




RESEARCH ARTICLE

# A case study on the first professional experiences of recently graduated pharmacists: Professional identity formation

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## Keywords

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## Abstract

**Background:** To become a community pharmacist in Türkiye, it is necessary to gain experience as an assistant pharmacist in a community pharmacy for a minimum of one year after graduation. This study aimed to explore the experiences of recently graduated pharmacists who have experienced assistant pharmacy practice (APP), a one-year training alongside community pharmacists in Türkiye, focusing on various aspects of this practice, particularly professional identity formation (PIF). **Methods:** A qualitative approach was used to achieve this objective. A case study design using in-depth interviews allowed participants to describe their lived and perceived experiences in their own words. **Results:** Twenty pharmacists (15 females and 5 males) were interviewed. Four themes emerged from the data: (1) contributions of assistant pharmacy practice to PIF, (2) challenges of this practice, (3) stages of PIF during this practice, and (4) pharmacists' perceptions of their roles at the conclusion of the PIF process. **Conclusion:** Considering the stages in question and the difficulties encountered in the practice, as acknowledged by the relevant authorities, it is anticipated that PIF during the APP period could be facilitated, and pharmacists' perspectives on the practice could change.

## Introduction

Professional identity refers to an individual's self-perception of being a member of a particular profession. This perception includes the values, beliefs, attitudes, and behaviours of the profession (Lake *et al.*, 2024). The formation of professional identity among pharmacists is gradual, starting with students, novice pharmacists, and experienced pharmacists (Kellar *et al.*, 2020). Existing literature highlights the diversity and complexity of pharmacists' professional identities, highlighting a variety of roles, responsibilities, and contexts around the world. For example, in a study on pharmacists' perceptions of their professional identity, Kellar and colleagues (2021) reviewed 23 articles and found themes of pharmacists, dispensers, businesspersons, patient counsellors, and physician

supporters. In particular, as recently graduated pharmacists are unable to develop a professional identity based on their education, the contribution of procedural processes required to become community pharmacists is an important subject of curiosity. In the limited literature, O'Sullivan and colleagues (2023) identified the processes that contribute to the formation of the professional identity of newly graduated pharmacists as graduates having the freedom to make decisions and interact with patients. Liu and colleagues (2018) showed that a special study programme focused on Biomedical Ethics and Human Sciences in medical education supported students' academic skills, productivity, and career development, including professional identity formation (PIF). These findings provide an important example of how interdisciplinary approaches applied to fields other

than pharmacies can be effective for PIF. The study also revealed that it positively affected professional identity development, leaving lasting effects during clinical practice for graduate physicians (Liu *et al.*, 2018).

Community pharmacists are among the frontline healthcare professionals who provide services to improve the health of individuals and society. In their daily practice, they undertake tasks such as drug counselling, prescription management, and increasing patient compliance with medications (Watson *et al.*, 2023). At the same time, they make valuable contributions to the health system by participating in public health campaigns, managing chronic diseases, providing vaccination services, and making lifestyle change recommendations. The multifaceted roles of pharmacists in the health system have become even more important, especially with the increasing health needs of society. In this context, community pharmacists have a strategic position to improve patient care and provide sustainable solutions to the healthcare system (Eldooma *et al.*, 2023).

The community pharmacy process in Türkiye is worth examining from the PIF perspective. The process followed in Türkiye consists of five years of pharmacy education supported by theoretical and practical courses and internships (Pharmacy Faculties Deans Council, 2019b). Students required to complete 120 days of internships can conduct their internships in community pharmacies, hospital pharmacies, and industry settings (Pharmacy Faculties Deans Council, 2019a). Additionally, with the implementation of the "Assistant Pharmacy Practice" in 2014 in Türkiye, "a pharmacist who intends to open a community pharmacy or work as a responsible manager in community pharmacies must work as an assistant pharmacist in community pharmacies under a service contract with a pharmacy owner for at least one year" (Ministry of Health, 2014). Assistant pharmacy practice is a critical factor for the success of healthcare systems. Furthermore, it was suggested that having multiple pharmacists in pharmacies alongside assistant pharmacists would improve communication, as patients prefer to interact with pharmacists (Bulut & Bilgener, 2021).

Arslan and colleagues' (2020a) study conducted using SWOT analysis explored the strengths and weaknesses of assistant pharmacy practice. According to this study, the strengths of assistant pharmacy practice include providing experience, service delivery by pharmacists in community pharmacies, an increase in the number of pharmacists per patient in therapy, and a temporary contribution to pharmacist employment. However, the weaknesses of assistant pharmacy practice include inconsistencies in salaries, additional expenses for

pharmacies and pharmacists, the length of the assistant pharmacy practice period, a limited number of pharmacists willing to employ assistant pharmacists and issues such as position inconsistency between assistant pharmacists and second pharmacists or apprentices (Arslan *et al.*, 2020b).

There are unanswered questions regarding the success of assistant pharmacy practice, which contain highly compelling arguments for qualified community pharmacies. In particular, these questions focus on the contribution of assistant pharmacy practice to the PIF process of recently graduated pharmacists. Because universities can initiate an appropriate PIF process for pharmacists, it is emphasised that those who complete the process will be community pharmacists; therefore, exposure to as many outstanding community pharmacists as possible is essential (Edwards, 2020). However, no studies have been found in the literature regarding the PIF process during the assistant pharmacy practice period implemented in Türkiye in recent years. However, understanding the dynamics of the PIF process will shed light on the evolving role of pharmacists in society (Holden *et al.*, 2012; Gunaseelan *et al.*, 2023). Therefore, this study aimed to explore the experiences of pharmacists undergoing assistant pharmacy practice in Türkiye, focusing on various aspects of this practice, particularly the development of PIF.

## Methods

### Study setting

This study was conducted in Türkiye, where assistant pharmacy practice was introduced in 2014.

### Study design

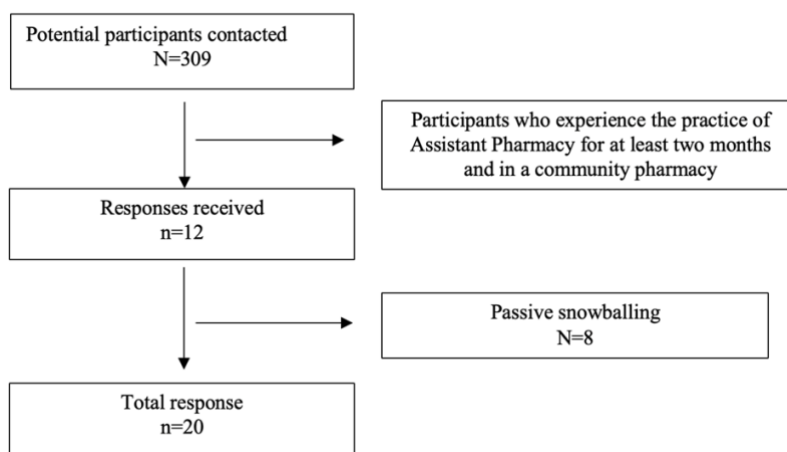
Given the significance of the process of forming pharmacists' professional identities, a single descriptive case study approach was employed to gain a comprehensive understanding of the professional identity formation process of recently graduated Turkish pharmacists working in community pharmacies. A case study is a research strategy that involves an in-depth and detailed examination of the subject of the case study, in which researchers seek to understand the dynamics present in a particular setting (Baxter & Jack, 2008). A semi-structured interview script (Appendix A) was created to elicit participants' descriptions of the experiences that contributed to their thinking, acting, and feeling like a pharmacist. A qualitative approach using a constructivist-interpretivist methodology was adopted to gain an in-depth understanding of

pharmacists' perspectives (Lincoln *et al.*, 2011). The interview questions were tested for clarity in the first interview, and minor revisions were made to the questions based on this interview.

**Study participants and recruitment strategies**

During the recruitment process, a convenience-based purposive sampling strategy was employed to target pharmacists with experience in assistant pharmacy practice in Türkiye. A flowchart illustrating the participant selection process is shown in Figure 1. The study targeted individuals who had experienced the assistant pharmacy practice application within the last two years, assuming that they would recall their experiences with the application more vividly. To form this purposive sample, invitations were extended to pharmacists who had engaged in the “Assistant Pharmacy Practice,” introduced in Türkiye in 2014, for a minimum of two months. Initially, an invitation message was circulated through WhatsApp groups of pharmacists registered with the Pharmacy Chambers. A passive snowball technique was implemented to further expand the participant pool. Snowball sampling

was employed to recruit participants. This method is particularly effective for reaching populations that are otherwise challenging to access or locate (Parker *et al.*, 2019). It relies on initial participants referring subsequent participants, creating a “chain” of recruitment. Twelve registered pharmacists responded affirmatively to participate. Subsequently, consenting participants were encouraged to refer to colleagues who met the inclusion criteria to participate in the study. As a result, eight additional individuals were included in the study, and a total sample size of 20 participants was achieved using data saturation principles (Mason, 2010). In determining data saturation, the criterion of terminating data collection when no new themes or information emerged was taken as the basis. In this context, data repetitions began to be observed after 18 participants. In addition, two additional participants were interviewed to confirm the accuracy of the findings and robustness of the themes. This method aimed to ensure data saturation in accordance with the qualitative research paradigm of the study and increase the reliability of the results obtained (Mason, 2010).



**Figure 1: Flowchart of the participant recruitment process**

**Data collection**

The researchers developed a semi-structured interview guide. As depicted in Appendix A, the guide was developed by researchers using the existing literature (O’Sullivan *et al.*, 2023). This guide consisted of open-ended questions, allowing the interviewer to explore participants' narratives in-depth and enabling them to provide detailed descriptions of their experiences. The interview guide used for data collection in this study was specifically developed for this research. To ensure validity, it underwent a thorough validation process. Initially, a panel of experts in the fields of pharmacy

education and qualitative research reviewed the draft version. The panel assessed the clarity, relevance, and comprehensiveness of the questions. Based on their feedback, revisions were made to improve the focus and clarity of the guide. To facilitate the involvement of interested individuals, a direct communication channel with the research team was established, which enabled the scheduling of interviews at mutually convenient times, dates, and locations. All interviews were conducted remotely via Zoom between October 2023 and January 2024, with durations ranging from 20 to 50 minutes. Participants were instructed to provide any

comments during the interview that they did not want to share with the researchers later; however, no participants provided such comments. The participants did not receive compensation for their time. There was no pre-existing relationship between the interviewer and participants. Candidate participants were evaluated according to the following criteria:

**Inclusion criteria:**

1. Having worked as an assistant pharmacist in a community pharmacy for at least 2 months.

To ensure the anonymity of participants, no personal identifiers were collected, and data were coded to prevent identification. Each participant was assigned the letter "P" followed by their identification number. All data were stored securely in password-protected files accessible only to the research team in compliance with data protection regulations.

**Data analysis**

The case study design employs specific data analysis methods, primarily coding and the constant comparative method (Stake, 1995).

The data were coded in a manner that ensured that no smallest word from the field was lost based on Kuckartz and Strauss' coding paradigm. Initially, the data were segmented into open codes, followed by categorisation and thematic analysis, thus completing axial and selective coding (Strauss, 1987; Kuckartz, 2014). Data analysis was conducted using MAXQDA 24.3.0, a software tool for qualitative data analysis. The software allowed for the systematic identification of themes and patterns across the dataset, providing a structured approach to data analysis. It also facilitated the visualisation of connections between different codes and themes, ensuring the rigour and reliability of the analytical process. Initially, all three investigators coded the first interview, followed by the subsequent interviews coded by the primary investigator. Regular meetings were held to discuss emerging categories and to ensure a reflexive approach throughout the study. Writing memos during coding to facilitate subsequent analysis is a fundamental aspect of the qualitative study approach. Memos were exchanged with the research team. The memo-writing process provided an opportunity for the team to dissect the codes and analyse their significance within the interview context (Clarke & Braun, 2021). Consistent with the qualitative study approach, data collection and analysis continued until saturation of categories was achieved (Clarke & Braun, 2021). The aforementioned tools were used alongside the constant comparative method. Emerging categories were refined, and the properties and

dimensions of each were identified. The relationship between the core category and the other major categories was continually explored and refined.

**Rigour**

To minimise researcher bias and adhere to theoretical sampling principles, this study engaged pharmacists practising as assistant pharmacists in various cities across Türkiye. A group of pharmacists who confirmed these results were discussed as a means of validating the findings (Guba & Lincoln, 1981). The chosen design played a crucial role in fostering reflexivity, allowing the researcher to demonstrate a critical self-reflective awareness of their role in both the analysis and overall study (King & Kitchener, 2012). Strategies were systematically employed to ensure precision and validity throughout the study (Morse, 2015). Each stage of data collection and analysis involved at least two researchers, and team consensus-building discussions were conducted to enhance the reliability of the findings. Care was taken to avoid imposing biased codes and categories on data.

**Ethical considerations**

This study was approved by the Ethics Committee of the Faculty of Pharmacy of Ataturk University (Approval No: 2400008793). The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Written informed consent was obtained from all participants prior to their involvement, and their participation was entirely voluntary. Participants were also informed that they could withdraw at any time without providing a reason. Efforts were made to minimise any potential psychological or emotional distress during data collection. Participants were informed that they could skip any questions they found uncomfortable.

**Results**

**Demographic characteristics**

Nineteen pharmacists (15 females and 4 males) were subjected to analysis. Their ages ranged from 23 to 26 years old. It was found that the duration since graduation varied from a minimum of 6 months to a maximum of 30 months. Among the pharmacists interviewed, some had experienced assistant pharmacy practice for at least two months, while others had experienced it for up to 16 months. The pharmacists interviewed worked in community pharmacies, hospital pharmacies, pharmaceutical warehouses, and academia (Table I).

**Table 1: Participant baseline characteristics**

Participant number <sup>a</sup>	Gender	Age	Number of months since graduation	Number of months of internship	Number of months as an assistant pharmacist	Internship setting	Current work setting
2	Male	25	18	4	12	Community pharmacy/industry	Hospital pharmacy
3	Male	24	18	5	4	Community pharmacy/industry/academia	Hospital pharmacy
4	Female	24	18	4	12	Community pharmacy/industry	Hospital pharmacy
5	Female	25	17	4	11	Community pharmacy	Pharmaceutical warehouse
6	Male	25	24	4	16	Community pharmacy/ Hospital pharmacy	Community pharmacy
7	Female	25	18	4	15	Community pharmacy/ Hospital pharmacy	Community pharmacy
8	Female	24	18	4	12	Community pharmacy	Community pharmacy owner
9	Female	25	30	4	11	Community pharmacy	Academia
10	Male	26	18	4	4	Community pharmacy	Hospital pharmacy
11	Female	24	6	4	3	Community pharmacy/ Hospital pharmacy	Community pharmacy
12	Female	26	12	4	13	Community pharmacy	Hospital pharmacy
13	Female	24	6	4	3	Community pharmacy/hospital pharmacy/ industry	Community pharmacy
14	Female	24	6	4	5	Community pharmacy/ Hospital pharmacy	Community pharmacy
15	Female	25	18	4	13	Community pharmacy	Community pharmacy owner
16	Female	23	6	4	2	Community pharmacy	Community pharmacy
17	Female	23	6	4	2	Community pharmacy/industry	Community pharmacy
18	Female	24	6	4	4	Community pharmacy/ Hospital pharmacy	Hospital pharmacy
19	Female	26	18	4	12	Community pharmacy	Hospital pharmacy
20	Female	24	24	4	12	Community pharmac	Academia

<sup>a</sup> Participant 1's interview was used for training and testing purposes, so was not included in the data set.

**Qualitative**

Four themes emerged from the data: (1) contributions of assistant pharmacy practice to PIF, (2) challenges of

this practice, (3) stages of PIF during this practice, and (4) pharmacists' perceptions of their roles at the conclusion of the PIF process (Figure 2).

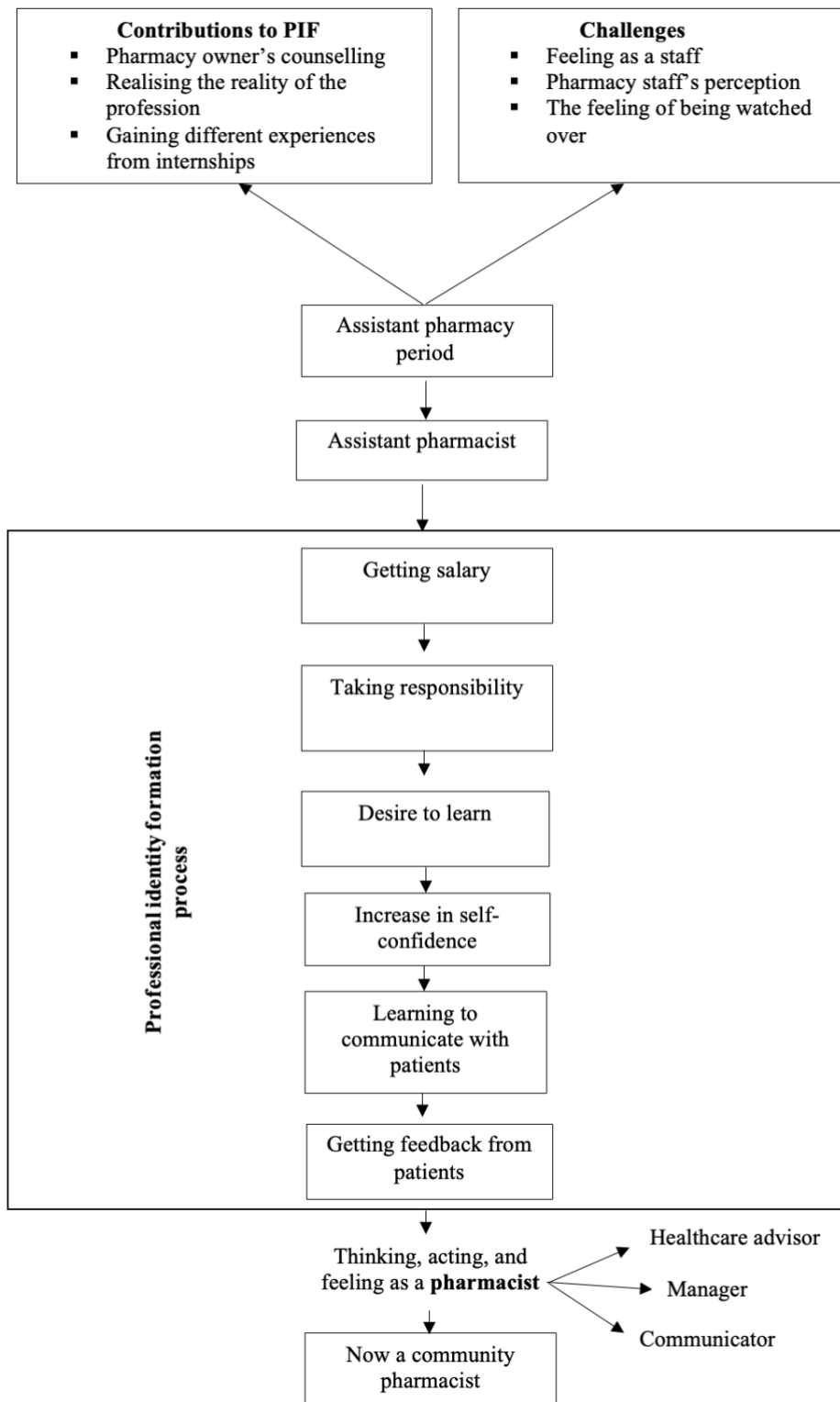


Figure 2: Thematic analysis

*Theme 1: Contributions to PIF*

Accordingly, the practice of assistant pharmacy made a significant contribution to the professional identities of the participants by allowing them to receive guidance

from pharmacy owners, realise all aspects of the profession, and provide different contributions from the internships they undertook during their undergraduate education. During this process, the

consultancy received from pharmacy owners revealed that it is useful to obtain information from experienced pharmacists before opening their own community pharmacies. Participants experienced all aspects of community pharmacy during this period and discovered both the positive and challenging aspects that they had not noticed before. Unlike the short-term internships completed during undergraduate education, assistant pharmacy practice offered participants a longer-term and more responsible experience. This shows that they play an in-depth and effective role in PIF.

*"So, actually, for example, from the moment I first entered, is good. Because I'm learning things, you know, there's experience in front of me, seeing two or three steps ahead of me, and it's nice to get support from pharmacy owner." (P13)*

*"Thus, assistant pharmacy period represented a comprehensive process for me, wherein I gained insights into the true facets of my profession, encompassing both its merits and challenges." (P5)*

*"Assistant pharmacy practice was more effective in my opinion because during internships, you're inevitably seen as a student, but in pharmacy assistance, you are there as a pharmacist. You have more responsibilities, so I think assistant pharmacy practice is more effective." (P17)*

### Theme 2: Challenges

During the assistant pharmacy practice period, participants encountered several challenges. These challenges are grouped into three categories. These are feelings as a staff, pharmacy staff's perception, and the feeling of being watched over. Participants stated that they felt not only as pharmacists but also as staff during the process. However, the pressure to be under observation by other pharmacy staff and to focus on specific tasks caused participants to experience uncertainty regarding how they were perceived by colleagues and pharmacy owners. Although most of the participants generally felt like pharmacists, they felt like staff during the assistant pharmacy practice and were asked to perform the duties expected from other staff with a sense of responsibility towards the pharmacy owners. This reflects the complexity of the hierarchical dynamics and professional identities within pharmacies. According to the data, it took time for other pharmacy staff to accept the participants, and they had difficulties in being seen as full-fledged pharmacists. Although most pharmacists felt like pharmacists occasionally, they were worried about

making mistakes because they were watched or observed by pharmacy owners, which increased their feelings of stress and tension.

*"But still, you never truly have your own business afterward, I mean, working with a pharmacist is nice, but you're still under the pharmacist's management. So, when you make a mistake, you are accountable to the pharmacist. You are still an employee, so to speak. In that sense, one wants to be in their own pharmacy a bit, they want a pharmacy they can manage with their own rules." (P13)*

*"Therefore, it takes time for staff to accept us. We have to prove ourselves by showing that we know what we are doing. That's the biggest challenge, honestly." (P11)*

*"You know, having the pharmacy's management always under observation, being watched all the time, creates a tense atmosphere. Even when providing information, I wonder if I'm giving the right information or if I'm speaking to the patient incorrectly, considering the fact that I'm just an employee while the owner of the place is the boss." (P10)*

### Theme 3: The six stages of an assistant pharmacist's PIF

During this practice, the process of developing a professional identity itself included six stages: getting a salary, taking responsibility, desire to learn, increasing self-confidence, learning to communicate with patients, and receiving feedback from patients. At the end of these six stages, the pharmacists felt, thought, and acted as pharmacists. They progressed through the different stages of expression intensity. Figure 3 shows the MAXQDA output and the density of the expressions.

The salary instilled a sense of responsibility in the participants and encouraged them to perform similar tasks as other pharmacy personnel throughout the assistant pharmacy practice process. Participants emphasised that the main difference between the internship process and assistant pharmacy is getting a salary and stated that this situation brings with it taking on more responsibility. These responsibilities typically include duties as the pharmacists in charge. Increasing responsibilities with salary has increased pharmacists' desire to learn and improve their ability to communicate more effectively with the knowledge they have acquired in this process.

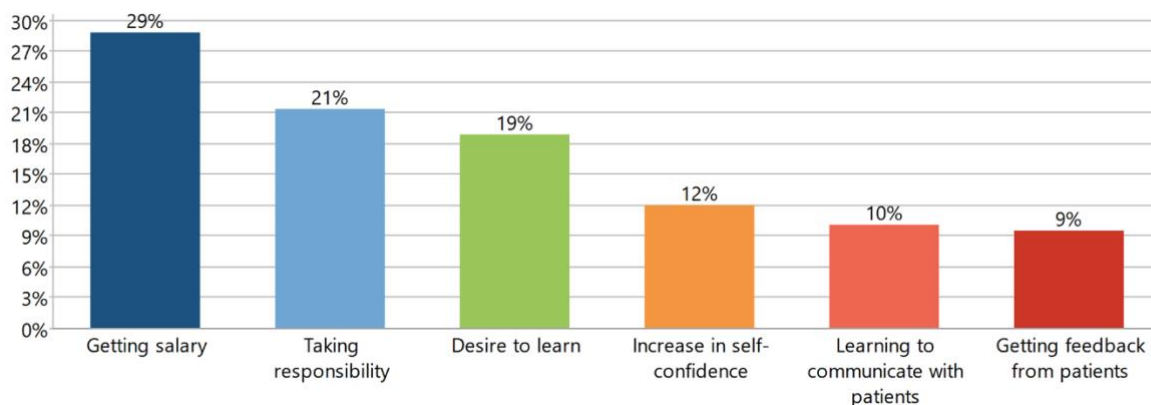


Figure 3: Maxqda output for the six stages of PIF during APP

Most participants stated that their self-confidence increased as they learnt more about pharmacy management, making them feel more comfortable and confident in interacting with patients. In this sense, it can be stated that interacting with patients has a critical role in creating the professional identities of pharmacists. However, some pharmacists had difficulty with this process and were excluded. This shows that pharmacists who have difficulty interacting with patients may have difficulty fully embracing their professional identities. According to the data obtained, feedback from patients played an important role in reinforcing the professional identity of pharmacists. This feedback had a positive impact on pharmacists, who emphasised that they had more empathy with patients and were able to communicate with them more effectively.

*“When the pharmacy owner starts paying your insurance and salary, they expect something from you. Because they're saying, 'I paid for this salary.' This is why nobody looks at you like a trainee anymore. They see you as a pharmacist now.” (P5)*

*“In assistant pharmacy, you're fully involved, you have responsibilities. After the pharmacist leaves, you're in charge of the pharmacy, so if something happens, the responsibility is yours, you take charge of the pharmacy.” (P13)*

*“In assistant pharmacy, if you don't know the information related to the pharmacy, you have to learn because you'll be doing this job, and you won't be doing it for just 1-2 months; you'll be doing it for a year, so you have to learn everything, including the workflow system.” (P16)*

*“When I first dispensed medication to a patient in pharmacy assistance, I noticed that people expect me to say something, so this particularly instills*

*confidence in a person. Being able to solve things, handle things, and manage things.” (P5)*

*“I could describe myself as someone who wasn't exactly short-tempered, but rather someone with flashes of brilliance, but I really wasn't like that at all. Patients can come to the pharmacy with different moods. And, of course, welcoming them with understanding involves empathy. I understand, yes, I could understand their anger at that moment. I could understand their impulsive behaviour at that moment because there was a patient in front of me, a client. By looking at it that way, I felt like I polished this aspect of myself a bit more, honestly.” (P15)*

*“Over time, I've learnt to refine myself by empathising and putting myself in the patient's shoes as much as possible. Previously, when someone didn't understand something, I used to say, "Don't you understand?" Now, I say, "Okay, you may not understand. Let me explain it in a way that you'll understand." I strive to simplify it to their level so they can grasp and comprehend it comfortably.” (P5)*

*“After graduating, experiencing situations in pharmacy assistance where patients thanked me, preventing some complications, or receiving positive feedback from patients when I resolved issues, all contributed to making me feel like a pharmacist.” (P8)*

Theme 4: Perceptions of role

Pharmacists thought, acted, and felt like pharmacists at the end of the above stages. Participants felt that the assistant pharmacy practice helped them understand the knowledge and skills they needed to become community pharmacists. At the end of the PIF process, most pharmacists described their professional

identities as healthcare advisors, some as managers, and a few as communicators.

*"We are primarily health advisors. Patients come to the pharmacy, you know there's a saying, 'the pharmacist covers the doctor's mistake, and the grave covers the pharmacist's.' Being a pharmacist means being able to provide health counseling, knowing the interactions of medications in the prescription, being able to answer questions, in my opinion." (P12)*

*"For me, it means more of management because the pharmacist is also the manager of the pharmacy. Even though we are assistant pharmacists, since our names are used on the licence, we were responsible for coordinating and organising everything in the pharmacy." (P17)*

*"What I noticed the most is that being a pharmacist means being a communicator. This is because people of all types and models come together. All opinions, ideas, and ideologies, including those from different nations, came to the pharmacy. At this point, being able to talk to every person always gave me a lot. In addition, the ability to persuade falls into the subcategories of communication. Can you convince the patient, can you provide confidence to the patient, does the patient feel comfortable with you, and can you cheer the patient? These are important for pharmacy." (P5)*

## Discussion

Using a case study design, a narrative summary of the role and effects of assistant pharmacy practice on PIF was built. Despite the challenges encountered in PIF during practice, it was observed that assistant pharmacy practice was particularly supported by pharmacists, especially in terms of opening community pharmacies. In Türkiye, this practice is also a prerequisite for opening pharmacies. Thus, findings consistent with the purpose of the mandatory practice were obtained. Additionally, this study revealed that the impact of this practice on PIF occurs in six stages.

In the pharmacy profession, the PIF process includes practical experiences gained by students through internships. These experiences provided students with the opportunity to translate theoretical knowledge into practice, explore various aspects of the pharmacy profession, and identify their strengths (den Boer *et al.*, 2021; Özçelikay & Zubarioglu, 2022).

Similar to the studies of Arslan and colleagues (2020b), in this study, assistant pharmacy practice was perceived

as a continuation of internships during the education period. However, by highlighting the difference between assistant pharmacy practice and internships, this study demonstrates that this distinction is the most significant point in the PIF process. Accordingly, while students do not receive any payment from pharmacy owners during internships in community pharmacies in Türkiye, it became mandatory to "pay assistant pharmacists a wage determined by the parties, not less than one and a half times the minimum wage" during assistant pharmacy practice (Ministry of Health, 2014, Bulut & Bilgener, 2021). Indeed, this difference was identified from the participants' perspectives as the most crucial factor in initiating the PIF process.

Responsibility was identified as another significant factor in the PIF process. In the literature, pharmacists who are not assigned responsibility cannot be involved in pharmacy affairs, thus hindering the PIF process (Chadha *et al.*, 2022). Consistent with the literature, this study highlights the importance of taking responsibility and identifies it as the second-most significant factor after salary.

The third and fourth factors identified in this study's PIF process consisted of two interconnected concepts. In this regard, willingness to learn and confidence gained from knowledge constitute these two factors. The desire to learn is undoubtedly an important factor in the PIF process. In a study by Quinn and colleagues (2020), participants expressed their preference not to be non-professional pharmacists and emphasised the importance of having sufficient knowledge. In this study, participants indicated that as they acquired knowledge, their willingness to communicate with patients increased; thus, the confidence gained from knowledge made them feel more like pharmacists. Several studies have demonstrated the importance of confidence in effective communication has been demonstrated by several studies (Seubert *et al.*, 2018; Qowimah *et al.*, 2021; de Castro Araújo-Neto *et al.*, 2024). In this sense, participants stated that when they started assistant pharmacy practice, they hesitated to interact with patients because of a lack of knowledge and anxiety. This finding contradicts the study by Kennie-Kaulbach and colleagues (2023), who identified being knowledgeable as the third most frequently mentioned factor when defining professional identities.

According to the findings of this study, communication with patients was deemed highly important in the fourth stage of PIF. Pharmacists who believed empathy should be present in the pharmacy considered it a cornerstone of communication with the community. Several pharmacists during the internship period reported being unable to communicate effectively, feeling unable to identify as pharmacists, and finding assistant pharmacy

practice unbeneficial. These findings provide evidence of the significance of communication in community pharmacies (Qudah *et al.*, 2021).

These findings are consistent with the literature, indicating the importance of establishing effective communication with customers or patients in the PIF process (Briceland *et al.*, 2023; Kennie-Kaulbach *et al.*, 2023). The last of the six factors identified by the study is receiving feedback. Participants mentioned that, during assistant pharmacy practice, they had the chance to correct their behaviour by receiving feedback from patients. This finding is consistent with the literature, indicating that providing feedback from patients to pharmacists is important for pharmacists to intervene more effectively (Ilardo & Speciale, 2020; Irwin *et al.*, 2024).

The results of this study reveal that assistant pharmacy practice plays an important role in creating professional identity for pharmacists and that this process progresses in six stages. In this sense, the exact opposite of the findings of Bulut and Bilgener (2021), who stated that pharmacists who have to participate in assistant pharmacy practice in Türkiye do not support this practice. It seems possible to achieve this result as the application becomes more understandable over time and its benefits begin to appear.

The findings of this study have significant implications for pharmacy education and policy in Türkiye. The incorporation of PIF activities into pharmacy curricula may enhance students' readiness to practice and foster a stronger sense of professional belonging. Policymakers in pharmacy education may wish to consider the development of structured mentorship programmes or internship opportunities that actively support the acquisition of critical skills and the formation of a professional identity. Furthermore, aligning educational strategies with global standards while addressing the unique needs of pharmacy practice in Türkiye may contribute to the advancement of both the profession and healthcare.

### **Limitations**

The participants' demographics skewed towards more females than males; however, this aligns with the prevailing trend in pharmacy degrees and the profession, both within Türkiye and internationally (UK and USA) (Arslan *et al.*, 2020b; Bissell *et al.*, 2021). The authors' experiences and biases inevitably influenced their perception of the data. As the corresponding author is a faculty member actively engaged in discussions about PIF, teaches the subject, and supervises pharmacy students, it is possible that these

circumstances led us to pay more attention to aspects of the transcripts that might not have been considered significant by investigators who do not have a direct role in the PIF curriculum.

### **Conclusion**

Several significant findings emerged in this case study of data related to PIF from Turkish pharmacists who had experience in assistant pharmacy practice. The data obtained from pharmacists revealed that the "salary" facilitating their active participation in pharmacy duties brought about a sense of responsibility. Consequently, this increased their desire for learning, boosted their confidence, enhanced their communication skills with patients, and enabled them to receive feedback. Thus, it initiated the PIF process, leading them to think, feel, and act as pharmacists. Moreover, participants underscored the role of assistant pharmacy in shaping their professional identities, noting the importance of receiving guidance from experienced pharmacists, gaining comprehensive insights into pharmacy practice, and acquiring diverse and impactful experiences compared to traditional internships. However, participants also encountered challenges during their PIF period, including feeling like mere staff, navigating the perspectives of other pharmacy staff, and experiencing a sense of being constantly observed. The findings of this study identified processes that may contribute to developing more effective strategies in assistant pharmacy practice, pharmacy education, and practical practice. Considering the stages in question and the difficulties encountered in the practice, as acknowledged by relevant authorities, it is anticipated that PIF during the assistant pharmacy period could be facilitated, and pharmacists' perspectives on the practice could change.

### **Conflict of interest**

The authors declare no conflict of interest.

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### **Appendix A: Interview questions**

- 1) What is your age?
- 2) How long has it been since you graduated?
- 3) Where are you currently employed?
- 4) In which areas have you completed internships? And for how long in total?
- 5) How many months have you been practicing assistant pharmacy?
- 6) What does being professional in a pharmacy mean to you?
- 7) What does being a pharmacist mean to you?
- 8) Have you ever felt like a pharmacist?
- 9) Do you think you behave like a pharmacist?
- 10) What does it mean to think and act like a pharmacist for you?
- 11) Have you ever observed role modeling inconsistent with your values?
- 12) Have there been times when you felt you had to compromise some parts of your personal identity to form your professional identity?
- 13) What post-graduation experiences have led you to question or reconsider your professional identity?
- 14) What kind of support has helped you or would help you when questioning your professional identity?
- 15) How did it feel to work as a pharmacist alongside another pharmacist?
- 16) What was the influence of assistant pharmacy practice on the formation of your professional identity?
- 17) Is there a difference between the influence of pharmacy assistance and internships on professional identity formation?
- 18) Is there any further information that you would like to include?