Jurnal Insan Farmasi Indonesia, 6(2) Desember 2023 (184-193)
Alexxander
p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

ELECTIVE COURSE DEVELOPMENT AND EVALUATION FOR THIRD-YEAR PHARMACY STUDENTS ON PHARMACY HEALTH COACHING IN INDONESIA

Alexxander[1] Ika Puspitasari[2], Susi Ari Kristina[3], Restu Dwi Pratiwi[4]*
[1]Department of Pharmaceutical Science, STIKES ISFI Banjarmasin, Kalimantan Selatan, Indonesia.
[2]Department of Pharmacology & Clinical Pharmacy, Gadjah Mada University, Yogyakarta, Indonesia.
[3]Department of Pharmaceutics, Faculty of Pharmacy, Gadjah Mada University, Yogyakarta, Indonesia.
[4]Instalasi Farmasi Rumah Sakit, Sambang Lihum Mental Hospital, Kalimantan Selatan, Indonesia.
*E-mail : alexxander@mail.ugm.ac.id

ABSTRACT

To describe our experiences in developing an elective course for third-year pharmacy students on pharmacy health coaching, as well as to evaluate its effects on students' attitudes, knowledge, and skills. Based on previously developed models, the 3 Co-TEAM models (collaboration, consultation skill, communication skill, training, education, attitude, motivation) consist of 18 hours of course modules. A multiple-choice and essay quiz was used to assess students' mastery of essential abilities pre and post elective courses. After the last teaching session, students' self-perceived attitude, knowledge, and skills were evaluated through a voluntary survey. Of the 60 students in the third year, only 7 students are willing to voluntarily take the elective course (response rate 11.67%). The development of the curriculum resulted in a course of 3 modules, the duration of each course was 2 hours. Results showed that there was a significant improvement in knowledge overall mean score before and after the course (38.79, SD=7.11 and 81.21, SD=5.34, respectively, $p<0.05$). The overall mean composite score in the student's perceived attitudes, knowledge, and skills was increased by 48.35%, 96.43%, 51.91%, respectively; $p<0.05$. This elective course has proven to be a successful way of educating pharmacy students. We advocate the incorporation of this style of education into the learning process to improve student's learning experiences while still supporting traditional healthcare learning.

Keywords: Pharmacy students, Pharmacy education, Educational measurement, Competency-Based Education

INTRODUCTION

Coaching can be defined in a variety of ways, many of them imply that the coach assists the person being taught in achieving his or her goals considerably more quickly than he or she could on their own[1]. Health coaching, according to the National Society of Health Coaches, is a method of engaging the patient/client that drives the agenda and taps into his or her

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

inner motivation to modify unhealthy habits[2]. Learning to be a health coach, as previously said, is an experience that can give pharmacy students some of the skills needed to effectively fulfill their role in prevention and wellness[3].

There have been few papers documenting pharmacy students' involvement in health coaching programs. Second-year pharmacy students who volunteered to serve as health coaches in a diabetes control program were featured in one study[4]. Uninsured hypertensive patients were coached by 11 nursing, medical, and pharmacy students, according to Leung and colleagues[5]. Students of various levels and backgrounds could be prepared to serve as health coaches, according to the findings[6]. As a result, it's critical to provide pharmacy students with the skills and information they'll need to deal with pharmacy health coaching. This paper discusses the experiences of the STIKES ISFI Banjarmasin School of Health Science in developing an elective course on pharmacy health coaching, as well as an evaluation of the effects of this new teaching module on pharmacy students.

METHOD

This is a one-group pre-post interventional study, conducted at STIKES ISFI Banjarmasin School of Health Science, from November 2019 – January 2020.

A new optional 18-hours course on pharmacy health coaching was implemented for third-year pharmacy students at the STIKES ISFI Banjarmasin School of Health Science, located in Kalimantan Selatan-Indonesia. Classes were held on Saturday morning, from 9:00 am to 11:00 am, from 16th November 2019 to 11th January 2020. The course was taught by a master's degree of pharmacist with coach certification, psychologist, and psychiatric. The course material taught refers to the components of the 3 Co-TEAM model that has been developed by researchers.

We used voluntary sampling. The third-year pharmacy students at this institution were informed by the academic system about this elective course, interested students can register with the academic department of the campus. All pharmacy students have informed that responses would be kept confidential.

The outcomes included improvement in pharmacy students' knowledge about pharmacy health

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

coaching and students' perceived attitude, knowledge, and skills about pharmacy health coaching.

Technical information

A two hours overview of this elective course and its content was first presented by a pharmacist with coach certification, in the format of a PowerPoint presentation to all third-year pharmacy students (60 students) in the classroom. The material provided was about health coaching in general, based on researcher finding in the previous study and these opportunities can be taken by students for their final project as a graduation requirement. The pdf files can be accessed by students through their Whatsapp group. The course registration process was conducted through the academic website.

Course format

An expert team of pharmacist health coaches from STIKES ISFI Banjarmasin, a psychologist, and a medical specialist was assembled, developed a plan for the program, and scheduled all tasks. The course's facilities (rooms and equipment) were arranged in collaboration with the school's program planners and lecture support staff. Because of the large number of students, lecturers have deemed the ideal teaching approach due to stimulate learning and memory[7].

To create the material of this course, scientific evidence was assimilated and coupled with expert opinions. Each instructor's PowerPoint lectures featured many videos to generate as many interactive discussions as feasible. To stimulate dialogues between the instructor and students, presentations of real-life situations, instruction of problem-solving, and role-playing were also included[7]. The lecture committee of STIKES ISFI Banjarmasin authorized and supported the curriculum and course format.

Students' learning assessment

Students' learning was assessed using two criteria:

1) Students' acquired knowledge about pharmacy health coaching. This part consisted of a quiz that was made to evaluate pharmacy students' knowledge about pharmacy health coaching. The quiz was written by a pharmacist health coach as an instructor, and distributed to students before the first lecture and after the last lecture. The questionnaire was face, content, and statistical ($r = 0.525$) validated among instructors and researchers of the study to enhance the

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

clarity and comprehensibility of the questions. The quiz consisted of 15 multiple choice questions, if the students answer correctly, they scored 1 for each question, if not they scored zero. Also, the questionnaire contained 10 essay questions that covered the pharmacy health coaching concept and motivational interviewing. The students must explain the answer in the description form, if the answer is correct it will get a maximum score of 1, if it only illustrates part of the expected answer it will get 0.5, while zero if the answer is not relevant at all .

2) Students' perceive toward attitude, knowledge, and skills. The attitude and knowledge sections consisted of seven items that assessed the attitudes and knowledge of the student toward PHC. The skills section consisted of four items that assessed the skills of the student related to PHC. The participants were asked to indicate their level of agreement with the survey items in each section using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). A composite score for each survey section was derived by awarding points for each survey item reply and summing the total points for each section. Points were assigned as follows: 5 points (strongly agree), 4 points (agree), 3 points (neutral), 2 points (disagree), and 1 point (strongly disagree).

A sample size calculation was not performed because the nature of the study was voluntary.

Data were analyzed using the SPSS version 17 (SPSS Inc., Chicago, IL, USA). The descriptive analysis was done using mean and standard deviation (SD) for continuous variables and percentage for qualitative variables. Further, the difference between groups will be tested statistically with the Wilcoxon test.

RESULT

Only seven students from sixty are willing to voluntarily take the elective course (response rate 11.67%). The majority of participants were female, representing 57.14% of the study sample (n=4). None of the participants had ever attended a course/workshop about pharmacy health coaching (Table 1).

Table 1. Demographic characteristics of the elective course participants

Demographic characteristics	N
Age (years), mean (SD)	21.57 (0.79)
Gender, N (%)	
Male	3 (42.86)
Female	4 (57.14)
Year of Study, years (%)	3 (100)
Have you ever attended a course about pharmacy health coaching? N (%)	
Yes	0 (0.0)
No	7 (100)

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

The development of the curriculum resulted 3 modules. The duration of each course was 2 hours (09:00– 11:00 am). The first module (4 hours) focused on the principles of pharmacy health coaching. Module 2 (2 hours) addressed knowledge of the underlying pathology of chronic disease and pharmacotherapy of chronic disease. The third module (12 hours) discussed the competencies of a pharmacy health coach. All components refer to the 3 Co-TEAM models (Tabel 2).

Table 2. Elective course format of pharmacy health coaching using 3 Co-TEAM model components

Component	Time Required	Teaching Model	Responsible Instructure
Principles of pharmacy health coaching 1. Definition 2. Key Values 3. Scope 4. Content of session 5. Delivery & tools	4 hours	Lecture, reading	Pharmacist with coach certification
Pathology of Chronic Disease 1. The underlying pathology of chronic disease 2. Pharmacotherapy of chronic disease	2 hours	Lecture, reading	Medical specialist and Master degree of pharmacist
Attitude 1. Tolerance & respect for individual background 2. Empathy 3. Professional behavior & accountability 4. Confidence 5. Strong encouragement 6. Work systematically & collaboratively **7.** Identifies area for development to improve competency	2 hours	Lecture, reading	Pharmacist with coach certification
Knowledge 1. Concept of the trans-theoretical model stage of change, self-determination theory, self-concordance theory, and adult learning theory 2. A holistic and comprehensive approach 3. Medication adherence 4. Psychoeducation 5. Deal with patient's irrational belief	4 hours	Lecture, reading	Clinical psychologist and Pharmacist with coach certification
Skills 1. Effective communication 2. Interprofessional Collaboration (IPC) 3. Consultation skill 4. Motivational interviewing	6 hours	Lecture, reading	Clinical psychologist and Pharmacist with coach certification

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

Table 3 showed that there was a significant improvement in knowledge, overall mean score [81.21, SD=5.34], P-values <0.05.

Table 3. Evaluation of student's knowledge

Participants	Pre-test	Post-test	p-value
1	47.50	89.00	
2	44.00	78.00	
3	31.00	77.00	
4	41.50	75.00	**0.000***
5	35.00	82.50	
6	43.50	79.50	
7	29.00	87.50	
Mean (SD)	**38.79 (7.11)**	**81.21 (5.34)**	

Students' learning assessment

The primary outcome results can be seen in Table 4. The overall mean composite score in the student's perceived attitudes section increased by 48.35% between the pre-and post-test (21.28 SD=1.496 vs. 31.57 SD=1.512, respectively, p<0.05). The only item in the student's perceived attitudes section that showed a statistically non-significant difference between pre-and post-scores was the following statement: able to express empathy for patients (p=0.059; Table 5).

Table 4. Evaluation of student's perceived pre and post elective course (composite score)

Item	Mean Pre-survey Score ± SD (n=7)	Mean Post-survey Score ± SD (n=7)	p-value
Attitude	21.28 ± 1.496	31.57 ± 1.512	0.016*
Knowledge	15.71 ± 1.254	30.86 ± 1.574	0.018*
Skills	11.00 ± 0.816	16.71 ± 0.756	0.017*

The overall mean composite score in the student's perceived knowledge and skills section increased by 96.43% and 51.91%, respectively; p<0.05. All the items in the knowledge and Skills section showed statistically significant differences between pre-and post- scores (p<0.05 for all items; Table 5).

Few articles have discussed the development of educational programs for pharmacy students to our knowledge[8,9]. This training focused on the student's attitude, knowledge, and skills, as well as quality standards for developing pharmacist health coaching proficiency. Before and after the course, participants are given multiple-choice and essay quizzes. Quizzes are a well-established and reliable technique of measuring knowledge that has a strong association with overall competence and performance, according to several studies[10,11]. The fact, this course simply provided a framework for students to get familiar with terms and concepts; it did not provide a sufficient framework for students to retain competencies, which must be updated and tested through periodic knowledge and skill evaluations [7]. However, in our experience, this 18-hour course allowed us to offer students appropriate competencies in a reasonable amount of time while remaining compatible with the school of pharmacy's educational program and organization.

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

Table 5. Evaluation of student's perceived pre and post elective course (individual item)

Item	Mean Pre-survey Score ± SD (n=7)	Mean Post-survey Score ± SD (n=7)	p-value
Attitude			
Able to work systematically and coordinate with other health providers	2.86 ± 0.690	4.43 ± 0.535	0.026*
Have a strong mentality and not easy to give up when the coaching process doesn't go as expected	2.86 ± 0.690	4.71 ± 0.488	0.026*
Able to identify deficiencies as a pharmacy health coach and willing to develop competence	2.29 ± 0.488	4.29 ± 0.488	0.017*
Confidence in conducting health coaching interventions	2.57 ± 0.535	4.29 ± 0.756	0.024*
Able to express empathy to patients	3.57 ± 0.535	4.57 ± 0.535	0.059
Have a professional and accountable behavior	3.71 ± 0.488	4.57 ± 0.535	0.034*
Able to respect and tolerate the patient's background	3.43 ± 0.535	4.71 ± 0.488	0.024*
Knowledge			
I understand the pathophysiology and pathophysiology of chronic diseases	2.00 ± 0.577	4.14 ± 0.690	0.024*
I understand the concept of the trans-theoretical model, self-determination theory, self-concordance, and adult learning theory	1.71 ± 0.488	4.29 ± 0.488	0.015*
I understand pharmacotherapy for chronic disease patients	2.86 ± 0.378	4.71 ± 0.488	0.011*
I understand how to take a holistic and comprehensive approach to chronic disease patients	1.86 ± 0.378	4.43 ± 0.535	0.016*
I understand the concept of medication adherence	2.71 ± 0.488	4.71 ± 0.488	0.017*
I understand how to deal with patients' irrational beliefs related to social, cultural, and religious norms	2.71 ± 0.488	4.42 ± 0.535	0.014*
I understand the concept of psychoeducation	1.86 ± 0.690	4.14 ± 0.378	0.016*
Skills			
I am able to communicate effectively with patients	2.86 ± 0.378	3.86 ± 0.378	0.020*
I am able to collaborate with other health providers, patients, and patient's family	3.14 ± 0.690	4.29 ± 0.488	0.038*
I am able to conduct consultation sessions with patients effectively and efficiently	2.71 ± 0.488	4.43 ± 0.534	0.014*
I am able to conduct motivational interviews with patients to trigger and strengthen intrinsic motivation from patients	2.29 ± 0.488	4.14 ± 0.378	0.011*

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

Our research looks to be some of the first published evidence on the influence of a pharmacy health coaching course on pharmacy students' attitudes, knowledge, and abilities. The response rate was low (11.67%), which could indicate that students were unfamiliar with the course.

Components for elective course format of pharmacy health coaching were using 3 Co-TEAM models that researchers developed before[12]. The model is based on a logic model sourced from general resources and specific resources, which involves tracing related previous studies, compiling systematic reviews, and focus group discussions with health professionals[13].

Modules in the course consist of 3 modules. The module for knowledge about chronic diseases is only given for 2 hours, this is because students in the third year have gained knowledge about pharmacotherapy of chronic diseases in other subjects. So that the course focuses on understanding the principles of pharmacy health coaching and improving the competence of third-year pharmacy students as pharmacy health coaches. Instructors involved include pharmacists who have received coach certification, psychologists, and specialist doctors. The protocol in preparing the course format was adopted from model curriculum for pharmacy technician education and training programs, fourth edition[14].

Students' knowledge about pharmacy health coaching has increased. Before the course, students showed an overall low knowledge mean score [38.79, SD=7.11]. Results showed that there was a significant improvement in knowledge, overall mean score [81.21, SD=5.34], P-values <0.05. Evaluation of students' perceived pre and post-elective course (composite score) also showed a significant increase in attitude, knowledge, and skills (P<0.05). For evaluation of students' perceived pre and post-elective courses for individual items, there is one item that does not show a significant increase (the ability of students to express empathy). This might be the ability to express empathy is fundamentally owned by every human being, it can be seen from the score before the course is relatively high (3.57, SD=0.535).

The following limitations should be considered when interpreting the findings of this study. First, the study used a one-group pre-post design to evaluate the pharmacy health coaching elective course without using a

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

comparator group to compare this course technique to standard methods. Second, the course's impact was investigated shortly after it was completed. This may not accurately reflect the course strategies for long-term impact. Third, the impact on real-world practice was not assessed because student evaluation was limited to the school setting. Finally, our research was limited to a single cohort of students from a single school, which limits the generalizability of the findings.

Pharmacists' roles have evolved substantially in recent years, and it is envisaged that pharmacists will play a significant role in providing pharmaceutical care services. As a result, to be competent healthcare practitioners and deliver pharmacy health coaching, pharmacists must get enough and comprehensive training and education. Pharmacy educators must give pharmacy students with scientific activities and courses for them to be competent in their roles and to ensure that they are capable of providing this service to their patients.

Pharmacy education delivered at the school of pharmacy level is one of the most significant factors in developing professional pharmacists, according to the Accreditation Council for Pharmaceutical Education (ACPE)[15]. So, it is critical for pharmacy educators to provide students with the necessary skills to ensure that they receive appropriate experiences as part of their course, as well as to develop opportunities to fully engage pharmacy students in pharmacy-related activities, which has a positive impact on patient care, benefits the experiential site, and provides a strong learning experience.

CONCLUSION

This elective course has proven to be a successful way of educating pharmacy students. We advocate the incorporation of this style of education into the learning process to improve student's learning experiences while still supporting traditional healthcare learning.

ACKNOWLEDGEMENT

We would like to thank STIKES ISFI Banjarmasin, Susi Ari Kristina, Ika Puspitasari, and Cecep Sugeng Kristanto for its valuable contribution to this study.

REFERENCE

1. Tofade T. Coaching younger practitioners and students using components of the co-active coaching model. Am J Pharm Educ. 2010;74.
2. National Society of Health Coaches [Internet]. [cited 2021 Oct 31]. Available from:

p-ISSN 2621-3184; e-ISSN 2621-4032
doi: 10.36387/jifi.v6i2.1603

https://www.nshcoa.com/
3. Pounds K, Offurum A, Moultry AM. First year pharmacy students as health coach in the management of hypertension. Pharm Educ. 2015;15:111-115.
4. MacLean LG, White JR, Broughton S, Robinson J, Shultz JA, Weeks DL, Willson MN. Telephone Coaching to Improve Diabetes Self-Management for Rural Residents. Clin Diabetes. 2012;30:13-16.
5. Leung LB, Busch AM, Nottage SL, Arellano N, Glieberman E, Busch NJ, Smith SR. Approach to antihypertensive adherence: A feasibility study on the use of student health coaches for uninsured hypertensive adults. Behav Med. 2012;38:19-27.
6. Margolius D, Bodenheimer T, Bennett H, Wong J, Ngo V, Padilla G, Thom DH. Health coaching to improve hypertension treatment in a low-income, minority population. Ann Fam Med. 2012;10:199-205.
7. Montana M, Mathias F, Rathelot P, Lacroix J, Vanelle P. Development and evaluation of an elective course on the pharmacist's role in disaster management in France. J Educ Eval Health Prof. 2019;16.
8. Woodard LJ, Bray BS, Williams D, Terriff CM. Call to action: Integrating student pharmacists, faculty, and pharmacy practitioners into emergency preparedness and response. J Am Pharm Assoc. 2010;50:158-164.
9. Tremblay ML. Simulation-based Crisis Resource Management in Pharmacy Education. Am J Pharm Educ. 2018;82.
10. Ed B. Writing Multiple Choice Outcome Questions to Assess Knowledge and Competence. Journal of continuing education in nursing. 2015;46:11.
11. Tangianu F, Mazzone A, Berti F, Pinna G, Bortolotti I, Colombo F, Nozzoli C, Regina ML, Greco A, Filannino C, Silingardi M, Nardi R. Are multiple-choice questions a good tool for the assessment of clinical competence in Internal Medicine? Ital J Med. 2018;12:88-96.
12. Alexxander A, Puspitasari I, Kristina S, Kristanto C. Health Coaching in Pharmacy Practice: A Systematic Review. Int J Pharm Res. 2021;13:1907-1920.
13. Puigmarti CM, Vonk R, Ommeren G, Hegger I. A logic model for pharmaceutical care. Journal of health services research & policy. 2018;23:148-157.
14. American Society of Health-System Pharmacists [internet]. Bethesda (USA): Model Curriculum for Pharmacy Technician Education and Training Programs, 4th Edition. 2015 [cited 2021 Oct 30]. Available from: https://www.ashp.org/-/media/assets/professional-development/technician-program-accreditation/docs/aso-model-curriculum-for-pharmacy-technician-education-and-training-programs.ashx
15. Hume A, Kirwin J, Bieber H, Couchenour R, Hall D. Improving care transitions: current practice and future opportunities for pharmacists. Pharmacotherapy. 2012;32:326-337.