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The Influence of Pharmaceutical Brochures on the Prescribing Habits of Orthopaedic Surgeons in Qatar: A Questionnaire-Based Study

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Abstract

Background: Pharmaceutical marketing, including the use of printed brochures, is a common method to promote both new and existing medications. However, its influence on clinical practice, particularly in specialties such as orthopaedics, remains underexplored. **Objective:** To evaluate whether pharmaceutical brochures affect the prescribing practices of orthopaedic surgeons in Qatar, specifically regarding non-steroidal anti-inflammatory drugs (NSAIDs). **Methods:** A structured questionnaire was distributed to orthopaedic surgeons practicing in Qatar between January and March 2025. Data on the reception and perceived influence of drug brochures were collected and analyzed. **Results:** Of 27 surgeons contacted, 22 responded (81%). All respondents reported prescribing NSAIDs. While 90% received pharmaceutical brochures regularly, only 14% reported that these brochures could influence their prescribing habits. The majority either discarded the brochures without reading them or read them and then discarded them immediately. **Conclusion:** Despite widespread dissemination, pharmaceutical brochures appear to have minimal influence on the prescribing patterns of orthopaedic surgeons in Qatar. Further research is needed to understand the nuances of pharmaceutical marketing and its long-term effects on prescribing behavior.

Keywords

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), Orthopaedic Surgeons, Pharmaceutical Brochures

1. Introduction

Pharmaceutical companies allocate substantial resources not only to drug development but also to marketing strategies aimed at promoting their products to physicians and healthcare providers [1]-[3]. These strategies include, but are not limited to, the distribution of printed brochures, provision of free samples, invitations to sponsored educational events, and occasionally offering incentives [4]-[8]. While the ethical and professional implications of these practices have been widely discussed in the literature, their direct impact on clinical decision making often remains ambiguous [9]-[13].

In our hospital, we have observed a notable increase in the quantity and visual quality of printed brochures distributed by pharmaceutical company representatives. These brochures often contain visually appealing content, simplified pharmacological data and comparative efficacy claims designed to favor the promoted medication. While brochures are intended to inform, their potential to influence can not be ignored [14] [15].

Despite widespread dissemination, limited empirical evidence exists to quantify how such promotional materials influence real-world prescribing habits in specialized fields like orthopaedics [16]. Most existing literature focuses on primary care physicians, paediatricians and other medical specialties, leaving a gap in understanding within the surgical specialty like orthopaedics [17]-[21].

Orthopaedic surgeons frequently prescribe NSAIDs as a first-line treatment for various musculoskeletal conditions. Given the widespread and routine use of NSAIDs in orthopaedic practice, we decided to investigate the influence of pharmaceutical brochures on the prescribing practices of orthopaedic surgeons in Qatar. Through a structured survey, we aimed to determine how frequently these materials are encountered, how they are perceived and whether they have a measurable impact on clinical decision-making.

2. Materials and Methods

Following ethical approval from the local hospital committee, a comprehensive questionnaire was developed by the authors (SJ, SK and BT) to evaluate the perceived impact of pharmaceutical brochures on NSAID prescribing behavior among orthopaedic surgeons (**Figure 1**). The target population included orthopaedic surgeons in active clinical practice in private institutions in Qatar. The list of orthopaedic surgeons was obtained by one of us (SK) from a national registry of orthopaedic surgeons. We conveniently sampled the whole group (non-random). We chose orthopaedic surgeons working in private health institutions as we believed they were more likely to be influenced by pharmaceutical brochures. The exclusion criterion was any surgeon with formal or financial ties to pharmaceutical companies to avoid bias.

The survey was conducted via email between January and March 2025. The questionnaire comprised multiple-choice questions covering professional experience, receipt and handling of brochures, and subjective perceptions of influence.

Reminder emails were dispatched at one- and three-week intervals to enhance the response rate. Data was collected anonymously, and descriptive statistical analysis was carried out using SPSS software to calculate frequencies, percentages and means.

Questionnaire

1. **How many years are you in practice?**
   a. Less than 5
   b. 5 to 10
   c. Greater than 10

2. **Do you prescribe NSAIDs?**
   Yes No

3. **Do you receive brochures/leaflets from pharmacy representatives?**
   Yes No

4. **Do the brochures/leaflets influence your prescribing habits?**
   Yes No

5. **What do you do with the brochures/leaflets?**
   a. Keep them
   b. Read and then throw away.
   c. Throw them away

6. **How many brochures/leaflets on average do you get a week?**
   a. 1 to 5
   b. 5 to 10
   c. Greater than 10

Figure 1. Showing various types of pharmaceutical approaches for NSAIDs.

3. Results

Twenty-two orthopedic surgeons out of the 27 contacted completed the questionnaire, yielding a high response rate of 81%. All participating surgeons indicated prescribing NSAIDs in their daily clinical practice.

Among the respondents, 20 (90%) reported having more than 10 years of clinical experience, while the remaining 2 (10%) were between 5 and 10 years. All participating surgeons indicated regular prescribing of NSAIDs in their daily clinical practice.

A majority, 20 out of 22 surgeons (90%), acknowledged receiving printed brochures from pharmaceutical company representatives. The remaining 2 surgeons deliberately opted out of receiving such materials, citing concerns about undue

influence on their prescribing decisions.

10 surgeons (50%) reported that they routinely read the brochures but disposed of them immediately thereafter, 9 surgeons (45%) confessed to discarding the brochures without reading them, while one (5%) respondent stated that he kept the brochures without elaborating on whether he read or referenced them.

Interestingly, 19 out of 22 surgeons (86%) stated that these brochures had no impact on their prescribing patterns. Conversely, 3 respondents (14%) admitted that brochures could potentially sway their decision-making process.

14 surgeons (70%) reported receiving 1 - 5 brochures weekly, while 5 surgeons (25%) received 5 - 10 brochures full. One surgeon indicated he received more than 10 brochures per week.

4. Discussion

The findings of this study revealed how orthopaedic surgeons in Qatar receive pharmaceutical marketing using brochures. Although most respondents received brochures regularly, only 3(14%) reported that the brochures could influence their prescribing practices; hence, 2 out of the 3 deliberately did not receive brochures. The three surgeons reported that they had previously received pharmaceutical brochures and were influenced and hence had made a conscious decision not to receive brochures anymore to avoid being influenced. This low rate is in contrast with the range reported in the literature of 18.7% - 79% [6] [9] [22]-[24].

A report by Hailu *et al.* in 2021 from a town in Ethiopia reported that 56% of doctors were influenced by pharmaceutical brochures [6]. Their report included all doctors working in the town, who were targeted by medical representatives and included all medications and not just NSAIDs.

Spiller *et al.* from the USA in 2002 reported a high influence rate of 68% [24]. Primary care physicians, family medicine physicians and doctors of other specialties were included in their report, and their study involved all medications and not just NSAIDs [24].

Another report by Sharma *et al.* from a teaching hospital in India in 2021 reported that pharmaceutical brochures influenced 79% of doctors [9]. Their report involved doctors from various specialties and included all types of medicines.

We believe the higher rates of influence on prescribing habits by pharmaceutical brochures reported in the literature are due to several factors, such as:

- The inclusion of a heterogeneous group of doctors, including medical and surgical specialties and family physicians. In contrast, our study focused exclusively on orthopaedic surgeons.
- Studies involved all medications, while our study was limited only to NSAIDs.
- Shorter years of working experience of the doctors in the various reports, while doctors in our study had longer working years. 90% of the doctors in our study had been in clinical practice for more than 10 years, whilst on average, only 38% of doctors in various studies had been in clinical practice for more than 10 years.

We also believe that lack of adequate knowledge of various medicines may also

be a factor that influences doctors from some parts of the world in their prescribing habits. A report from Yemen in 2013 stated that physicians recognize medical representatives and pharmaceutical brochures as information providers and beneficial to their work [25].

Our results suggest a degree of professional independence, as the majority of clinicians were skeptical of commercially driven content and believed more in clinical evidence and personal experience. This may be related to the fact that most doctors in our study have been in clinical practice for more than 10 years and rely on subconscious bias in their decision-making when prescribing NSAIDs. It may also reflect a preference for evidence-based practice over marketing-influenced decision-making. It is well known that a large majority of brochures present data that were based on underlying studies funded by pharmaceutical companies and the sole purpose of these brochures was to promote a product instead of scientific appraisal and education [4] [26]-[29].

The fact that a subset of doctors in our study admitted to being influenced raises concerns about the need for continuous medical education that is independent of industry bias.

A review of the literature suggests that many clinicians were exposed to brochures at least once a month [6] [9] [30]. In our study, 70% of doctors received a minimum of five pharmaceutical brochures in a month, with one receiving about 40 brochures monthly. The preliminary findings of our study indicate a notable presence of pharmaceutical brochures in the orthopaedic clinical setting.

Our study also highlights the diversity in how promotional material is handled. Some surgeons prefer not to engage with the brochures and discard them immediately, while others find them instructive enough to read before discarding. This behavioral variability may depend on individual attitudes toward pharmaceutical marketing, time constraints and access to alternative sources of clinical information.

This study is limited by its small sample size, which lacks power for secondary analysis. It is also limited by its geographical restriction to Qatar. In addition, the study was carried out involving practicing orthopedic surgeons and their prescribing habits of NSAIDS, which could limit the generalizability of the results of this study to other specialties and other medications. Finally, the data is self-reported and thus may be subject to recall or social desirability bias.

5. Conclusion

Despite widespread dissemination, pharmaceutical brochures appear to have minimal influence on the prescribing patterns of orthopaedic surgeons in Qatar. Further research is needed to understand the nuances of pharmaceutical marketing and its long-term effects on prescribing behavior.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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