

# “Primary Care Physicians” Perspective on Placebos in Clinical Practice: Attitudes, Beliefs, and Prescribing Habits

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## Abstract

**Background:** Global patterns in the clinical use of placebos differ due to physicians’ conceptual differences, culture, region, and setting. This study aimed to evaluate the attitudes, beliefs, and prescribing habits of primary care physicians toward the use of placebos. **Methods:** This was a cross-sectional study. An anonymous web-based survey questionnaire was used to collect the information of primary care physicians (2017–2018). Descriptive statistics and frequency distributions were calculated using the Chi-square and Fisher’s exact tests. **Results:** The mean age of the participants was  $41.3 \pm 12$  years. Male physicians (67%) outnumbered their female counterparts. There were 87/108 (80.5%) physicians who responded. Minority of the physicians (21%,  $n = 18$ ) had used a placebo in clinical practice, and only 25% indicated placebo prescription to be ethically acceptable. The most common reasons for placebo use were to satisfy a complaining patient (27.6%), calm the patient (23%), and as a supplemental treatment to other medicines (20.7%). A significant association was found between the age ( $P = 0.03$ ) and years of experience ( $P = 0.01$ ) with the placebo prescribing practice. Majority (43.8 %) of non-Saudis compared to 15.5% of Saudi respondents reported using placebos ( $P = 0.01$ , odds ratio = 6.35). Majority (75%) of the respondents believed that placebos can be used in clinical practice without giving prior information to the patient. **Conclusion:** Minority of the physicians used placebos in clinical practice. Clinical experience and cross border variation were seen among physicians in placebo prescribing practices. Physicians used placebos primarily for psychological benefit.

**Keywords:** Physicians’ attitude, placebo prescription, primary care physicians’, Saudi Arabia

## INTRODUCTION

The placebo effect refers to positive clinical outcomes caused by a treatment that is not attributable to its known physical properties or mechanism of action.<sup>[1]</sup> Despite understanding the interactions of mind and body and its connection to the placebo effect, one might argue that the effectiveness and improvement in the illness are due to the placebo or other processes.<sup>[2]</sup> This is a controversial issue, but the practice still occurs, and it is a commonly used treatment by many physicians (17% to 80%) in the routine clinical practice.<sup>[3–6]</sup> In recent years, the trend for placebo prescription has changed; a shift from other medical specialties toward family physicians. The data suggest that more than half of physicians prescribe placebo treatment, and its use by the family physicians is more as compared to other disciplines.<sup>[7]</sup> Family physicians usually see patients who are chronically ill with nonspecific complaints and prescribing practices differs (29%–97% at least once in their career, 15%–89% monthly, and 1%–75% weekly) among countries.<sup>[1,7,8]</sup> Studies have shown differences

in the attitudes and opinions on the use of placebo in everyday practice.<sup>[9–13]</sup>

In general, placebo is considered ethical, effective, and play a significant role in patient care.<sup>[2,13]</sup> In a recent meta-analysis, the most important reasons reported for the use of placebo were to calm the patient, to avoid conflict, or to handle an unjustified demand of a patient, treating nonspecific complaints, and use as a supplement to other therapies.<sup>[7]</sup>

The pattern of placebo prescriptions differs across nations. Factors that might play a role in this variability include

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differences in terms of culture, region, country, professional views, and health-care models.<sup>[8]</sup> At present, the studies on why some physicians prescribe placebo and others not are relatively limited in Saudi Arabia. To elucidate how placebo prescription varies among physicians; we surveyed a sample of family physicians about their placebo prescribing practices, such as the frequency of prescribing, attitudes, beliefs, and prescribing habits in clinical practice.

## METHODS

### Study design

A cross-sectional, descriptive study.

### Study population

Participants were physicians and residents working in the primary health-care center of Family and Community Medicine Department at the King Saud University Riyadh, Saudi Arabia during the year 2017–2018. The physicians were a mix from different ethnic and cultural backgrounds. However, the residents were Saudis with a fairly homogenous set with similar ethnicity and cultural backgrounds.

### Sampling method and procedure

The sampling frame included all primary care physicians and residents in the department of family medicine who were running their clinics at the primary health care center.

Using the open source Monkey Survey web-based application tool, we designed our survey to collect self-reported information concerning placebos in the clinical practice. Participants received an E-mail invitation explaining the purpose of the study, the guarantee of anonymity, and an individualized online link to the research questionnaire. A maximum of three E-mail reminders were sent to physicians who did not respond. Participation was voluntary. Data collection lasted around 2 months. No incentives were offered for survey completion. More than 80% (87/108) participants in the sample completed the questionnaire.

### Questionnaire

The questionnaire comprised of two sections: the first part consisted of questions that covered the individual demographic traits of the physicians (age, gender, graduation year, practice type, primary care physicians, or resident under training), nationality, and topics such as the frequency of placebo use and the circumstances of its administration. The second part consisted of seven statements about ethical position and professional attitude toward placebo prescription on a seven-item Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, and 7 = strongly agree). It also had items on information given to patients who receive a placebo treatment, circumstances accompanying placebo use in routine care. Several of the survey questions was adapted from a previous study.<sup>[14]</sup> The Cronbach alpha reliability coefficient of the questionnaire was 0.75.

## Data analysis plan

The data were analyzed using IBM Statistical Package for the Social Sciences Statistics for Windows, version 21 (IBM Corp., Armonk, N.Y., USA). Descriptive statistics and frequencies were calculated to examine the individual traits of physicians. Chi-square/Fisher exact tests were used, and all statistical comparisons were considered significant at a level of <0.05.

## Ethics approval

The current study was approved by the Institutional Review Board of the College of Medicine; King Saud University (reference # E-17-2727).

## RESULTS

Of the 108 surveyed participants, 80.5% (87) completed and returned the questionnaire. Male and female respondents represented 66.7% and 33.3% of the samples, respectively. The mean age of the participants was  $41.3 \pm 12$ . Most of the doctors were Saudi (81.6%). Majority (60.9%) were physicians with more than 15 years of working experience [Table 1].

### Relationship between variables

There were statistically significant associations between physician demographics. A significant association was found between age and placebo prescription. Older physicians (age >40 years) with more experience in clinical practice (>15 years) were more likely to be prescribers than younger physicians ( $P = 0.033, 0.033$ ). The differences between placebo prescribers and nonprescribers in relation with demographic data are shown in Table 2.

### Frequency of placebo use

Overall, 21% ( $n = 18$ ) of physicians reported using placebos in clinical practice. Thirteen percent ( $n = 11$ ) of respondents had used a placebo at least once in a year, whereas 8% ( $n = 7$ ) reported prescribing placebos as often as once a month, 28% ( $n = 24$ ) had never prescribed it while 52% ( $n = 45$ )

**Table 1: Respondents sociodemographic characteristics ( $n=87$ )**

Characteristics	Physicians, $n$ (%)
Age (years)	
≤40	40 (46)
>40	47 (54)
Sex	
Male	58 (66.7)
Female	29 (33.3)
Nationality of physicians/trainee	
Saudi national	71 (81.6)
Non-Saudi national	16 (18.4)
Work experience (years)	
15	34 (39.1)
>15	53 (60.9)
Status of doctors	
Resident	34 (39.1)
Physician	53 (60.9)

**Table 2: Relations between placebo prescription and sociodemographic characteristics**

Variable	Do not prescribe placebo, n (%)	Prescribe placebo, n (%)	$\chi^2$ /Fisher's exact test	P
Age (years)				
<40	36 (52.2)	4 (22.2)	5.156	0.033*
>41	33 (47.8)	14 (72.8)		
Gender				
Males	44 (63.8)	14 (77.8)	1.261	0.400
Females	25 (36.2)	4 (22.2)		
Nationality				
Saudi	60 (86.9)	11 (61.1)	6.354 <sup>a</sup>	0.019*
Non-Saudi	9 (13.1)	7 (38.9)		
Years since graduation				
15	31 (44.9)	3 (16.7)	4.789 <sup>a</sup>	0.033*
>15	38 (55.1)	15 (83.3)		
Status				
Physician	41 (59.4)	12 (66.7)	0.315 <sup>a</sup>	0.603
Resident	28 (40.6)	6 (33.3)		

\*Significant  $P < 0.05$ 

were not sure about the frequency of placebo prescribing in their practice. The results differed strongly among physician's frequency of prescribing placebo. Higher placebo prescribing practice among non-Saudi physicians 43.8% (7/16) compared to Saudi physicians 15.5% (11/71), and it was statistically significant ( $P = 0.019$ , odds ratio = 6.35). No significant associations were found between gender and placebo prescription [Table 2].

### Attitudes toward administration in clinical practice

Regarding the effectiveness of prescribing placebo, 40% reported it to be effective ( $n = 34$ ) and it was statistically significant between prescribers and nonprescribers ( $\chi^2_{(1)} = 18.6$ ,  $P = 0.000$ ) [Table 3].

### Ethical stance toward use of placebos in clinical practice

Overall, only 25% ( $n = 22$ ) of respondents indicated placebos use is acceptable ethically ( $\chi^2_{(1)} = 7.33$ ,  $P = 0.013$ ) [Table 4]. Majority of the Saudi physicians (68%,  $n = 15$ ) considered placebo treatment ethically acceptable as compared to their non-Saudi counterparts (32%,  $n = 7$ ); ( $P = 0.060$ ) [Table 4]. Only 17% ( $n = 15$ ) of the respondents thought that the placebo use in clinical practice should be categorically prohibited. In addition, 29% ( $n = 25$ ) of physicians agreed that placebos could be permitted in certain circumstances after informed consent.

### Allowed if it has demonstrated clinical efficacy

Most physicians (80%,  $n = 70$ ) believed that their patients could benefit from placebos if the scientific data of efficacy exists. Personal clinical experience of placebo efficacy was considered as an important factor when prescribing placebos (78%,  $n = 68$ ;  $P = 0.013$ ).

### Information given to patients

The methods used by physicians to inform the patients about placebo prescription varied. A difference emerged between prescribers and nonprescribers when asked that while giving placebo what a doctor should say? Overall,

majority (76%,  $n = 66$ ) indicated placebos use could be prescribed without notifying the patients.

Of those prescribing placebos, 56% said that they will inform their patients as compared to 16% ( $n = 11$ ) of nonprescribers ( $P = 0.001$ ). Of the prescribers, 71% ( $n = 15$ ) introduced it as "a medicine without specific effect," 19% ( $n = 4$ ) as "a medicine" and only 10% ( $n = 2$ ) of the physicians explicitly said, "it is a placebo."

### Reasons and circumstances of placebo use

The reasons reported by the physicians to placebo prescription varied and are shown in Figure 1.

The most common justifications given for placebo prescription were to satisfy a complaining patient (28% calm the patient (23%,  $n = 20$ ), and as a supplemental treatment to other medicines (21%,  $n = 18$ ). Other reasons included treatment for nonspecific symptoms (19.5%,  $n = 19$ ), were as a diagnostic tool 14% ( $n = 12$ ), pain management 11.5% ( $n = 10$ ); it was used barely 2.3% ( $n = 2$ ) as a substitute while titrating the dose. In comparison between prescribers and nonprescribers for placebo, it was statistically significant only when used as a supplement medicine ( $P = 0.009$ ) and for the treatment of nonspecific symptoms ( $P = 0.006$ ) [Figure 1].

### DISCUSSION

The results of this study show that placebo prescribing is not a popular part of medical treatment among family physicians in Saudi Arabia. The lower placebo prescribing pattern is contrary to the findings of a recent systematic review and meta-analysis.<sup>[7]</sup> Our results confirm previous findings from other countries that the frequency and patterns of usage vary considerably between physicians from different ethnic origins, perhaps reflecting sociocultural impact.<sup>[15]</sup> However, uncertainty remains as the data on self-reported attitudes

**Table 3: Attitudes and ethical consideration toward placebo prescription among prescribers and nonprescribers**

Variable	Do not prescribe placebo, <i>n</i> (%)	Prescribe placebo, <i>n</i> (%)	$\chi^2$ /Fisher's exact test	<i>P</i>
No effectiveness	50 (94.3)	3 (5.7)	18.668	0.000
Effectiveness	19 (56)	15 (44)		
Allowed if scientific data of efficacy exists				
Disagree	16 (23.2)	1 (5.6)	2.823	0.109
Agree	53 (76.8)	17 (94.4)		
Allowed if my clinical experience supports efficacy				
Disagree	17 (24.6)	2 (11.1)	1.530	0.339
Agree	52 (75.4)	16 (88.9)		
<b>Of the following situations, please mark all those in which you would or have prescribed placebo</b>				
As a diagnostic tool (to distinguish between real and imaginary symptoms, or organic and psychological symptoms)				
No	62 (89.9)	13 (72.2)	3.733	0.067
Yes	7 (10.1)	5 (27.8)		
As a supplement for other medicines				
No	59 (85.5)	10 (55.6)	7.805	0.009
Yes	10 (55.6)	8 (44.4)		
As a substitute while titrating the dose of a medicine (e.g., psychotropic medication withdrawal)				
No	67 (97.1)	18 (100)	0.534	1.000
Yes	2 (2.9)	0 (0.0)		
To calm a patient				
No	55 (79.7)	12 (66.7)	1.372	0.344
Yes	14 (20.3)	6 (33.3)		
To satisfy a complaining patient				
No	53 (76.8)	10 (55.6)	3.229	0.084
Yes	16 (23.2)	8 (44.4)		
As a treatment for unspecific symptoms				
No	60 (87.0)	10 (55.6)	8.953	0.006
Yes	9 (13.0)	8 (44.4)		
For pain control				
No	61 (88.4)	16 (88.9)	0.003	1.000
Yes	8 (11.6)	2 (11.1)		
While giving placebo doctor should				
Say nothing to the patient	58 (84.1)	8 (44.4)	12.234	0.001
Inform the patient that it is a medicine/placebo/or both	11 (15.9)	10 (55.6)		
Placebo is always forbidden				
Disagree	59 (85.5)	13 (72.2)	1.766	0.290
Agree	10 (14.5)	5 (27.8)		
Placebo is allowed after informed consent				
Disagree	51 (73.9)	11 (61.1)	1.143	0.380
Agree	18 (26.1)	7 (38.9)		
Consider placebo treatment ethically acceptable				
Disagree	56 (81.2)	9 (50.0)	7.336	0.013
Agree	13 (18.8)	9 (50.0)		

and behaviors is not sufficient to explain the factors for the variance in prescribing; whether a “culture bound syndrome” or other challenges.

Our results confirm previous findings from other countries that treatments can differ as a result of professional attitude.<sup>[6]</sup> Physicians behavior differed from their beliefs in managing patients by prescribing placebo. Majority of non-Saudi

physicians would use a placebo in the clinic in comparison to their counterparts. The findings of this study show that placebo prescribing practices can vary as a function of country and culture. It highlights a different pattern of placebo use by the physicians in light of regional differences; the sociocultural values and the professional experience. A plausible explanation for the difference could be that non-Saudi physicians used the placebos to cope with difficult

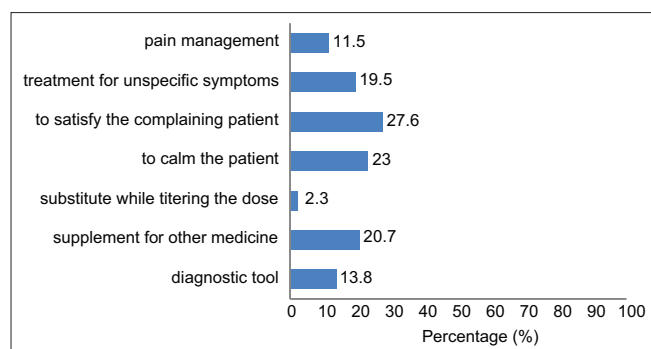
**Table 4: Attitudes and ethical consideration toward placebo prescription among Saudi and non-Saudi physicians**

Variable	Saudi, n (%)	Non-Saudi, n (%)	$\chi^2$ /Fisher's exact test	P
No effectiveness	47 (66.2)	6 (37.5)	4.52	0.03
Effectiveness	24 (33.8)	10 (62.5)		
Allowed if scientific data of efficacy exists				
Disagree	11 (15.5)	6 (37.5)	4.02	0.04
Agree	60 (84.5)	10 (62.5)		
Allowed if my clinical experience supports efficacy				
Disagree	13 (18.3)	6 (37.5)	2.82	0.09
Agree	58 (81.7)	10 (62.5)		
<b>Of the following situations, please mark all those in which you would or have prescribed placebo</b>				
As a diagnostic tool (to distinguish between real and imaginary symptoms, or organic and psychological symptoms)				
No	60 (84.5)	9 (56.3)	6.35	0.02
Yes	11 (15.5)	7 (43.8)		
As a supplement for other medicines				
No	57 (80.3)	12 (75.0)	0.22	0.63
Yes	14 (19.7)	4 (25.0)		
As a substitute while titrating the dose of a medicine (e.g., medication withdrawal)				
No	70 (98.6)	15 (93.8)	1.36	0.24
Yes	1 (1.4)	1 (6.3)		
To calm a patient				
No	56 (78.9)	11 (68.8)	0.75	0.51
Yes	15 (21.1)	5 (31.3)		
To satisfy a complaining patient				
No	9 (56.3)	54 (76.1)	2.56	0.12
Yes	7 (43.8)	17 (23.9)		
As a treatment for unspecific symptoms				
No	58 (81.7)	12 (75.0)	0.37	0.73
Yes	13 (18.3)	4 (25.0)		
For pain control				
No	64 (90.1)	13 (81.3)	1.01	0.38
Yes	7 (9.9)	3 (18.8)		
While giving placebo doctor should:				
Say nothing to the patient	55 (77.5)	11 (68.8)	1.60	0.42
Inform the patient that it is a medicine	3 (4.2)	1 (6.3)		
It is a placebo	1 (1.4)	1 (6.3)		
A medicine without any effect to the complaint	12 (16.9)	3 (18.8)		
Placebo is always forbidden				
Disagree	59 (83.1)	13 (81.3)	0.03	1.0
Agree	12 (16.9)	3 (18.8)		
Placebo is allowed after informed consent				
Disagree	54 (76.1)	8 (50.0)	4.33	0.03
Agree	17 (23.9)	8 (50.0)		
Consider placebo treatment ethically acceptable				
Disagree	56 (78.9)	9 (56.3)	3.53	0.06
Agree	15 (21.1)	7 (43.8)		

patients and as a means to overcome the barriers such as language, time constraints in a busy clinic, patient's beliefs and expectations, uncertainty or experiential knowledge gleaned from personal experiences of giving placebos. Recent evidence suggests that primary care physicians serve an unselected population of patients with diagnostic uncertainty, a wide variety of complaints and symptoms,

and pressure to treat. Physicians usually opt for placebos either to get a patient stop complaining, to avoid conflict or for treating nonspecific symptoms or unjustified demand for medication. This is line with international data that reports the most common reasons for placebo use as unreasonable request for medicines, to avoid argument with patients, for nonspecific symptoms or as a supplement.<sup>[7,16]</sup>





**Figure 1:** Reasons and circumstances of placebo use by physician/resident

This suggests that placebo practices can change significantly even among physicians of the same specialty working and sharing common responsibilities. This area needs future research to untangle the reasons for the differences.

Apart from nationalities, another area of dissonance involved the age and experience of the physicians in terms of practice years. Senior physicians prescribed more placebos than junior ones. This is in contrast to the findings of previous studies aiming to determine the placebo use among western Family Physicians; younger physicians were more likely to give placebos than older physicians.<sup>[14,16]</sup> Many factors can affect the prescribing practices. A possible explanation could be the difference in education system and cultural values. Experience plays a vital role in decision making.<sup>[16]</sup> Both senior and junior colleagues are often involved in clinical practice, but they may vary in professional approaches. Senior physician's decisions are based more on clinical experience rather than theory. They usually recognize the relative merits of placebos on body-mind connection and organize their knowledge differently for its utilization as compared to juniors who often see the body as an isolated entity.<sup>[4]</sup> Another reason could be that junior physicians are trained to administer or prescribe only when necessary. This philosophy conflicts with their everyday experiences when dealing with difficult patients due to lack of experience; so they face considerable uncertainty. On the other hand, seniors see the use of nonspecific treatments as a problem-solving tool that can be used to manage a variety of difficult situations in routine practice.<sup>[17]</sup> Nevertheless, another important reason could be to reduce the burnout while dealing with perplexing situations.

The findings of this study highlighted a much lower trend in placebo prescribing. Reported literature provides evidence for a wide variability in frequency of the use of placebos in clinical contexts. Results of a Danish survey showed that 86% of 545 general practitioners used a placebo treatment at least once within the past year which is much higher as compared to 13% in the present study.<sup>[13]</sup> Small-scale studies from Israel, the UK, Sweden, and New Zealand report matching results.<sup>[6,18-20]</sup>

With regard to the situations associated with placebo use, the most frequently reported reason was for psychological effect;

to satisfy a complaining patient or to calm the patient. This is similar to findings of other studies that suggest placebos affect the psychobiological functioning and thus provides symptomatic relief.<sup>[12,16,21]</sup> However, for other situations like pain management, only a minority (11%) of physicians indicated its use as compared to a previous study which reported 48%.<sup>[12]</sup>

In general, the use of placebos in practice does not seem to follow a straightforward pattern; in particular, not from a global or cross-cultural perspective. Physicians might have multiple reasons such as; considering it safe, having a beneficial effect and helping patients feel they are being taken care of. Understanding the prescribing practices among physicians is complex and the reasons for this are unclear.

The controversy on the ethical use and effectiveness of placebos in clinical practice is over two centuries old. The ethical problem might be considering it a deception. On these grounds, some might contemplate placebo treatment to be unethical and a violation of the patients right and therefore prohibited.<sup>[22]</sup> This study shows a lower rate of ethical acceptance; which is opposite to the previous published literatures.<sup>[13,16]</sup> However, the prescribing trend has decreased as compared to the previously reported study in Saudi Arabia.<sup>[23,24]</sup>

There are several unanswered questions which our study could not address. Motivation and attitudes towards placebo use are complex.<sup>[3]</sup> Quantitative studies cannot capture all behaviors to make reliable conclusions; as there is always a possibility to miss on many important issues. The use of self-administered inventories may be subject to recall bias; therefore, the interpretation of our findings remains speculative.

The results cannot be generalized as they are from physicians from a single institution and may not be representative of family physicians working in the community. Future studies among a broader sample of physicians should be directed to identify the cues of physicians that may provide a better understanding of the subject.

## CONCLUSION

The results of this study suggest that minority of the physicians in Riyadh, the capital city of Saudi Arabia used placebos in clinical practice. Clinical experience and cross border variation were seen among physicians in placebo prescribing practices. Physicians used placebos primarily for psychological benefit. Additional studies are needed to take a closer look and provide additional insight at the relationship between placebo prescribing and demographic attributes such as culture, ethnicity and language.

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## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Tilburt JC, Emanuel EJ, Kaptchuk TJ, Curlin FA, Miller FG. Prescribing "placebo treatments": Results of national survey of US internists and rheumatologists. *BMJ* 2008;337:a1938.
2. Miller FG, Colloca L, Kaptchuk TJ. The placebo effect: Illness and interpersonal healing. *Perspect Biol Med* 2009;52:518-39.
3. Fässler M, Meissner K, Schneider A, Linde K. Frequency and circumstances of placebo use in clinical practice – A systematic review of empirical studies. *BMC Med* 2010;8:15.
4. Kermen R, Hickner J, Brody H, Hasham I. Family physicians believe the placebo effect is therapeutic but often use real drugs as placebos. *Fam Med* 2010;42:636-42.
5. Howick J, Bishop FL, Heneghan C, Wolstenholme J, Stevens S, Hobbs FD, *et al.* Placebo use in the United kingdom: Results from a national survey of primary care practitioners. *PLoS One* 2013;8:e58247.
6. Linde K, Friedrichs C, Alscher A, Wagenpfeil S, Meissner K, Schneider A. The use of placebo and non-specific therapies and their relation to basic professional attitudes and the use of complementary therapies among German physicians – A cross-sectional survey. *PLoS One* 2014;9:e92938.
7. Linde K, Atmann O, Meissner K, Schneider A, Meister R, Kriston L, *et al.* How often do general practitioners use placebos and non-specific interventions? Systematic review and meta-analysis of surveys. *PLoS One* 2018;13:e0202211.
8. Lichtenberg P. The role of the placebo in clinical practice. *Mcgill J Med* 2008;11:215-6.
9. Fässler M, Gnädinger M, Rosemann T, Biller-Andorno N. Placebo interventions in practice: A questionnaire survey on the attitudes of patients and physicians. *Br J Gen Pract* 2011;61:101-7.
10. Berger JT. Placebo medication use in patient care: A survey of medical interns. *West J Med* 1999;170:93-6.
11. Ortiz R, Chandros Hull S, Colloca L. Patient attitudes about the clinical use of placebo: Qualitative perspectives from a telephone survey. *BMJ Open* 2016;6:e011012.
12. Fässler M, Gnädinger M, Rosemann T, Biller-Andorno N. Use of placebo interventions among Swiss primary care providers. *BMC Health Serv Res* 2009;9:144.
13. Hróbjartsson A, Norup M. The use of placebo interventions in medical practice – A national questionnaire survey of Danish clinicians. *Eval Health Prof* 2003;26:153-65.
14. Simeos JB, Costa PS, Yaphe J. Placebo prescription and empathy of the physician: A cross-sectional study. *Eur J Gen Pract* 2017;23:98-104.
15. Harris CS, Campbell NK, Raz A. Placebo Trends across the Border: US versus Canada. *PLoS One* 2015;10:e0142804.
16. Sherman R, Hickner J. Academic physicians use placebos in clinical practice and believe in the mind-body connection. *J Gen Intern Med* 2008;23:7-10.
17. Raz A, Raikhel E, Anbar RD. Placebos in medicine: Knowledge, beliefs, and patterns of use. *Mcgill J Med* 2008;11:206-11.
18. Nitzan U, Lichtenberg P. Questionnaire survey on use of placebo. *BMJ* 2004;329:944-6.
19. Gray G, Flynn P. A survey of placebo use in a general hospital. *Gen Hosp Psychiatry* 1981;3:199-203.
20. Thomson RJ, Buchanan WJ. Placebos and general practice: Attitudes to, and the use of, the placebo effect. *N Z Med J* 1982;95:492-4.
21. Lynöe N, Mattsson B, Sandlund M. The attitudes of patients and physicians towards placebo treatment – A comparative study. *Soc Sci Med* 1993;36:767-74.
22. Lichtenberg P, Heresco-Levy U, Nitzan U. The ethics of the placebo in clinical practice. *J Med Ethics* 2004;30:551-4.
23. Hassan T, Fauzi M, Hasan D. Perceptions of placebo therapy among health practitioners in Jazan region of Saudi Arabia. *Int J Health Sci (Qassim)* 2011;5:45-9.
24. Al Jumaih A, Al Kadhimi I, Al-Seraya A, Nicholls A, Al Sayyari A. Placebo prescribing habits and views in a University Hospital. *Webmed Central Bioeth* 2010;1:WMC00587.