

using 4 Polymerase chain reaction (PCR) and repeat primers. Only repeatable bands were employed in the statistical analysis. All dinucleotide repeat primers produced clear bands in experiments. It is hard to explain why Random Amplified Polymorphic DNA profile complexity does not correlate with genome size. According to scientists, Random Amplified Polymorphic DNA reactions, amplification products are determined by template priming site competition rather than total priming site accessibility. Thermal cycling relaxes annealing, increasing primer-template mismatches. Thus, competition between priming sites increases the proportion of perfectly matched initiations and decreases the total number of products. Random Amplified Polymorphic DNA markers allow phylogenetic analysis of *Nyctanthes arbor-tristis* (Linn.) species. Studying multiple cultivators within each species and other wild relatives of farmed *Nyctanthes arbor-tristis* (Linn.) may produce a more accurate dendrogram. This would also enable more accurate species-specific genomic measurements. Such an analysis and other cladistic methods may help reconstruct *Nyctanthes arbor-tristis* (Linn.) more precisely. This strategy could potentially help to find wild *Nyctanthes arbor-tristis* (Linn.) species for genetic improvement.

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Suggestions on Retaining Students and Increasing Enrolments in Foods and Human Nutrition (Home/ Community Science Education)

Ranawat R.*¹ and Semwal S.²

¹Department of Home Science, University of Rajasthan, Jaipur

² Extension Education and Communication Management,
Punjab Agricultural University, Ludhiana

*Email: raginiranawat20@gmail.com

ABSTRACT

The Corona pandemic has put focus on health and immunity like never before. It has boosted the field of nutrition, food product development and related areas. But, the field of education in foods and nutrition is struggling with the problem of low enrolment of students. To solve this, it is imperative to identify the factors causing the students to withdraw from the subject. Hence, the present study was purposely carried out with the college students and faculty members selected from home/ community science colleges/ departments of six universities in five states. The information pertaining to the causative variables behind student drop-outs and suggestions for student attraction and retention was gathered from 166 students and 51 teachers respectively. According to the students and faculties, the causes behind withdrawal from the subject were no interdisciplinary collaborations and inter-linkage with the nutrition and food organizations/NGOs/government organizations. Reforming the traditional curriculum of food science and nutrition can contribute to higher enrolment and retention as per the findings of the study. The study concluded that implementing these suggestions can aid in better enrolments. Advantage can be taken of the digital measures and tools available today to reach larger sections of the student population. Cues can be taken from the guidelines of National Education Policy 2020.

Key words: Home/ Community Science, Foods and Nutrition and Enrolment enhancement.

INTRODUCTION

The pandemic has put focus on health and immunity like never before. Boosting immunity, staying healthy, especially through natural methods has become the favorite topic of discussion for most households. Now this is a welcome change but at the same time, there has been rampant circulation of misinformation and fad practices about health, immunity and most prominently diet. There is a never before need for specialized experts in diet, nutrition, food product development and related areas. But, the field of education in foods and nutrition is struggling. Foods and

nutrition, a discipline of the beautiful field of Home/community Science, has been experiencing dwindling enrolment of students for quite some time now.

Overall, the education sector of India is booming with the largest student population in the world (over 350 million). Efforts will have to be put in to ensure that this young upcoming generation gets itself involved in fields requiring most consideration. Proper direction will have to be provided to improve the enrolment in concerned subjects by addressing causative variables and suggestions for retaining them in Home/Community and Agriculture Sciences. As per the All India Survey on Higher Education (2015-16) conducted by

Ministry of Human Resource Development, Department of Higher Education (New Delhi), there are only 9970 students enrolled in higher education under home science, only 98876 students are enrolled in B.Sc. (Agriculture) as compared to 5,09,031 students in Bachelor of Sciences and 13,80,583 in Bachelor of Arts. The Gross Enrolment Ratio in higher education of Rajasthan is only 18.50 percent for females; which is sadly lower than Chandigarh (70.40%), Delhi (48.20%), Tamil Nadu (42.40%) and Himachal Pradesh (35.50%) along with other states of India.

Health and education are strongly interconnected while a healthy individual is more likely to have better education outcomes, the right education can improve the health status of the household. The government has launched various developmental programmes and Home/Community Science education contributes to maximizing its benefits to the target population via nutrition and health education, and effective dissemination of authentic information. Home/Community Science takes note of the ecological conditions of the rural families and educates them on the methods to maximize the benefits accruing from them.

According to Raghuvanshi (2018), there has been a great revolution in the field of Home/community Science. This subject which was earlier perceived as only suitable for girls, to prepare them for domestic life and motherhood, is now viewed as multi purpose programme being taken up by both girls and boys. New dimensions have been attained in its concerned departments, viz. Foods and Human Nutrition, Textiles and Apparel Design, Human Development, Resource/Home Management and Extension Education and Communication Management. This education can undoubtedly contribute to empowering the

minds of young girls and boys.

Foods and Human Nutrition is a beautiful subject that deals with imparting knowledge about the significance of correct dietary practices and the underlying science. Looking at the condition of the country in terms of malnutrition and hidden hunger, the significance of nutrition education increases manifold. This multidisciplinary subject emphasizes nutrition education, hygiene and sanitation, improvement in food quality and product development. But with the advancement in the education sector, there is a declining enrolment rate in Home/Community Sciences.

So, in order to attract more students towards Food Science and Nutrition, it is imperative to identify the factors that cause them to withdraw from the subject and also determine their idea and suggestions for retention in Home/Community Sciences. Keeping above factors in mind, the present study was designed with the objectives:

1. To identify the causative variables for student drop-outs in Home/Community Sciences in the field of Food Science and Nutrition
2. To determine the suggestions from Home/Community Sciences students and faculty members for attracting and retaining students in the field of Food Science and Nutrition.

MATERIALS AND METHODS

The present research (conducted under the ICAR funded extramural project) was carried out purposively with the college students and teachers/ professors that were selected from Home/community Science colleges/departments from Maharani College (University of Rajasthan, Jaipur, Rajasthan), Choudhary Charan Singh Haryana Agricultural University, Hisar (Haryana), Gobind Ballabh Pant University

of Agriculture and Technology, Pantnagar (Uttarakhand), Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan), Maharaja Sayajirao University, Vadodara (Gujarat) and Avinashilingham University of Women, Coimbatore. The information pertaining to the causative variables and suggestions for their retention in Food Science and Nutrition was gathered through an online Google tool survey; some were contacted personally and others through the email-id, which led to a total of 166 students and 51 teachers/ professors. The results were coded initially and based on the frequency of the respondents they were recorded and tabulated. The percentages are calculated and presented in the result section.

RESULTS AND DISCUSSION

Deriving causes behind student drop-outs from concerned subject teachers and students

Data in Figure (1) highlights the causes that lead to student drop-outs in the Food Science and Nutrition department of Home/ Community Science colleges. The majority of the students (68.70%) reported that due to a lack of awareness about the career avenues and job prospects in the Food

Science and Nutrition department, students are getting shifted to other courses. Moreover, most of the students (41.6%) also pointed out that due to a lack of exposure to experiential training, internships in industries and hospitals there is a decline in enrollment and an increase in drop-outs. Furthermore, three-fourth (76.50%) of the faculty members responded with the same cause for drop-out: that there is a lack of awareness regarding career avenues like public/ health/ community etc. Also, most of the faculty members (47.1%) believed that due to inadequate marketing of self-developed healthy products, students are dropping out of the concerned department.

Apart from the information given in figure 1, students also believed that there is no new motivation and the same traditional pattern is being followed in the syllabus. Further, there is a lack of streamlining or specialization in the particular field and no collaboration of the college with other Indian or foreign universities. Furthermore, faculties also believed that there is a lack of awareness about the entrepreneurship potential of the subject. Moreover, doctors suggest the diet charts to the patients so, the dietician suggestions remain impractical in the Indian scenario.

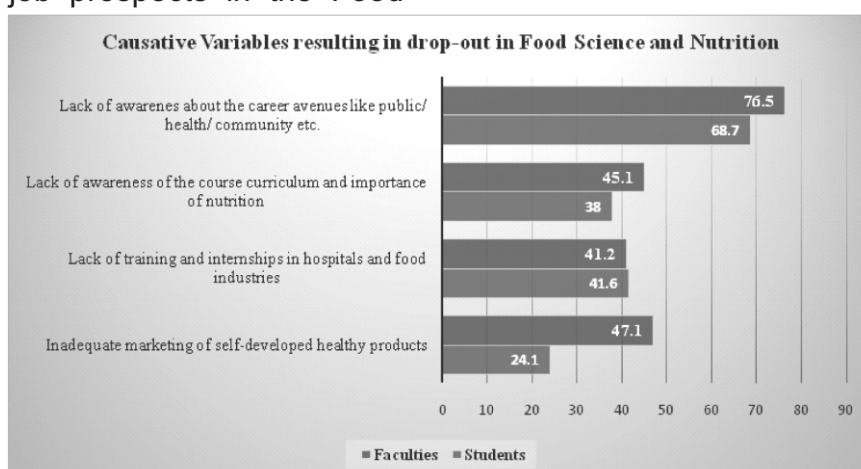


Figure 1: Causative Variables resulting in drop-out in Food Science and Nutrition

Suggestions to attract and retain the students in Food Science and Nutrition

A perusal of Figure (2) infers the suggestions collected from the students and faculty members to attract and retain the students in Food Science and Nutrition.. Data in Figure 2 showed that the majority of the students (71.7%) suggested that the University linking up with the health/ dietary/ community departments can retain the students in the concerned department. Similar results were reported from the faculties also as 78.4 per cent of them suggested that the University link up with the health/ dietary/ community departments to retain the students. This was followed by the student's suggestions as the inclusion of diplomas, certificate courses and skills to be introduced at UG level (61.4%), publicizing

the self-prepared healthy food products (47.6%) and re-framing the concept of lab-to-land and vice-versa (39.8%). Results of the suggestion from faculties showed similar results.

Apart from the above mentioned suggestions, more suggestions were given by students and faculties as career related counseling and internships during the summer break should be included in the curriculum to utilize the time productively and publicizing the public health department also with the dietetic ones. Furthermore, focus on lab work for development of food products that are economic, healthy and nutritious and are meant for marketing and distribution in rural communities could also be made part of the curriculum.

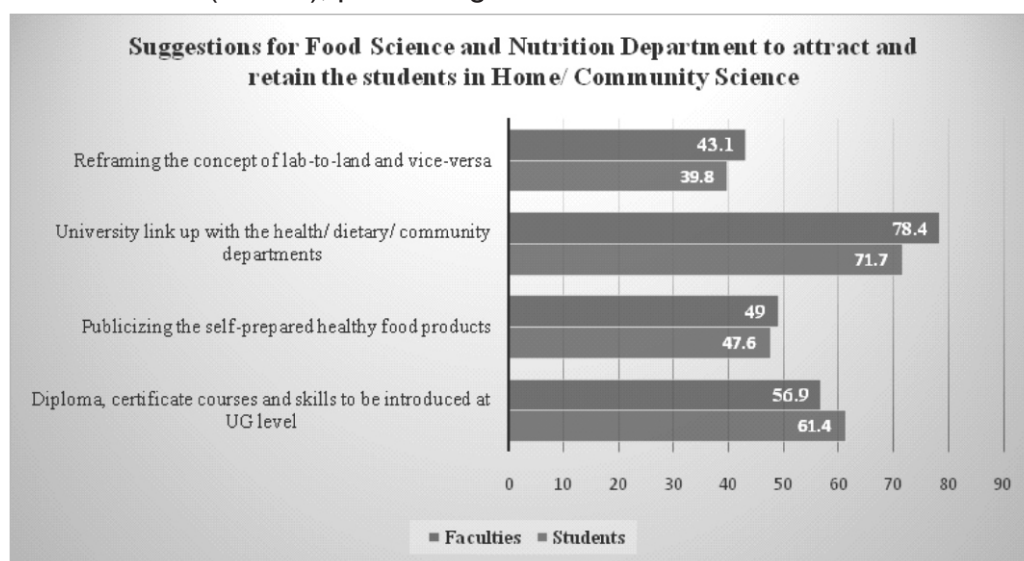


Figure 2: Suggestions for Foods and Nutrition Department to attract and retain the students in Home/ Community Science

RECOMMENDATIONS IN LINE WITH NEP, 2020

Health is a multidimensional concept that is shaped by biological, physical, psychological, social, economic, cultural and political factors. Access to basic needs

like food, safe water supply, housing, sanitation and health services influences the health status of a population and these are reflected through mortality, morbidity and nutritional indicators. So, Health, Foods and Nutrition education is mandatory for the

students and there is a need to re-design the curriculum for better enrollment rates. In line with this, the National Education Policy, 2020 had crucial guidelines set by the Government of India to achieve the goal of quality education. There are various recommendations in line with NEP, 2020 policy that can be noted for upgrading the field of Foods and Nutrition:

1. Students in Foods and Nutrition should learn as per their will through holistic and multidisciplinary approach, where students can combine multi-disciplinary subjects along with integration of vocational courses, for example clinical nutrition with human development or community nutrition with extension education. The element that can be incorporated is that the students will be given 'multiple exit options' and appropriate 'certification' within their graduation degree only. For instance, Foods and Nutrition students will get certification after completing one-year, offer an advanced diploma after two-year, a Bachelor's degree after completion of 3 years and a degree indicating research intelligence by the end of the 4th year.
2. Other university linkages and inter-departmental collaborations should be encouraged to provide a better linkage, support talented students and help students grasp the concept better.
3. University/ college should create an autonomous entity to ensure appropriate integration of technology with foods and nutrition education. Thereafter, institutions will also be able to empower their faculty as well as students by streamlining lecture processes through ICT-enablement.

4. Blended learning approach should be followed and new modifications to be made in traditional classrooms. A dedicated team for developing digital infrastructure including e-content, digital library, etc. can be initiated to meet the needs of students and maximize their learning outcomes.

CONCLUSION

Every field of education needs a good quantity and quality of students in order to remain relevant and thrive. Low student enrolment and higher rates of dropouts are a problem for all five disciplines of Home/community Science education today. The study endeavoured to identify the causative factors behind low enrolments in Foods AND Nutrition science and strategies to retain the students. The most significant cause was lack of diversity of courses in the field and product development labs in the departments and universities. However, the study also found that inter-linkages with food and nutrition organizations, non-governmental organizations and revamping the traditional curriculum of food science and nutrition along with some major interdisciplinary collaborations can make a substantial impact in retaining and attracting students. Guidelines of National Education Policy 2020 can also be followed for better formulation and upgradation of Foods and Nutrition syllabi and their implementation. Advantages can be taken from the easy availability of digital tools and media to improve the enrolment rates and address the misconceptions about the subject.

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