

Pharmacists: Do They Have Sufficient Knowledge and Self-Confidence of Nutrition to Counsel Patients on Possible Interactions Between Nutritional Supplements and Prescription Medication?

INTRODUCTION:

Upon deciding on a major, I found myself torn between pharmacy and nutrition. I always wanted to pursue a career in the medical field but had a fear of blood. On the other hand, nutrition was an area in which I have always been interested. During my freshman year I instead decided to major in pharmacy and recently decided to incorporate nutrition with pharmacy. Graduating with a degree in pharmacy and a specialization in nutrition is uncommon, but valuable. The University Scholar Program will enable me to link my two fields of interest in a way that would greatly benefit society. In turn, the research I conduct may have an impact on the curriculum for the University of Connecticut's School of Pharmacy Program which would enhance the education of future graduates in the area of nutrition to better serve the public.

SIGNIFICANCE:

People have busy lives and active lifestyles and as a result, a person's nutrition is something that commonly gets neglected. Most families resort to pre-packaged foods as a means of convenience and as a solution to lack of time. Since people may feel they do not get the proper nutrition they need from the food they eat, they often fill in the gaps of their diets with nutritional supplements. With increased education by pharmacists of the possible effects of nutritional supplements on prescription medications, there may be an overall improvement in patient health. The question is, however, whether or not pharmacists today are sufficiently educated about nutritional supplements to be able to counsel their patients appropriately.

In being chosen as a University Scholar, I will research the extent of knowledge and self-confidence of Connecticut pharmacists concerning nutritional supplements. Since many UConn pharmacy graduates end up practicing in this state, focusing on Connecticut pharmacists will enable me to evaluate the education received at UConn and, if necessary, make suggestions to improve the program in the area of nutrition. It is known that people of higher economic status are generally more concerned about their health and would more than likely resort to the use of these supplements (US Dept of Health). Connecticut is one of the wealthier states in the nation thereby increasing the likelihood of nutritional supplement usage among its residents. This

makes it even more pertinent that Connecticut pharmacists be properly educated in nutrition and nutritional supplements.

Whereas pharmacists are traditionally drug oriented, the advent of pharmaceutical care encourages pharmacists to counsel patients about their specific drug regimens. Patients who choose to take nutritional supplements should be made fully aware of the possible effects in combining these nutritional supplements with prescription medications. For example, most women who are taking thyroid replacement hormones are also taking calcium supplements for osteoporosis. The information some of these women may be lacking is the fact that calcium can affect the absorption of these thyroid hormones (Singh et al.). Therefore, they may not be getting the full dose of medication they should be receiving. What is unknown, however, is whether or not physicians are aware that their patients are taking these supplements and have therefore already adjusted the dosing of the hormone to the appropriate level. With an interaction like this, it is important for pharmacists to be able to recognize and alert their patients when they might be incorrectly combining the use of nutritional supplements and prescription medications.

METHODOLOGY:

In order to evaluate the knowledge of pharmacists in the area of nutritional supplementation, I will do a literature search on possible interactions between nutritional supplements and prescription medication. This research will allow me to determine which interactions are important or should be focused on based on the severity of the interaction and/or prevalence of the interaction. I also plan to take 5 relevant courses from the nutritional sciences department, a statistics course, and a nursing research course. Taken collectively with the required pharmacy courses, these courses will provide me with the background necessary to conduct my research, prepare surveys, and evaluate the results of the surveys. From this, I will have the ability to evaluate the nutritional course components of the current Pharm D curriculum. This evaluation will be based on my own experiences as I take each of the courses as well as discussions with professors whose courses I have yet to take. After the collection of these data, I will conduct surveys to determine the level of knowledge and self-confidence of Connecticut pharmacists in the area of nutritional supplementation.

In the preliminary round of my field research, I will send a letter to all retail pharmacies in Connecticut (addresses from Connecticut Pharmaceutical Association), approximately 600, including independent pharmacies, chain pharmacies (i.e. CVS, Rite-Aid, Walmart), and super-market pharmacies (i.e. Stop & Shop, Shaws). This range of retail pharmacies will provide me with the information to evaluate the different levels of nutritional education based on the pharmacy type, more specifically which pharmacies require their pharmacists to undergo continuing education in nutrition, and if pharmacists practicing in super-markets have more training or education in this area since they are located in a food setting. The letter will inform pharmacists about my project and ask them if they would like to participate in my study. Enclosed with the letter will be a self-addressed stamped envelope for their replies. In consulting with survey researcher Kenneth Speranza, I can expect over a 50% return rate by identifying myself as an undergraduate UConn student conducting a valuable study. Based on the responses received, I will conduct a survey on those pharmacies showing an interest in participating.

A pharmacist's background survey will include questions about a pharmacist's current place of employment, year and place of graduation, the type of nutrition education received, whether or not he/she is taking continuing education courses or self-education via journals, magazines, internet, etc. in this area, and if he/she has confidence in counseling patients based on the level of education in nutrition. This information may show if there has been a general change in the nutritional courses offered or a desire for continuing education to parallel the trend of the increasing interest in nutrition by the public. Along with this, I will conduct a knowledge-based survey based on my literature research of severe and prevalent interactions through pharmacist's responses to situational questions. Before sending out my surveys, I will do a pilot sample on 4th year professional pharmacy students and asking for their impute on the effectiveness and appropriateness of my questions. From their feedback, I will refine my surveys and administer them to willing pharmacists. Based on the results of the surveys, I will re-evaluate the current curriculum of the University of Connecticut's Pharm D program and determine whether a course in nutrition should be required, a nutrition elective offered, and/or if additional material in nutrition should be presented for an existing course.

PLAN OF STUDY:

The four years I have remaining at the University of Connecticut allows me sufficient time to conduct a thorough analysis and possibly implement the results of my findings in the Pharm D program. My proposed University Scholar curriculum is as follows:

Spring Semester 2001

Regular Curriculum		Proposed Courses	
Phrm 201 Pharmaceutical Care	1 cr	Path 297 Pathobiology*	3 cr
Phrm 206 Interpersonal Skills Development	2 cr	NUSC 236 Principles of Nutrition*	3 cr
Phrm 220 Nervous System	5 cr		
Phrm 234 Bio-Organic Chemistry II	3 cr	* These courses will be taken as my electives	
Phrm 235 Bio-Organic Lab	1 cr		
Electives	5 cr		
Total Semester Credits:	17 cr	Total Semester Credits:	18 cr

Summer 2001

Proposed Course	
Nurs 213 Nursing Research	3 cr
Stat 110V Elementary Concepts of Nutrition	3 cr
Total Credits:	

Fall Semester 2001

Regular Curriculum		Proposed Courses	
Phrm 207 Pharmaceutical Care		Nurs 299 Independent Study	3 cr
Phrm 221 Cardiovascular/Renal/Respiratory	4 cr	Stat 272Q Introduction to Biostatistics	3 cr
Phrm 242W Solution and Solid Dosage Forms	4 cr		
Phrm 244 Dosage Forms Prep Lab I	1 cr		
Phrm 245 Pharmacokinetics	3 cr		
Phrm 253 Therapeutics	2 cr		
Total Semester Credits:	14 cr	Total Semester Credits:	20 cr

Spring Semester 2002

Regular Curriculum		Proposed Courses	
Phrm 207 Pharmaceutical Care	1 cr	NUSC 241 Nutritional Assessment	1 cr
Phrm 208 Pharmacy Law and Ethics	3 cr		
Phrm 222 Endocrine/GI Systems	3 cr	NUSC 250 Nutrition for Exercise and Sport	3 cr
Phrm 246 Dispersed Systems	3 cr		
Phrm 247 Dosage Forms Prep Lab II	1 cr		
Phrm 254 Therapeutics II	3 cr		
Total Semester Credits:	14 cr	Total Semester Credits:	18 cr

Fall Semester 2002

Regular Curriculum		Proposed Courses	
Phrm 200 Evaluation Skills	3 cr	NUSC 265 Medical Nutrition Therapy*	3 cr
Phrm 209 Pharmaceutical Care			
Phrm 223 Pharmacology Discussion/Lab	1 cr	NUSC 266 Medical Nutrition Therapy Recitation*	1 cr
Phrm 224 Chemotherapy	2 cr		
Phrm 225 Toxicology	2 cr	* These courses will be taken as my electives	
Phrm 255 Therapeutics III	2 cr		
Phrm 257 Clinical Pharmacokinetics	3 cr		
Electives	3 cr		
Total Semester Credits:	16cr	Total Semester Credits:	17 cr

Spring Semester 2003

Regular Curriculum		Proposed Courses	
Phrm 209 Pharmaceutical Care	1 cr	Nurs 299 Independent Study	3 cr
Phrm 210 Non-Prescription Medication	3 cr		
Phrm 211 Introduction to Clinical Practice	2 cr		
Phrm 212 Prescription Processing (Lab)	3 cr		
Phrm 225 Immunology	3 cr		
Phrm 256 Therapeutics IV	3 cr		
Electives	4 cr		
Total Semester Credits:	19 cr	Total Semester Credits:	22 cr

Final Year of Clinical Rotations

Fall Semester 2003

Regular Curriculum	
Phrm 262 Professional Experience in Community Pharmacy	4 cr
Phrm 263 Professional Experience in Hospital Pharmacy	4 cr
Phrm 264 Professional Experience in Ambulatory Care Pharmacy	4 cr
Phrm 265 Professional Experience in General Medicine	4 cr
Total Semester Credits:	16 cr

Proposed Curriculum

Nutr 332 Vitamins and Minerals	3 cr
Total Semester Credits:	19 cr

Spring Semester 2004

Regular Curriculum	
Phrm 267 Professional Experience in Infectious Disease	4 cr
Phrm 270 Professional Experience in Pediatrics	4 cr
Phrm 271 Professional Experience in Geriatrics	4 cr
Phrm 272 Professional Experience in Community Practice II	2-4cr
Phrm 276 Professional Experience in Emergency Medicine	2-4 cr
Total Semester Credits:	16-20 cr

The nutrition courses I have elected to take will provide me with a general background in this field as well as enhancing my education in the area of medical nutrition in particular. I would like to have waived several courses that are pre-requisites for nutritional sciences courses I plan to take. Much of NUSC 165, 200 and PNB 250,265 are covered in pharmacy required courses. Along with these classes, I will be working closely with two faculty advisors, Patricia Neafsey in nursing and Marla Campbell in clinical pharmacy, both of whom have an interest in pharmacy and nutrition. In addition, I would like to work with an advisor who has experience with formulating and evaluating surveys, possibly Kenneth Speranza.

BIOGRAPHICAL INFORMATION:

Upon entrance to the University of Connecticut, I was awarded a leadership scholarship for my active participation in high school organizations. In my first two years at the University of Connecticut, I have been named to the Dean's list all four semesters and was named New

England Scholar last year. My first semester at the University I became actively involved in the professional co-ed pharmacy fraternity, Phi Delta Chi. During my second semester, I was named Worthy Keeper of Records and Seals (Secretary) and have kept my office since. This coming December, I plan on continuing my involvement with this organization as Worthy Chief Counselor (President). As a member of Phi Delta Chi, I am able to develop a greater appreciation for a career in pharmacy as well as leadership skills necessary for future success. The pride that I have in my level of success as an undergraduate student and commitment as a member of Phi Delta Chi is something I will carry with me as a University Scholar. I will continue to excel in my academics while enhancing my abilities as a leader to actively improve the education received by future pharmacy students at UConn.

SUMMARY:

As a graduate from the University of Connecticut with the honor of being University Scholar, I will have the knowledge to be of great benefit to society. With the education I receive in the pharmacy program along with my research project, I plan to have a career as a nutritional consultant. I want to be kept up to date with prescription medications and current trends of acute and chronic illnesses, but at the same time be able to actively educate my patients so that they can get the most out of their medications and stay healthy. On a wider scale, the research I plan to conduct has the possibility of improving the curriculum for future pharmacy students at the University of Connecticut enhancing their marketability. As a result they will become highly recognized as important providers in the health care team enabling them to take an even more active role in serving the needs of the public.

Patricia Neafsey

Marla Campbell

References

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