Chi-square value statistic is 170.52; as the calculated test statistic is more significant than the critical table value, H_0 is rejected, and H_A is accepted. Hence, product positioning statement detailing is vital (Figure 2A).

Inference

For all products, a product positioning statement is vital to detail. In the case of niche products and me-too products, it needs to be decided *in situ* at the product promotional location whether to detail the product positioning statement or not. However, the product positioning statement must be described for a new novel product category.

Question 17

Importance of the composition of product and chemical structure (e.g., enantiomers or stereoisomers, natural product, type of salt or ester, solubility, etc.).

All the respondents clearly state that the product composition and characteristics should be presented effectively and straightforwardly for novel new products and progressively lesser importance for niche products and me-too products. Please note that neutral respondents are also there, so there is a need to educate all about the significance of product composition and associated aspects. The data is subjected to Chi-square analysis to draw unbiased conclusions. The critical value is 15.507 (8 degrees of freedom, 0.05 level of significance). H_0 = product composition, chemical structure, and associated detailing points are unimportant for pharma products. H_A = product composition chemical structure and related detailing point is essential for

pharma products. The calculated test Chi-square value statistic is 123.97; as the calculated test statistic is more significant than the critical table value, H_0 is rejected, and H_A is accepted. Hence, pharma products' composition, chemical structure, and associated detailing points are necessary (Figure 2B).

Inference

Among all the three product categories, detailing product composition, chemical structure, and associated points is most important for novel new products, then niche and followed by me-too. We need to give education on the importance of the product composition and related points since neutral respondents are also there.

Question 18

Importance of pharmacodynamics: Mechanism of action and dose-response relationship. Also, indications and spectrum of coverage.

According to the graph of all four categories of respondents, the maximum respondents reiterate that pharmacodynamics (mechanism of action and dose-response relationship), indications, and spectrum of coverage of promoted novel new product is essential; so, it is for niche products and me-too products. However, in the case of neutral responses, 301 (29.86%) are there for me-too products (who are unsure). Thereby, educational aspects of interesting newer facets of pharmacodynamics are required for training and communication.

The data is subjected to Chi-square analysis to draw unbiased conclusions. The critical value is 15.507 (8 degrees of freedom, 0.05 level of significance). H_0 = product pharmacodynamics, dose-response relationship, indications, and spectrum of action detailing point is unimportant for pharma products. H_A = product pharmacodynamics, dose-response relationship, indications, and range of action detailing points are essential for pharma products. The calculated test Chi-square value statistic is 79.28; as the calculated test statistic is more significant than the critical table value, H_0 is rejected, and H_A is accepted. Hence, product pharmacodynamics (dose-response relationship and mechanism

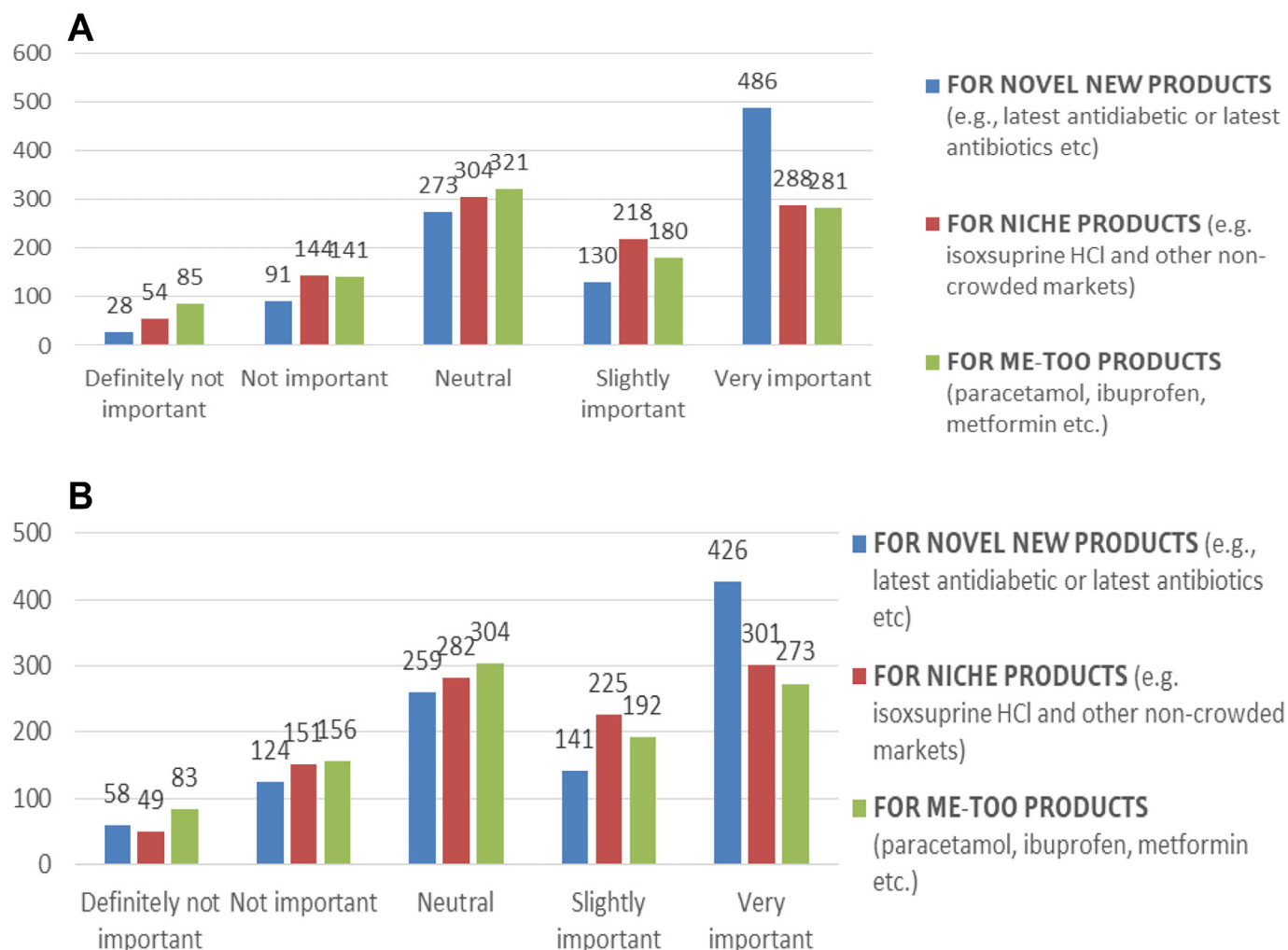


Figure 2: Graph represents the responses for A) question 16 and B) question 17.

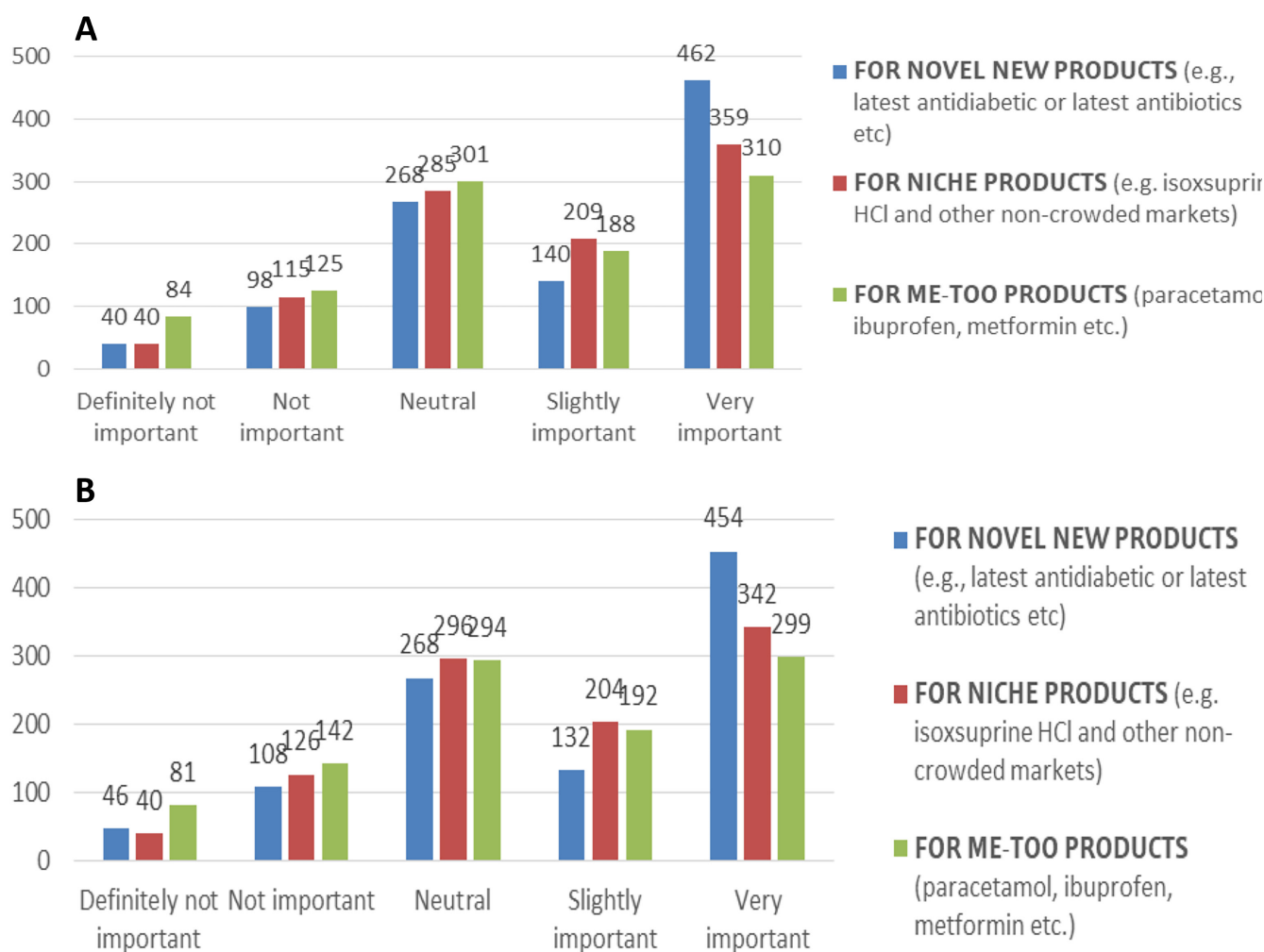


Figure 3: Graph represents the responses for A) question 18 and B) question 19.

of action), indications, and spectrum of action detailing points are essential for pharma products (Figure 3A).

Inference

Among all the three product categories (novel new, niche, and me-too), detailing product pharmacodynamics (dose-response relationship and mechanism of action), indications, and spectrum of action is essential-highest for novel new products, then niche and followed by me-too. Training, too, is vital.

Question 19

Importance of pharmacokinetics: ADME of a product (Also the percentage of absorption and bioavailability, distribution into various fluids, metabolism including first-pass metabolism and elimination).

It is evident that for novel new products, the presentation of pharmacokinetic data, including bioavailability, distribution, first-pass metabolism, and elimination, is essential; for niche products and me-too products also, it is crucial since it helps clinicians decide on prescribing through analysis of *in vivo*

drug behavior. What is fascinating is the number of neutral responses, indicating that educational campaigns for this pharmacokinetics-related point have much potential.

The data is subjected to Chi-square analysis to draw unbiased conclusions. The critical value is 15.507 (8 degrees of freedom, 0.05 level of significance). H_0 = product pharmacokinetics and associated points presentation is unimportant for pharma products. H_A = product pharmacokinetics and associated points presentation is essential for pharma products

The calculated test Chi-square value statistic is 91.02; as the calculated test statistic is more significant than the critical table value, H_0 is rejected, and H_A is accepted. Hence, product pharmacokinetics and associated points detailing are essential for pharma products (Figure 3B).

Inference

For detailed product pharmacokinetics and associated points, including distribution in body fluids, bioavailability, and elimination, give more emphasis on novel new products, then niche products and next lower importance to me-too products;

launch educational campaigns for product pharmacokinetics and associated points to all target audience in all three product categories.

Question 20

Importance of circadian rhythm (chronopharmacology).

The timing of giving medicines has a high impact on drug therapy results. The trending of results for this question on chrono pharmacology (circadian rhythm) is that all four respondent categories (doctors, pharmacists, field managers, and MRs) believe chrono pharmacology or circadian rhythm-related information is very important for novel new products, then comes the niche products and finally me-too products (in the category of significant responses). This item should focus on training since neutral respondents who need education are substantial.

The data is subjected to Chi-square analysis to draw unbiased conclusions. The critical value is 15.507 (8 degrees of freedom, 0.05 level of significance). H_0 = product circadian rhythm detailing is not essential for pharma products. H_A = product circadian rhythm detailing is vital for pharma products. The calculated test Chi-square value statistic is 92.37; as the calculated test statistic is more significant than the critical table value, H_0 is rejected, and H_A is accepted. Hence, product circadian rhythm detailing is essential for pharma products (Figure 4A).

Inference

One should train chronopharmacology updates to detail personnel and observe the impact on the target audience; technically, this point is relevant for practice. It is vital to engage field personnel to make them understand what chronopharmacology is all about.

Question 21

Importance of posology (dosage and administration, e.g., before food or after food, etc.).

There is a clear-cut response that was dosing, and administration is a vital point for detailing, whereas, in reality, field personnel often do not describe this point. Emphasis is on pharmacodynamics and some clinical result in an indication(s) in conventional detailing stories. Hence, it is essential to focus on the details of dosing emphatically.

The data is subjected to Chi-square analysis to draw unbiased conclusions. The critical value is 15.507 (8 degrees of freedom, 0.05 level of significance). H_0 = product posology is not essential for pharma products. H_A = product posology is critical for pharma products

The calculated test Chi-square value statistic is 34.50; as the calculated test statistic is more significant than the critical table value, H_0 is rejected, and H_A is accepted. Hence, product posology detailing is essential for pharma products (Figure 4B).

Inference

Detailing should start with posology and then get into pharmacodynamics, pharmacokinetics, and even product positioning statements. Example: Dr., one tablet a day, swallowed whole, after a meal, brand X: provides tight control over blood pressure to avoid damage to target organs.

Question 22

Importance of ADR (Adverse drug reaction, e.g., Nausea, vomiting, skin reaction, extrapyramidal symptoms, drowsiness), toxicity (over-dosage, genotoxicity, etc.) (Remedy for toxicity) and Drug-Drug, drug-food and drug-alcohol interaction.

One distinctive trend in Part B respondents is that there are maximum essential respondents (both critical and slightly important put together), and neutral respondents are also a significant number. People are neutral if they don't know the implications or are clueless. Hence, it is an opportunity for trainers to understand this neutral positioning and do more focused pharmacological training. For the novel new products market segment, it is vital to detail ADRs, drug interactions, and associated points, including toxicity. At the same time, it is lesser for niche products than novel new ones and even lesser for me-too. So, the way forward is to detail (posology and) ADRs, although it is against conventional logic to describe negative aspects of the drug.

The data is subjected to Chi-square analysis to draw unbiased conclusions. The critical value is 15.507 (8 degrees of freedom, 0.05 level of significance). H_0 = product ADRs, toxicity, and drug interactions detailing is unimportant for pharma products. H_A = product ADRs, toxicity, and drug interactions describing are essential for pharma products. The calculated test Chi-square value statistic is 26.72; as the calculated test statistic is more significant than the critical table value, H_0 is rejected, and H_A is accepted. Hence, product ADRs, toxicity, and drug interactions detailing are essential for presenting pharma products (Figure 5A).

Inference

Trainers should focus on providing all ADR and related points for detailing training, and marketing strategists should prioritize this. They can do this by providing the facts and figures of ADRs, drug interactions, toxicity, and associated points and managing these challenges when they occur.

Question 23

Importance of Clinical Trial Information, including latest updates (e.g., endpoints, longitudinal study, observational cohort, double-blind crossover randomized study, etc.).

The data points clearly show that it is essential to detail the latest clinical study results of novel new products. And for niche

products, the pattern is the same though 'slightly important' respondents are more. Regarding me-too products, neutral responses are the most, and 'very important' respondents are lesser. Also, 'slightly important' respondents are almost equal in the me-too and niche categories. For neutral respondents, focused training on pharmacology, is the need of the hour, so they can upgrade their thinking and understand the merit of clinical pharmacology detailing; this is an opportunity for pharmaceutical trainers.

The data is subjected to Chi-square analysis to draw unbiased conclusions. The critical value is 15.507 (8 degrees of freedom, 0.05 level of significance). H_0 = product clinical trial and the latest clinical research detailing is unimportant for pharma products. H_A = product clinical trial and latest clinical research detailing is essential for pharma products. The calculated test Chi-square value statistic is 35.81; as the calculated test statistic is more significant than the critical table value, H_0 is rejected, and H_A is accepted. Hence, product clinical trial and the latest clinical research detailing is essential for pharma products (Figure 5B).

Inference

Pharmacology training should be focused on neutral respondents, and clinical data detailing is maximally necessary for novel new

products and then for niche products and me-too products on an equal footing between them – evidently, doctors are open to updates.

Ranking of talking points and training themes

The ranking of essential talking points based on the total number of respondents for each talking point (total of very important and slightly important) was done for novel new products. The ranked descending order of talking points for novel new products is as follows:

Posology, product positioning, ADRs, pharmacodynamics, clinical trial information, pharmacokinetics, composition, and circadian rhythm. This order of pharmacological talking points is to be followed in the promotional detailing and collaterals.

Rankings of neutral respondents for novel new products have been done through the tabulation method, and the inference is as follows - the neutral responses give a direction of training to MRs and field personnel. The rankings are from top to bottom of neutral respondents:

Importance of circadian rhythm, pharmacokinetics, clinical trial information, product positioning, composition, pharmacodynamics, posology, and ADRs.

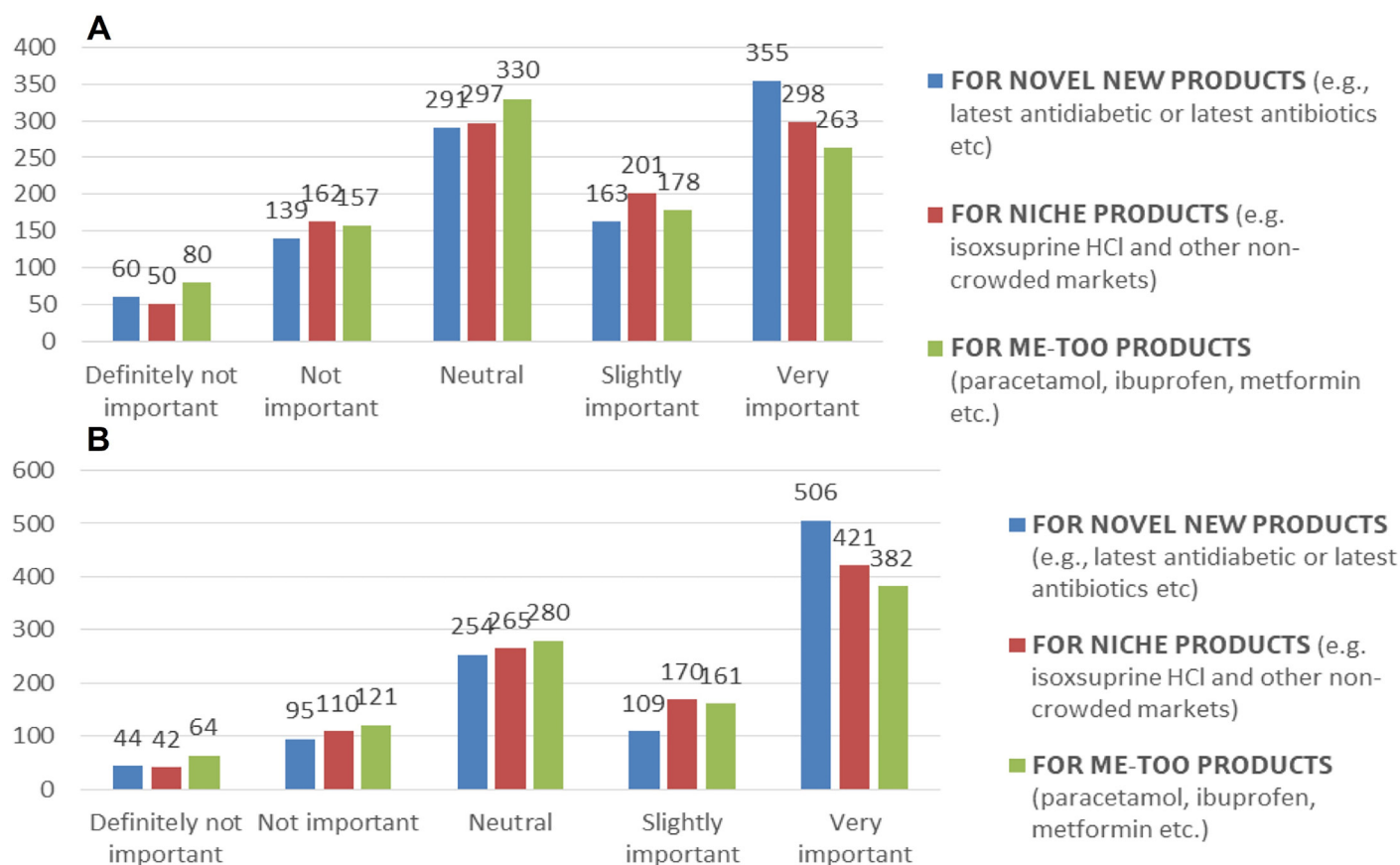


Figure 4: Graph represents the responses for A) question 20 and B) question 21.

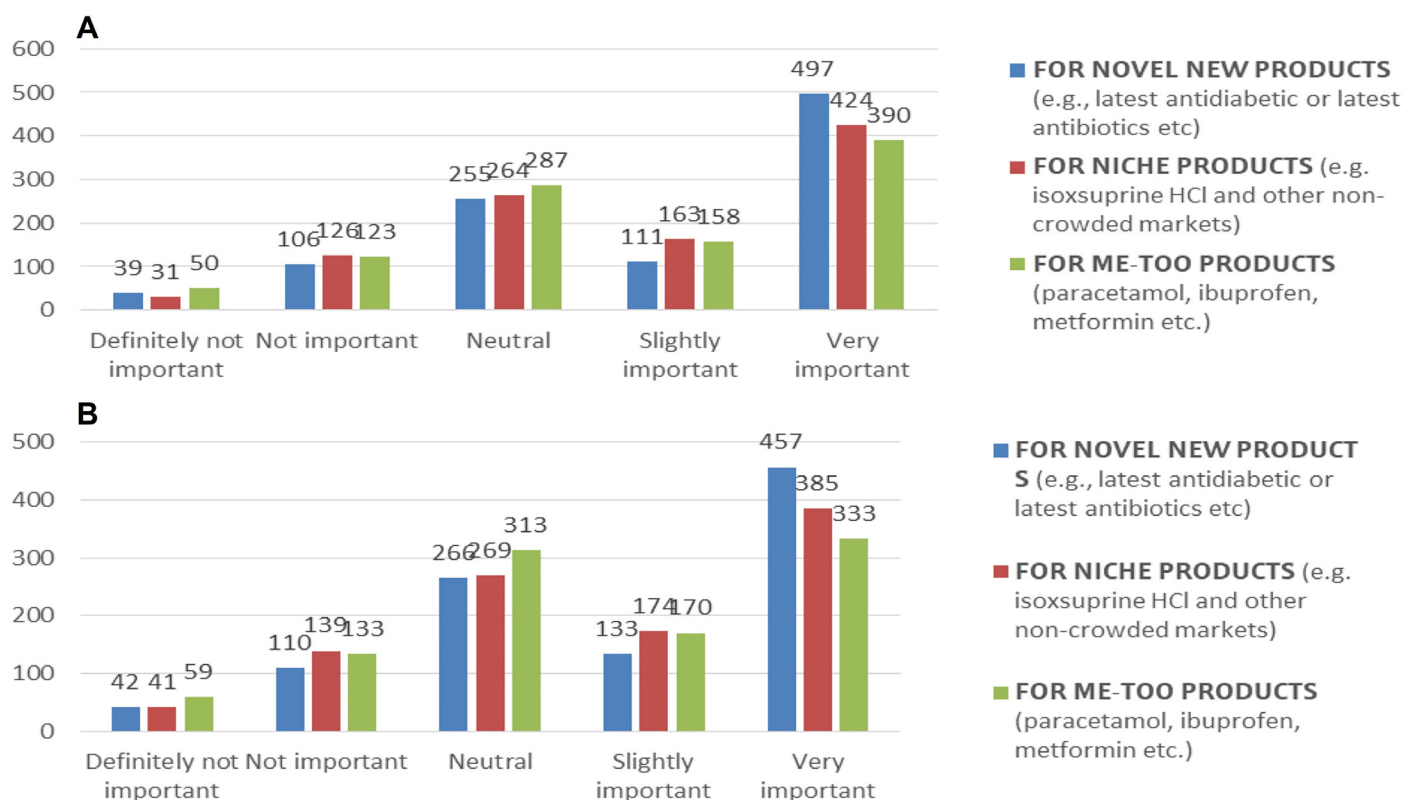


Figure 5: Graph represents the responses for A) question 22 and B) question 23.

So, communication strategists may follow above sequence for envisioning training programs and product promotional messages.

The talking points for niche products were placed in descending order; the order was decided based on the total number of responses per talking point. The rankings of very important and important responses (total) talking points for niche products are as follows:

Posology, ADRs, pharmacodynamics, clinical trial information and clinical updates, pharmacokinetics, product positioning, and circadian rhythm (chronopharmacology).

This order is best for delivering promotional messages for niche products.

The number of neutral respondents for each talking point in the niche product category was placed in descending order:

Circadian rhythm (chronopharmacology), pharmacology product positioning, pharmacokinetics, pharmacodynamics, composition, clinical trial information, clinical updates, posology, and ADRs.

This is the sequence of importance for niche products, so give maximum priority to circadian rhythm and come progressively downwards to ADRs when delivering specialized training programs and creating messages.

The talking points for me-too mass products was put in descending order; the order was decided based on the total

number of responses per talking point. The rankings of very important and important responses (total) for me-too mass products are as follows:

Posology, ADRs, pharmacodynamics, pharmacokinetics, composition, product positioning, and circadian rhythm: this order of pharmacological talking points is best for delivering product promotional messages in the case of me-too mass products.

The number of neutral respondents for each talking point in the me-too mass products category was placed in descending order:

Circadian rhythm (chronopharmacology), clinical trial information, product positioning, composition, pharmacodynamics, pharmacokinetics, ADRs, and posology.

This is the sequence of importance for me-too mass products, so give maximum priority to circadian rhythm and come progressively downwards to posology when delivering specialized training programs.

CONCLUSION

It is concluded from this study that clarity of pharmacology concepts in MRs improves their confidence and they can do good detailing to produce better sales. Training on pharmacology concepts ensures the feeling of empowerment and involvement in fieldwork. The MRs are brand ambassadors, and their pharmacological training empowerment contributes to a good image and high sales. It is prudent for pharmaceutical companies

to give good training to field personnel on pharmacology concepts so they may clarify product or therapy-related doubts of doctors, pharmacists, and others. Such field personnel can confidently use pharmacology in their transactions since it will give better mileage and improve or better their dealings with doctors and pharmacists; companies should strengthen this trait in MRs and field managers. It is evident there is a hunger for pharmacology training in MRs. This opens a window for pharmacologists (doctors and pharmacists, including PharmD) to provide training modules and fill the vacuum. We see a strong tendency that training in pharmacology concepts for frontline personnel shall improve sales, as per surveyed doctors and MRs in particular. 33.43% of total respondents (doctors, pharmacists, MRs and field managers), state sales can improve by 75% or more due to pharmacology training. Hence, pharmacology clarity should be created through training and other collaterals or educational materials, which MRs use. Such MRs can participate in group product promotion like CMEs and CPEs - and also do effective comparative selling in all formats of product promotion including day-to-day activities. MRs being the brand and company ambassadors, due to pharmacological training, will enhance the company standing as per 86.90% of respondents - and have higher professionalism for better sales outcomes. While HR departments should focus on hygiene factors and soft skills, the product management and training departments can play a high-impact role by creating a robust pharmacological platform for knowledge and collaterals of field personnel - this will enable them to be steady employees, improve their career prospects and indulge in modern product promotion such as e-detailing. For novel new products, niche products and me-too mass products, the priority of talking points in product promotion and training themes are clear from this study.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

LSSSDC: Life science sector skills development council; **AIDD:** Assessment instrument for drug detailing; **WHO:** World Health Organization; **NOS:** National occupational standards; **CME:** Continuing medical education; **CPE:** Continuing pharmacy education; **ADR:** Adverse drug reaction.

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