Pharmacy students attitude towards academic research in south India

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ABSTRACT

The current cross-sectional survey of six months duration was performed to assess pharmacy student’s attitude towards academic research in self-financing private pharmacy institutions in south India. The study included students of both genders of all pharmacy programmes who showed their willingness by administering a standard validated questionnaire with a total of sixteen inventories. In our review of four hundred and thirty student responses, female (55.35%) students were female, and 90.93% student participants belong to the age group of 20-25 years. More than half of the students (53.49%) agreed. Research participation is a vital parameter in industrialised employment, research and pharmaceutical education. More than fifty percent our study participants recommend proper financial and resource funding and timelines are the significant limitations in performing research activities. In our study, 62.32% of respondents recommended a fortified research centre establishment for academicians which could improve and integrate a sustained development in teaching-learning and practice of scientific research in graduating students for their education and career. In conclusion, the perspective of pharmacy students towards research investigated in our study was found satisfactory; and recommended a significant focus on financial grant or support, fortified research environment, and dedicated research curriculum for the sustainable development of academic research.

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INTRODUCTION

Pharmacy education is evolving rapidly worldwide, with significant changes to the education curricula, strategies and modes of delivery (Brazeau et al., 2009; Accreditation Council for Pharmacy Education, 2011). Providing comprehensive patient care is an essential component of all healthcare professions (HCPs). For the provision of adequate care, future workers in HCPs are expected to be trained in all aspects and to exercise proficient skills in their research-based academic education and professional practice. To create impact-laden critical reasoning abilities among future healthcare practitioners, research activities should be followed by seminars, conference presentations and publications as part and parcel of every healthcare discipline globally. Thus, one cannot side-line the importance of scholarly research activities as an essential component of a complete medical and health sciences curriculum in undergraduate and postgraduate education.
Moreover, the initiation and incorporation of evidence-based knowledge are emphasised globally as an essential component in modern science education. For the past few decades, a changing trend has been observed regarding the inclusion of research components in medical and pharmacy education (Ismail et al., 2014; Basnet and Bhandari, 2014).

Practice research is a fundamental driver for expansion and innovation in professional practice. Active participation of practitioners in such a research program is vital. These changes drive interest among students in conducting research and presenting and publishing their work at national and international levels. The ability of a student to carry out scholarly research is an added advantage for their academic advancement through the acquisition of critical thinking and analytical skills, as well as through comprehension and analysis of the foundations of evidence-based medicine (Burgoyne et al., 2010; Collins et al., 2010). Several studies have shown that research experience at a student level is strongly associated with future career achievements and scholarly research initiatives (Ghamdi et al., 2014; Dong et al., 2012).

Conducting scholarly research activities at the student level is an arduous task. In the context of this, several barriers have been reported, including lack of time, lack of support from faculties, and lack of funding sources, among others (Siemens et al., 2010). Despite these difficulties and predicaments, pharmacy students at their graduation and postgraduate level perform their research projects across the globe.

Academic programs are held accountable for “preparing graduates to conduct research and scholarly activity” (Bradberry et al., 2007). Pharmacy students’ attitudes towards postgraduate research have been investigated in the past. However, these early studies were conducted at a time when the goals and objectives of the profession and the practice of pharmacy were vastly different and postgraduate education mainly involved laboratory-based research in pharmaceutics, pharmacology or medicinal chemistry (Draugalis et al., 1989; Winans and Madhavan, 1992).

Early identification of their passion towards research will help to discern their inclination, as well as their potential scope for professional practice in the clinical setting. Most of the medical and allied health sciences curriculum in developing and industrialised countries like India should contain epidemiology, research methodology, biostatistics and biomedical literature evaluation. However, given the demand and competing interest towards scholarly research, several studies have identified attitudinal ambivalence towards the significance of academic research publication (Kritikos et al., 2015, 2013). We believe pharmacy students, as like medical students, are among the students in the major health profession discipline, who represent potential future leaders in clinical and pharmaceutical research. With this in mind, it is worth studying the attitudes of pharmacy students regarding research activities. The current research is an attempt to explore attitudes towards the scholarly research activities in pharmacy students of south India.

**MATERIALS AND METHODS**

The current cross-sectional, self-administered questionnaire, instrumentation survey of six months duration was performed in a self-financing autonomous pharmacy institution of south India. The study included both gender students of all programmes (B. Pharmacy, PharmD and M. Pharmacy) who showed willingness towards participation, first-year students all programs of both genders were excluded. Ethical approval was obtained (RIPER/IRB/PP/2019/019) before the start-up of study. All the collected data were entered into a personal computer on Microsoft Excel Sheet and analysed, and the obtained responses were documented based on criteria of the Likert scale. Cronbach’s alpha value was calculated to confirm the reliability and correlation between the inventories of the self-administered validated questionnaire.

The cross-sectional survey of six months duration was performed in a self-financing autonomous pharmacy institution of south India to assess pharmacy student’s attitude towards academic research, by administering a validated self-administered questionnaire.

The study participants were pharmacy students at under and postgraduate level, excluding the first years, selected randomly based on their willingness. Participation was voluntary, and facts collected were maintained with most confidentiality. The English language questionnaire designed was statistically validated with Cronbach’s alpha coefficient value (Tavakol and Dennick, 2011), resulting in a value of 0.78. A pilot pretesting of the questionnaire was performed, to identify the practical and communication difficulties, and other ambiguities while surveying. Furthermore, the questionnaire was reviewed by an expert panel in subjects and curriculum for relevance and completeness. The self-administered questionnaire consisted of 16
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Table 1: Demographic of study participants

<table>
<thead>
<tr>
<th>Program and Year</th>
<th>Gender distribution</th>
<th>Age distribution (in years)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>&lt; 20</td>
</tr>
<tr>
<td>B. Pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year</td>
<td>35</td>
<td>43</td>
<td>30</td>
</tr>
<tr>
<td>3rd Year</td>
<td>39</td>
<td>47</td>
<td>0</td>
</tr>
<tr>
<td>4th Year</td>
<td>33</td>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>PharmD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year</td>
<td>7</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>3rd Year</td>
<td>11</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>4th Year</td>
<td>10</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>5th Year</td>
<td>10</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>6th Year</td>
<td>21</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>M. Pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Year</td>
<td>18</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>2nd Year</td>
<td>21</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>191</td>
<td>238</td>
<td>39</td>
</tr>
</tbody>
</table>

inventories; divided into broad categories of demographic of study participants with 4 inventories and 12 inventories on attitudes to academic research and research as a higher component of education as close-ended questions on 3-point Likert scale; which could take 5 to 10 minutes to respond by the study participants.

RESULTS AND DISCUSSION

In our study of 430 responses, 237 (55.12%), 110 (25.58%) and 83 (19.30%); were students pursuing their B. Pharmacy, PharmD and M. Pharmacy program respectively.

Our study observed an overall 44.42% and 55.35% of male and female student participants, and the majority (90.93%) of student participants belong to the age group of 20-25 years, results are summarised in Table 1.

Distribution of students in B. Pharmacy Program

The study participants in B. Pharmacy program were 237; out of which 107 (45.15%) and 130 (54.85%) were male and female respectively. Students were at a higher frequency (87.34%) in the age group of 20-25 years. Third-year students (36.29%) were more in comparison to the second (32.91%) and fourth years (30.8%) respectively.

Distribution of students in the PharmD Program

The study participants in the PharmD program were 110; out of which 45 (40.91%) and 65 (59.09%) were male and female respectively. The age group of 20-25 years were having more students (91.82%). Fourth-year students (22.73%) were more in comparison other years, in which 19.09% of students were under both second and sixth year respectively.

Distribution of students in M. Pharmacy Program

The study participants in M. Pharmacy program were 83; out of which 39 (46.99%) and 44 (53.01%) were male and female respectively. All the students fall under the age group of 20-25 years. Second-year students (54.22%) were more in comparison in the first years (45.78%), respectively.

The current cross-sectional survey observed students’ research involvement during their education is higher both at PharmD (54.54%) and M.Pharmacy program (75.9%), which was relatively found lower in B.Pharmacy program (45.15%); findings of which are similar to other studies (Bhagavathula et al., 2017; Getov et al., 2015). The previous research pieces of evidence show-cased (Sadana et al., 2004; Oliveira et al., 2014), the hallmark barriers involved in a lack of performance of research tasks involving inadequate research courses taught, and research training in pharmacy curriculum; the same was observed in our study regarding the research teaching in students of 81.86% B.Pharmacy and 65.06% M.Pharmacy program; and research curriculum observed in students of all program 84.81% B.Pharmacy, 89.16% M.Pharmacy and
Table 2: Pharmacy student’s attitude towards academic research self-administered questionnaire

<table>
<thead>
<tr>
<th>Questionnaire inventory</th>
<th>B.Pharmacy n (%)</th>
<th>PharmD n (%)</th>
<th>M.Pharmacy n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Did research involvement motivated pharmaceutical science and research employment</td>
<td>107 (45.15)</td>
<td>60 (54.54)</td>
<td>63 (75.9)</td>
</tr>
<tr>
<td>2 Research should be taught to all students</td>
<td>194 (81.86)</td>
<td>48 (43.64)</td>
<td>54 (65.06)</td>
</tr>
<tr>
<td>3 Research is useful for career</td>
<td>134 (56.54)</td>
<td>72 (65.45)</td>
<td>60 (72.29)</td>
</tr>
<tr>
<td>4 Research training should be made mandate in pharmacy curriculum</td>
<td>201 (84.81)</td>
<td>94 (85.45)</td>
<td>74 (89.16)</td>
</tr>
<tr>
<td>5 Research improve writing skills</td>
<td>154 (64.98)</td>
<td>81 (73.64)</td>
<td>75 (90.36)</td>
</tr>
<tr>
<td>6 Provides platform of global research interaction</td>
<td>136 (57.38)</td>
<td>66 (60)</td>
<td>58 (69.88)</td>
</tr>
<tr>
<td>7 Research publication write up is difficult</td>
<td>128 (54.01)</td>
<td>55 (50)</td>
<td>48 (57.83)</td>
</tr>
<tr>
<td>8 Performing and publishing a research requires guidance and mentorship</td>
<td>198 (83.54)</td>
<td>68 (61.82)</td>
<td>39 (46.99)</td>
</tr>
<tr>
<td>9 Research should be vital in my professional training</td>
<td>110 (46.41)</td>
<td>84 (76.36)</td>
<td>62 (74.7)</td>
</tr>
<tr>
<td>10 Basic research in degree is significant in choosing a specialty and career in research</td>
<td>184 (77.64)</td>
<td>75 (68.18)</td>
<td>34 (40.96)</td>
</tr>
<tr>
<td>11 Centre for research to be established for academicians</td>
<td>154 (64.98)</td>
<td>60 (54.55)</td>
<td>54 (65.06)</td>
</tr>
<tr>
<td>12 Proper financial and resource funding and timelines enhances research interest</td>
<td>124 (52.32)</td>
<td>51 (46.36)</td>
<td>69 (83.13)</td>
</tr>
</tbody>
</table>

85.45% PharmD programmes.

Sensitising research writing skills in pharmacy students enhances their participation and equip them as an expert in a research career and future scientists, the same was observed in majority our study participants 90.36% of M.Pharmacy, 73.64% of PharmD, and 64.98% of B.Pharmacy students.

Performing and publishing research requires guidance and mentorship with faculty members observed in our study with an overall response of 70.93% resulting in students satisfaction towards research career (Nykamp et al., 2010) for better learning, and building optimum research capacities. In our study, 68.14% was the overall average of students agreed that basic research in degree is significant in choosing an advanced research PhD in speciality and career in research, similar to other studies (El-Hammadi, 2012). More than fifty percent our study participants recommend proper financial and resource funding and timelines could enhance the interest towards research and related activities interest, which was considered as the significant limitations and also recommendations by other research evidence (Ghamdi et al., 2014; Siemens et al., 2010). In our study, 62.32% of respondents recommended a fortified research centre establishment for academicians which could improve and integrate a sustained development in teaching-learning and practice (TLP) of scientific research in graduating students for their education and career (Al-Arifi, 2019; Cursiefen and Altunbas, 1998), results are summarised in Table 2.

CONCLUSIONS

In conclusion, the pharmacy students’beliefs towards academic research investigated were found satisfactory; and recommended a significant focus on financial grant or support, fortified learning and teaching environment, and dedicated research curriculum for the sustainable develop-
ment of academic research enabling high qualified professionals in healthcare research and patient care.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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