

Editorial

Pharmaceutical industry and academia linkage in Pakistan: a prevalent challenge

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Citation: Mahmood A. Pharmaceutical industry and academia linkage in Pakistan: a prevalent challenge. Bull Pharm Med Res. 2022;1:1-2.

Received: 27 October 2022

Revised: 03 December 2022

Accepted: 06 December 2022

Published: 09 December 2022

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Extract

The pharmaceutical industry and academia together play a pivotal role in addressing drug-associated issues, formulation, and processing errors. Therefore, the waste of expensive therapeutic moieties and problems such as batch failure during pharmaceutical dosage form production processes can easily be overcome. This partnership can also reduce the economic burden at the patient's end. Understanding that trust is a prime factor in establishing strong linkages between the pharmaceutical industry and academia is pertinent. However, before making such commitments, organizations must revisit their capacities. Academia should focus on updating and improving the existing curriculum by including subjects with practical significance, such as biotechnology, rheology, particle processing, formulation technologies, and material sciences, to promote problem-based learning among students.

Keywords

Pharmaceutical industry; Academies and institutes; Material science; Formulation technologies; Industrial problems; Pakistan

The majority of the chemicals that are discovered and processed for therapeutic purposes offer solubility issues and fall in Class II or Class IV of the Biopharmaceutics Classification System (BCS). These types of chemicals offer poor bioavailability profiles. Selection of a suitable dosage form as well as route of administration entirely depends on the physicochemical properties and nature of the chemical moiety. Conventional dosage forms do not offer optimum levels of drugs.

The pharmaceutical industry and academia together play a pivotal role in addressing drug-associated issues, formulation, and processing errors. As a result, the waste of expensive therapeutic moieties and problems such as batch failure during pharmaceutical dosage form production processes can easily be overcome. This linkage between the pharmaceutical industry and academia can also reduce the economic burden at the patient's end by providing the best pharmacological agent at a lower price.

The pharmaceutical umbrella includes small-scale and large-scale manufacturing units, equipment suppliers, excipients and universities offering pharmacy education. Currently, in Pakistan, there is a lack of awareness of the Pharmaceutical Industry and Academia linkage. The pharmaceutical industry is investing more in achieving its yearly targets instead of investing in its research and development (R&D) department. However, worldwide, collaboration between R&D departments and universities has occurred many times. Such linkages bring innovation to the pharmaceutical's unit end. For pharmaceutical industries seeking advanced knowledge of innovations, high-quality university research with promising results is always alluring.

Given the importance of academia, two contributions can be expected from universities. First, universities try to discover advanced knowledge that directly applies to industrial production processes, such as prototypes and new processes. Second, they bring up innovation in the context of supplying human capital by teaching graduates who pursue their careers as researchers or by joining the industry. This industry-university collaboration is essential for a number of reasons, such as achieving a shorter possible product life cycle, coping with unforeseen economic situations, applying technological innovation, and competing globally [1].

It has been generally observed that students at academic institutions learn by rote and procreate knowledge. However, their failure to demonstrate their knowledge and apply the skills they learned throughout their study duration is eye-opening for stakeholders. Moreover, employability depends on the list of prerequisite skills that employers in the industry keenly seek, particularly among youth, who, on the other hand, face unemployment after completing their professional degree from universities for several reasons but are not limited to a lack of job search experience with no practical exposure of industry, fear of failure in acclimatizing to the working environment and a mismatched set of skills as required by the employers [2, 3].

Understanding that trust is a prime factor in establishing strong linkages between the pharmaceutical industry and academia is pertinent. However, before making this commitment, organizations must ensure that their vision, mission, business scope, and in-house capacity allow them to enter into such agreements. Furthermore, academia should take steps without delay toward building human resource capacity by updating and improving the existing curricula with the inclusion of subjects with practical significance, such as biotechnology, rheology, particle processing, formulation technologies, and material sciences. In addition to the existing subjects, new courses can promote problem-based learning among students [4].

Author contributions: The author himself wrote and revised the manuscript.

Funding: Not applicable.

Ethics statement: Not applicable.

Consent to participate: Not applicable.

Data availability: Not applicable.

Acknowledgments: None.

Conflicts of interest: Asif Mahmood is the editor-in-chief of the Bulletin of Pharmaceutical & Medicinal Research.

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