Perception and practice of placebo use among physicians in Mangalore

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ABSTRACT

Background: Placebo use falls under two contexts: clinical care and research. In today's pharmacological era where treatment is available for almost all illnesses, there exists a lot of questions about the perceived efficacy and usage of placebos. This study focuses on assessing the knowledge, attitude, and practice of placebo use in clinical medicine. This study also aimed to pay attention to the ethical dimensions of using a placebo in clinical practice. Subjects and Methods: A cross-sectional study was conducted among 86 physicians in five hospitals and various private clinics in Mangalore, India, using a self-administered questionnaire. Results: About 72% of physicians were found to be prescribing placebos. Vitamins were the most commonly prescribed placebos. Pure placebos were prescribed by 69.4% and impure placebos by 83.9% of physicians. Pure placebos were deemed acceptable by 70.9% of physicians if used for their psychological effect, but only 46.3% said the same for impure placebos. Placebos were most commonly prescribed to conform to the patients' requests for some sort of medicine. Among our physicians, 54.8% and 62.8% of placebo prescribers felt that many or some patients would be disappointed if they were to find out that they had been treated with pure or impure placebos, respectively. Conclusion: Physicians agreed that placebos were acceptable in some circumstances in clinical practice. Physicians think that the information and training about placebos during their medical studies was insufficient. Perhaps, more time should be put into teaching about placebos during medical studies and proper guidelines should be laid down about placebo usage.

Keywords: Clinical pharmacology, ethics, general medicine, general practice, placebo use

Introduction

In clinical medicine, a placebo is an inactive substance which produces a beneficial effect in a psychobiological manner. A pure placebo refers to inert substances or methods, e.g., sugar pills or saline injections. An impure placebo refers to substances or methods which do have pharmacological activity but cannot be expected to have any direct therapeutic effects for the particular disease or symptoms, e.g., antibiotics in viral infections. Patients given these inert or active substances not known to actively treat the presenting condition may sometimes have an improvement, this is known as the placebo effect. It is postulated that the placebo effect occurs because of the patient's absolute belief that they are receiving medication for their ailment. It has also been seen that expensive therapies, even if they are actually placebos, can work better than cheaper therapies.

Surveys have been conducted in multiple regions of the world which show the prevalence of placebo prescription between 45% and 89%. There has been a constant to-and-fro argument regarding the usage of placebo in clinical practice. Many physicians feel that if a beneficial effect can be taken by prescribing a placebo, this advantage should be taken. In contrast, others feel that the use of placebos in clinical medicine is outdated and deceitful to the patient. It is thought that placebo...
use in clinical practice is a waste of time and thus decreases clinical efficiency. Also, it is believed that since there have been many pharmaceutical advances and the promotion of informed consent, there is no need for the use of placebos; thus, placebo use is criticized.

There are valid arguments both in favor and against the use of placebos, but the questions remain: How often are placebos actually used in everyday clinical practice? Is it ethical for physicians to use a mode of treatment that involves lying to the patient? Is this deception justifiable by the good that it could do for the patient?

The main objectives of this research were to estimate the proportion of physicians prescribing placebos clinically in Mangalore and to assess the knowledge, practice, and attitude toward the use of placebos in clinical medicine. At the conclusion of this research, we will have a clear view on the acceptance of placebos by physicians in Mangalore, India. We will be able to comment on the different ethical views, if any, on pure and impure placebos. There will also be an understanding regarding the reasons for placebo usage and the statements used by the physicians to assure patients regarding placebo prescription. Placebo use is especially important in primary care because the physician will be seeing the same patient for many years, so the patient may never get adequate care if they do not approach another physician outside their primary care physician.

**Subjects and Methods**

A cross-sectional study was carried out in five hospitals and various private clinics in Mangalore, India. We wanted to include both groups of physicians – those who visit both inpatient and outpatient department of the hospitals and others who work through clinics. We approached around 100 physicians and 86 agreed to participate in our study and returned completed questionnaires. Considering the busy and erratic schedule of physicians, convenience sampling method was opted. All physicians who had finished their postgraduation degree and had at least 1 year of experience and gave their voluntary consent were included in the study. All nonwilling participants and physicians enrolled in postgraduation programs were excluded.

The protocol including the questionnaire was prepared. The questionnaire was adapted and modified from the previous researches and contained four sections: demographic details, knowledge about placebos, usage of placebos, and ethical views on the usage of placebos. Ethics approval was obtained by the Institutional Ethics Committee (IEC). Written consent was taken and the study was carried out thereafter on the willing participants.

The collected data were entered into Excel and then analyzed using SPSS (Statistical Package for Social Sciences) version 16.0. Factors/reasons associated with the use of placebos were tested using “Chi-square test” and $P < 0.05$ was considered as statistically significant.

**Results**

The mean age of physicians in the study was 37.5 years. Among our study population, 56 (65.1%) physicians worked in a hospital, 3 (3.5%) physicians worked in private clinics, and 27 (31.4%) worked in both hospitals and private clinics. Fifty-seven (66.3%) physicians had been in practice for <10 years after postgraduation and 29 (33.7%) had >10 years of experience.

The characteristics of placebo prescription among our study population are shown in Table 1. About 72% of physicians participating in this study prescribed placebos in our study. The most commonly prescribed placebos were vitamins (88.7%) and antacids (41.9%). There were multiple reasons for placebo prescription among our study population as shown in Table 2. Most common (69.4%) being to conform to the patients request for some type of medication, 58.1% to offer treatment for constant unwarranted complaints, and 56.5% for nonspecific complaints.

The responses of physicians to five statements about placebos are shown in Table 3; 69.8% of all physicians thought that the placebo effect was purely psychological. About 48.8% of all physicians thought that placebos initiate self-healing processes in the patient, 56.5% of placebo prescribers thought the same, whereas only 29.2% of non-prescribers thought the same.

The responses to 11 ethical statements for both pure and impure placebos are shown in Table 4 where the responses could be agree, disagree, and don’t know. When asked if placebos were acceptable under some circumstances in clinical practice, 72.1% and 62.8% of physicians thought that placebos were acceptable under some circumstances in clinical practice, for pure and impure placebos, respectively ($P < 0.001$), whereas 16.3% of physicians thought that both pure and impure placebos were never acceptable in clinical practice ($P < 0.001$). Among physicians that prescribed placebos, 14.5% thought that pure placebos were never acceptable in clinical practice, whereas 9.7% thought that impure placebos were never acceptable in clinical practice.

Only 26.7% of all physicians thought that the information and training about placebos during their medical studies was sufficient; in this, only 8.3% of non-prescribers felt their training was sufficient, whereas 33.8% of prescribers felt that it was sufficient.

Table 5 also shows the responses to the statements about how physicians felt that their patients would react if they were to find out that they had been treated with a pure or impure placebo. In total, 54.8% and 62.8% of placebo prescribers felt that many or some patients would be disappointed if they were to find out that they had been treated with pure or impure placebos, respectively, whereas 75% of non-prescribers felt the same way in cases of both pure and impure placebos.
The results of the study showed that 72% of 86 physicians that participated in the study did in fact prescribe placebos. The finding was in line with past literature which ranged from 45% to 89%. A similar study done in Ahmedabad city in 2009 showed an 89% usage of placebos among physicians. It is quite alarming that the results are more towards the higher level of placebo use seen in past literature.

Placebos were most commonly prescribed once a week (45.2%). A study from Denmark found that 48% of general practitioners used placebos >10 times in the past year, whereas another study in Israel found that among the group that used placebos, 62% used a placebo at least once a month. The results of our study were similar to previous literature. Since Mangalore is urbanized, it can be compared with the results of these past studies in developed countries.

It is thought that patients would respond better to the placebo effect if the received substance had a medical use rather than just being a pure placebo. In our study, among those that did prescribe placebos, pure placebos were prescribed by 69.4% and impure placebos by 83.9%. Thus, pure and impure placebo were shown to have similar prescription rates as compared with past studies, which also showed that impure placebos were prescribed more often than pure. The reason may be because substances such as vitamins when used as placebos may not
relieve the patient’s symptoms directly, but they may have some other effect on the body which could lead to relief. Even though certain impure placebo can show medical benefits in patients i.e. antibiotics can help prevent secondary bacterial infection during viral illness, there also exists a problem of overuse of antibiotics leading to increased resistance, which should also be given consideration during prescription. Furthermore, the use of substances such as antibiotics can have detrimental effects on the patient’s gut microbiota which can lead to new ailments.

This creates a vicious cycle of overtreatment and, thus, the mistreatment of the patient.

The most commonly prescribed placebos were vitamins by far at 88.7%; this corresponded with a previous study in India, which found that vitamins were used as placebos by 74% of physicians. In contrast to this, a study in the United States found that vitamins were only used by 38% of physicians. Thus, there may be a regional difference as to which placebos are used.\[14\] Another aspect to this result may depend on the education level of patients. The education level of patients in Mangalore may make a difference in what is prescribed. Patient’s in the United States would probably read about the medication they had been prescribed on the internet and quickly discover that they had been given vitamins, whereas the patients in Mangalore would be unlikely to conduct any further investigation of their prescription. This brings about a dilemma that physicians are taking advantage of their patient’s unwillingness to look up information about the given medication; so, they are in essence cutting corners in patient care.

When inquired about the reasons for placebo prescription, the most common (69.4%) answer we got was to conform to the patients’ request for some type of medication and to offer treatment for constant unwarranted complaints (58.1%). These data support that a growing number of physicians believe in prescription of medication in order to avoid conflicts and increase patient satisfaction. This is especially important in primary care as the patient load increases. Past studies have shown that 15%–89% of general practitioners prescribed placebos at least once a month.\[12\]

Other studies found that only 28%–32.2% used placebo as a diagnostic tool,\[8\] whereas it was used as a diagnostic tool in our study by 54.8% of physicians prescribing placebos. Again, these

| Table 2: Reasons for placebo prescription |
|------------------------------------------|
| Frequency \(n=62\) | \(P\) |
| To conform with the requests of the patient and avoid conflict (patient demands medication) | 43 (69.4%) | <0.001 |
| To gain a therapeutic advantage through the placebo effect | 28 (45.2%) | <0.001 |
| To still be able to offer a treatment option to a patient with an incurable disease | 25 (40.3%) | <0.001 |
| To offer a treatment in situations in which standard treatments may strongly burden patients with side effects or are contraindicated | 17 (27.4%) | 0.004 |
| To offer a treatment to patients whose complaints and test results are not attributable to a certain disease (non-specific complaints) | 35 (56.5%) | <0.001 |
| To offer treatment to patients with constant unwarranted complaints | 36 (58.1%) | <0.001 |
| To test whether the pain (or complaint) is psychogenic or organic (i.e. as a diagnostic tool) (to distinguish between genuine and imaginary symptoms) | 34 (54.8%) | <0.001 |
| To avoid drug addiction | 13 (21.0%) | 0.015 |
| For pain relief | 18 (29.0%) | 0.003 |
| If the patient could not afford the therapy (expensive medicine, surgery, etc.) | 10 (16.1%) | 0.036 |
| If a colleague has had positive experience with it in the past | 11 (17.7%) | 0.027 |

| Table 3: Physicians responses to 5 statements about placebos |
|-------------------------------------------------------------|
| \(n=86\) | Yes | No | Uncertain |
| “The placebo effect is purely psychological” | | |
| Response of placebo prescribers \(n=62\) | 43 (69.4%) | 9 (14.5%) | 10 (16.1%) |
| Response of non-prescribers \(n=24\) | 17 (27.4%) | 1 (4.2%) | 6 (25%) |
| Total \(n=86\) | 60 (69.8%) | 10 (11.6%) | 16 (18.6%) |
| “Placebo interventions initiate self-healing processes in the patient” | | |
| Response of placebo prescribers \(n=62\) | 35 (56.5%) | 12 (19.4%) | 15 (24.2%) |
| Response of non-prescribers \(n=24\) | 7 (29.2%) | 7 (29.2%) | 10 (41.7%) |
| Total \(n=86\) | 42 (48.8%) | 19 (22.1%) | 25 (29.1%) |
| “The clinical effects of placebo interventions are mostly negligibly small” | | |
| Response of placebo prescribers \(n=62\) | 29 (46.7%) | 21 (33.8%) | 12 (19.4%) |
| Response of non-prescribers \(n=24\) | 11 (45.8%) | 4 (16.7%) | 9 (37.5%) |
| Total \(n=86\) | 40 (46.5%) | 25 (29.1%) | 21 (24.4%) |
| “Saline injection is a pure placebo” | | |
| Response of placebo prescribers \(n=62\) | 29 (46.7%) | 26 (41.9%) | 7 (11.3%) |
| Response of non-prescribers \(n=24\) | 15 (62.5%) | 5 (20.8%) | 4 (16.7%) |
| Total \(n=86\) | 44 (51.2%) | 31 (36.0%) | 11 (12.8%) |
| “The information and training about placebos and their use during my medical studies was sufficient” | | |
| Response of placebo prescribers \(n=62\) | 21 (33.8%) | 32 (51.6%) | 9 (14.5%) |
| Response of non-prescribers \(n=24\) | 2 (8.3%) | 16 (66.7%) | 6 (25.0%) |
| Total \(n=86\) | 23 (26.7%) | 48 (55.8%) | 15 (17.4%) |
Table 4: Ethical views on the usage of placebos (values in parenthesis are percentages)

|                                | Use of pure placebo | Use of impure placebo | P* |
|--------------------------------|---------------------|-----------------------|----|
|                                | Agree               | Disagree              | Don’t know | Agree | Disagree | Don’t know | Don’t know |
| are acceptable when used for their psychological effect | 61 (70.9)           | 10 (11.6)             | 15 (17.4)  | 40 (46.5) | 33 (38.4) | 13 (15.1)  | 0.542      |
| are acceptable when the patient wants or expects this therapy | 46 (53.5)           | 23 (26.7)             | 17 (19.8)  | 33 (38.4) | 32 (37.2) | 21 (24.4)  | 0.003      |
| are acceptable when clinical experience has shown a benefit | 58 (67.4)           | 12 (14)               | 16 (18.6)  | 49 (57)  | 16 (18.6) | 21 (24.4)  | 0.001      |
| are acceptable as long as the physician and patient work together in partnership | 48 (55.8)           | 19 (22.1)             | 19 (22.1)  | 39 (45.3) | 30 (34.9) | 17 (19.8)  | <0.001     |
| are acceptable when prescribed by any physician regardless of their experience | 10 (11.6)           | 62 (72.1)             | 14 (16.3)  | 6 (7)  | 61 (70.9) | 19 (22.1)  | <0.001     |
| are for me a traditional component of medical practice | 18 (20.9)           | 49 (57)               | 19 (22.1)  | 15 (17.4) | 49 (57)  | 22 (25.6)  | <0.001     |
| can be tried in most medical conditions | 11 (12.8)           | 65 (75.6)             | 10 (11.6)  | 5 (5.8)  | 71 (82.6) | 10 (11.6)  | <0.001     |
| are not acceptable when they involve deception | 57 (66.3)           | 11 (12.8)             | 17 (19.8)  | 55 (64)  | 12 (14)  | 19 (22.1)  | <0.001     |
| are not acceptable because the efficacy is insufficient | 37 (43)             | 26 (30.2)             | 23 (26.7)  | 30 (34.9) | 31 (36)  | 25 (29.1)  | <0.001     |
| are acceptable in some circumstances in clinical practice | 62 (72.1)           | 10 (11.6)             | 14 (16.3)  | 54 (62.8) | 16 (18.6) | 16 (18.6)  | <0.001     |
| are never acceptable in clinical practice | 14 (16.3)           | 58 (67.4)             | 14 (16.3)  | 14 (16.3) | 56 (65.1) | 16 (18.6)  | <0.001     |

*Significance testing was done by using Pearson’s Chi-square test

Table 5: Physicians thoughts on the acceptance of placebo usage in clinical practice and patient’s reaction to finding out about placebo usage

|                                | Agree | Disagree | Don’t Know |
|--------------------------------|-------|----------|------------|
| “Pure placebos are never acceptable in clinical practice” | 9 (14.5%) | 44 (71.0%) | 9 (14.5%)  |
| Response of placebo prescribers (n=62) | 5 (20.8%) | 14 (58.3%) | 5 (20.8%)  |
| Response of non-prescribers (n=24) | 14 (16.3%) | 58 (67.4%) | 14 (16.3%) |
| Total (n=86) | 6 (9.7%) | 44 (71.0%) | 12 (19.4%) |

| “Impure placebos are never acceptable in clinical practice” | 8 (33.3%) | 12 (50.0%) | 4 (16.7%)  |
| Response of placebo prescribers (n=62) | 14 (58.3%) | 4 (16.7%) | 1 (4.2%)  |
| Response of non-prescribers (n=24) | 29 (33.7%) | 23 (26.7%) | 15 (17.4%) |
| Total (n=86) | 14 (16.3%) | 56 (65.1%) | 16 (18.6%) |

| “Do you think that your patients would be disappointed if they learned that they had been intentionally treated with a pure placebo?” | 15 (24.2%) | 19 (30.6%) | 14 (22.6%)  |
| Response of placebo prescribers (n=62) | 14 (58.3%) | 4 (16.7%) | 1 (4.2%)  |
| Response of non-prescribers (n=24) | 29 (33.7%) | 23 (26.7%) | 15 (17.4%) |
| Total (n=86) | 18 (29.0%) | 21 (33.8%) | 12 (19.4%) |

| “Do you think that your patients would be disappointed if they learned that they had been intentionally treated with an impure placebo?” | 11 (45.8%) | 7 (29.2%) | 0 (0%)  |
| Response of placebo prescribers (n=62) | 29 (33.7%) | 28 (32.6%) | 12 (14.0%) |
| Response of non-prescribers (n=24) | 29 (33.7%) | 28 (32.6%) | 12 (14.0%) |
| Total (n=86) | 29 (33.7%) | 28 (32.6%) | 12 (14.0%) |

results apply mainly to urban areas because it is unlikely that a placebo would be used as a diagnostic tool in rural areas. In fact, the response of conforming to a patient’s requests would likely be even higher in rural settings in India. Misinterpreting a placebo response can extinguish any hope of securing appropriate evaluation and treatment for patients with complex problems. Thus, placebos should not be used as an assessment tool because the patient deserves better. If a physician is unable to determine the root cause of the patient's complaints, ethically, it would be better to refer the patient to another doctor instead of conducting placebo-assisted diagnoses.

In regards to statements provided by physicians in cases of pure and impure placebos, it was found that 24.2% said it was medication for both pure and impure placebos. 22.6% said it was a substance that may help and will not hurt for a pure placebo, whereas 35.5% said the same for an impure placebo. About 22.6% said nothing in case of an impure placebo and 16.1% said the same for a pure placebo. About 3.2% said it was a medicine with no specific effects. No physician told the patient that it was a placebo for both pure and impure placebos. Previous studies showed that patients were told by their physician that they were receiving medication in 19%–80% of cases, 17%–39% of physicians said nothing when giving a placebo, 9%–68% said they were receiving a nonspecific drug which may be beneficial and only 0%–5% of physicians informed the patient that they were receiving medication in 19%–80% of cases. The results of our study were similar to various previous studies. However, again this applies more to urban areas because in the rural setting, more physicians would likely say nothing when prescribing a placebo. The majority of the physicians felt that their patients would be disappointed if they learned that they were receiving a nonspecific drug which may be beneficial.
This deception may lead to a loss of trust in the patient provider relationship when the deception is discovered. Increased public awareness, personal interest in health, and the availability of information from the internet and other sources have reduced the likelihood that a clinician is capable of maintaining such a deception; but if and when the patient finds out, it will not only affect the potential clinical benefit from placebo prescription but also the patient will lose trust in the provider and perhaps the delivery system itself.

We found that 14.5% of physicians that prescribed placebos thought that pure placebos were never acceptable in clinical practice, whereas 9.7% thought that impure placebos were never acceptable in clinical practice. These results are lower than a previous study which showed that of respondents that thought placebo treatment was unethical, 50% still prescribed them. About 66.3% and 64% of physicians thought that placebos were not acceptable when they involved deception, for pure and impure placebos, respectively. Any important information that a patient might need to make a responsible decision about his or her medical care should not be withheld, even if withholding the information appears to be in his or her best interest. Deception violates both patient autonomy and the fundamental respect of the patient. Only 26.7% of all physicians thought that the information and training about placebos during their medical studies was sufficient. Thus, the teaching methods about placebo use in medical schools in India are severely lacking. Since doctor’s go to many different medical colleges in different states in India and then to other colleges for postgraduation studies before establishing themselves in a particular place, the case for insufficient teaching methods about placebos across India can be made.

About 72.1% and 62.8% of physicians thought that placebos were acceptable under some circumstances in clinical practice, for pure and impure placebos, respectively. In previous studies, 46%–62% of physicians felt that placebo use was acceptable in some situations. The majority of physicians agreed that a pure placebo was acceptable if used for its psychological effect (70.9%) and with evidential benefits shown through research (67.4%), but only 46.5% and 57%, respectively, said the same for an impure placebo. Thus, these results indicate that physicians were more accepting of pure rather than impure placebo. However, patients may not be accepting of any type of placebo. As seen in a past study where many people posted their comments about purchasing placebo prescriptions. Patients think that it is a waste of money and even fraud.

In our study, 55.8% of physicians thought that pure placebos were acceptable if the physician and patient work together in partnership and 45.3% thought the same for impure placebos. A study in Switzerland found that 60% of physicians thought that pure placebos were acceptable if the physician and patient work together in partnership and 75% thought the same for impure placebos. Our results vary drastically because we found the opposite to be true that physicians in Mangalore deemed pure placebos to be more acceptable than impure ones. It is important to engage patients in shared decision making about their treatment. Some believe that whenever a placebo is prescribed, the patient should be informed and clear expectations of this form of intervention and why it appears to be the best clinical option should be clearly laid out. One may presume that this might cause a negative impact on the potential of the placebo, but recent research shows that the placebo effect still takes place even when the patient is informed. Therefore, the credibility of the doctor–patient relationship will be maintained along with therapeutic relief, especially since 54.8% and 62.8% of placebo prescribers felt that many or some patients would be disappointed if they were to find out that they had been treated with pure or impure placebos, respectively. But this does not mean that physicians should just start prescribing placebos as long as they tell their patients; instead, these placebos should only be prescribed if other medical therapies do not work or if no treatment exists for the particular ailment.

Prescribing a placebo addresses only the most superficial layer of patient need. Therefore, relying on placebos before all other therapeutic modalities are exhausted is an unacceptable model. Before prescribing placebos, the patient’s diagnosis should be reviewed and confirmed. Using a placebo prior to completing the diagnostic work-up can be misleading and prevent definitive treatment. It is unethical to just prescribe a placebo without giving due diligence.

**Conclusion**

Placebos are widely used in clinical medicine in Mangalore with vitamins being most commonly prescribed as placebo. Physicians in our study were more acceptable to pure placebos than impure placebos; despite which, impure placebo (such as vitamins, antacids) usage was more prevalent than pure placebos. Our study physicians mostly wanted to conform to the needs of their patients expecting therapy, and therefore, they prescribed placebos. Irrespective of their ethical views surrounding it, no physician told their patients that they were being given a placebo; however, most were convinced that their patients would be disappointed if they learned that they had been given a placebo treatment. The majority of our physicians agreed that enough knowledge is not imparted about placebos during medical education. The authors of this article hope that patient’s do not lose their faith in all physicians if they find out they had been deceived with placebos by some physicians. We believe that placebos can still have a place in modern medicine as long as the doctor and patient work together in a partnership where the patient knows they are receiving a placebo.

**Statement of ethics**

The study was approved by the IEC, Kasturba Medical College Mangalore, Manipal University (Reg. No. ECR/541/Inst/KA/2014).
Financial support and sponsorship
Self.

Conflicts of interest
There are no conflicts of interest.

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