Original Article

Questionnaire on the awareness of generic drugs among outpatients and medical staff

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ABSTRACT: Generic drugs are not as widely used in Japan as they are in the West. The objective of this study was to survey the awareness of generic drugs among outpatients and medical staff and propose methods of promoting the use of generic drugs. Our survey showed that 86.7% of respondents were aware of generic drugs. This is a higher awareness rate than that in a survey of other groups conducted last year. One reason to explain this higher awareness is the recent increase in generic drug advertisements both in newspapers and on television. However, a point of note is that generic drug usage has not increased.

Our survey also showed that generic drug awareness was differed widely among age groups, as younger respondents were much more aware of generic drugs than older respondents. Still, about 40% of respondents who were aware of generic drugs did not realize that they were less expensive than name-brand drugs – including 30% of medical staff.

In addition to continuing advertisement of generic drugs in the media, medical doctors and pharmacists should also be encouraged to endorse the use of generic drugs. Furthermore a new system allowing for substitution prescriptions started in April 2008 and consequently pharmacists can now play an important role in promoting the use of generic drugs.

Keywords: Generic drugs, Awareness, Questionnaire, Prescription substitution

1. Introduction

With Japan's rapidly aging society, medical expenditures reached a record level of some 32 trillion yen for the 2005 fiscal year (*1*) and estimates are that this cost will climb to as much as 48 trillion yen by 2025 and continue to grow beyond that date (*2*). Generic drugs are thus seen as one way to reduce medical expenditures (*3*). For example, since 2003 the Diagnosis Procedure Combination (DPC) has been used in 82 key hospitals. Furthermore, the prescription system was revised in April 2006 so that physicians could designate if a prescribed medication could be substituted with generic drugs and dispensed at pharmacies. However, a study of 126 pharmacies around Japan by the Society of Japanese Pharmacists conducted from April – May 2006 showed that while 18% of prescriptions could have been substituted with generic drugs, less than 2% actually had been (*4*). Similarly, in October and November 2006 only 2.2% of prescriptions had been substituted with generic drugs at some 617 pharmacies around Japan. The Ministry of Health, Labor, and Welfare (MHLW) also noted that on average about 17% of prescriptions could have been substituted with generic drugs at 635 pharmacies in October 2006 (*5*). All previous surveys showed that less than 10% of all prescriptions had actually been substituted with generic drugs (*4-7*). Thus, despite efforts to promote the use of generic drugs, they still are not being used as widely in Japan as they are in the West (*8*).

A questionnaire on generic drugs was distributed to survey awareness among outpatients and medical staff. This was used to identify several key reasons why generic drugs were not widely used in Japan and subsequently make recommendations on how to improve this situation.

2. Materials and Methods

Between the period of August and December 2007, a questionnaire was distributed both to outpatients, aged 16 years or older, who had received a prescription for one or more drugs, and to medical staff at pharmacies and hospitals in the Kanto area of Japan to determine their awareness of generic drugs. The completed survey was either collected on the same day it was completed or on the next visit. Pharmacies were selected from the Ain Pharmacies Group and were located in Omiya, Kawasaki, Ueno, Yugawara, and Isezaki. Medical

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staff surveyed were from Tokyo University Hospital, Hanzomon Hospital, Fukagawatachikawa Hospital, Tajima Hospital, Doai Memorial Hospital, and Minamiyamato Hospital – all of which were affiliated with this university hospital. Medical staff surveyed were doctors, nurses, clinical laboratory technicians, radiological technicians, and medical clerks.

3. Results

In total, 614 questionnaires were distributed to outpatients and medical staff and a total of 514 responses were received, indicating a response rate of 83.7%. Of the 514 respondents, 229 were men (44.6%) and 285 were women (55.4%); 12 were teens (over 16 years old) (2.3%), 99 were in their twenties (19.3%), 101 were in their thirties (19.6%), 71 were in their forties (13.8%), 109 were in their fifties (21.2%), 72 were in their sixties (14.0%), and 50 were over seventy (9.7%). In total, 457 respondents were outpatients (74.4%) and 175 respondents were medical staff (25.6%).

A total of 51.3% of respondents thought medicines were expensive. Answers for outpatients and medical staff were similar, but answers among age groups differed widely – the older the respondents were, the more they tended to answer that medicines were expensive. Interestingly the exception was those over seventy (38.8% of those in their twenties and 77.1% in their sixties answered that medicines were expensive, but only 26.0% of those over seventy thought so) (Figure 1).

Although 86.7% of respondents indicated that they knew about generic drugs, only 17.0% had used them. A higher percentage of medical staff (96.9%) knew about generic drugs than outpatients (82.2%). In other words, 3.1% of medical staff did not know about generic drugs. Many more medical staff (26.9%) had used generic drugs than outpatients (11.3%). The awareness rate for generic drugs was almost parallel to the age groups – that is to say, the younger the age group, the higher the awareness rate. (The awareness rate for those over seventy was 64.0%, while the rate for those in their twenties was 96.0%). Younger age groups tended to have used generic drugs, except for teens (20.2% of those in their twenties and 12.0% of those over seventy had used generic drugs. No teens had used generic drugs) (Figure 2).

A total of 55.3% of respondents indicated that they did not know how inexpensive generic drugs were compared to name-brand drugs (Figure 3). Since 82.2% of respondents knew about generic drugs (Figure 1), about 40% of those who knew about generic drugs were not aware of the price difference between generic drugs and name-brand drugs. The number of outpatients who were unaware of the price difference (65.4%) was double that of medical staff (32.2%). Older age groups tended to answer that they did not know the price difference between generic drugs and name-brand drugs, although this also included teens (41.8% of those in their twenties and 69.4% of those over seventy indicated that they did not know how inexpensive generic drugs were compared to name-brand drugs) (Figure 3).

A total of 61.6% of respondents stated that they would prefer to substitute generic drugs if they were less expensive, 28.4% said they did not know if they wanted to substitute, and only 10.0% of respondents said they did not want to substitute generic drugs regardless of the price difference. A higher percentage of medical staff (65.6%) than outpatients (59.9%) said they would prefer to substitute generic drugs. The preference for substituting generic drugs decreased with age groups

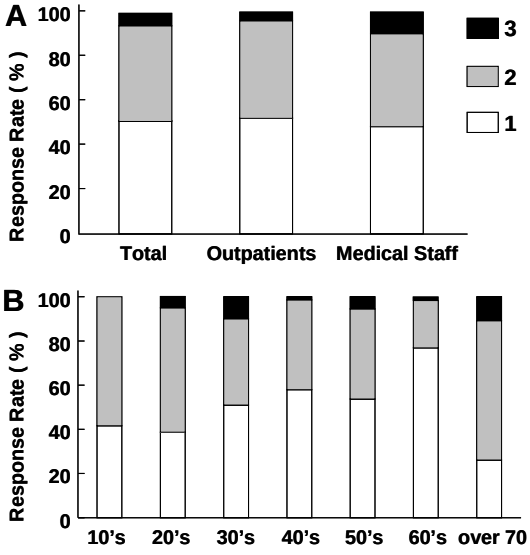

Figure 1. What do you think about the price of medicines? A: Result according to outpatients and medical staff. B: Result according to generations. 1: expensive. 2: dubious (neither expensive nor cheap). 3: cheap.

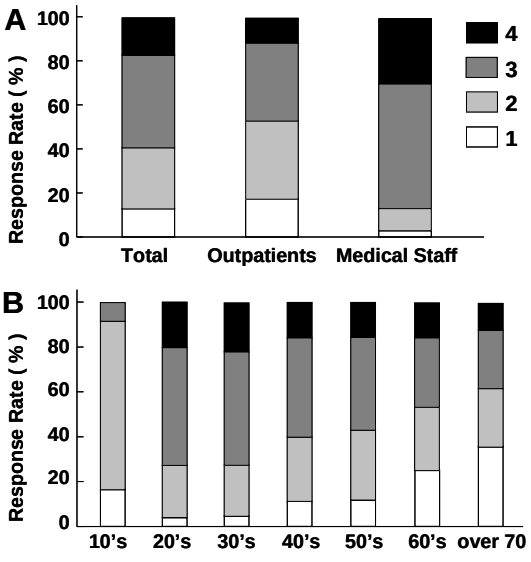

Figure 2. Do you know about generic drugs? A: Result according to outpatients and medical staff. B: Result according to generations. 1: I do not know. 2: I know the name, but do not know fully. 3: I know, but do not take generic drugs. 4: I know and take generic drugs.

except for teens (72.2% of those in their twenties and 36.6% of those over seventy preferred to substitute generic drugs). The number of respondents who were undecided increased in parallel to age groups, with teens again being the exception (22.7% in their twenties and 55.6% seventy and over answered that they did not know if they wanted to substitute) (Figure 4).

The primary reasons why outpatients did not use generic drugs were simply because their doctor did not substitute generic drugs and patients did not know about them. Concern over the effects of generic drugs was a third reason. Medical staff expressed more concern about the effect and quality of generic drugs and exhibited more anxiety about generic manufacturers than outpatients (Figure 5). Still, only 32.8% of respondents were concerned about generic drugs.

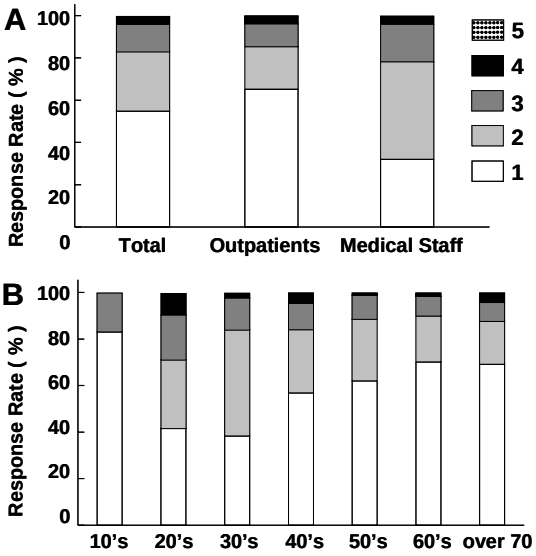

Figure 3. What do you think about the price difference between generic drugs and brand drugs? A: Result according to outpatients and medical staff. B: Result according to generations. 1: I do not know. 2: I think that generic drugs are more than 20% cheaper than brand drugs. 3: I think that generic drugs are about 20% cheaper than brand drugs. 4: I think that generic drugs are about 10% cheaper than brand drugs. 5: I think that both generic drugs and brand drugs are similar price.

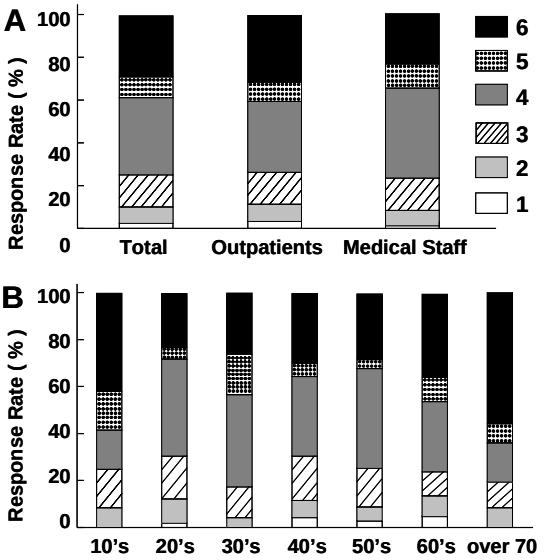

Figure 4. Are you going to take generic drugs? A: Result according to outpatients and medical staff. B: Result according to generations. 1: I am going to take generic drugs even if generic drugs and brand drugs are similar price. 2: I am going to take generic drugs if generic drugs are 10% cheaper than brand drugs. 3: I am going to take generic drugs if generic drugs are 20% cheaper than brand drugs. 4: I am going to take generic drugs if generic drugs are 30% cheaper than brand drugs. 5: I am not going to take generic drugs regardless of their prices. 6: I do not know.

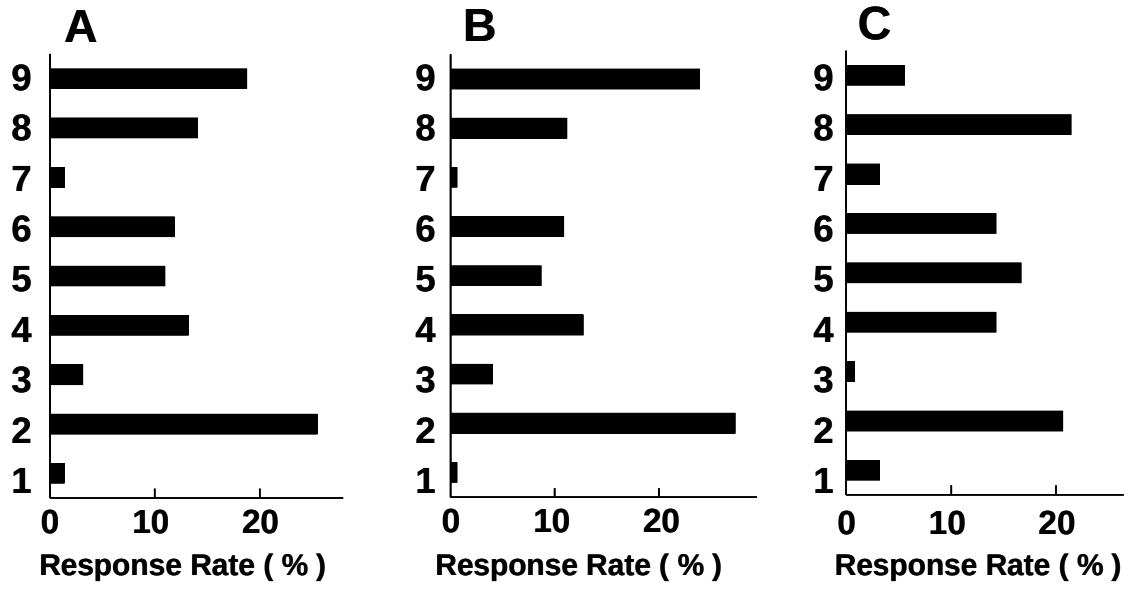

Figure 5. Why do not you take generic drugs? A: Result of total responders, B: Result of outpatients, C: Result of medical staff. 1: Because generic drugs and brand drugs are similar prices. 2: Because doctors do not prescribe. 3: Because pharmacies do not have stock. 4: Because I am concerned about their efficacy. 5: Because I am concerned about their quality. 6: Because I am concerned about generic makers. 7: Because doctors reject my request for a generic drug prescription. 8: none of these. 9: Because I do not know about generic drugs.

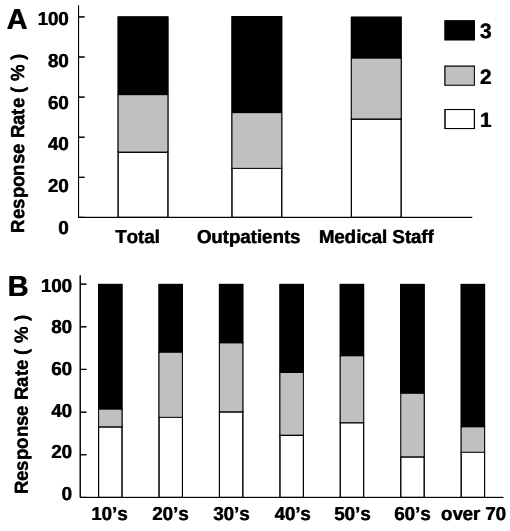

Figure 6. Are you concerned about generic drugs? A: Result according to outpatients and medical staff. B: Result according to generations. 1: Yes, I am. 2: No, I am not. 3: I do not know.

However, of those concerned considerably more were medical staff (49.4% *vs*. 24.7% of outpatients). Younger age groups were more concerned than older age groups (37.8% in their twenties and 21.4% over seventy were concerned about generics). A higher percentage from the older age groups tended to answer that they did not know if they wanted to substitute (31.6% in their twenties and 66.7% over seventy responded that they did not know if they wanted to substitute) (Figure 6).

4. Discussion

While there have been numerous surveys on the awareness of generic drugs, this is to the authors' knowledge the first survey conducted simultaneously with outpatients and medical staff. In the summer of 2006, a survey of some 1,000 consumers conducted by the Fair Trade Commission showed that 78% of consumers were aware of generic drugs, and that more than 90% preferred generic drugs (*9*). However, a 2006 survey of 3,031 outpatients in Miyazaki prefecture showed that 49.4% of outpatients knew about generic drugs (*6*). These differing results in the awareness of generic drugs may be a result of differences in the nuance of the surveys but are more likely a result of the difference in age groups. Generally, the average age of consumers tends to be much younger than outpatients, and the current survey showed that there were considerable differences in awareness of generic drugs between younger and older age groups (Figure 2). Accordingly, the current results should be compared with those from the survey among outpatients in Miyazaki Prefecture, even though the geographical locations of the surveys differ. The awareness rate for generic drugs among outpatients (82.2%) in a 2007 survey (Figure 2) was much higher than in the 2006 survey by Sasaki (49.4%). This would indicate that

Table 1. Share of generic drugs in Western countries and in Japan

Fiscal year	America	Germany	England	France	Japan
2002 (%)	52.0	50.0	52.0	12.0	12.0
2005 (%)	56.0	57.3	59.3	15.7	17.1

• Share is calculated based on the amount of quantity;
• Data are cited from references *8*, *11*, and *12*.

awareness of generic drugs is increasing each year, with the primary reason for this being the impact of recent advertisements both in newspapers and on television. Tanaka *et al*. noted that awareness of generic drugs among older age groups tends to be lower than among younger age groups (*10*), and the current survey supports that conclusion. The awareness rate for those in their twenties was 96.0%, whereas it was 64.0% for those over seventy (Figure 2). Thus, the necessity seems to be to focus on older age groups in order to encourage use of generic drugs. As simply running newspaper and television advertisements is unlikely to achieve this, doctors and pharmacists should recommend generic drugs in their consultations, and generic drug posters should be displayed in hospitals and pharmacies and pamphlets should be distributed to outpatients. The current survey showed that outpatients received information about their prescribed drugs from the Internet or drug manuals, but they actually wanted to direct counseling about their prescriptions from either their doctor or pharmacist (data not shown).

The use of generic drugs is being promoted in order to limit sharp increases in medical expenses. For example, the DPC was implemented in 2003 and a new prescription system was adopted in April 2006 so that physicians could indicate if the prescribed medication could be substituted with generic drugs. Still, the share of the generic drug market in Japan is low when compared to the West, with France being the exception (Table 1). For example, the use of generic drugs in the US has now reached over 50%, while the generic market in Japan was 16.4% in 2003, 17.1% in 2005, and 16.9% in 2006 (*11*). While Japan has adopted many of the systems used in the US with some differences, the share of generic drugs has not increased. This suggests that the promotion of the awareness of generic drugs does not necessarily result in promotion of the use of generic drugs. The results of the current survey indicate that while the total awareness of generic drugs has increased, there is still a considerable difference in awareness between younger and older age groups. Specifically the rate of awareness among people over seventy (who account for the majority of medical expenses) is still low (Figure 2). Furthermore, 74.0% of people over seventy did not think that medicines were expensive (Figure 1) and had very little knowledge or understanding of generic drugs. In fact, the current survey showed that 55.3% of respondents did not

know how inexpensive generic drugs were compared to name-brand drugs (Figure 3). Thus, individual and direct promotion of generic drugs as described above is necessary. Many more medical staff (49.4%) expressed concern about generic drugs than outpatients (27.4%) (Figure 6), so simply describing the cost benefits of generic drugs is insufficient. Patients should also be informed about the safety and efficacy of generic drugs.

The prescription substitution rate can be calculated using the following formula:

Prescription substitution rate = *[Non-hospital prescription rate] × [Rate of physician designation] × [Preference rate among outpatients] × [Preference rate among pharmacists] × (1 - [Off label rate])
(*A non-hospital prescription means a prescription that is dispensed at a community pharmacy and not a hospital pharmacy)

In 2007, the average non-hospital prescription rate was about 50% in Japan (*7*). Using Nikkei Drug information, the rate of physician designation was 31% in April 2006. The new prescription system that was implemented in April 2008 required physicians to indicate if the prescribed medicine could not be substituted with a generic. This means that if there is no designation from the physician, all prescriptions can automatically be substituted with generic drugs. The current survey showed that although more medical staff had concerns about generic drugs than outpatients (Figure 6), more medical staff (65.5%) preferred to use the less expensive generic drugs than outpatients (59.9%) (Figure 4). Actually, all eleven medical doctors working in hospitals who participated in this survey answered that they would themselves use generic drugs if prescribed (data not shown). Thus, the number of prescription drugs that can be substituted with generic drugs could increase dramatically after April 2008. While many generic drugs have off-label problems, generic drugs that are frequently used do not have such issues (*7*). This survey demonstrated that outpatients did not use generic drugs primarily because they did not know about them and because their physician did not prescribe generic drugs (Figure 5). As mentioned above, the new prescription system started in April 2008, so the rate of physician designation should no longer be a limiting factor. Further, this survey showed that 59.9% of outpatients preferred to substitute generic drugs if they were less expensive (Figure 4). Thus, the preference rate among outpatients should not be a limiting factor either. A final key factor limiting the use of generic drugs is likely to be the preference rate among pharmacists. Muto showed that the preference rate for generic drugs among medical doctors was 68%, which is very similar to the current data (65.6%, Figure 4), while the preference rate among pharmacists was only 25% (*7*). The reason for the lower preference rate among pharmacists is primarily an issue of responsibility. That is to say, if trouble occurs after a prescription has been substituted with a generic drug, then the question of who should be responsible – the physician or the pharmacist – is unclear (*13*).

The MHLW has adopted many systems for a stable supply of generic drugs to ensure the quality of generic drugs and it changed the prescription system format in order to encourage the use of generic drugs. The MHLW has stated that the share of generic drugs should increase to more than 30% by 2012. However, the share of generic drugs remains at around 16% and is not increasing (*12*). In the US, the share of generic drugs has increased to over 50% (Table 1), but this is not because physicians prefer generic drugs. Actually, over 80% of physicians prescribe name-brand drugs (*14*). However, prescription substitution laws in states such as Massachusetts require pharmacists to use generic drugs. And, for example, under California legislation, pharmacists are not responsible for side effects of generic drugs (*11*). As a result, generic drugs are much more widely used in the US. In Japan, the preference rate among pharmacists is likely to be a limiting factor and consequently legislation similar to that in the US should be implemented to motivate pharmacists to use more generic drugs.

Research has also suggested that information about generic drugs from generic manufacturers is inadequate (*15*). The MHLW also requires generic manufacturers to provide adequate information to medical sites (*16*). Generally, however, generic manufacturers are smaller in scale than name-brand manufacturers and as such may be unable to provide the same amount of information. In the US, the Food and Drug Administration (FDA) guarantees the efficacy and safety of generic drugs. As a result, generic manufacturers do not actively collect efficacy and safety-related data (*17,18*). In Japan, the MHLW should also establish a system to guarantee the efficacy and safety of generic drugs. As a consequence, the share of generic drugs may indeed exceed 30% by 2012.

Acknowledgments

The authors are grateful to Ain Pharmacies, Ltd. for their cooperation with this survey. The authors are also indebted to Mr. Alan Bresgi, a researcher at the Tokyo University Pharmaco-Business Innovation Laboratory, for his review of this manuscript.

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(*Received June 18, 2008; Accepted June 24, 2008*)