Applying the theory of planned behaviour to pharmacists’ beliefs and intentions about the treatment of vaginal candidiasis with non-prescription medicines

Anne Walkera, Margaret Watsonb, Jeremy Grimshawa and Christine Bondb


**Background.** It is important to understand health professionals’ attitudes and beliefs about practice and the barriers to achieving best practice. The theory of planned behaviour (TPB) has been widely used to understand behaviour. In this study, TPB was used to explore the psychological variables that influence community pharmacists and the supply of non-prescription medicines.

**Objectives.** The objectives of the study were to: (i) apply the TPB to community pharmacy behaviour; (ii) identify barriers to/facilitators of evidence-based practice; (iii) describe psychological variables and responses to written scenarios of patients presenting in community pharmacies for non-prescription antifungals for the treatment of vulvovaginal candidiasis; and (iv) to examine the relationships between beliefs and behavioural intention.

**Methods.** A questionnaire survey was constructed using the TPB and disseminated to pharmacies in Grampian, Scotland. The purpose of the study was to explore community pharmacists’ attitudes, beliefs and intentions about the supply of non-prescription antifungals for the treatment of vulvovaginal candidiasis.

**Results.** Of the 121 questionnaires disseminated, 76 (63%) were returned. Behavioural intention to sell antifungals to women with vulvovaginal candidiasis symptoms was strong. Attitude towards recommending these medicines was positive. However, only half of the sample responded appropriately to all four patient scenarios (n = 42, 54%). Most pharmacists felt that they were able to recommend antifungals if they wished, but did not feel under social pressure to recommend them. Local doctors did not appear to be influential with respect to selling antifungals. If a customer was elderly, pregnant or if the pharmacist was uncertain of the diagnosis of candidiasis, an antifungal was less likely to be recommended.

**Conclusion.** TPB provides a valid and useful summary of the key psychological variables influencing practice. There is more to pharmacy practice than the knowledge and attitudes of the pharmacist.

**Keywords.** Barriers, community pharmacists, effective professional practice, non-prescription medicines, theory of planned behaviour.

**Introduction**

The availability of over-the-counter (OTC) medicines that can be purchased from community pharmacies is growing worldwide.1 As a result, community pharmacists and their staff [e.g. medicine counter assistants (MCAs)] have an expanding range of medicines that they can recommend for the treatment of minor illness. [(An MCA refers to a member of the pharmacy support staff whose main role is the supply of non-prescription medicines (NPMs) to customers. All MCAs are required to have completed an accredited training course.2] In the UK, many prescription-only medicines (POMs) have been re-classified to
pharmacy-only and general sales list (GSL) status, including antifungal medicines for the treatment of vulvovaginal candidiasis (thrush). The majority of NPM sales involve MCAs\textsuperscript{3,4} however, it is the community pharmacist who is responsible for ensuring that these medicines are sold appropriately, often requiring them to assess a patient’s symptoms and their medication history. This has required community pharmacists to expand their knowledge and to change their practice where necessary.

There is evidence that the supply of NPMs (i.e. pharmacy-only and GSL medicines) is not always appropriate\textsuperscript{5–9} therefore a change in practice is required. One therapeutic group identified as causing concern to physicians and health professionals in terms of the consequences of inappropriate use is antifungal medicines for the treatment of vulvovaginal candidiasis.\textsuperscript{10–12} Studies have identified a need to help pharmacists promote the appropriate supply of antifungals. To achieve this, it is important to understand pharmacists’ attitudes and beliefs about the use of these drugs and the barriers to their appropriate supply.

**Behaviour change**

Studies of strategies to improve pharmacists’ practice with respect to the sale of NPMs have aimed either to increase their knowledge\textsuperscript{13} or to remind them of their existing knowledge.\textsuperscript{14} These strategies have had variable success.\textsuperscript{13} A key reason for this may be that knowledge is only one factor affecting pharmacy practice. Multiple barriers may exist that prevent knowledge from being applied, e.g. the economic structure of community pharmacy, the current NHS contract, inter-professional conflicts, limitations in knowledge or skills, customer demand and attitudinal factors.\textsuperscript{15–17} A range of barriers specific to the supply of NPMs has been identified.\textsuperscript{4} These include the member of pharmacy personnel involved in the consultation and their attitudes and beliefs about the supply of NPMs, the nature of the consultation, and customer demand and expectation. Research into medical practice has shown that implementation strategies are more likely to be effective if they address the barriers that are relevant to the adoption of a particular practice.\textsuperscript{18} Currently, it is not clear which of the potential barriers should be targeted in strategies to change pharmacy practice with respect to NPMs.

Social–psychological models can be helpful in identifying key determinants of behaviour. Several of these models of behaviour have been used to investigate barriers to the implementation of pharmacy practice change, including the theory of goal-oriented behaviours\textsuperscript{19,20} and the trans-theoretical model of behaviour change.\textsuperscript{21,22} The results suggest that attitudes and self-efficacy may be crucial predictors of practice change among community pharmacists.

**Theory of planned behaviour (TPB)**

The TPB (Fig. 1) is one of the most thoroughly tested and robust of the social psychological models.\textsuperscript{23,24} TPB proposes that behaviour is predicted by the strength of an individual’s intention to behave in that way. Behavioural intention (BI) is predicted by three variables: attitude towards the behaviour, subjective norm (SN) and perceived behavioural control (PBC) over the behaviour. Attitudes, SNs and PBC are assumed to be predictable from an individual’s beliefs about the behaviour. Attitude towards the behaviour is proposed to arise from beliefs about the likely outcomes of the behaviour [behavioural beliefs (BBs)] weighted by an evaluation of the importance of each of the consequences [outcome evaluation (OE)]. SN is assumed to be predicted from beliefs about the views of other important individuals or groups [normative beliefs (NBs)] weighted by the person’s motivation to comply with these groups [motivation to comply (MC)]. In the

\begin{figure}
\centering
\includegraphics[width=\textwidth]{tpb_diagram.png}
\caption{The theory of planned behaviour. Based on Conner and Norman's interpretation of the TPB model\textsuperscript{24}}
\end{figure}
community pharmacy setting, important groups might include other pharmacists, local family physicians, customers and professional organizations. PBC is predicted by beliefs about factors likely to facilitate or inhibit the behaviour [control beliefs (CBs)] weighted by the person’s evaluation of the power that each of these factors has to affect their behaviour [power (P)]. Factors that may be perceived to facilitate or inhibit behaviour might include organizational constraints and customer preferences.

The TPB has been widely used to explore factors associated with health professionals’ beliefs and attitudes to health-related behaviour.24–30 Similar factors may influence community pharmacists’ decision to supply NPMs.

This paper reports a questionnaire survey developed using the TPB to explore community pharmacists’ beliefs and attitudes towards the treatment of vulvovaginal candidiasis using non-prescription antifungals.

**Objectives**

The objectives of the survey were to: (i) apply the TPB to community pharmacy behaviour; (ii) identify barriers to/ facilitators of evidence-based practice; (iii) describe psychological variables and responses to written scenarios of patients presenting in community pharmacies for non-prescription antifungals for the treatment of vulvovaginal candidiasis; and (iv) to examine the relationships between beliefs and behavioural intention.

**Methods**

**Participants and procedure**

In March 2000 a questionnaire constructed using the TPB was mailed to 121 of the 125 community pharmacies in Grampian, Scotland. Pharmacies were excluded from the survey if the pharmacists were members of an antifungal guideline development group (n = 3) or if the pharmacy did not sell OTC antifungals (n = 1) (based on the researcher’s knowledge of the pharmacy). Two reminders were sent.

**Questionnaire development**

The questionnaire was developed using standard methods and question stems suggested by Conner and Norman.24 The questionnaire referred to the treatment of vaginal symptoms in community pharmacies and the use of OTC antifungals given by the oral or intra-vaginal route only. Copies of the questionnaire are available from the corresponding author.

Semi-structured interviews were conducted with a purposive sample (i.e. different pharmacy types and locations) of 19 community pharmacists to identify their beliefs about selling antifungals.31 A list of 65 BBs, 11 NBs and 38 CBs was generated from these interviews. By combining similar responses, this list was reduced to 10 BBs, six NBs and eight CBs. To identify the most salient beliefs, the reduced list was mailed to 30 pharmacists in Tayside to rate their strength of agreement with each item on a 7-point scale and each belief on a 5-point scale in terms of its importance in practice. Eleven (37%) pharmacists responded to the survey. Median scores were calculated for the strength of agreement with, and importance in practice of each of the beliefs in the list. The top seven BBs, three NBs and seven CBs were included in the questionnaire. The final questionnaire was piloted with five academic pharmacists. The survey was then mailed to the 121 community pharmacies.

**Measures**

Items were generated to assess all constructs specified in the TPB: BI (two items); attitude (two items); SN (one item); PBC (one item); BBs and OEs (seven items each); NBs and MC (three items each); and CBs and perceived P (six items each). Responses to all items were rated on 7-point scales, labelled strongly disagree/strongly agree and scored from −3 (strongly disagree) to +3 (strongly agree).

Measures of BBs, NBs and CBs weighted, respectively, by OE, MC and P, were calculated by multiplying item scores together and taking the mean (labelled $BB \times OE$, $NB \times MC$ and $CB \times P$, respectively, possible range +9 to −9).

BI was measured by the question: “In the next month, how likely is it that you will recommend an over-the-counter antifungal preparation to treat vulvovaginal candidiasis?” Respondents indicated their likelihood on a 7-point scale [1 (very likely) to 7 (very unlikely)].

**Self-reported practice**

Self-reported practice was assessed by scoring responses to four patient scenarios (Table 3). The scenarios were developed by three practising community pharmacists who had also participated in the development of evidence-based guidelines for the treatment of vulvovaginal candidiasis in community pharmacies.32 The pharmacists were asked to devise scenarios that, in their experience, reflected the most common presentations for vulvovaginal candidiasis and requests for antifungal treatments, and that tested different guideline recommendations. For each scenario, participants were asked to indicate whether they would sell an antifungal or not, and, if they would, to indicate which type of antifungal they would recommend (topical external, topical intra-vaginal or oral). Responses to each scenario were scored as appropriate or inappropriate, with appropriateness being defined by guideline recommendations.32 Pharmacists who responded appropriately to all four scenarios were classified as guideline compliant.

**Statistical analysis**

The reliability of measures of BI and attitude were assessed by Cronbach’s alpha. Non-parametric analyses
were applied to skewed data. The influence of TPB components on BI was investigated by multiple linear regression. All analyses were conducted using SPSS for Windows version 10.0.

Results

Of the 121 questionnaires distributed, 76 (63%) were returned. The majority of respondents were female \( [n = 49 (64.5\%)] \), working full-time \( [n = 63 (83\%)] \) and employee pharmacists \( [n = 44 (58\%)] \). The pharmacies were single independent pharmacies \( [n = 28 (36.4\%)] \), small multiple pharmacies having between two and nine branches \( [n = 29 (38.2\%)] \) and large multiple pharmacy chains \( [n = 19 (25\%)] \).

**Behavioural intention, attitude, subjective norm, perceived behavioural control and response to patient scenarios**

Ratings for the TPB variables are shown in Table 1. Measures of BI and attitude showed good internal reliability (BI, \( \alpha = 0.85 \); attitude, \( \alpha = 0.99 \)). Measures of internal reliability are not appropriate for weighted measures of behavioural beliefs (BB \( \times \) OE), normative beliefs (NB \( \times \) MC) or control beliefs (CB \( \times \) P) because they are formative rather than reflective indicators of the underlying construct. \(^{33}\) BI to sell antifungal preparations to women with symptoms of vulvovaginal candidiasis was strong (median 2.5). Attitude towards recommending these medicines was positive, with no negative responses. PBC was variable, with scores falling across the full range of the scale. The median (+2) suggests that most pharmacists felt that they were able to recommend antifungals if they wished to. SN scores suggest that the majority of these pharmacists did not feel under social pressure to recommend antifungals (median −2).

Median scores for the belief items are shown in Table 2. The pharmacists agreed with most of the BBs, but disagreed that customers would be embarrassed if offered an antifungal. All of the outcomes associated with recommending these products were evaluated positively and strongly. Local doctors did not appear to be influential with respect to selling antifungals. Customers and the Royal Pharmaceutical Society of Great Britain (RPSGB) were perceived as being in favour of selling antifungals; however, the pharmacists only appeared to be motivated to comply with the latter. All the CBs were endorsed positively, suggesting that they all have an influence on the decision to recommend an antifungal; however, the directions of influence differed. For example, if a customer was elderly, pregnant or if the pharmacist was uncertain of the diagnosis of candidiasis, an antifungal sale was less likely to be recommended. Concurrent use of antibiotics, a previous diagnosis of candidiasis and the pharmacist’s personal experience of vulvovaginal candidiasis all made recommendation of an antifungal more likely.

Responses to the patient scenarios varied, with between 74 and 89% of pharmacists responding appropriately to each scenario (Table 3). Approximately half of the sample responded appropriately to all four scenarios \( (n = 42, 54\%) \) (i.e. guideline compliant).

**Relationships between TPB variables and response to patient scenarios**

The relationship between TPB variables and response to patient scenarios was explored. Scores on BI, attitude, SN, PBC and the weighted and unweighted individual belief items were compared between pharmacists who responded appropriately to all four scenarios (guideline-compliant pharmacists, \( n = 42 \)) and those who did not (guideline-non-compliant pharmacists, \( n = 34 \)). The two groups were indistinguishable on most of these items.

However, guideline-compliant pharmacists had stronger intentions to sell antifungals (compliant median 3, range −0.5 to 3; non-compliant median 2, range −1 to 3; Mann–Whitney \( U = 543.5, P = 0.038 \)); were more likely to believe that antifungals are expensive (compliant median 1, range −3 to 3; non-compliant median 0, range −3 to 3; Mann–Whitney \( U = 447.5, P = 0.006 \)); and to believe that pregnant women should not use them (compliant median 2, range −3 to 3; non-compliant median 0.5, range −3 to 3; Mann–Whitney \( U = 474.5, P = 0.011 \)). They also rated the reduction of symptoms as less important than non-compliant pharmacists, although overall ratings were high in both groups (compliant median 2, range 0–3; non-compliant median 3, range 1–3; Mann–Whitney \( U = 494.5, P = 0.005 \)).

**Relationships between TPB variables**

Relationships between BI, attitude, SN, PBC and the belief-based measures are shown in Table 4. BI to sell an antifungal was associated with a positive attitude towards selling them, but not with any of the other
### Table 2: Median and range for belief items (n = 76)

<table>
<thead>
<tr>
<th>Belief Item</th>
<th>BB (−3 to 3)</th>
<th>OE (−3 to 3)</th>
<th>BB × OE (−9 to 9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I recommend an antifungal preparation the customer will have rapid relief of her symptoms</td>
<td>2 (0, 3)</td>
<td>3 (0, 3)</td>
<td>4 (0, 9)</td>
</tr>
<tr>
<td>An antifungal preparation may delay treatment of a more serious condition</td>
<td>0 (−3, 3)</td>
<td>3 (0, 3)</td>
<td>0 (−9, 9)</td>
</tr>
<tr>
<td>An antifungal preparation will reduce the customer’s symptoms</td>
<td>2 (−1, 3)</td>
<td>3 (0, 3)</td>
<td>4 (−2, 9)</td>
</tr>
<tr>
<td>An antifungal preparation will reduce the risk of infection spreading</td>
<td>1 (−3, 3)</td>
<td>2 (−2, 3)</td>
<td>2 (−9, 9)</td>
</tr>
<tr>
<td>If I recommend an antifungal preparation I will have job satisfaction</td>
<td>1 (−3, 3)</td>
<td>2 (−3, 3)</td>
<td>2 (−9, 9)</td>
</tr>
<tr>
<td>If I recommend an antifungal preparation the customer will be embarrassed</td>
<td>−2 (−3,3)</td>
<td>3 (−3,3)</td>
<td>−4 (−9,9)</td>
</tr>
<tr>
<td>If I recommend an antifungal preparation the customer will be satisfied</td>
<td>2 (−1, 3)</td>
<td>3 (0, 3)</td>
<td>6 (−2, 9)</td>
</tr>
<tr>
<td>GPs in this locality think I should sell antifungal preparations to customers with vaginal symptoms</td>
<td>1 (−3, 3)</td>
<td>1 (−2, 3)</td>
<td>0 (−9, 6)</td>
</tr>
<tr>
<td>The Royal Pharmaceutical Society of Great Britain thinks I should treat customers with vaginal symptoms</td>
<td>2 (−3, 3)</td>
<td>2 (−2, 3)</td>
<td>2 (−6, 9)</td>
</tr>
<tr>
<td>Customers think I should treat vaginal symptoms</td>
<td>2 (0, 3)</td>
<td>0 (−3, 3)</td>
<td>0 (−9, 9)</td>
</tr>
<tr>
<td>Elderly customers (&gt; 60 years) should not use antifungal preparations</td>
<td>2 (−3, 3)</td>
<td>−2 (−3, 3)</td>
<td>−2 (−9, 9)</td>
</tr>
<tr>
<td>OTC antifungal preparations are expensive</td>
<td>0 (−3, 3)</td>
<td>0 (−3, 3)</td>
<td>0 (−9, 9)</td>
</tr>
<tr>
<td>Women who are pregnant women should not use OTC antifungal preparations</td>
<td>1 (−3, 3)</td>
<td>−2 (−3,1)</td>
<td>−2 (−9, 9)</td>
</tr>
<tr>
<td>Antibiotics can predispose a customer to vaginal thrush</td>
<td>3 (−1, 3)</td>
<td>2 (−3, 3)</td>
<td>6 (−9, 9)</td>
</tr>
<tr>
<td>I only recommend OTC antifungal preparations if the customer has had a previous diagnosis of thrush</td>
<td>2 (−3, 3)</td>
<td>2 (0, 3)</td>
<td>2 (−9, 9)</td>
</tr>
<tr>
<td>I am always certain that the diagnosis is vaginal thrush</td>
<td>1 (−3, 3)</td>
<td>−2 (−3, 3)</td>
<td>−2 (−9, 9)</td>
</tr>
<tr>
<td>Personal experience of vaginal thrush influences my treatment of this condition&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1 (−1, 3)</td>
<td>1 (−1, 3)</td>
<td>1 (−3, 9)</td>
</tr>
</tbody>
</table>

<sup>a</sup> n = 46.

BB = behavioural belief; OE = outcome evaluation; BB × MC = behavioural belief weighted by outcome evaluation; NB = normative belief; MC = motivation to comply; NB × MC = normative belief weighted by motivation to comply; CB = control belief; P = perceived power to influence behaviour; CB × P = control belief weighted by perceived power to influence behaviour.

### Table 3: Response to customer scenarios (n = 76)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Appropriate response</th>
<th>n (%) appropriate response</th>
</tr>
</thead>
<tbody>
<tr>
<td>A woman presents in your pharmacy requesting a tube of Canesten™. Her symptoms are itch and a whitish discharge and she has had them for 2 days. She has had thrush previously and is taking no other medication.</td>
<td>Sale of appropriate&lt;sup&gt;a&lt;/sup&gt; antifungal</td>
<td>65 (84%)</td>
</tr>
<tr>
<td>A woman presents in your pharmacy requesting something for thrush. Her symptoms are itch, a yellow discharge and a foul odour. She has had these symptoms for about 2 days She has had thrush previously and is taking no other medication.</td>
<td>No sale</td>
<td>69 (89%)</td>
</tr>
<tr>
<td>A woman presents in your pharmacy describing an itch down below. Her symptoms are itch and a whitish discharge and she has had them for about 2 days. She has had thrush previously and is taking no other medication. She is in the first trimester of pregnancy.</td>
<td>No sale</td>
<td>57 (74%)</td>
</tr>
<tr>
<td>A woman presents in your pharmacy requesting Diflucan™. Her symptoms are itch and a whitish discharge and she has had them for 2 days. She has had thrush previously and is taking no other medication. She has not used Diflucan™ before.</td>
<td>Sale of appropriate&lt;sup&gt;a&lt;/sup&gt; antifungal</td>
<td>68 (88%)</td>
</tr>
<tr>
<td>Appropriate response in all four scenarios</td>
<td>–</td>
<td>42 (54%)</td>
</tr>
</tbody>
</table>

<sup>a</sup> Appropriate antifungal refers to one administered by either the oral or intra-vaginal route.
psychological measures. To explore the extent to which BI could be predicted from the other TPB components, the variables were entered into a linear multiple regression analysis. Following the theoretical formulation of the TPB, measures of attitude, SN and PBC were entered as a first step, with weighted behavioural (BB/H11003 OE), normative (NB/H11003 MC) and control (CB/H11003 P) beliefs entered as a second step. These results confirmed the correlational analysis, with attitude emerging as the only significant predictor of behavioural intention (step 1, $\beta = 0.28$, $P = 0.017$; step 2, $\beta = 0.28$, $P = 0.022$). Overall, the TPB components accounted for 14–19% of the variance in behavioural intention (step 1, $R^2 = 0.14$, $P = 0.017$; step 2, $R^2 = 0.19$, $P = 0.03$).

### Discussion

**Key findings**

Pharmacists in this study had a positive attitude towards the supply of antifungals to women with symptoms of vulvovaginal candidiasis, and a strong intention to supply these medicines. Attitude was the best predictor of BI, suggesting that interventions to strengthen or promote positive attitudes towards the supply of these drugs may be effective in changing practice. However, BIs were very strong in this study, leaving relatively little potential for behaviour change through this mechanism.

BI was related to self-reported practice. Pharmacists with stronger BIs to supply were more likely to respond appropriately to all the patient scenarios (i.e. guideline compliant), suggesting that intention is an important factor in decision making. However, despite their strong intentions, only half of these pharmacists responded appropriately to all four scenarios, which may imply that factors within the pharmacy setting are also important in decision making [e.g. cost of antifungals, customer characteristics (e.g. pregnant, elderly)]. It might also be a knowledge issue about contra-indications to antifungal use.

The relationship between BI to sell antifungals and guideline-compliant action appears to be complex. Few differences were found between guideline-compliant and non-compliant pharmacists with any of the psychological measures. This suggests that pharmacists’ beliefs were not the key factors in determining their decision to recommend an antifungal.

**Limitations of survey**

The pharmacists’ intentions may have been their intention to supply any antifungal (i.e. oral, intra-vaginal or external), whereas the scenarios referred only to the oral or intra-vaginal administration of these drugs. This could have resulted in a mismatch between measures of behaviour and measure of BI, thus reducing the strength of the relationship between them. A second methodological issue relates to the status of the responses to the written scenarios. These were included as a measure of self-reported practice. A review of self-report suggests this has limited validity as a measure of health professional practice. This is a serious methodological issue for studies of health professional practice. Objective measures of practice are often difficult to obtain and may not always be feasible because of ethical issues and patient confidentiality. Self-report is often the only ethical and practical option, although it has been suggested that individuals may overestimate their performance by as much as 20%. If people differentially overestimate their performance, then this would lead to difficulties with interpretation.

**Implications for research and practice**

The results showed that a social–psychological approach to the understanding of pharmacy practice was beneficial. The TPB provided a valid and useful summary of the key psychological variables influencing practice. Factors other than attitudes influence practice, and therefore need to be targeted by behaviour change strategies. These findings concur with a study of Canadian pharmacists and their provision of general

<table>
<thead>
<tr>
<th>Behavioural intention</th>
<th>Attitude</th>
<th>Subjective norm</th>
<th>PBC</th>
<th>BB × OE</th>
<th>NB × MC</th>
<th>CB × P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioural intention</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.35**</td>
<td>–</td>
<td>0.09</td>
<td>–0.07</td>
<td>–0.10</td>
<td>0.05</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>–0.09</td>
<td>–0.07</td>
<td>0.10</td>
<td>0.21</td>
<td>0.07</td>
<td>–0.13</td>
</tr>
<tr>
<td>PBC</td>
<td>0.10</td>
<td>0.21</td>
<td>0.11</td>
<td>0.02</td>
<td>0.16</td>
<td>–0.07</td>
</tr>
<tr>
<td>BB × OE</td>
<td>0.24*</td>
<td>0.38**</td>
<td>0.02</td>
<td>0.25*</td>
<td>0.19</td>
<td>0.04</td>
</tr>
<tr>
<td>NB × MC</td>
<td>–0.10</td>
<td>0.07</td>
<td>0.16</td>
<td>0.19</td>
<td>0.24*</td>
<td>–0.13</td>
</tr>
<tr>
<td>CB × P</td>
<td>0.05</td>
<td>–0.13</td>
<td>–0.07</td>
<td>–0.13</td>
<td>0.04</td>
<td>–0.11</td>
</tr>
</tbody>
</table>

*P < 0.05; **P < 0.01.
pharmaceutical care (i.e. not specific to NPM supply), and suggest that providing pharmaceutical care is not just a function of individual decision making. Further research is needed to investigate what these factors might be and how they might be targeted by future interventions to optimize practice.

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Declaration

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References