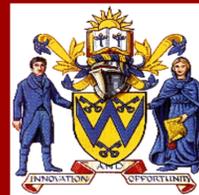


A Study to Determine UK Undergraduate Pharmacy Students' Awareness and Understanding of Adverse Drug Reaction Reporting



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Introduction

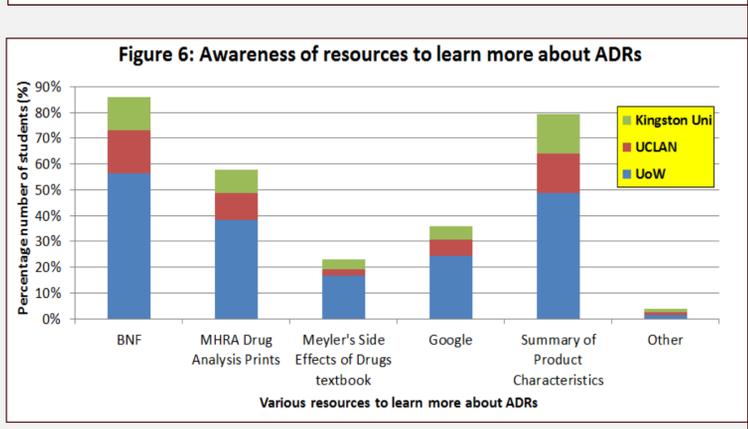
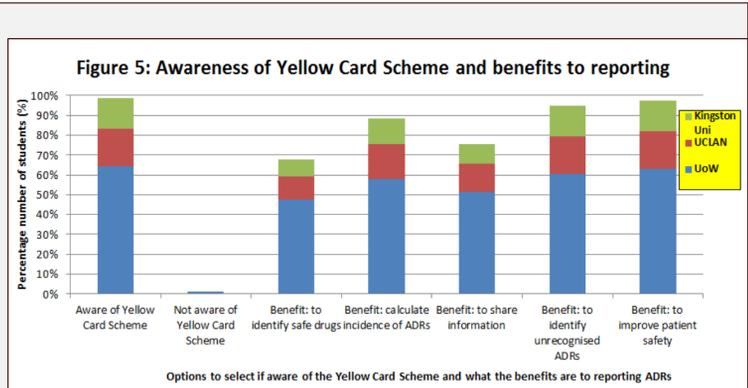
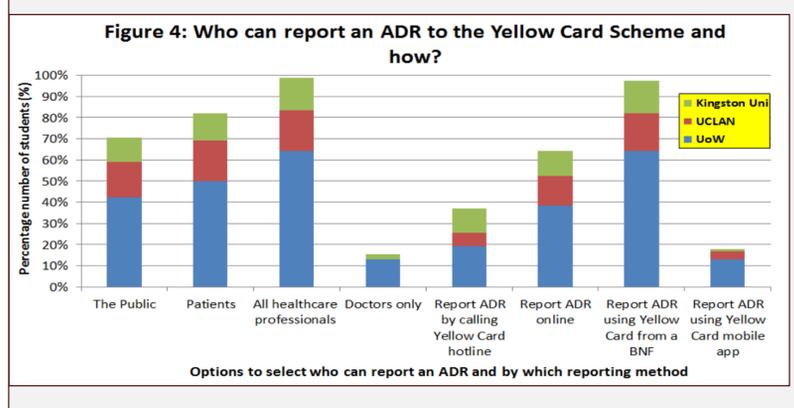
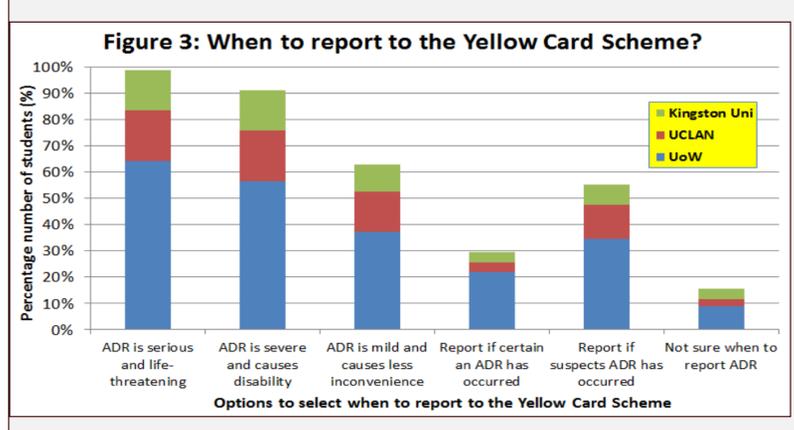
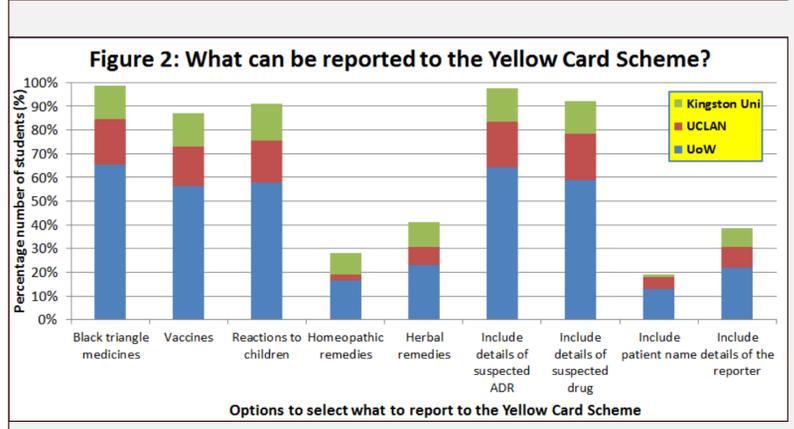
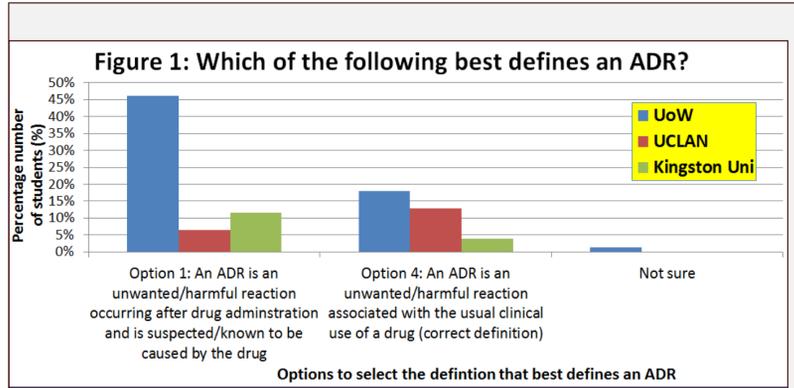
- In the UK, healthcare professionals, patients and the public can voluntarily report a suspected adverse drug reaction (ADR) to the Yellow Card Scheme (MHRA, 2016).
- Generali (2014) recognised that pharmacists play a key role in ADR reporting and it is essential to teach identification/recognition of ADRs and their subsequent reporting within pharmacy undergraduate curriculum. Smith and Webley (2013) indicated there was a low level of teaching on pharmacovigilance in UK Schools of Pharmacy.
- Furthermore, it currently remains unknown about UK undergraduate pharmacy students' awareness and understanding of ADR reporting. This is significant to determine because current 4th year pharmacy students are close to becoming qualified pharmacists who are perfectly positioned in the community/society to potentially identify and report ADRs.

Aim, Objectives and Hypothesis

- Aim:** To determine undergraduate 4th year pharmacy students' awareness and understanding of ADR reporting by distributing a short cross-sectional survey to the University of Wolverhampton (UoW), University of Central Lancashire (UCLAN), Kingston University, and Liverpool John Moores University (LJMU).
- Objectives:**
 - To determine understanding of ADR reporting;
 - Identify the definition for an ADR
 - Select when and what to report
 - Select the benefits to reporting ADRs
 - To determine awareness of ADR reporting;
 - Aware of the Yellow Card Scheme
 - Who can report an ADR
 - Yellow Card reporting methods
 - What resources to use to gather information about ADRs
- Hypothesis:** The method and timing of teaching does not have an impact on the level of awareness and understanding of ADR reporting among 4th year pharmacy students.

Methods

- The survey consisted of 10 MCQs and one pre- and post-survey question.
- To gather a true representation of what students' may know and be aware of about ADR reporting, the use of devices with access to the internet, textbooks, a BNF and discussion among peers was unpermitted while completing the survey. The survey was voluntary, anonymous, took 10-15 minutes to complete and was not a knowledge test.
- Hardcopies of the survey were distributed at the UoW during a morning lecture. An online version of the survey was distributed to UCLAN and Kingston University throughout eight days. An invitation to participate was forwarded by email to students at LJMU. Students that were willing to participate received the survey and consent form by email.



Results

- Of the total 348 4th year pharmacy students as the sample population, 78 students in total participated (51 from UoW, 15 from UCLAN, 12 from Kingston University) which produced a 22% response rate.
- The mean level of students' confidence about ADRs and ADR reporting was calculated from the pre- and post-survey question.
- The averages of the total scores from the survey (10 MCQs) were; 22.96 for UoW, 24.07 for UCLAN, and 24.92 for Kingston University.
- The one-way analysis of variance (ANOVA) conducted on the survey (10 MCQs) total scores for the 78 respondents, generated an *F*-value of 1.77, *F*-crit value of 3.12 and *P*-value of 0.18 at 0.05 alpha level.
- Figures 1-6 illustrates the results from the survey questions.

Literature Cited

Generali, J.A. (2014) Adverse Drug Event Reporting: Awareness Is Not Enough. *Hospital Pharmacy*, 49(2), pp.110-111.
 Smith, M.P. and Webley, S.D. (2013) Pharmacovigilance teaching in UK undergraduate pharmacy programmes. *Pharmacoepidemiology and Drug Safety*, 22, pp.223-228.
 MHRA (2016) Report a suspected problem or incident [online]. [Accessed 20 July 2016]. Available at: <<https://yellowcard.mhra.gov.uk/>>.

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Discussion

- In contrast to UCLAN and Kingston University, students' from UoW felt slightly more confident about their knowledge of ADRs and ADR reporting after completing the survey, in comparison to before.
- The averages of the total survey scores for the participating Schools of Pharmacy may not be reliable or applicable due to small sample sizes. The data from the online survey may not be reliable due to the uncertainty of students using unpermitted resources whilst completing the survey.
- From one-way ANOVA, the *F*-value was less than the *F*-crit value, therefore the null hypothesis was accepted.
- In contrast to UoW and Kingston University, more frequent teaching on ADR reporting is undertaken at UCLAN throughout the undergraduate four-year pharmacy course.
- Majority of the students from UCLAN were able to identify the definition for an ADR, in contrast to UoW and Kingston University which demonstrated partial understanding. Majority of students know what to report to the Yellow Card Scheme, but partially understood that homeopathic and herbal remedies can be reported too.
- Majority of students recognised the benefits to reporting an ADR, but a small number of students showed limited understanding of when to report an ADR.
- The majority of students demonstrated an overall awareness of ADR reporting.

Conclusion

- The study determined that 4th year pharmacy students have an overall awareness and partial understanding of ADR reporting.
- The null hypothesis was accepted; the method and timing of teaching did not have an impact on the level of awareness and understanding of ADR reporting among 4th year pharmacy students.

Recommendations

- For further improvement, the involvement of more UK Schools of Pharmacy and a longer timescale for survey distribution is recommended to improve reliability and applicability of potential results.
- Implementation of a refresher lecture, workshop or tutorial throughout the undergraduate pharmacy course. The aim of this being to maintain undergraduate knowledge about ADR reporting, which may improve their ADR reporting rate and patient safety as practicing pharmacists.