Conclusion: For a particular drug, contraindications and method of administration comprise most of the essential ready knowledge. Other aspects include only common side effects, basic mechanism of action, and standard adult dosage. Little knowledge about interactions was identified as being essential. Junior doctors seem to have inadequate ready knowledge essential to good prescribing. Ready knowledge about mechanism of action and the major categories, contraindications and method of administration is lacking most. This might be an indication to improve pharmacotherapeutical education on these aspects.

1. Farmacotherapeutisch Kompas 2012, College van Zorgverzekeringen.

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PP048—A SYSTEMATIC REVIEW ON LEARNING IN A STUDENT RUN CLINIC
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Introduction: Medical students should be better prepared for their future role as therapeutic prescribers, to reduce medical errors and health costs. Context-based learning is widely known for its positive effects on learners; however, the extent to which context learning is applied in different pharmacotherapy-curricula varies. The optimal and most realistic form of context learning in pharmacotherapy education would be learning (to prescribe) in a learner-centered student run clinic (LC-SRC). In contrast to regular student-run clinics (SRCs), which are clinics organized and run by student-teams who mainly care for the underserved and homeless populations in the United States, LC-SRCs do not exist. In advance of our plans to start a LC-SRC, we aim to analyze student outcomes of (regular) SRCs on skills, knowledge, and attitudes.

Patients (or Materials) and Methods: A systematic literature review according to the PRISMA guidelines in the PubMed and ERIC databases was performed. Additionally, we used the SNOWBALL method, checking all references in included articles.

Results: Pubmed and ERIC database search yielded 205 unique hits; upon further analysis, 59 articles were on SRCs and 24 (41%) of this articles reported outcomes on students’ skills, knowledge, or attitudes. Only 5 articles (21%) had a (quasi-)experimental design, 1 “non-experimental” article was a literature review. Overall strength of findings was rated mean 2.56 on a 5-point scale. Snowball search of 865 references yielded 52 new hits, de-doubled 27 unique new articles on SRCs. The effect of participation of medical students’ skills, knowledge, and attitudes in SRCs is uncertain, mainly based on expert opinions and student surveys. Students report improved skills (ie, in history taking and physical examination), indicated they obtained knowledge they were unlikely to get elsewhere and valued the SRC as educationally relevant.

Conclusion: Quality of research on student participation outcomes is poor, research design is often inferior (observational not (quasi-) experimental), methods are poorly described, follow-up time if done is short, and conclusions could often not be based on results. Considering the theoretical benefits and the lack of evidence of student outcomes on participation in SRCs, further research should be performed. The best location for such research would be at a LC-SRC. The goal should be to gather conclusive evidence on learner outcomes. This highly promising concept could contribute to optimal context-based learning, improving pharmacotherapeutical education. Our results of the first evaluation of our pilot LC-SRC from March 2013-June 2013 will be presented at the EACPT congress.

Disclosure of Interest: None declared.

PP050—SALIVA-BASED CYP1A2 PHENOTYPING USING CAFFEINE FROM BEVERAGES: A PRACTICAL COURSE FOR STUDENTS
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Introduction: Teaching in clinical pharmacology for students in medicine and biomedical disciplines is often focused on theory, while practical courses, which can introduce methods of research and clinical application to students, are underrepresented.

Patients (or Materials) and Methods: We adapted a saliva-based, noninvasive CYP1A2 phenotyping protocol to the needs of an afternoon practical course for third-year biomedical sciences students. Those students who freely decided to quantify their own CYP1A2 activity had to abstain from caffeine sources starting from the evening before the course day. In the morning, students collected a saliva sample at home into a tube, which was handed out together with the course documentation some days before the course. Thereafter, they drank a cup of strong coffee, black tea, or caffeinated energy drinks and abstained from caffeine until the collection of the second saliva sample at the course site in the early afternoon, 5 to 6 hours after caffeine intake. The students then prepared their own saliva samples for the quantification of caffeine and paraxanthine using a published HPLC-UV method. The run-time per sample was 18 minutes, so that in the end of the afternoon, the evaluation of a limited calibration curve and the caffeine-to-paraxanthine clearances of 2 participants was possible. Clearance values were estimated using a published formula that translates the paraxanthine and caffeine concentrations to clearance values.

Results: Between 11 and 20 students participated per year in groups of 3 to 5 students. As expected, metabolic caffeine clearance was accelerated in smokers (2.18 mL/min/kg body weight; coefficient of variation, 61%) compared with nonsmokers (1.37 mL/min/kg body weight; coefficient of variation, 83%). Students’ satisfaction with the practical course was good.

Conclusion: The students got an estimate of their own phenotypic CYP1A2 activity and an impression of the interindividual variability in xenobiotic metabolism, in particular of the influence of smoking on CYP1A2 activity. As an advantage, no drug was used for this test. Additionally, students acquired knowledge of drug analysis methods applied in clinical pharmacology.

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PP053—CHALLENGES IN UNDERGRADUATE PHARMACOTHERAPY EDUCATION: THE GHENT UNIVERSITY EXPERIENCE
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Introduction: Undergraduate pharmacotherapy teaching has to deal with the following facts. [1] Every practicing physician should be able to use medicines properly, taking into account important non-pharmacologic aspects like drug adherence and treatment cost. [2] Knowledge taught to students is often already outdated at the time they graduate. [3] Often not 1 therapy is correct but >1 therapeutic option is defendable. [4] Guidelines show first-choice treatments...