A-LEVEL BIOLOGY AS A POSITIVE PREDICTOR FOR YEAR 1 SUCCESS IN THE UCL MPHARM DEGREE

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Introduction: The study of Pharmacy in the UK puts great emphasis on prior learning in chemistry. It is the only core science Advanced-level General Certificate of Education (A-level) required as a pre-requisite (Sharifa et al., 2003). However, in recent years the curriculum has become more clinically orientated (Waterfield, 2015). Curricular integration of science and clinical practice is called for in the General Pharmaceutical Council’s 2010 Education standards (GPhC, 2011). There is concern that individuals with a background in chemistry alone may be less academically successful than those who have also studied biology.

Objective: In year 1 of the UCL MPharm programme, basic chemistry is taught in the module PHAY1002 “The Chemistry of Medicines” and biochemistry and pharmacology are taught in the module PHAY1003 “Body Systems and Therapeutics”. In this study, the grades obtained in the examinations of these modules were compared for students who enrolled with A-level Chemistry and A-level Biology (C+B) with those who enrolled with A-level Chemistry alone (C-B).

Results: In the written examination of the PHAY 1002 (Chemistry of Medicines) module there was no significant difference between the scores of the C-B cohort (66% ± 2.08; mean ± SEM, N=49) compared to the score of the C+B cohort (69.8% ± 0.627; mean ± SEM, N=391). However, in the PHAY1003 (Body Systems and Therapeutics) module, the C-B cohort scored significantly less with 43.3% ± 2.51 compared to the score of 54.7% ± 0.791 of the C+B cohort (P<0.01).

Similar patterns of grade distribution were observed for the C+B and C-B cohorts in the PHAY1002 examinations. However, in the PHAY1003 module no student in the C-B cohort scored above 79%, whereas 4.61% of the students in the C+B did. More students scored 60-79 in the C+B cohort (35.8%) compared to the C-B group (20.4%). Fewer students with biology (C+B) failed with a score below 39 (14.3%), whereas 36.7% of students without biology failed.

Discussion: Sharifa et al. (2003) showed that the final honours classification of a pharmacy degree strongly correlated with differences in the grade attained in biology A-level. The current study suggests that students who enrol in the MPharm undergraduate programme at UCL without A-level biology will perform less well in biochemistry and pharmacology. Additional targeted support might positively impact on the progression of students without biology A-level.