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RESEARCH ARTICLE

Improving attitude and self confidence of pharmacy students through the purposive non-technical skills training

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Abstract

Objective: To determine the influence of purposive non-technical skill training on pharmacy students' attitudes and self-confidence regarding their performances. **Methods:** The research was conducted with fourth-year PharmD students eligible for compulsory pharmacy professional practice. The non-technical skill training comprised a three-hour session led by two psychologists and included two segments: learning from seniors' experiences and instructor-led training. An anonymous online pre and post-test questionnaire was administered both before and after the training. **Results:** A significant increase in self-confidence in most non-technical skills was observed following the purposive training. The training significantly increased the mean confidence ratings of most non-technical skills among students in the pharmaceutical science programme, while it also raised the mean confidence ratings of non-technical skills related to patient care among students in the pharmaceutical care programme. Additionally, the training significantly enhanced the mean confidence ratings of all non-technical skills, particularly teamwork, among students who did not adhere to the study plan. Conversely, there was an increase in the mean confidence ratings of non-technical skills related to interpersonal skills among students who adhered to the study plan. Interestingly, training significantly increased the mean confidence ratings of non-technical skills only in female students. **Conclusion:** Adaptable and inclusive training approaches are important to meet the diverse needs of pharmacy students and ensure their preparedness for professional practice.

Introduction

Non-technical skills (NTS) are essential for personal development, social participation, and career success (Gibb, 2014). Various terminologies refer to non-technical skills, including soft skills and social competencies (Lamri & Todd, 2023). These skills encompass emotional intelligence, communication, creativity, problem-solving, teamwork, stress management, adaptability, and cultural awareness (Lamri & Todd, 2023). They are often better predictors of career success than hard skills and are important for client service, which is a required and necessary component of work environments. Communication, including effective listening and public speaking, is essential for life and work (Frenzel *et al*., 2015; Lee & Nguyen, 2023). In addition, emotional intelligence involves managing emotions and responding positively to feedback (Frenzel *et al*., 2015; Lee & Nguyen, 2023). Critical thinking requires evaluating and synthesising information for practical application (Frenzel *et al*., 2015). Reports indicate that situational awareness, decision-making, leadership, task management, communication and teamwork are crucial for pharmacists to improve patient safety (Ashour *et al*., 2020).

The Doctor of Pharmacy (PharmD) degree programme at the College of Pharmacy, Rangsit University, offers

two programmes: an undergraduate pharmaceutical science programme and a pharmaceutical care programme. The curriculum requires six calendar years to complete the pharmacy professional degree consisting of five full years of coursework, 400 hours of compulsory pharmacy professional practice at the end of the fourth academic year and 1,600 hours of internship rotations throughout the sixth academic year. These two programmes are designed to complete the core competency of pharmacy professionals in four academic years and the specific competency of each programme in the fifth academic year. The curriculum integrates scientific knowledge, clinical skills, and professional development, ensuring that graduates possess lifelong learning abilities, leadership, creative thinking and adaptability to change.

Communication is one of the most important competencies for pharmacists (McDonough & Bennett, 2006). Relationships with patients and other healthcare professionals are keys to providing pharmaceutical care services. During academic years, this skill has been built over time through training in counselling, interviewing and educating patients, as well as collaborative working as pharmacist interventions. However, there are various barriers to effective verbal communication. Medical terms should be avoided as they create ambiguity (Centre for Teaching Excellence, n.d.). In addition, being concise, clear and confident in communication is advised (Centre for Teaching Excellence, n.d.). Furthermore, active listening is fundamental to effective communication. Barriers to active listening include the inability to concentrate when people talk, criticising them, distractions from strong emotional responses or external noise, and experiencing physical illness (Centre for Teaching Excellence, n.d.). Personality factors like being introverted and shy cause silence and avoidance of sharing ideas (Bukhari *et al*., 2023). Therefore, all these barriers need to be taken into consideration while communicating with patients. It is encouraged to incorporate communication skills training in relevant subjects or situations with an extra practice designed specifically for students' needs.

Furthermore, adaptability means the ability to adjust to changing circumstances with ease. Being flexible, open-minded, creative, innovative and able to prioritise tasks are all required (Handshake, n.d.). Interestingly, being proactive, having the courage to try and fail, and generating one's own ideas and solutions are essential for pharmacists (McLaughlin *et al*., 2017).

Prioritisation is a vital process involving time, energy, and attention to tasks (Calonia *et al*., 2023). Effective prioritisation becomes an essential skill for academic achievement. Similarly, teamwork is the collaborative effort of a group to achieve a common goal or to complete a task effectively and efficiently.

Perspective is the ability to perceive things as they really are. Many factors can affect one's perspective. Generally, different perspectives always occur in people's lives, but they are necessary. Initially, they improve communication and reduce misinterpretations and distortions in communication (Psychologs World, 2024). Next, they are necessary for a realistic evaluation as well as for merits and validity (Psychologs World, 2024). Finally, they expand one's view to create the opportunities for changing perspectives (Psychologs World, 2024). The training could challenge limited beliefs and open students to alternative points of view.

Despite the development and integration of these skills into the pharmacy curriculum, it remains crucial to recognise their importance and practical application. Before commencing compulsory pharmacy professional practice, purposive non-technical skills training is provided to ensure the achievement of these competencies. Additionally, learning from real situations is emphasised. However, it is unclear whether this purposive training sufficiently influences pharmacy students' attitudes and confidence in their performances. Therefore, this study was conducted using an online questionnaire before and after the training.

Methods

This observational study was conducted in August 2023 with approval from the Institution Ethics Review Board (COA.No.RSUERB2024-014). The research involved fourth-year PharmD students meeting the criteria for compulsory pharmacy professional practice at the College of Pharmacy, Rangsit University, Thailand. Of the 162 fourth-year PharmD students, the sample size was calculated using Taro Yamane's formula to achieve a 95% confidence level, requiring a minimum of 116 participants for the study.

Students were verbally briefed on the study's purpose, and the details were highlighted, including the emphasis on voluntary participation without any course credit. Subsequently, electronic informed consent forms were used. The non-technical skills training was conducted as a three-hour session led by two psychologists and included two segments: learning from seniors' experiences and instructor-led training. An anonymous online questionnaire was administered both before and after the training to serve as pre-test and post-test assessments.

The questionnaire was reviewed by experts in the learning field to evaluate its validity using the Index of Item Objective Congruence (IOC). The values of IOC from the experts' evaluation ranged between 0.67 and 1.00, which were in accordance with the acceptable criterion. Furthermore, the reliability was also tested in a pilot study conducted among 30 pharmacy students attending pharmacology classes in the academic year 2022. The Cronbach's alpha coefficient was 0.97, which indicated that the instrument was reliable and suitable for data collection. Descriptive statistics were used to summarise the demographic characteristics of the students. The confidence ratings for non-technical skills in pharmacy professional practice between the PharmD programmes, adherence to the study plan (academic achievement according to the study plan outlined in the curriculum) and genders were presented as means and compared using an unpaired T-test or ANOVA as appropriate. All those confidence ratings before and after the training were compared using a paired T-test or repeated ANOVA as appropriate.

The significance level was defined as a *p*-value of less than 0.05. All statistical analyses were performed using IBM SPSS Statistics Desktop 20.0 Windows (IBM Corp., N.Y., USA).

The questionnaire consisted of five parts as follows:

Part 1: Demographic data

Part 2: Self assessment of the confidence rating for non-technical skills with 10 questions as in Appendix A and 5-point Likert scale answers range from "*strongly disagree*" (1) to "*strongly agree*" (5).

For example:

1. Understanding changes during your internships?

2. Adapting to the environment and handling challenging situations, even when internship supervisors are particularly strict?

3. Being able to communicate clearly, concisely, and accurately?

Part 3: Open ended questions of seven case studies

The Situation and Reaction Test (SRT) was adopted to determine thoughtful and; conscious and intentional actions towards the particular situations as outlined in Appendix B.

For example:

Case study 1:

A preceptor at a hospital training site noticed that a pharmacy student was not completing assigned tasks properly, with many shortcomings. The preceptor warned the students and asked them to correct the work, but the revised work still had many deficiencies and lacked attention to detail. The preceptor explained and clarified the issues, but the students seemed dissatisfied since they had never encountered such problems before and had never been criticised in this manner. If you were this pharmacy student, how would you resolve this problem?

Part 4: 5-point Likert scale for training satisfaction

Part 5: Suggestions

Results

A total of 156 students participated in this study. The majority were female (74.36%) and adhered to the study plan (73.72%). The proportion of students in the pharmaceutical care programme was slightly higher than those in the pharmaceutical science programme (52.56% *vs.* 47.44%) (Table I).

Table I: Student characteristics

Characteristics	Number (%)
Gender	
Female	116 (74.36)
Male	28 (17.95)
LGBTW+	10 (6.41)
Not specified	2 (1.28)
PharmD programmes	
Pharmaceutical care	82 (52.56)
Pharmaceutical science	74 (47.44)
Adhering to study plan	
Yes	115 (73.72)
No	41 (26.28)

In general, all non-technical skills showed a significant increase after training, except for teamwork. It is noteworthy that the way the training is structured has a greater influence on students' attitudes than the length of the training itself. The experiences of senior students may significantly capture their attention, as they are likely to encounter similar situations.

Prior to training, there were no statistically significant differences in the mean confidence ratings for non-technical skills between students in the pharmaceutical science programme and those in the pharmaceutical care programme, with the exception of self-control (4.32 *vs.* 4.01, *p* value = 0.020) and listening skills (4.50 *vs.* 4.21, *p* value = 0.020). Conversely, training did not significantly affect the mean confidence ratings for all non-technical skills. Among students in the

pharmaceutical science programme, training led to a significant increase in the mean confidence ratings for non-technical skills, excluding task prioritising and teamwork (Figure 1). In contrast, for students in the pharmaceutical care programme, training significantly enhanced the mean confidence ratings for understanding change (3.99 *vs.* 4.31, *p* value = 0.014), adaptation (3.69 *vs.* 4.10, *p* value = 0.006), communication (3.54 *vs.* 3.89, *p* value = 0.021), and noticing and understanding (4.17 *vs.* 4.41, *p* value = 0.031) (Figure 1).

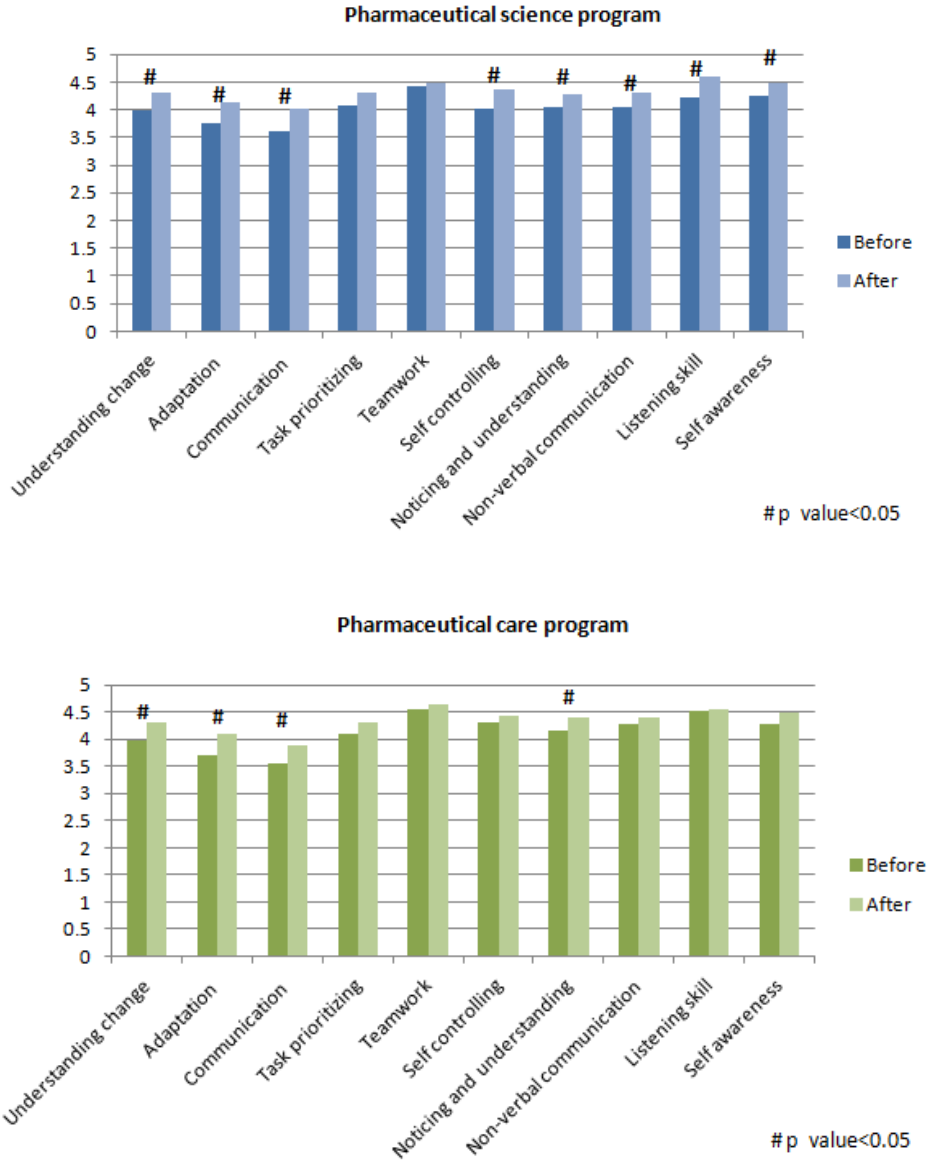

Figure 1: The confidence rating of non-technical skills before and after training regarding PharmD programmes

Regarding adherence to the study plan, the mean confidence ratings for non-technical skills were generally similar, except for communication (3.83 *vs.* 3.49, *p* = 0.043) and teamwork (4.63 *vs.* 4.40, *p* = 0.036) before training. However, the mean confidence ratings for all non-technical skills were significantly higher in students not adhering to the study plan post-training. For students not adhering to the study plan, training significantly increased the mean confidence ratings for non-technical skills, with the exceptions of adaptation, teamwork, and non-verbal communication. Conversely, among students adhering to the study plan, training significantly enhanced the mean confidence ratings for understanding change, adaptation, communication, self-control, and noticing and understanding (Figure 2).

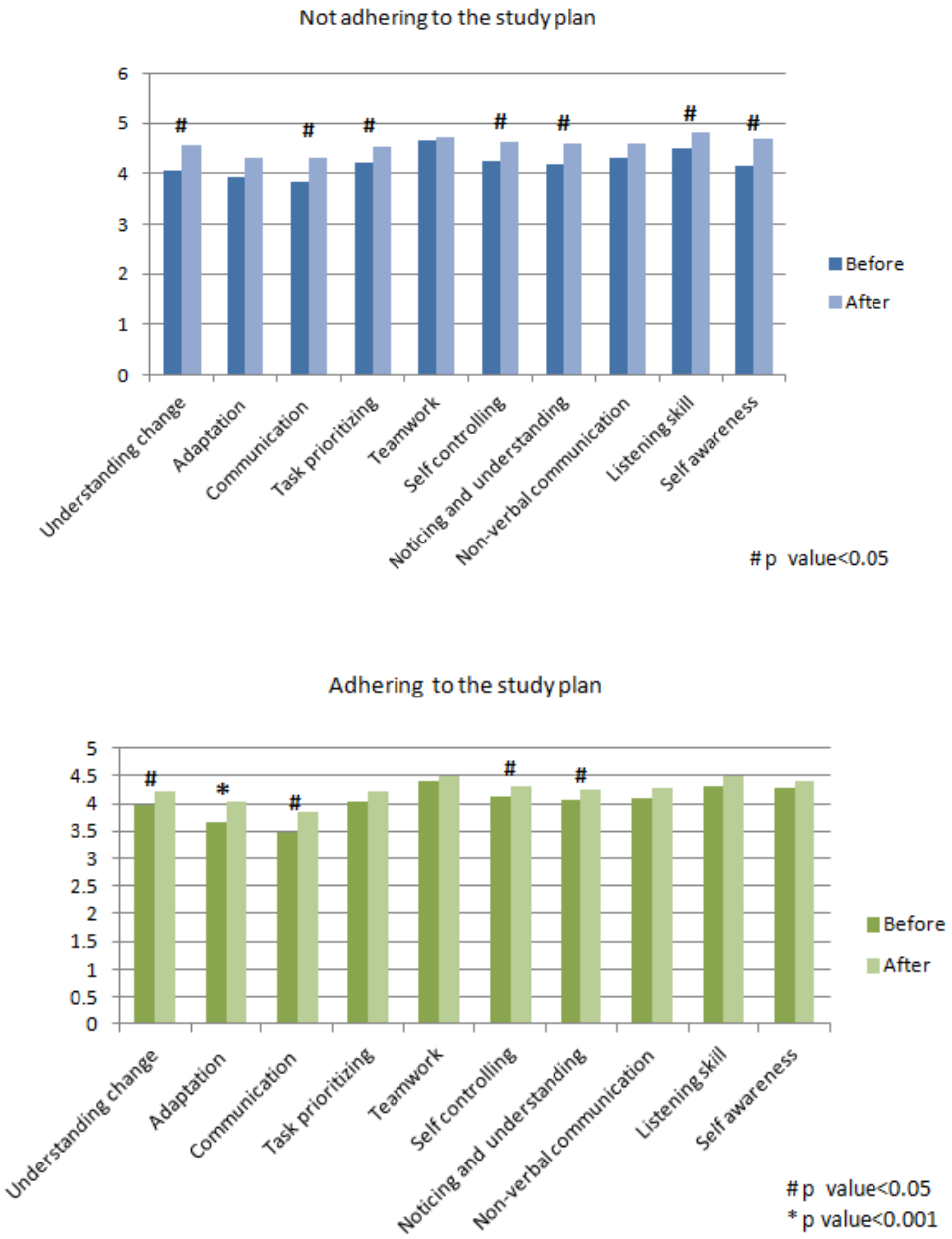

Figure 2: The confidence rating of non-technical skills before and after training regarding adhering to the study plan

Before training, the mean confidence ratings for non-technical skills were similar across genders, except for self-awareness (p = 0.013). The highest mean confidence rating for this skill was observed in males (4.54) and the lowest in LGBTQ+ (3.60) individuals, with a significant difference (p = 0.006). However, training did not significantly affect the mean confidence ratings for non-technical skills across genders. Notably, training significantly increased the mean confidence ratings in female and LGBTQ+ students. Among female students, all mean confidence ratings for non-technical skills significantly increased after training, except for teamwork (4.48 *vs.* 4.53, p value = 0.482) and non-verbal communication (4.16 *vs.* 4.31 p value = 0.091). In LGBTQ+ students, training significantly increased the mean confidence ratings only for noticing and understanding (3.60 *vs.* 4.40, p = 0.029) (Figure 3).

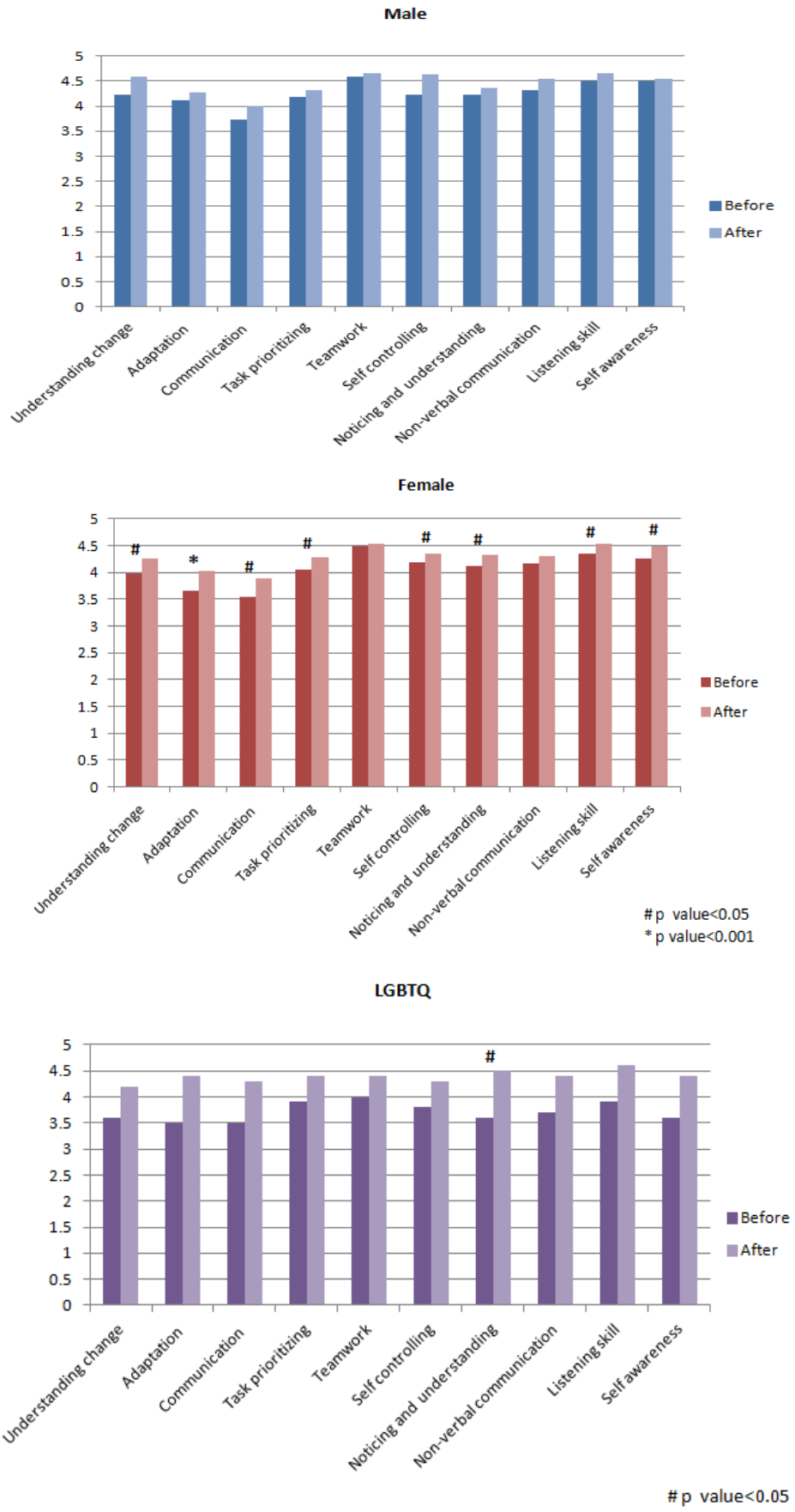

Figure 3: The confidence rating of non-technical skills before and after training between genders

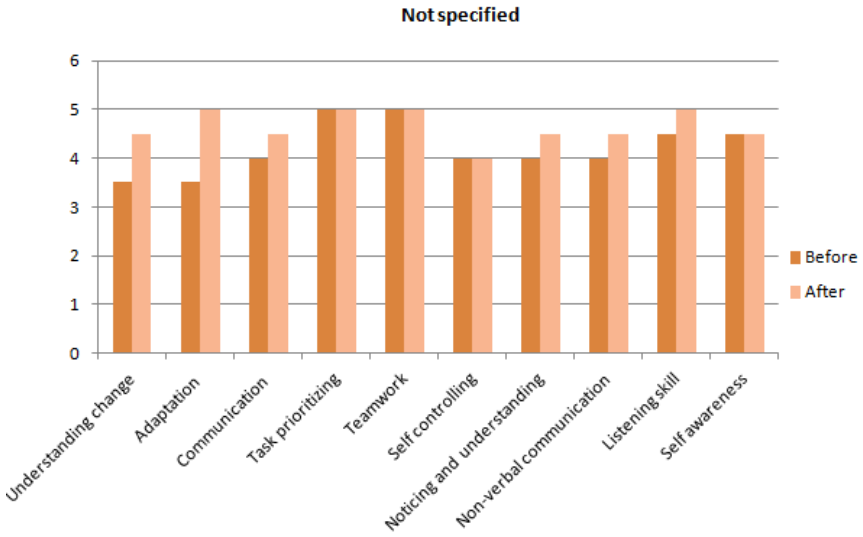

Figure 3: The confidence rating of non-technical skills before and after training between genders

Overall, students reacted positively to the SRT. The training did not influence students' responses except for situations 3 and 5. In situation 3, most students tended to avoid the conflict arising from different perspectives. However, there was a significant increase in the proportion of students wanting to clarify the reasons for differing perspectives after training (13.20% *vs.* 27.80%, *p* value = 0.002). In situation 5, the proportion of students seeking advice and continuing to practice to improve their skills for client service dramatically increased (26.50% *vs.* 98.00%, *p* value < 0.001) after training (Table II). The overall training satisfaction was 4.37.

Table II: The reactions toward the open-ended questions of eight situations

Situations	Reactions	Before training (n,%)	After training (n,%)	*P*-value
1	Correct	148 (98.00)	144 (95.40)	0.198
	None	3 (2.00)	7 (4.60)	
2	Discused	99 (66.00)	104 (68.90)	0.595
	Quiet or ignored	51 (34.00)	47 (31.10)	
3	Follow the preceptor's perspective	131 (86.80)	109 (72.20)	0.002
	Discussed	20 (13.20)	42 (27.80)	
4	Correct	149 (98.70)	148 (98.00)	1.000
	Discussed	2 (1.30)	3 (2.00)	
5	Correct	111 (73.50)	3 (2.00)	< 0.001
	Seeking advice	40 (26.50)	148 (98.00)	
6	Correct	149 (98.70)	149 (98.70)	1.000
	None	2 (1.30)	2 (1.30)	
7	Correct	149 (98.70)	149 (98.70)	1.000
	Improving self confidence	2 (1.30)	2 (1.30)	

Discussion

The results showed a significant increase in students' confidence in most non-technical skills after purposive training. Communication and adaptation showed the greatest increase in average confidence ratings after training, similar to the impact of co-curriculum courses for developing soft skills in undergraduate Malaysian students (Yusof *et al.*, 2022). Pharmacy professional practice is the first step out of campus life. Awareness of

the current situation and readiness for change are the first stages, which are the most difficult to overcome before changing behaviours (Shaikh, 2020), underlying the importance of soft skills training. It was in line with the study of health sciences students, which showed that communication and emotional intelligence benefited professional training and improved their clinical competence (Sancho-Cantus *et al*., 2023).

Training in the pharmaceutical science programme emphasises laboratory skills. Training positively affects self-confidence ratings for understanding change and communication, similar to the skills required in the pharmaceutical industry (Calvert *et al*., 2013). However, post-training self-confidence ratings in task prioritisation and teamwork did not significantly change among students in the pharmaceutical science programme, as they had practised these consistently throughout their study programme (Middleton S *et al*., 2018). Interestingly, the training significantly impacted non-technical skills involving patient care, such as communication or noticing and understanding, among students in the pharmaceutical care programme. The training could raise students' awareness of these skills as they are crucial to achieving optimal health outcomes (Kwame A & Petrucka PM, 2018). The significantly higher post-training self-confidence rating in students who did not adhere to the study plan showed the impact of training. The grade point average (GPA) and academic year can influence teamwork skills. GPA and the academic year were positively related to teamwork skills (De Prada et al., 2022), in contrast to the results obtained from students not adhering to study plans. Interpersonal skills, communication skills, interdependence and commitment to team success were key factors for teamwork (Yusof *et al*., 2021). The training could highlight to students the importance of teamwork skills in achieving academic success. Training significantly increased self-confidence in listening skills and self-awareness among students who did not adhere to study plans, possibly because they might lack those necessary skills. Subsequently, the training provided them with new insights and techniques, leading to noticeable improvements in their skills and confidence. Listening skills are critical for academic success, as they enhance comprehension and retention of information in class. A better understanding, meaningful participation, and accurate following of instructions are enabled by effective listening (Feyten & Carine, 1991). Self-awareness involves understanding one's strengths, weaknesses, emotions, and motivations, leading to better academic outcomes (Sutton, 2016). Moreover, it can balance study habits, facilitate seeking help when needed, and help set realistic academic goals (Sutton, 2016). Moreover, training significantly increased self-confidence scores in task prioritisation among students not adhering to study plans, similar to lower time management scores reported in students with less academic achievement (Wilson *et al*., 2021). Goal setting may be the key to task prioritisation. Breaking down larger goals into smaller, manageable steps may be suitable and easier for them to align with their goals (Calonia *et al*., 2023). Furthermore, they concluded that a study buddy is an important strategy to provide concern, support and motivation to achieve high-quality outputs (Calonia *et al*., 2023). Improvement in adaptability was related to study progression (De Prada *et al*., 2022) since adaptable students tended to have lower negative behavioural engagement (Collie et al., 2017). Supported the finding that students adhering to study plans showed higher self-confidence scores in adaptability after training. Male students were found to be better in self-awareness because they act carefully to ensure morals and ethics compared to females, which supports the results (De Prada *et al*., 2022; Setiati, 2023). The impact of training was found to be greater in female students supported by previous studies showing that female students actively participate in various activities to enhance their soft skills (Setiati, 2023). They are highly aware of the importance of these skills for their career goals (Setiati, 2023).

The ability of students to face critical situations in everyday work, as tested by the SRT, is an effective approach to evaluate mentality and understanding, such as social adaptability, sense of responsibility, cooperation, reasoning ability and self-confidence (Unacademy, n.d.; Testbook Edu Solutions, 2024). The training significantly increased the proportion of students exhibiting self-confidence, reasoning ability for different perspectives, social adaptability, and a sense of responsibility for the pharmacist's role.

There are some limitations to this study. The three-hour training might not be sufficient to produce long-lasting changes in attitudes and self-confidence. Long-term follow-up assessments are recommended to determine if the effects persist over time. Moreover, the use of self-reported questionnaires may introduce response bias. Students might overestimate their self-confidence or change their responses according to perceived expectations.

Conclusion

Purposive non-technical skills training in pharmacy education is crucial for developing effective pharmacy practice. While the impact varies across demographics and educational programmes, purposive training interventions can significantly enhance specific non-technical skills. The findings underscore the importance

of adaptable and inclusive training approaches to meet the diverse needs of pharmacy students and ensure their preparedness for professional practice.

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Conflict of interest

The authors declare no conflict of interest.

Source of funding

The authors did not receive any funding.

Ethics approval and informed consent

This descriptive study was conducted in August 2023 with the approval of the Institution Ethics Review Board (COA.No.RSUERB2024-014). Students were verbally briefed on the study's purpose and details highlighted, including the emphasis on voluntary participation without any course credit. Subsequently, electronic informed consent forms were used.

References

Ashour, A., Phipps, D. L., & Ashcroft, D. M. (2021). The role of non-technical skills in community pharmacy practice: an exploratory review of the literature. *International Journal of Pharmacy Practice*, **29**(3), 203–209. https://academic.oup.com/ijpp/article/29/3/203/6125373

Bukhari, S., Kalhoro, I., Lashari, A. A., Soomro, I. A., Batool, S., & Amur, A. (2023). The communication barriers and their impacts on the academic performance of the graduate students. *Journal of Positive School Psychology*, **7**(5), 605–612. https://journalppw.com/index.php/jpsp/article/view/16816

Calonia, J. T., Pagente, D., Desierto, D. J. C., Capio, R. T., Tembrevilla, J. A. P., Guzman, C. A., & Nicor, A. J. S. (2023). Time management and academic achievement: Examining the roles of prioritization, procrastinationand socialization. *International Journal of Innovative Science Engineering and Technology*, **8**(6), 766–775. https://zenodo.org/records/8115965

Calvert, S., Gobburu, J., O'Barr, S., Shah, K., Huber, J., & Weiner, D. (2013). The future of the pharmaceutical sciences and graduate education: Recommendations from the AACP graduate education special interest group. *American Journal of Pharmaceutical Education*, **77**(4), S2. https://www.ajpe.org/article/S0002-9459(23)02944-3/fulltext

Centre for Teaching Excellence, University of Waterloo. (n.d.). Effective communication: Barriers and strategies. Retrieved Juny, 2024 from https://uwaterloo.ca/centre-for-teaching-excellence/catalogs/tip-sheets/effective-communication-barriers-and-strategies

Collie, R. J., Holliman, A. J., & Martin, A. J. (2017). Adaptability, engagement, and academic achievement at university. *Educational Psychology*, **37**(5), 632–647. https://doi.org/10.1080/01443410.2016.1231296

De Prada, E., Mareque, M., & Pino-Juste, M. (2022). Teamwork skills in higher education: Is university training contributing to their mastery? *Psicologia: Reflexão e Crítica*, **35**(1), 5. https://doi.org/10.1186/s41155-022-00207-1

Feyten, C. M. (1991). The power of listening ability: An overlooked dimension in language acquisition. *The Modern Language Journal*, **75**(2), 173–80. https://doi.org/10.1111/j.1540-4781.1991.tb05348.x

Frenzel, J., Eukel, H., Neville, M., Castillo, S., Donohoe, K., Jones, M., Kirwin, J., McMillan, A., Starry, M., Tingen, J., & Urteaga, E. (2015). Essential skills for pharmacy graduates reported by advanced pharmacy practice experience preceptors. *Currents in Pharmacy Teaching and Learning*, **7**, 700–704. http://dx.doi.org/10.1016/j.cptl.2015.06.005

Gibb, S. (2014). Soft skills assessment: Theory development and the research agenda. *International Journal of Lifelong Education*, **33**(4), 455–471. https://doi.org/10.1080/02601370.2013.867546

Handshake. (n.d.). Soft skills 101: definition + 50 examples. Retrieved Juny, 2024, from https://joinhandshake.com/blog/students/soft-skills-examples/

Jeremy, L., & Lubart, T. (2023). Reconciling hard skills and soft skills in a common framework: The generic skills component approach. *Journal of Intelligence*, **11**, 107.1–19. https://doi.org/10.3390/jintelligence11060107

Kwame, A., & Petrucka, P. M. (2021). A literature-based study of patient-centered care and communication in nurse-patient interactions: barriers, facilitators, and the way forward. *BMC Nursing*, **20**(1), 158. https://doi.org/10.1186/s12912-021-00684-2

Lee, S., & Nguyen, P. A. A. (2023). 12 Skills pharmacy students can apply to become leaders in their practice. Pharmacy Careers, **17** (1), 10–11. https://www.pharmacytimes.com/view/12-skills-pharmacy-students-can-apply-to-become-leaders-in-their-practice

McDonough, R. P., & Bennett, M. S. (2006). Improving communication skills of pharmacy students through effective precepting. *American Journal of Pharmaceutical Education*, **70**(3), 58. https://doi.org/10.5688/aj700358

McLaughlin, J. E., Bush, A. A., Rodgers, P. T., Scott, M. A., Zomorodi, M., Pinelli, N. R., & Roth, M. T. (2017). Exploring the requisite skills and competencies of pharmacists needed for success in an evolving health care environment. *American Journal of Pharmaceutical Education*, **81**(6), 116. https://doi.org/10.5688/ajpe816116

Middleton, S., Charnock, A., Forster, S., & Blakey, J. (2018). Factors affecting individual task prioritisation in a workplace setting. *Future Healthcare Journal*, **5**(2), 138–142. https://doi.org/10.7861/futurehosp.5-2-138

Psychologs World. (2024). How does personal perspective impact our lives? https://www.psychologs.com/how-does-personal-perspective-impact-our-lives

Sancho-Cantus, D., Cubero-Plazas, L., Botella Navas, M., Castellano-Rioja, E., & Cañabate Ros, M. (2023). Importance of soft skills in health sciences students and their repercussion after the COVID-19 epidemic: Scoping review. *International Journal of Environmental Research and Public Health*, **20**(6), 4901. https://doi.org/10.3390/ijerph20064901

Setiati, F. (2023). Are there soft skill ability different In gender? *Journal of Career and Entrepreneurship*, **2**(2), 44–58. https://doi.org/10.3390/ijerph20064901

Shaikh, A. (2020). Understanding change: A critical review of literature. *Annals of Contemporary Developments in Management & HR*, **2**(2), 40–44. https://acdmhr.theiaer.org/archive/v2/v2n2/p5.pdf

Sutton, A. (2016). Measuring the effects of self-awareness: Construction of the self-awareness outcomes questionnaire. *Europian Journal of Psychology*, **12**(4), 645–658. https://doi.org/10.5964/ejop.v12i4.1178

Testbook Edu Solutions. (2024). SSB situation reaction test: Check out the tips to prepare for SRT here! https://testbook.com/ssb-service-selection-board/srt-ssb

Unacademy. (n.d.). Situation reaction test. Retrieved Juny, 2024, from https://unacademy.com/content/ssc/study-material/english/situation-reaction-test/

Wilson, R., Joiner, K., & Abbasi, A. (2021). Improving students' performance with time management skills. *Journal of University Teaching & Learning Practice*, **18**(4), 16–20. https://files.eric.ed.gov/fulltext/EJ1304142.pdf

Yusof, N., Hussein, R., Hashim, R., Mansur, A. B. F., Malik, S., Bajnaid, N., & Mohd Arif, S. (2021). Teamwork effectiveness in student's final year project. *International Journal of Emerging Technologies in Learning*, **16**(15), 4–15. https://doi.org/10.3991/ijet.v16i15.23705

Appendix A: Self assessment of the confidence rating for non-technical skills

Are you confident in:	
1.	Understanding changes during your internships?
2.	Adapting to the environment and handling challenging situations, even when internship supervisors are particularly strict?
3.	Being able to communicate clearly, concisely and accurately?
4.	Managing your time effectively and planning which influences your working performance?
5.	Collaborating creatively with others including showing mutual respect, listening to opinions and being adaptable?
6.	Observing, understanding, managing and expressing your emotions effectively?
7.	Recognising and understanding the emotions of your peers and internship supervisors?
8.	Using non-verbal communication effectively, including
9.	Being an attentive listener, employing techniques such as active listening, silence and emotional reflection
10.	Having a strong sense of self-awareness?

Appendix B: Case studies for the situation and reaction test

Case studies	
Case study 1	A preceptor at a hospital training site noticed that a pharmacy student was not completing assigned tasks properly, with many shortcomings. The preceptor warned and asked them to correct the work, but the revised work still had many deficiencies and lacked attention to detail. The preceptor explain and clarify the issues, but the student seemed dissatisfied since they had never had such problems before and never been criticised in this manner. If you were this pharmacy student, how would you resolve this problem?
Case study 2	A preceptor at a hospital training site unwilling to teach or accept pharmacy students from private universities because they are "*spoiled, lazy, not hardworking, but they pay to graduate*." If you were this pharmacy student, how would you handle this situation?
Case study 3	A pharmacy student wore sneakers to their pharmacy training site, believing they were comfortable and suitable for the job. However, the preceptor at the training site considered the sneakers inappropriate and deducted points for behavior. If you were this pharmacy student, how would you handle this situation?
Case study 4	A pharmacy student at a pharmacy training site is very dedicated, eager to learn, and responsible for assigned tasks. However, the student does not engage in other tasks unrelated to the internship, such as carrying boxes of medication or cleaning shelves. This has led the preceptor to feel that the student lacks a willingness to help. If you were this pharmacy student, how would you address this issue?
Case study 5	A pharmacy student at a pharmacy training site is very dedicated, eager to learn, and responsible for assigned tasks. However, the student tends to avoid interacting with customers, and dispensing medications. The preceptor has noticed that the student speaks to patients in a curt and impolite manner. Then the preceptor doesn't allow the student to interact with customers. If you were this pharmacy student, how would you address this issue?
Case study 6	A pharmacy student at a pharmacy training site is quiet and does not interact much with the preceptor. The student rarely asks questions or seeks additional knowledge leading the distance between the preceptor and the student. If you were this pharmacy student, how would you address this issue?
Case study 7	A pharmacy student at a pharmacy training site is very dedicated, eager to learn, and responsible for assigned tasks. However, the student is quiet and rarely shares opinions because they are afraid of being criticised for giving incorrect answers. If you were this pharmacy student, how would you address this issue?