



FIP Development Goals

What community pharmacy teams need to support good hygiene as part of people's self-care

2023



Colophon

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International Pharmaceutical Federation (FIP)
Andries Bickerweg 5
2517 JP The Hague
The Netherlands
www.fip.org

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Authors and editors:

Christopher John (FIP Lead for Data and Intelligence)
Sherly Meilianti (FIP Data and Intelligence Specialist)
Diala Koudmani (FIP Global Pharmaceutical Observatory – intern)
Farah Aqqad (FIP Regional Engagement, Support and Development Manager)

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Executive summary

Self-care is often thought of as what people do for themselves to establish and maintain health, and to prevent and deal with illness. According to the World Health Organization, it is a broad concept encompassing nutrition (type and quality of food eaten), lifestyle (sporting activities, leisure etc), environmental factors (living conditions, social habits etc), socioeconomic factors (income level, cultural beliefs etc), self-medication and hygiene (general and personal).¹

This study, which took the form of an online questionnaire, aimed to describe community pharmacy insights into hygiene and pharmacy teams' role in addressing germ concerns of the public across India, Indonesia, Saudi Arabia, South Africa and Thailand.

The findings from our literature review showed that the concept of providing hygiene care advice has been differently shaped pre- and post-COVID times. Before the COVID-19 pandemic, the area of focus was limited to oral hygiene. All studies reviewed in the literature reinforced the vital role of community pharmacists as the public's first choice of healthcare provider in mitigating the spread of the disease as well as their prominent contribution to overall emergency management. There was also an unequivocal need to support, train and educate community pharmacists and their teams to improve their knowledge because the concept of increasing personal hygiene awareness is a focus area of community pharmacists in developed and developing countries.

Key findings:

- Total respondents: 60 (the majority from India (68.3%) and community pharmacists (90.0)).
- Over three-quarters of respondents (46, 76.7%) believed that their customers were aware of germs and infections.
- Forty-nine respondents (81.7%) across the five countries reported that pharmacists provided hygiene advice to the public. Apart from pharmacists, pharmacy support staff also provided advice in India, Indonesia and South Africa. Pharmacy retail staff also provided advice in India, Indonesia, South Africa and Thailand.
- More than half of the respondents across the five countries reported that avoidance of respiratory, viral communicable, and food and waterborne infections were the most common germ concerns that the public expressed to them.
- In general, most respondents indicated that they were "extremely comfortable" to "somewhat comfortable" discussing hygiene areas with their customers. The role of hand hygiene in reducing the spread of infection has been found to be the area most respondents were extremely comfortable talking about
- Regarding advice/solutions provided by the community pharmacy team, more than three-quarters (44, 73.3%) of respondents across the five countries indicated that they provided advice on appropriate antibiotic use.
- Lack of time was reported by 27 respondents (45%) across the five countries as a barrier preventing community pharmacy teams from providing household and personal hygiene education. Only respondents in India, Indonesia and South Africa reported a lack of confidence in pharmacists when it comes to offering health advice.
- Public education about the importance of hand hygiene and disinfection in preventing the spread of infection was mentioned by 38 participants (63.3%) and was the most popular approach in India, Indonesia, South Africa and Thailand.
- Forty participants (66.7%) agreed or strongly agreed that the long-term and excessive use of disinfectants can potentially increase or have an impact on antimicrobial resistance.
- All five countries reported that more than half of respondents (35, 58.3%) obtained hygiene information as part of their continuing professional development.
- Thirty participants (50.0%) across the five countries indicated their top learning need was to give customers advice that met their needs.

- E-learning (webinars, e-educational materials) was selected by 42 respondents (70.0%) as the preferred format of education and training programmes required by the community pharmacy team.

As evidenced throughout this report, community pharmacists and their teams can play a leading role in providing reliable recommendations and educating patients on health hygiene, engaging and empowering patients in self-care, and minimising the spread of contagious diseases, ultimately contributing to improving our communities' overall health.

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1 Introduction

Self-care is often thought of as what people do for themselves to establish and maintain health, and to prevent and deal with illness. According to the World Health Organization, it is a broad concept encompassing nutrition (type and quality of food eaten), lifestyle (sporting activities, leisure etc.), environmental factors (living conditions, social habits etc.), socioeconomic factors (income level, cultural beliefs etc.), self-medication and hygiene (general and personal).¹ Since the start of COVID-19 pandemic, pharmacy professionals have expanded their role in supporting people's self-care, including advice on hygiene and disinfection.

Undertaking routine hygiene habits as part of self-care can limit the transmission of infectious microorganisms. This has been highlighted recently with hygiene measures such as handwashing playing an important role in containing the threat of COVID-19. Other factors are also important in preventing the spread of "germs" in the home and community. These include (in addition to hand hygiene) surface disinfection, and food and respiratory hygiene.²

Adopting evidence-based hygiene approaches as part of self-care in the home, the workplace, transport systems and leisure facilities offers a way to improve protection against acquiring microorganisms and infections — especially where there are risks of transmission. There are people living in the community, including children, the elderly and clinically vulnerable groups, who are at greater risk of infection. Inadequate hygiene measures can facilitate the transmission of community-based infections which can cause increased morbidity and mortality.²

As the public's first choice of healthcare provider, pharmacists and their teams working in the community can play an important role in mitigating the spread of infection. Educating the public on hygiene and sanitation measures as part of self-care is an important role for the community pharmacy team. By addressing the germ concerns of the public and providing appropriate advice, the pharmacy team can also play an important role in limiting community-acquired antimicrobial-resistant strains.

1.1 Aim and objectives

The aim of this study was to describe community pharmacy insights into hygiene and addressing germ concerns of the public across India, Indonesia, Saudi Arabia, South Africa and Thailand.

The objectives were to:

- Explore hygiene awareness of the community pharmacy team;
- List hygiene areas the community pharmacy team is happy to talk to customers about;
- Describe which members of the community pharmacy team are providing hygiene advice;
- List germ concerns that the public express to community pharmacy teams;
- Discuss the community pharmacy team's knowledge about hygiene's impact on antimicrobial resistance (AMR);
- Explain how pharmacy teams advise or provide solutions to the public about their germ concerns;
- List current and future learning needs of the pharmacy team for hygiene and how these vary across the five targeted nations; and
- Make recommendations for education required to address the learning needs.

2 A review of the literature and existing data

We conducted a systematic literature review to describe community pharmacy insights into hygiene and explore the current evidence of the role of pharmacists in providing pharmaceutical and educational services for patients about personal and general hygiene. Our review also helped identify the pharmacy team's drivers, knowledge gaps and learning needs, and we designed the survey questions (see Appendix) accordingly.

2.1 Search strategy and inclusion criteria

2.1.1 Review of literature

Various keywords (AMR, germs, impact, pharmacists, knowledge, education) mentioned in the objectives were searched using e-databases; however, no results were found while using this combination. Thus, a broader range of keywords and inclusion criteria were selected to retrieve relevant studies.

The databases used for the literature search included PubMed (Mesh search), SCOPUS, Embase and Ovid MEDLINE (see Table 1 for combinations of keywords used). The literature search was conducted in October 2022, and no time limit was imposed to restrict the search. Overall, there is a paucity of evidence regarding the objectives of this project.

Table 1: Literature search combinations

Database (up to 2 October 2021)	Controlled vocabulary and keywords			Citations retrieved	Articles included in this review
PubMed (Mesh search) Different keywords combination	((("Pharmacists"[Mesh]) OR "Pharmacies"[Mesh]) OR "Community Pharmacy Services"[Mesh])	AND	"Hygiene"[Mesh]	47	After excluding duplicates: 1,116 articles. After title and abstract screening: 30 articles. After reviewing the content in detail: 4 articles were included.
	((("Pharmacies"[Mesh] OR "Community Pharmacy Services"[Mesh]) OR "Pharmacists"[Mesh])	AND	"Disinfection"[Mesh]	13	
	((("Role"[Mesh]) AND "Pharmacists"[Mesh]) AND "Pharmacies"[Mesh])	AND	"Self Care"[Mesh]	9	
	((("Role"[Mesh]) AND "Pharmacists"[Mesh]) OR ("Pharmacies"[Mesh] OR "Community Pharmacy Services"[Mesh]))	AND	"Hygiene"[Mesh]	35	
	(("Knowledge"[Mesh]) AND "Pharmacists"[Mesh])	AND	"Hygiene"[Mesh]	0	
Scopus	(TITLE-ABS-KEY (pharmacists) OR TITLE-ABS-KEY (community AND pharmacy) OR TITLE-ABS-KEY (pharmacies)	AND	TITLE-ABS-KEY (hygiene))	985	
Embase Different keywords combination	pharmacists.mp. or pharmacist/ AND community pharmacy.mp. or "pharmacy (shop)"/	AND	hygiene/	25	
	pharmacists.mp. or pharmacist/ AND community pharmacy.mp. or "pharmacy (shop)"/	AND	disinfectant.mp	0	
	pharmacists.mp. or pharmacist/ AND hygiene/	AND	knowledge/	6	

Ovid MEDL	pharmacists.mp. or pharmacist/ AND community pharmacy.mp. or "pharmacy (shop)"/	AND	hygiene/	3	
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A systematic literature approach was conducted to identify and assess the relevant literature. The inclusion criteria of these articles were:

- Studies which involved pharmacists working in the community setting;
- No geographical limitations for the countries included (worldwide);
- All types of studies, audits and reports; and
- Only studies in the English language.

Initially, we identified 1,123 studies from the databases, of which seven were excluded due to duplication. Afterwards, the team members screened 1,116 articles which led to the exclusion of 1,086 studies based on irrelevant titles or abstracts reviewed. Subsequently, 30 articles were reviewed in detail, of which seven articles were included in this literature review. Articles were excluded based on the inclusion criteria selected for this literature. Figure 1 illustrates the literature search profile.

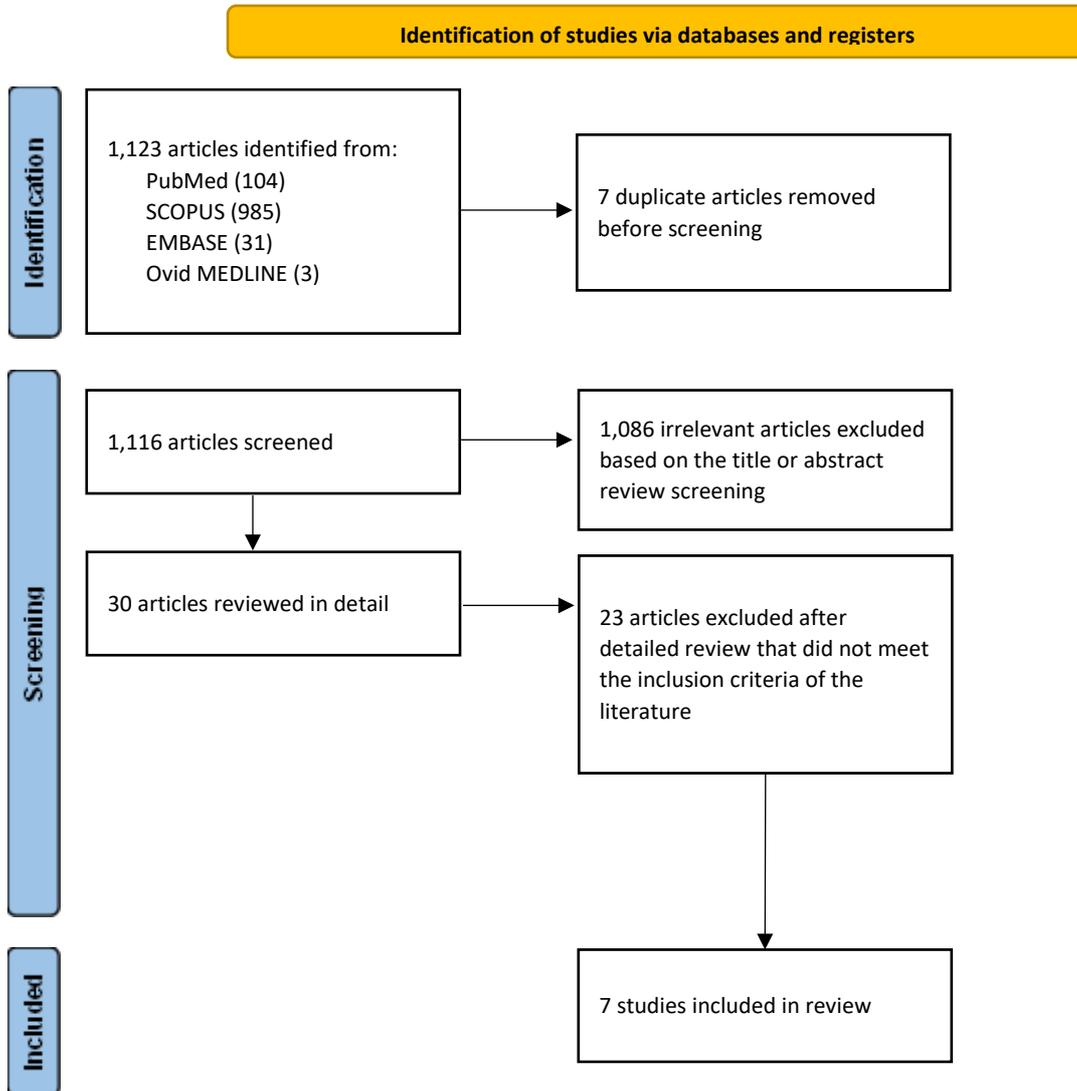


Figure 1. Flowchart of articles identified, excluded and included

2.2 Data extraction and analysis

2.2.1 Role of pharmacists in providing hygiene healthcare advice

A few studies were conducted to investigate the knowledge, attitude and the extended role of pharmacists in providing hygiene healthcare advice. Nevertheless, the findings of the search noticeably show the concept of providing hygiene care advice has been differently shaped pre- and post-COVID times. Before the COVID-19 pandemic, the area of focus was limited to oral hygiene.

Pharmacists were frequently asked to provide advice on oral hygiene care and oral health information only. However, the role of pharmacists has evolved and expanded during the health crisis and proved that patients can benefit from the community pharmacist providing different aspects of pharmaceutical services, including educating service users on different hygiene aspects and other infection prevention measures.^{3,4}

2.2.2 Role of pharmacists in practising personal and environmental hygiene during COVID-19, and educating others

All studies reviewed reinforced the vital role of community pharmacists, as the public's first choice of healthcare provider, in mitigating the spread of COVID-19 as well as their prominent contribution to overall emergency management.³⁻¹⁰

Community pharmacists were charged with implementing government infection control "management strategies" to curb the spread of the infection. Accordingly, infection prevention and control practices were put in place for both staff and patients in community pharmacies. Pharmacy staff were practising hand hygiene with the correct use of alcohol-based formulations and keeping workspaces clean and disinfected regularly to remove any potential sources of infection, as examples of the set measures and procedures.³⁻⁶

In a study conducted in France, "educating services users on hygiene measures" is one of the novel community pharmacists' services identified during the COVID-19 pandemic.³ In Nigeria, community pharmacists also reported educating and counselling patients on personal and environmental hygiene during COVID-19 as part of the services provided, including hand hygiene, and regular cleaning of the work floor, surfaces, tools and products.⁵ A study in Australia assessed community pharmacist's awareness of and response to infection and sanitation control. The results of an online cross-sectional survey showed that out of the 137 respondents, 94.9% of pharmacists noticed regular cleaning in their pharmacy premises, with only 48.2% of the cleaning process done using gloves. Only one-third of pharmacists (38.0%) were aware of the two-step disinfecting and cleaning process of using water followed by a chemical disinfectant.⁶ All these studies highlighted the important role of community pharmacists in educating the public on personal and environmental hygiene during the COVID-19 pandemic.³⁻⁶

2.2.3 Drivers and barriers to pharmacists' roles

Some of the reviewed studies identified the drivers of pharmacists to provide pharmaceutical services during the pandemic. These drivers came from the moral and professional obligation to offer pharmaceutical care assistance and professional satisfaction in terms of the general contribution and integration with other healthcare professionals during the pandemic.^{5,6} However, the reduced workforce in the workplace, extended opening hours, lack of knowledge and experience, and lack of time were considered barriers to handling these services properly.⁴⁻⁷

Drawing from the reviewed studies, it is clear that pharmacists, as the first accessible healthcare providers for the public, play a pivotal role in improving general hygiene and providing healthcare information to patients. However, little is known about how these services were implemented in practice. Moreover, there is a clear gap in terms of the existence of a reliable and trustworthy source of information, a lack of standardised advice and recommendations, and limited educational training programmes and courses.

Therefore, there is an unequivocal need to support, train and educate community pharmacists to improve their knowledge. It is also noted that the concept of increasing personal hygiene awareness is a focus area of community pharmacists in developed and developing countries.

3 Assessing the pharmacy team's involvement and needs in supporting hygiene as part of people's self-care

The review explained in Chapter 2 provided insights into community pharmacists' roles in delivering different hygiene services and educating and advising the public on various hygiene aspects. However, the evidence showed that there is a need to bridge the gap that exists in pharmacists' information and knowledge as providers of these services. Therefore, our survey aimed to collect information on current community pharmacy knowledge and insights into hygiene and germ concerns of the public, determine future learning needs and recommend appropriate training and delivery methods across India, Indonesia, Saudi Arabia, South Africa and Thailand.

3.1 Method

A quantitative cross-sectional survey was undertaken (using the Qualtrics platform) during November and December 2022. The FIP Global Pharmaceutical Observatory project team designed and developed the online survey, which was peer-reviewed. The survey consisted of 17 multiple-choice questions that were constructed by considering the review of the relevant literature and derived from the objectives of the project. The survey comprised three sections:

1. Introduction, project overview, and demography/practice information-related questions;
2. Community pharmacists'/community pharmacy team's awareness and attitudes to hygiene in the community; and
3. Community pharmacists'/community pharmacy team's current hygiene knowledge using a five-point Likert scale.

The invitation email and survey were translated into the official languages of the targeted countries: Arabic, English, Indonesian and Thai. The survey was designed to be completed within 10 minutes. The terms "germs" and "hygiene" were defined to enable all participants across the five nations to have the same understanding of these terms:

- "Germs" refers to the microscopic bacteria, viruses, fungi, and protozoa that can cause ill health or disease; and
- "Hygiene" refers to conditions and practices that help to maintain health and prevent the spread of diseases, including personal and environmental hygiene.

The disseminated survey is included in the Appendix.

The survey was sent to the five FIP member organisations (MOs) of the selected countries, inviting them to participate in this survey and to disseminate it to all community pharmacists and their staff. During the survey period, two reminder emails were sent to the five MOs to increase the response rate. The collected data from the online survey were automatically coded and entered into statistics software, and only the completed responses were considered for analysis. We defined the completed response as "valid" if the respondent progressed through the survey and submitted their responses, and the respondent was currently working in a community pharmacy in one of the targeted countries. Respondents could continue with the submission without having to fill out all questions, therefore a valid response might have some missing answers.

Replies to the survey questions were collected and summarised using descriptive analysis (frequencies and percentages) and the results were visualised using bar charts. The results section is presented in two sections: community pharmacy

involvement in supporting people's hygiene (section 3.3) and community pharmacy awareness and needs to support their role in people's hygiene (section 3.4).

3.2 Respondents' demographics

A total of 60 respondents from selected countries completed this survey. Most respondents (41, 68.3%) were based in India, followed by Thailand (8, 13.3%), South Africa (7, 11.7%), Indonesia (3; 5.0%) and Saudi Arabia (1, 1.7%). Most respondents (56, 93.3%) were employed in community pharmacies (Figure 2). One respondent from India and Indonesia also worked in a FIP member organisation, and one from Thailand also worked in a government organisation.

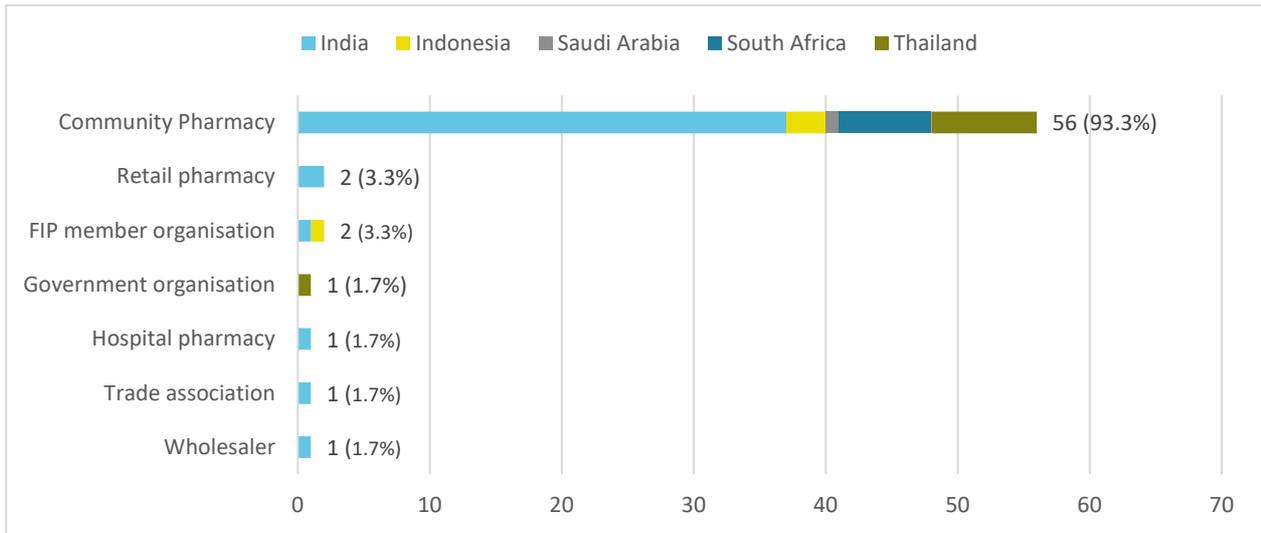


Figure 2. Respondents' workplace by country

Figure 3 shows the proportion of respondents according to their role in the workplace. Most respondents were pharmacists (53, 90.0%). The respondents from India include two pharmacy technicians and one community pharmacy assistant.

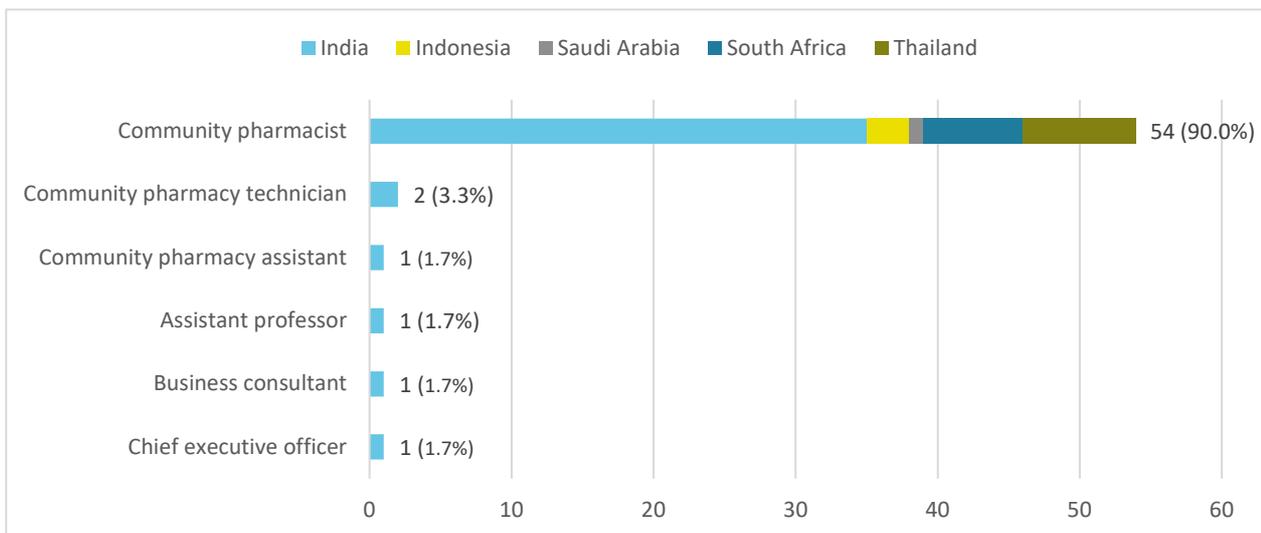


Figure 3. Respondents' role in the workplace by country

A quarter of respondents (15, 25.0%) had working experience of more than 30 years (Figure 4). These respondents were mostly from India and South Africa. The second-highest proportion of respondents had worked between one and five years (14, 23.3%), followed by 13 respondents who had been working between 11 and 20 years (21.7%). Half of the respondents based in Thailand (4) had been practising between six and 10 years. There were only three respondents from India with experience of less than one year. The respondent from Saudi Arabia has experience ranging from 21 to 30 years.

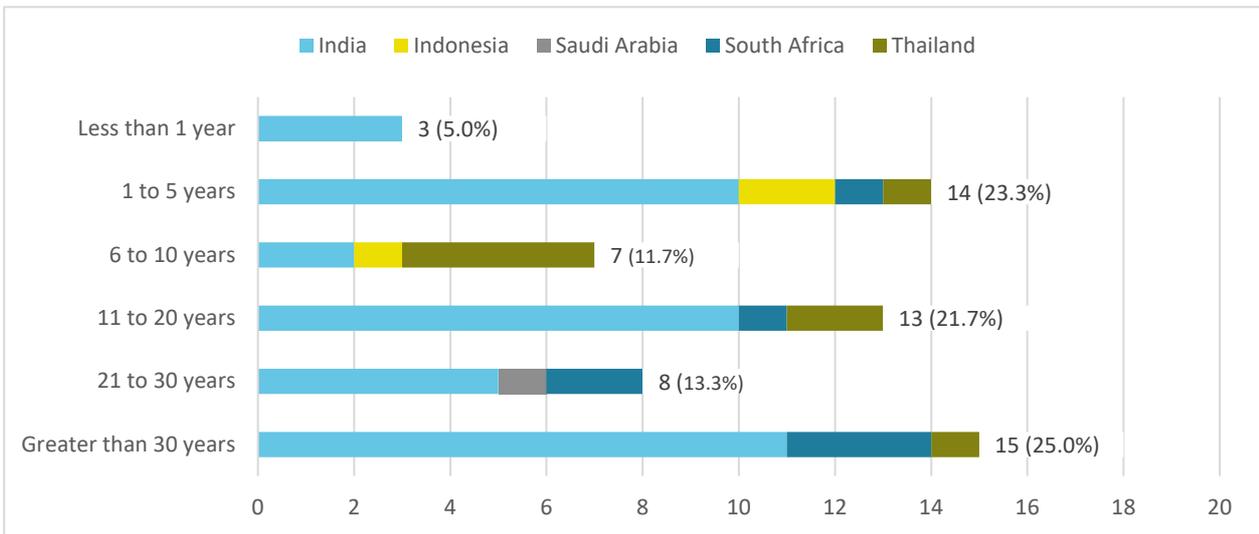


Figure 4. Respondents' years of experience by country

Figure 5 shows the distribution of respondents' highest qualifications by country. Over half of respondents (31, 51.7%), across all countries, had a BPharm as their highest educational qualification. This was followed by a Diploma in Pharmacy (9, 15.0%) and a PhD (7, 11.7%).

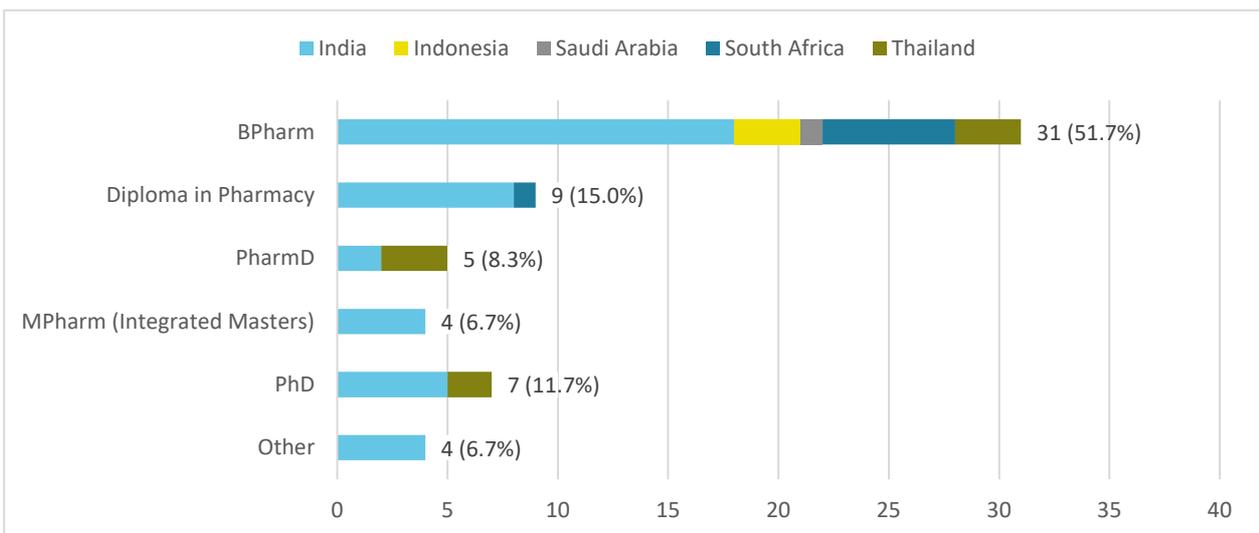


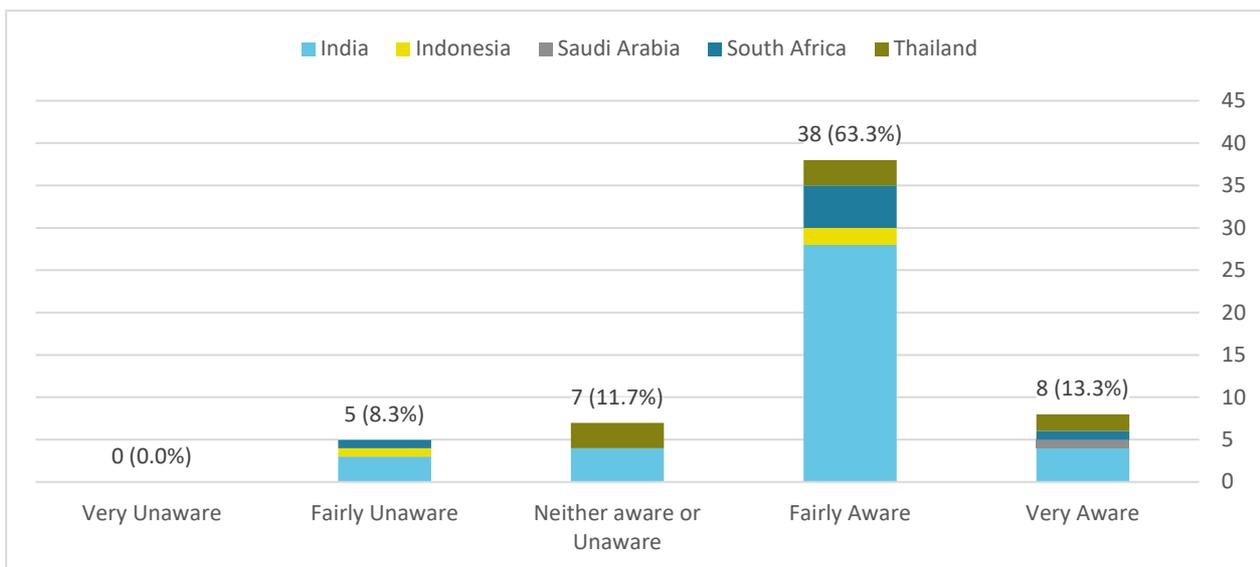
Figure 5. Respondents' highest qualification by country

3.3 Community pharmacy involvement in supporting people's hygiene

This section describes the community pharmacy team's involvement in supporting people's hygiene. The section starts with the community pharmacy team's perception of public awareness of germs and infections, followed by who in the community pharmacy team provided advice to the public on this topic. In this section, we also describe the types of germ concerns that the public expressed to community pharmacy teams. From the types of germ concerns that the public expressed, we further illustrate how comfortable the community pharmacy team is talking with their customers. This section further explores the advice that the community pharmacy team regularly gives to customers and the barriers that hinder them from contributing to the public's education about household and personal hygiene.

3.3.1 Respondents' perception of public awareness of germs and infections

Respondents were asked about their perception of their customers' awareness of germs and infection (see Figure 6). Over three-quarters of respondents (n:46; 76.7%) believed that their customers were aware of germs and infections. A total of five respondents (8.3%) from India, Indonesia and South Africa reported that their customers were fairly unaware of germs and infections.

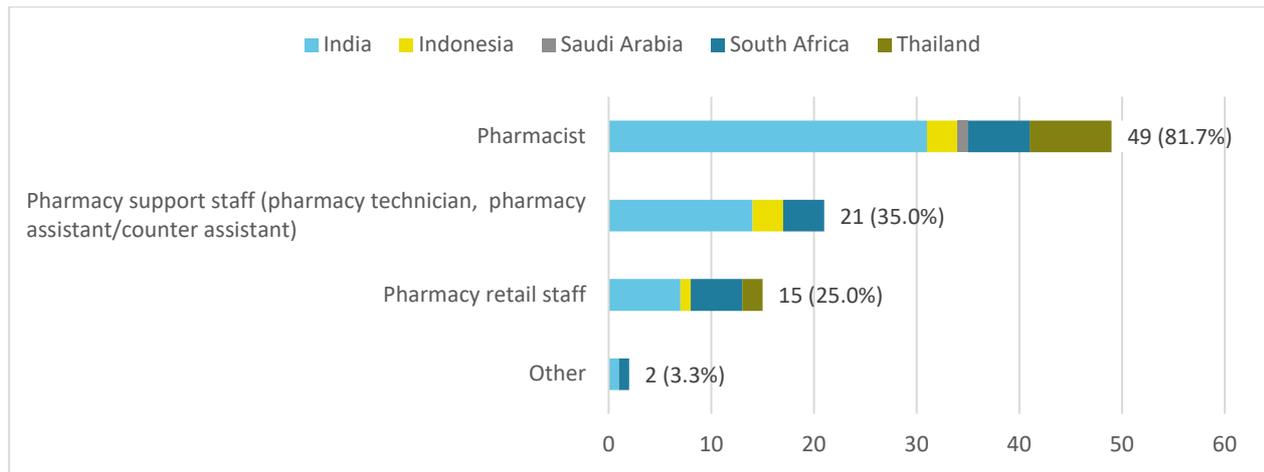


Two respondents (3.3%) did not provide their opinion.

Figure 6. Respondents' perception of public awareness of germs and infections

3.3.2 Members of the community pharmacy team who provide hygiene advice

Figure 7 illustrates members of the community pharmacy team who provide hygiene advice. Forty-nine respondents (81.7%) across the five countries reported that pharmacists provided hygiene advice to the public. The findings show that apart from pharmacists, pharmacy support staff also provided advice in India, Indonesia and South Africa. Pharmacy retail staff also provide advice in India, Indonesia, South Africa and Thailand, according to 15 respondents (25.0%).

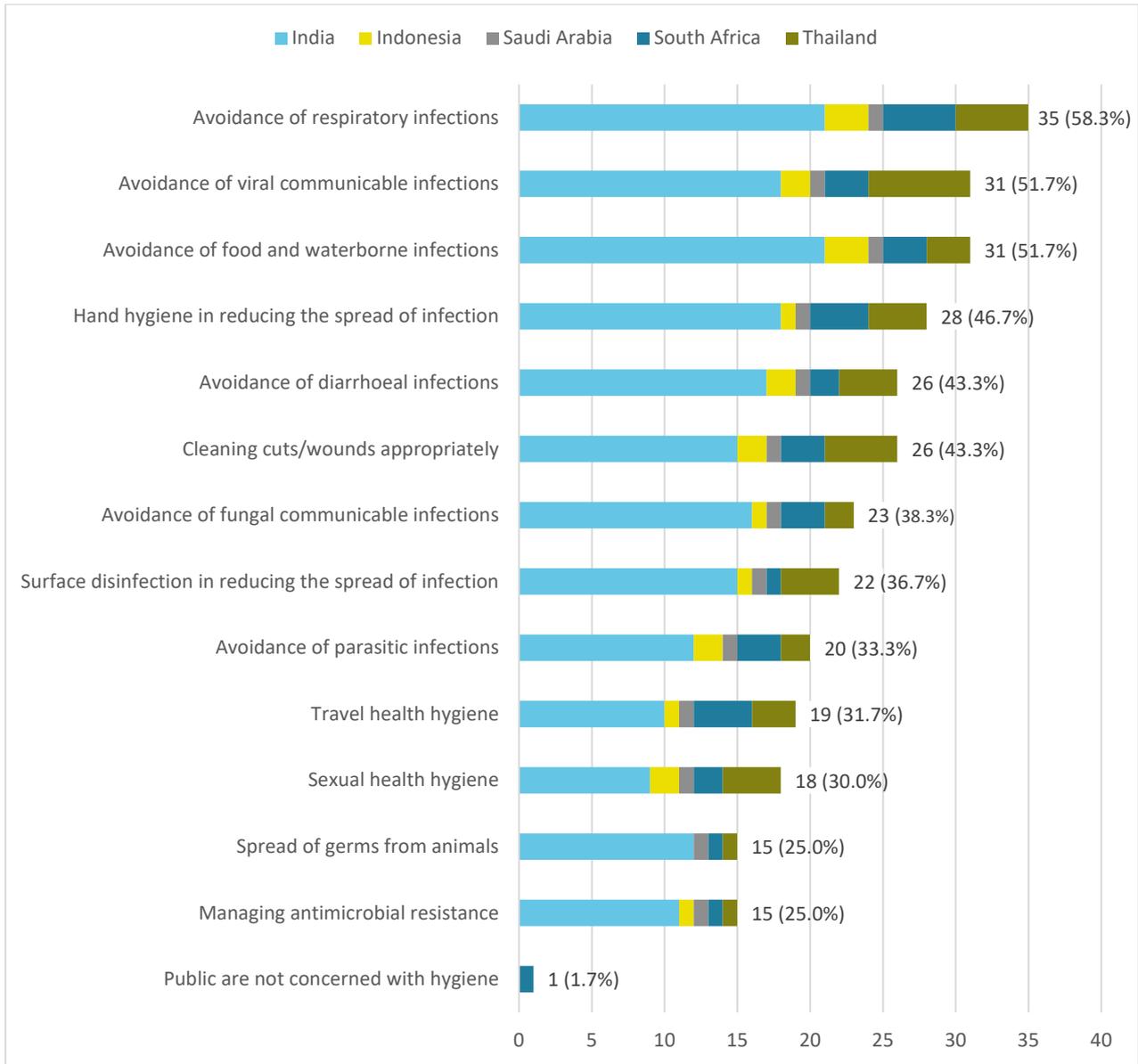


Five respondents (8.3%) did not provide their opinion.

Figure 7. Members of the community pharmacy team who provide hygiene advice

3.3.3 Germ concerns that the public expressed to the community pharmacy team

More than half of the respondents reported that avoidance of respiratory, viral communicable, and food and waterborne infections were germ concerns that the public expressed to them (Figure 8). From the categories listed in the questionnaire, the spread of germs from animals was not a concern of respondents from Indonesia. A respondent from South Africa reported that the public was not concerned about hygiene.

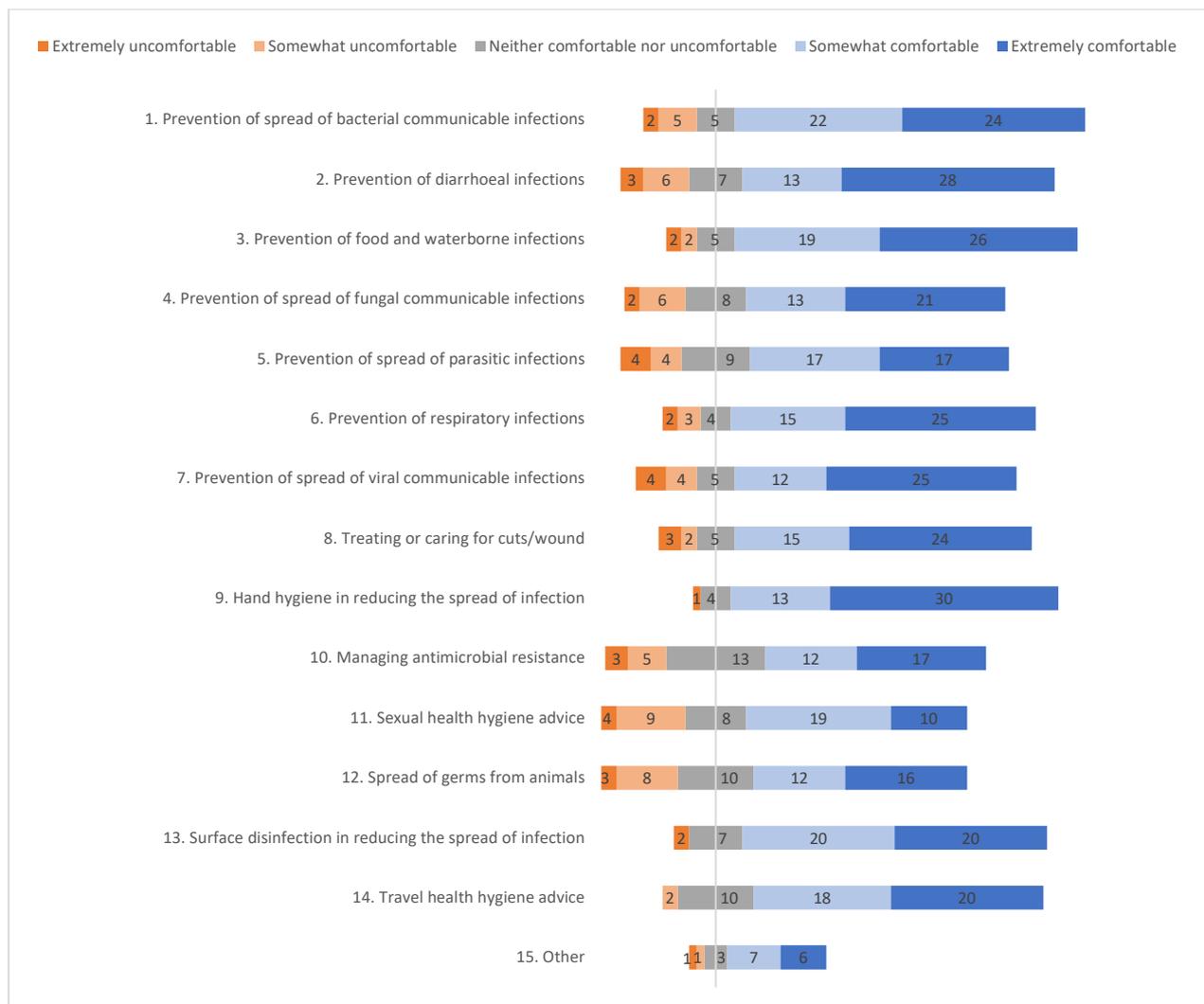


Five respondents (8.3%) did not provide their opinion.

Figure 8. Germ concerns that the public expressed to community pharmacy teams

3.3.4 Hygiene areas that the community pharmacy team are happy to talk to customers about

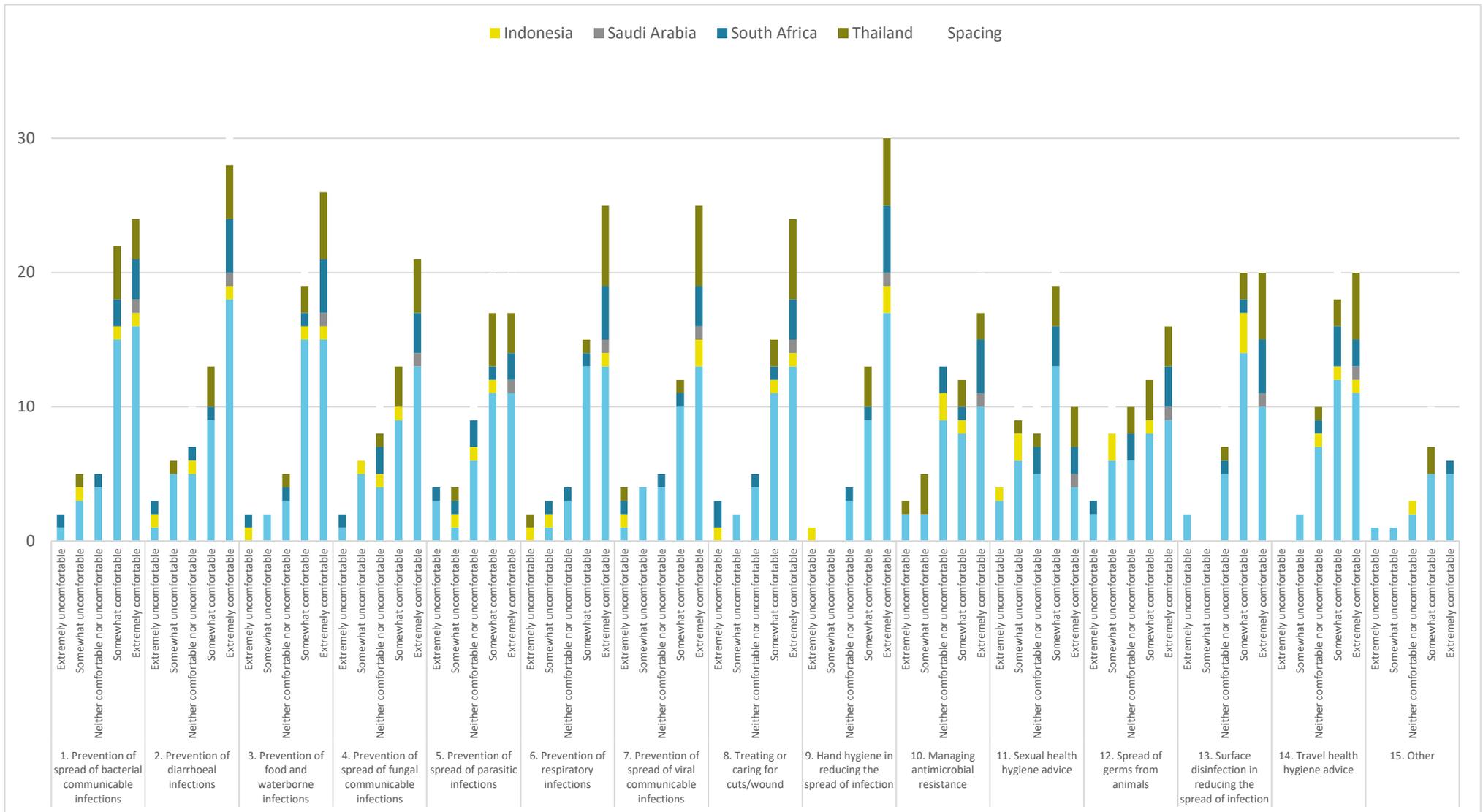
In general, most respondents indicated that they were “extremely comfortable” to “somewhat comfortable” discussing hygiene areas with their customers. The role of hand hygiene in reducing the spread of infection is the area that most respondents are extremely comfortable to talk about (30, 50.0%). This was followed by the prevention of diarrhoeal infections (28, 46.7%) and the prevention of foodborne and waterborne infections (26, 43.3%). The top two areas that respondents felt somewhat comfortable talking about were preventing the spread of bacterial communicable infections (22, 36.7%) and reducing the spread of infection through surface disinfection (20, 33.3%). Sexual health hygiene advice was among the top areas that respondents felt “somewhat uncomfortable” or “extremely uncomfortable” discussing. The prevention of the spread of parasitic infections and the prevention of the spread of viral communicable diseases were also in the “extremely uncomfortable” category. and the spread of germs from animals was a “somewhat uncomfortable” subject (Figure 9).



Several respondents did not provide their opinion: ¹2 respondents (3.3%); ²3 (5.0%); ³6 (10.0%); ⁴10 (16.7%); ⁵9 (15.0%); ⁶11 (18.3%); ⁷10 (16.7%); ⁸11 (18.3%); ⁹12 (20.0%); ¹⁰10 (16.7%); ¹¹10 (16.7%); ¹²11 (18.3%); ¹³11 (18.3%); ¹⁴10 (16.7%); ¹⁵42 (70.0%).

Figure 9. Rate of comfort in talking to customers on the above hygiene areas

Figure 10 illustrates the comfort level of community pharmacy staff when discussing hygiene areas with customers by country. Respondents from Thailand indicated that they were “somewhat uncomfortable” to “extremely comfortable” treating or caring for cuts and wounds. Respondents in Thailand and India reported that they were “somewhat uncomfortable” to “extremely comfortable” discussing hand hygiene with customers to prevent the spread of infections. Survey respondents in South Africa indicated that they were “somewhat uncomfortable” to “extremely comfortable” talking with customers about managing antimicrobial resistance. Respondents from Indonesia, South Africa, Saudi Arabia and Thailand were “somewhat uncomfortable” to “extremely comfortable” talking with customers about surface disinfection in reducing the spread of infection and travel health hygiene. Whereas respondents from Indonesia were “somewhat uncomfortable” to “extremely comfortable” providing sexual hygiene advice, those from South Africa were “somewhat comfortable” to “extremely comfortable”.



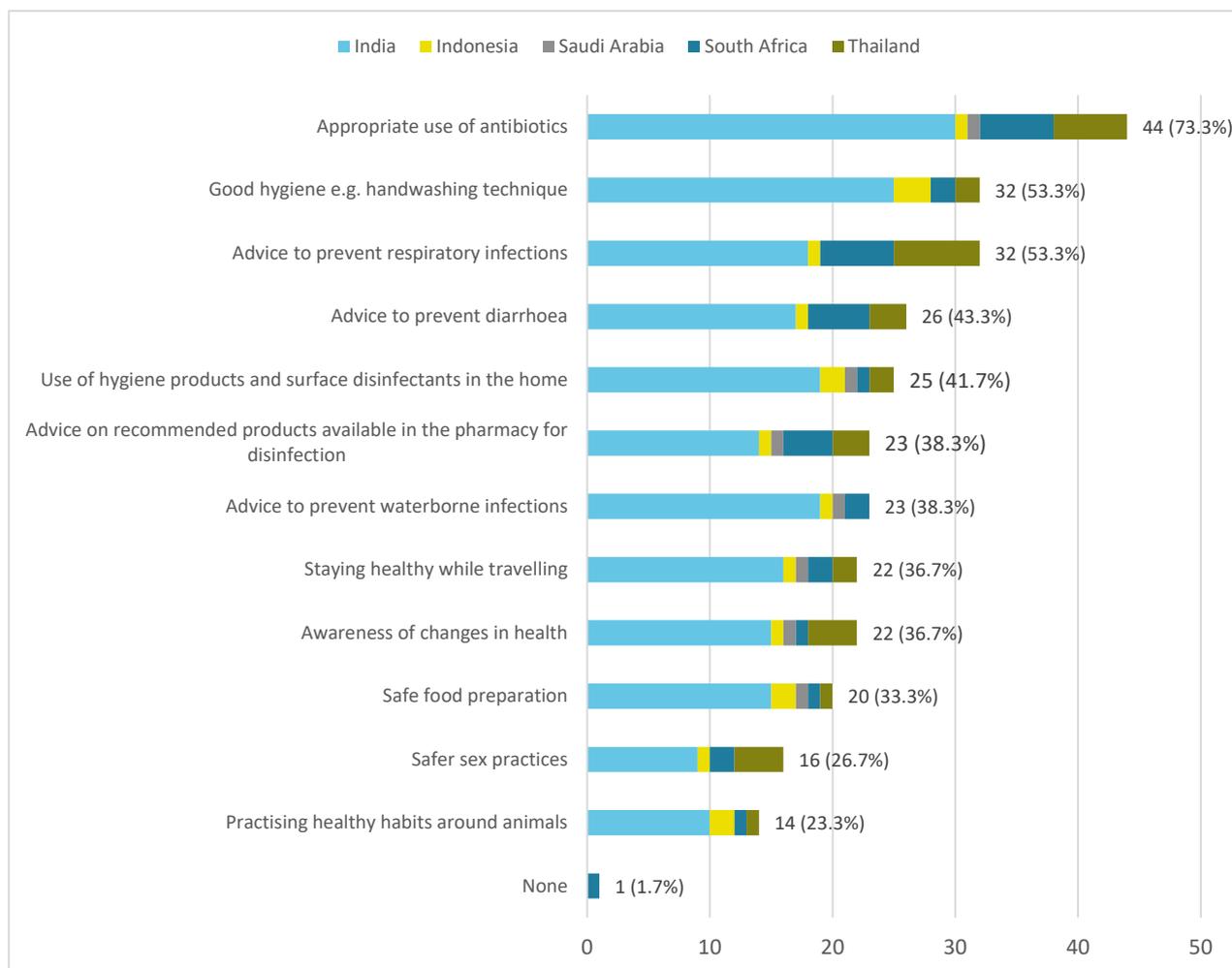
Several respondents did not provide their opinion: ¹² 2 respondents (3.3%); ²³ 5 (5.0%); ³⁶ 10 (10.0%); ⁴¹ 16 (16.7%); ⁵⁹ 15 (15.0%); ⁶¹ 18 (18.3%); ⁷¹ 16 (16.7%); ⁸¹ 18 (18.3%); ⁹¹ 20 (20.0%); ¹⁰¹ 16 (16.7%); ¹¹¹ 10 (16.7%); ¹²¹ 18 (18.3%); ¹³¹ 11 (18.3%); ¹⁴¹ 10 (16.7%); ¹⁵⁴ 2 (70.0%).

Figure 10. Level of comfort in talking to customers on the above hygiene areas by country

3.3.5 Ways of pharmacy teams advising and providing solutions to the public about their germ concerns

To investigate how pharmacy teams can assist the public with their germ concerns, we explored the advice or solutions that the community pharmacy team regularly provides to customers. Additionally, we explored the barriers that prevent the pharmacy team from contributing to public education about household and personal hygiene.

Almost three-quarters (44, 73.3%) of respondents across the five countries indicated that they provided advice on appropriate antibiotics use (see Figure 11). Over half of respondents (32, 53.0%) from India, Indonesia, South Africa and Thailand said they gave good hygiene advice, like handwashing tips and respiratory infection prevention tips. Respondents from Thailand did not indicate that they offered advice regarding the prevention of waterborne infections.

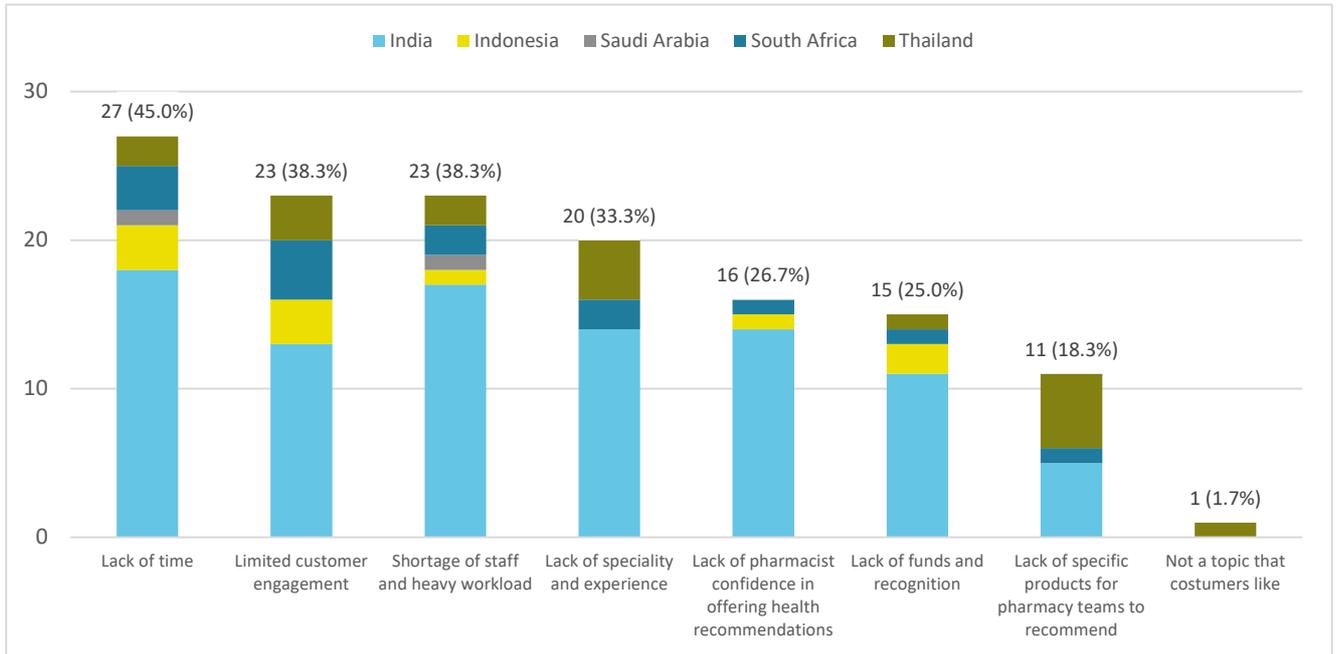


Five respondents (8.3%) did not provide their opinion.

Figure 11. Advice or solutions the community pharmacy team regularly give to customers

A lack of time was reported by 27 respondents (45.0%) across the five countries as a barrier preventing community pharmacy teams from providing household and personal hygiene education (see Figure 12). Limited customer engagement is the second most common barrier reported by 23 respondents (38.3%) across India, Indonesia, South Africa and Thailand. It is also the most common barrier reported by respondents in South Africa (4) and Indonesia (3). The shortage of staff and a heavy workload were reported by 23 respondents (38.3%) in the five countries, and were the second most frequent factors cited by respondents in India (17). Among respondents from Thailand, a lack of specific products for pharmacy teams to recommend (5) and a lack of expertise and experience (4) were the top two obstacles

reported. Only respondents in India (14), Indonesia (1) and South Africa (1) reported a lack of confidence in pharmacists when it comes to offering health advice.



*Five respondents (8.3%) did not provide their opinion.

Figure 12. Barriers hinder community pharmacy team from contributing to the public’s education about household and personal hygiene

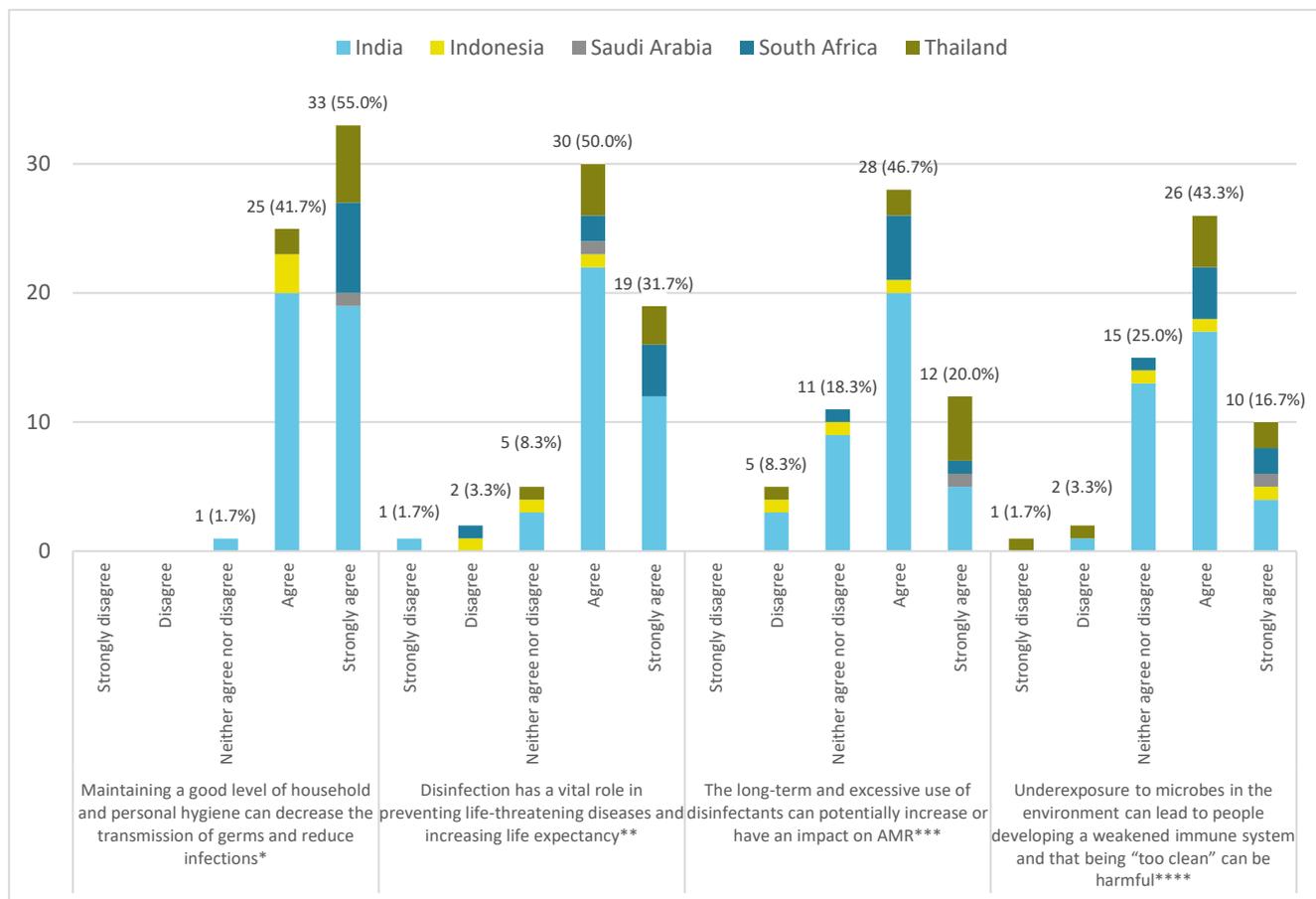
3.4 Community pharmacy awareness and needs to support their role in people’s hygiene

This section explores the community pharmacy team’s awareness of hygiene and the educational and training requirements needed to support them in their role in people’s hygiene. We begin by exploring the level of agreement among community pharmacy teams regarding four broad hygiene topics. We also explore hygiene approaches that the pharmacy team considers could be ways of reducing antimicrobial resistance. To examine the pharmacy team’s education and training needs, we explore the current sources of hygiene information they use to support their roles as well as their learning needs with regard to hygiene and disinfection. Finally, we examine the formats of education and training programmes to meet the learning needs.

3.4.1 Hygiene awareness of the community pharmacy team

Overall, more than half of the respondents agreed with all statements indicated in the questionnaire. Most (58, 96.7%) agreed or strongly agreed with the statement that maintaining a good level of household and personal hygiene can prevent the spread of germs and reduce infections (Figure 13). Half of the respondents (30, 50%) agreed that disinfection plays a major role in preventing life-threatening diseases and extending life expectancy. Three respondents from India, Indonesia and Thailand disagreed with this statement. There were 40 participants (66.7%) who agreed or strongly agreed that the long-term and excessive use of disinfectants can potentially increase or have an impact on AMR. However, five participants — three from India, one from Indonesia and one from Thailand — disagreed with this statement. A total of 36 participants (60.0%) agreed or strongly agreed that underexposure to microbes in the environment can lead to a weakened immune system and that being too clean can be harmful. Fifteen respondents

(25.0%) neither agreed nor disagreed with the statement, and one participant from India and three from Thailand disagreed or strongly disagreed.

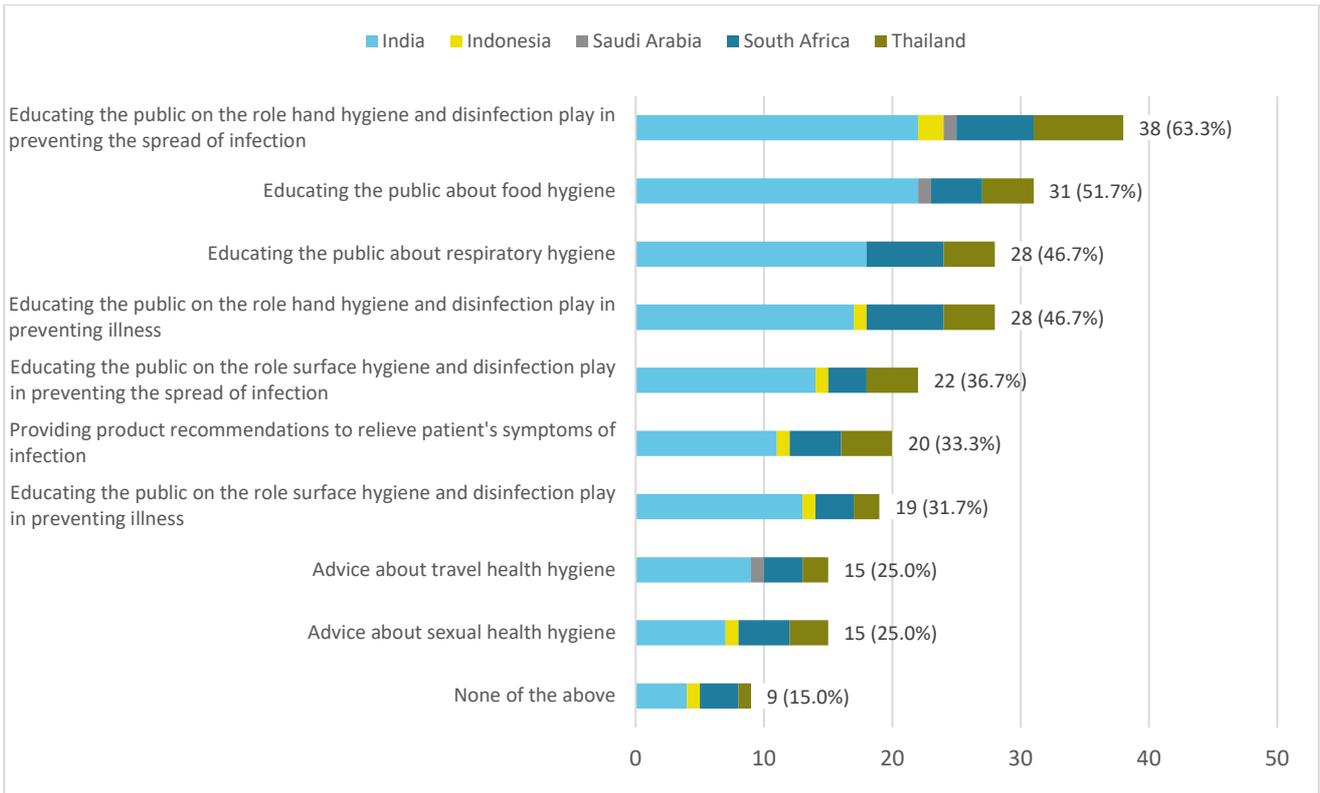


*One respondent (1.7%) did not provide their opinion; **Three respondents (5.0%) did not provide their opinion; ***Four respondents (6.7%) did not provide their opinion; ****Six respondents (10.0%) did not provide their opinion

Figure 13. Level of agreement with hygiene statements by country

3.4.2 Community pharmacy team's knowledge of how hygiene impacts antimicrobial resistance

Figure 14 describes hygiene approaches that the community pharmacy team considers as ways of reducing antimicrobial resistance. Public education about the importance of hand hygiene and disinfection in preventing the spread of infection was selected by 38 participants (63.3%), and was the most popular approach in India (22), Indonesia (2), South Africa (6), and Thailand (7). Food hygiene education was selected by 31 participants (51.7%) and was among the top approaches considered by respondents in India (22). In addition to educating the public about the role of hand hygiene in preventing infection spread, the top two approaches identified by participants were educating the public about respiratory hygiene as well as the role of hand hygiene and disinfection in order to prevent illness. Only 15 participants (25.0%) selected advice about travel health hygiene and advice about sexual health hygiene. Respondents from Indonesia did not select food hygiene education, respiratory hygiene education or travel health hygiene advice as approaches to reducing antimicrobial resistance.

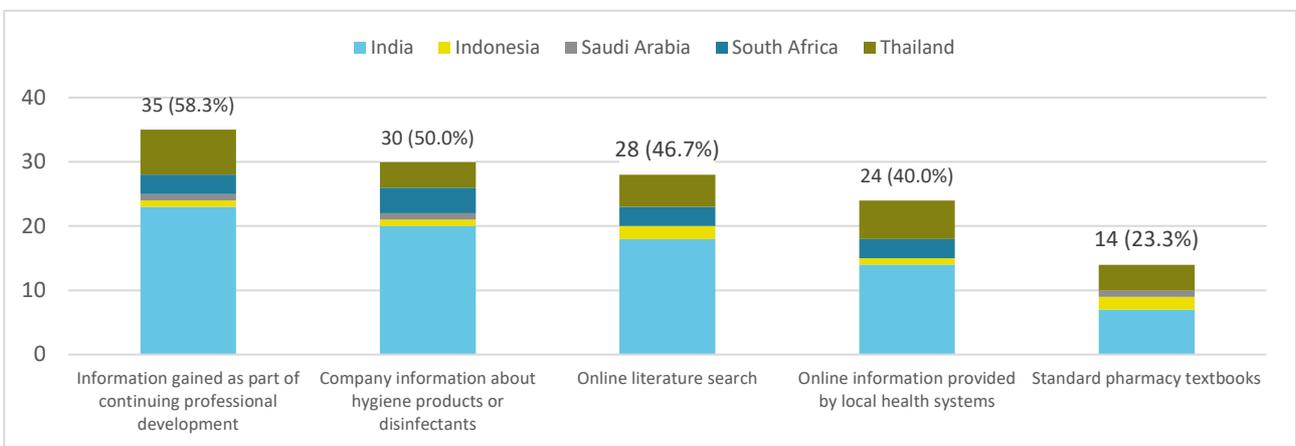


Six respondents (10%) did not provide their opinion.

Figure 14. Hygiene approaches community pharmacy team consider as ways of reducing antimicrobial resistance

3.4.3 Current and future hygiene learning needs of the pharmacy team

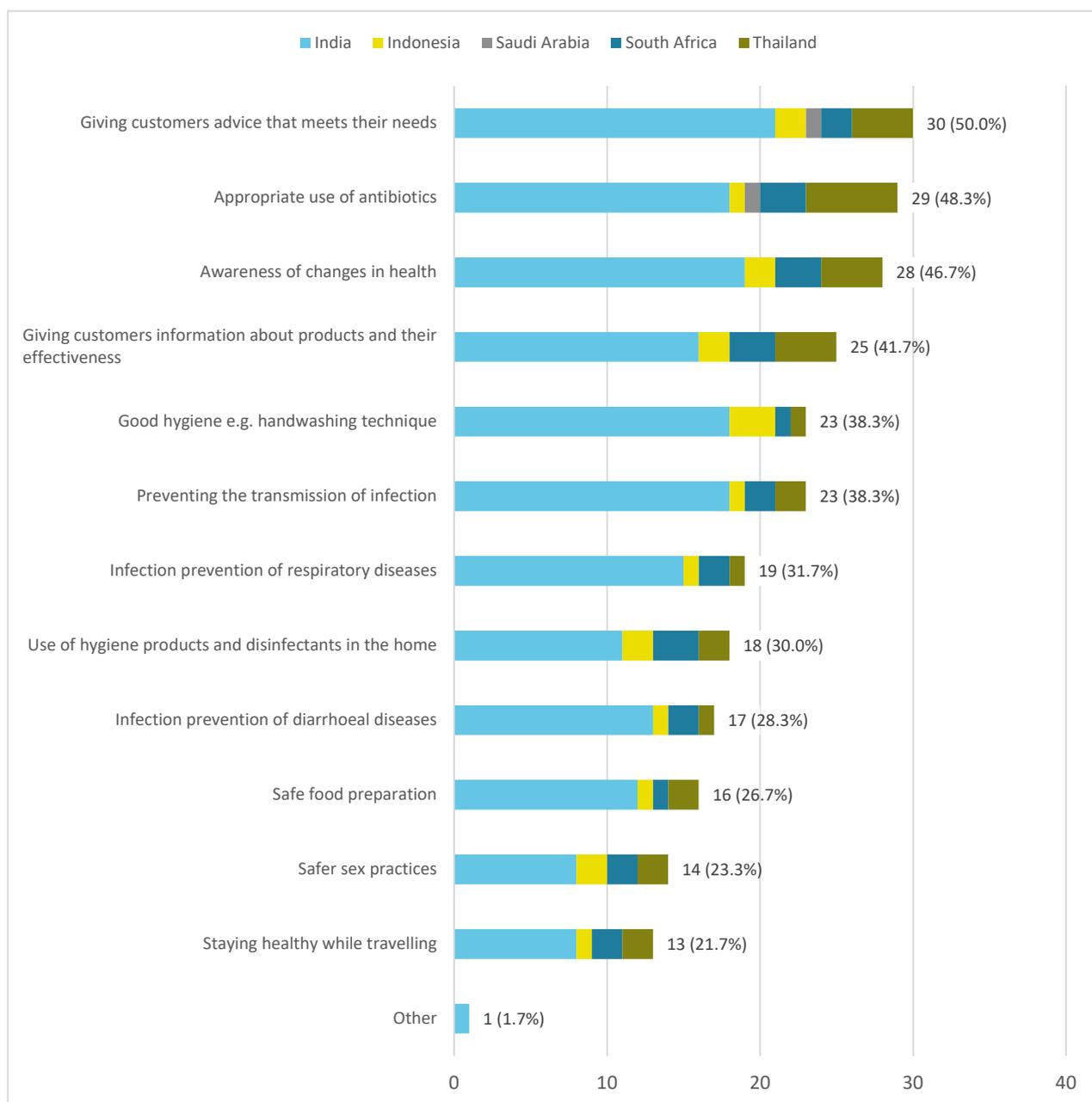
Community pharmacy teams use numerous sources of hygiene information to support their role (see Figure 15). All five countries reported that more than half of respondents (35, 58.3%) obtained information as part of their continuing professional development. Thirty respondents (50.0%) across the five countries also reported receiving information about hygiene products and disinfectants from the manufacturer. There was less than a quarter of respondents (14, 23.3%) who indicated that they obtained information from standard pharmacy textbooks. This was not reported by respondents from South Africa. Online information provided by the local health system was the second most common source of information in Thailand, as reported by six respondents. In addition to standard pharmacy textbooks, online literature searches were among the most frequently used sources by respondents from Indonesia (2).



Four respondents (6.7%) did not provide their opinion.

Figure 15. Current sources of hygiene information that the pharmacy team use

A total of 30 participants (50.0%) across five countries indicated that their learning needs were to support giving customers advice that meets customers' needs (Figure 16). This was the top learning need reported by respondents from India (21). In the five countries, 29 participants (48.3%) indicated appropriate antibiotic use as their learning need, which was the most common learning need selected by respondents from Thailand (6). Learning need for good hygiene, e.g., handwashing technique, was reported by all respondents from Indonesia (3), whereas this learning need was only reported by one participant each from South Africa and Thailand. Only one participant from South Africa indicated safe food preparation as a learning need, and only one participant from Thailand reported infection prevention from respiratory diseases and diarrhoeal diseases as a learning need. The least frequent learning need reported by respondents was advising patients or communities to stay healthy while travelling, which was reported by 13 participants (21.7%), among those reported by respondents in India (8). As well as staying healthy while travelling, safer sex practices were among the less frequently reported learning needs (8, 13.3%).

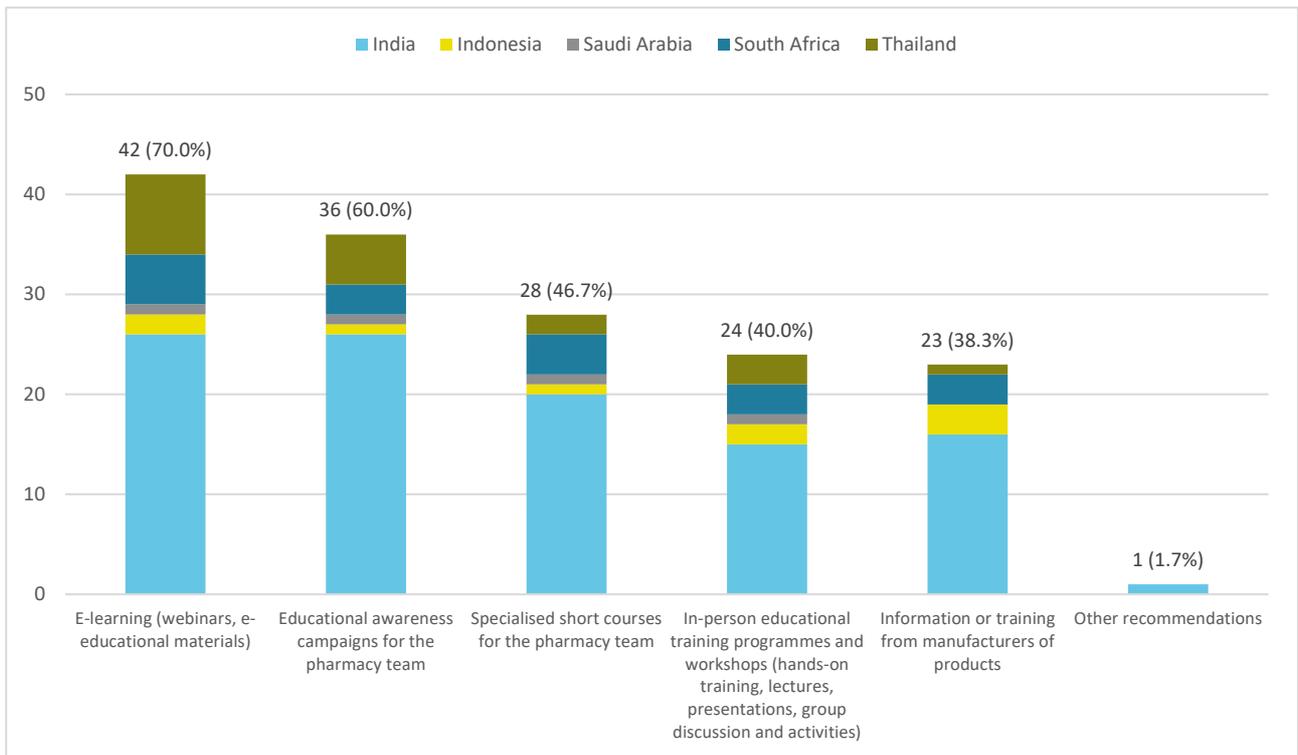


Eight respondents (13.3%) did not provide their opinion.

Figure 16. Learning and training pharmacy team needs relating to hygiene and disinfection in the home or community

3.4.4 Recommendations for education required to address learning needs

Figure 17 describes the formats (delivery methods) of education and training programmes that the pharmacy team needs. E-learning (webinars, e-educational materials) was selected by 42 respondents (70.0%) as the preferred format of education and training programmes required by the community pharmacy team. This was also among the top choices selected by respondents from India (26), South Africa (5), and Thailand (8). The second highest selected programme was education awareness campaigns for pharmacy teams (36, 60.0%), which was the second highest chosen by respondents from India (26) and Thailand (5). Among respondents in South Africa, specialised short courses for pharmacy staff were the second most commonly selected option (4). In India, in-person educational training programmes and workshops (hands-on training, lectures, presentations, group discussions and activities) were the least preferred programmes selected by respondents (15). Although information or training from manufacturers of products was selected by all respondents from Indonesia (3), it was not selected by respondents in Saudi Arabia and was the least commonly selected by respondents in Thailand (1).



Seven respondents (11.7%) did not provide their opinion.

Figure 17. Formats (delivery methods) of education and training programmes the pharmacy team needs

4 Summary and conclusions

The COVID-19 pandemic has had a big impact on pharmacy practice in many countries, and pharmacy practice has moved towards new roles and responsibilities focused on public health with services delivered by appropriately trained pharmacists and their teams. Since pharmacists are often the first point of contact for people in communities, they have become significantly involved in delivering primary healthcare services, emphasising the self-care concept as the key strategy for health promotion and disease prevention.

The aim of this report is to give diverse insights, collected from a cohort of targeted countries, into the community pharmacy team's involvement and needs in supporting people's hygiene as part of self-care. This report explored the awareness of the public as well as the germ and hygiene concerns that are usually discussed with the community pharmacy team. These concerns were described in a list of the most common infections (Figure 8) that the community pharmacy team could prevent by raising awareness and increasing public education about good hygiene and disinfection practices (personal and household).

We explored the use of some appropriate hygiene and disinfection measures that can guide pharmacists in providing health sanitation advice to the public. Using hygiene techniques supported by evidence (including those addressed in this report) is pivotal to help prevent the spread of infection and thus may reduce antimicrobial resistance, a global public health threat that urgently needs to be tackled.¹¹

Although pharmacists constantly show their willingness and professional motivation towards providing self-care-related services, they also mention that their learning gaps need to be filled in order for them to perform their newly expanded roles. It is noteworthy that the educational and learning needs explored in this report were differently prioritised by countries based on their knowledge gaps. Such gaps can be filled by choosing effective delivery methods of education and training programmes tailored to meet the pharmacy team's lack of knowledge and experience. E-learning was found to be the preferable format of education and training chosen by our respondents. A lot of evidence pointed out the effectiveness of e-learning in producing better engagement and retention as well as in saving time and money¹²

Recent epidemiology work studied the role and impact of maintaining a good hygiene level in reducing the risk of transmission of infectious germs and antimicrobial resistance.^{13, 14} The findings will be a valuable area for consideration and advocacy that pharmacists can address with their patients.

As evident throughout this report, community pharmacists and their teams can play a leading role in providing reliable recommendations and educating patients on health hygiene, engaging and empowering patients in self-care, and minimising the spread of contagious diseases, ultimately contributing to the improvement of our communities' overall health.

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Appendix: Survey questionnaire (English version)

Introduction

We are pleased to invite you to take part in a short online survey to explore the community pharmacy team's involvement and needs in supporting people's hygiene as part of self-care.

The aim of this study is to describe the community pharmacy team's insights into hygiene, identify the germ concerns of the public and how community pharmacy teams respond to these in the country where you practice.

Information for participants

The survey is anonymous, and no one will be able to link your responses back to you. Your data will be stored in password-protected drives that only members of the project team will have access to. Your data will be pooled with other participants' responses, analysed and reported in an anonymised format. You are not obliged to answer any of the questions, your participation is voluntary, and you can withdraw from the survey at any time without any negative repercussions.

This survey is being conducted by the FIP Global Pharmaceutical Observatory (GPO) and resourced through an unrestricted grant from Reckitt. The following survey will require approximately 10 minutes to complete, and we would appreciate if you can complete this survey by 06 December 2022. The survey is available in Arabic, English, Indonesian and Thai. Thank you for your time and for taking part in this survey.

Q1 Your country of residence

- India
- Indonesia
- Saudi Arabia
- South Africa
- Thailand
- Other

Skip To: End of Survey If Your country of residence = Other

Q2 Your workplace. *You can select more than one option*

- Community Pharmacy
- FIP member organisation
- Trade association
- Wholesaler
- Other _____

Q3 Your role

- Community pharmacist
- Community pharmacy technician
- Community pharmacy assistant
- Other _____

Q4 Your length of time working in a community pharmacy

- Less than 1 year
 - 1 to 5 years
 - 6 to 10 years
 - 11 to 20 years
 - 21 to 30 years
 - Greater than 30 years
-

Q5 Your educational qualifications: *Please select your highest-level qualification*

- BPharm
 - MPharm (Integrated Masters)
 - MSc (Pharmacy)
 - Dr of Pharmacy
 - PhD
 - Other _____
-

Q6 Are you currently working in a Community Pharmacy?

- Yes
- No

Skip To: End of Survey If Are you currently working in a Community Pharmacy? = No

Terminology: [Germs](#) refers to the microscopic bacteria, viruses, fungi, and protozoa that can cause ill health or disease. [Hygiene](#) refers to conditions and practices that help to maintain health and prevent the spread of diseases, including personal and environmental hygiene.

Q7 In your opinion, how aware are users of community pharmacy services about germs or infections in the community and at home?

- Not Aware At All
 - Fairly Unaware
 - Neither aware or Unaware
 - Fairly Aware
 - Very Aware
-

Q8 What germ or hygiene concerns are members of the public currently raising with you? *You can select more than one option*

- Avoidance of bacterial communicable infections
- Avoidance of diarrhoeal infections
- Avoidance of food and waterborne infections
- Avoidance of fungal communicable infections
- Avoidance of parasitic infections
- Avoidance of respiratory infections
- Avoidance of viral communicable infections
- Cleaning cuts/wounds appropriately
- Hand hygiene in reducing the spread of infection

- Managing antimicrobial resistance
- Sexual health hygiene
- Spread of germs from animals
- Surface disinfection in reducing the spread of infection
- Travel health hygiene
- Other _____

Q9 Please rate your comfort in talking to your customers on the following hygiene areas.

	Extremely uncomfortable	Somewhat uncomfortable	Neither comfortable nor uncomfortable	Somewhat comfortable	Extremely comfortable
Prevention of spread of bacterial communicable infections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevention of diarrhoeal infections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevention of food and waterborne infections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevention of spread of fungal communicable infections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevention of spread of parasitic infections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevention of respiratory infections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevention of spread of viral communicable infections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treating or caring for cuts/wound	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hand hygiene in reducing the spread of infection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Managing antimicrobial resistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexual health hygiene advice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spread of germs from animals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surface disinfection in reducing the spread of infection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Travel health hygiene advice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 Which members of the community pharmacy team provide hygiene advice to customers?

You can select more than one option

- Pharmacist
 - Pharmacy support staff (pharmacy technician, pharmacy assistant/counter assistant)
 - Pharmacy retail staff
 - Other _____
-

Q11 Which of the following advice or solutions do you regularly give to customers about their germ concerns?

You can select more than one option

- Advice to prevent diarrhoea
 - Advice to prevent respiratory infections
 - Advice to prevent waterborne infections
 - Advice on recommended products available in the pharmacy for hand hygiene
 - Advice on recommended products available in the pharmacy for disinfection
 - Appropriate use of antibiotics
 - Awareness of changes in health
 - Good hygiene e.g. handwashing technique
 - Practising healthy habits around animals
 - Safe food preparation
 - Safer sex practices
 - Staying healthy while travelling
 - Use of hygiene products and surface disinfectants in the home
 - Other _____
-

Q12 Which of the following hygiene approaches do you consider as ways to reduce antimicrobial resistance?

You can select more than one option

- Educating the public about food hygiene
 - Educating the public about respiratory hygiene
 - Educating the public on the role hand hygiene and disinfection play in preventing illness
 - Educating the public on the role surface hygiene and disinfection play in preventing illness
 - Educating the public on the role hand hygiene and disinfection play in preventing the spread of infection
 - Educating the public on the role surface hygiene and disinfection play in preventing the spread of infection
 - Providing product recommendations to reduce the spread of infection
 - Providing product recommendations to relieve patient's symptoms of infection
 - Advice about sexual health hygiene
 - Advice about travel health hygiene
 - None of the above
-

Q13 What further learning/training do you need relating to hygiene and disinfection in the home or community?

You can select more than one option

- Appropriate use of antibiotics
 - Awareness of changes in health
 - Giving customers advice that meets their needs
 - Giving customers information about products and their effectiveness
 - Good hygiene e.g. handwashing technique
 - Infection prevention of diarrhoeal diseases
 - Infection prevention of respiratory diseases
 - Practising healthy habits around animals
 - Preventing the transmission of infection
 - Safe food preparation
 - Safer sex practices
 - Staying healthy while travelling
 - Use of hygiene products and disinfectants in the home
 - Other _____
-

Q14 Which formats (delivery methods) of education and training programmes that you need to address the learning/training needs listed in the previous question? *You can select more than one option*

- Educational awareness campaigns for the pharmacy team
 - E-learning (webinars, e-educational materials)
 - Information or training from manufacturers of products
 - In-person educational training programmes and workshops (hands-on training, lectures, presentations, group discussion and activities)
 - Specialised short courses for the pharmacy team
 - Other recommendations
-

Q15 What barriers hinder you from contributing to the public's education about household and personal hygiene?

You can select more than one option

- Inadequate knowledge and training
 - Lack of funds and recognition
 - Lack of pharmacist confidence in offering health recommendations
 - Lack of speciality and experience
 - Lack of specific products for pharmacy teams to recommend
 - Lack of time
 - Limited customer engagement
 - Shortage of staff and heavy workload
 - Other _____
-

Q16 Please rate your level of agreement with each of the following four statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Maintaining a good level of household and personal hygiene can decrease the transmission of germs and reduce infections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disinfection has a vital role in preventing life-threatening diseases and increasing life expectancy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The long-term and excessive use of disinfectants can potentially increase or have an impact on antimicrobial resistance (AMR)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Underexposure to microbes in the environment can lead to people developing a weakened immune system and that being "too clean" can be harmful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q17 What is/are the current sources of hygiene information that you use? *You can select more than one option*

- Company information about hygiene products or disinfectants
- Information developed by the community pharmacy
- Information gained as part of continuing professional development
- Online information provided by local health systems
- Online literature search
- Standard pharmacy textbooks
- Other _____

International
Pharmaceutical
Federation

Fédération
Internationale
Pharmaceutique

Andries Bickerweg 5
2517 JP The Hague
The Netherlands

T +31 (0)70 302 19 70
F +31 (0)70 302 19 99

fip@fip.org

| 2023-02 FIP GPO