

Project on
A Survey on the knowledge of probiotics among
students and the market analysis of available
probiotics.

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APPROVAL

This Project, **A Survey on the knowledge of probiotics among students and the market analysis of available probiotics** submitted by **Jannatul Nayem Shila** to the Department of Pharmacy, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Masters of Pharmacy and approved as to its style and contents.

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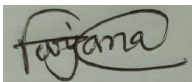
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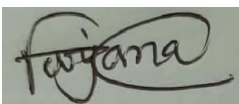
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DECLARATION

I hereby declare that, this project report is done under the supervision of Farjana Islam Aovi, Senior Lecturer, Department of Pharmacy, Daffodil International University, in partial fulfillment of the requirements for the degree of Masters of Pharmacy. I am declaring that this Project is my original work. I also declare that neither this project nor any part thereof has been submitted elsewhere for the award of Masters or any degree.

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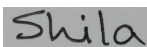
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DEDICATION

DEDICATED TO MY PARENTS

Abstract

Probiotics are being developed commercially for both human uses, primarily as novel foods or dietary supplements and in animal feeds for the prevention of gastrointestinal infections, with extensive use in the poultry and aquaculture industries. This Survey analyses the knowledge of probiotics in students and market analysis of probiotics and probiotic product. The result suggested that 83% population are unknown to probiotics as well as the use of probiotics within people is least. Most of the shop keep it in but sell is less.

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CHAPTER 1

INTRODUCTION

1.1: Probiotics

Probiotics, is an old concept, but now a day's scientific interest level is increasing rapidly. Definition of Probiotics: "live microbial feed supplements that can benefit the host by improving its intestinal balance" (Fuller 1989). In other word, Probiotics be present living bacteriological food enhancements which usefully mark the cloud animal via refining its duodenal bacteriological equilibrium (Fuller 1991,1989). Probiotics are simple otherwise varied philosophies of living microorganisms that once representative to animal otherwise human, possess a positive result the well-being of swarm perchance via enlightening the equilibrium to the foreign micro-flora. Pitch of probiotics abstains materialized such as different skill by submissions at agribusiness too aqua-culture as per replacements to anti-biotics other than prophylactics in souls. The probiotic in details stimulus had been fine acknowledged (Fuller1992). The absence of vital information approximately the instrument to the probiotic. Effect are not frightened the enlargement of excessive lots of probiotic groundworks certain used for management of many state of affairs in animals and mans. One feature that recycled in the variety of probiotic. Nations has capability to observe to instinctive epithelial-cells to the animal in which the probiotic is presence nursed. Nonstop administration is essential for the extreme apprehension of probiotic result. Numerous probiotic products in the market privilege to many different things excluding promoted surrender to transmissible illness, antitumor movement, improved progress feed and rate conversion in farm house birds, and improved egg production by roosters, enriched milk invention by cows.

1.2: CLASSIFICATION OF PROBIOTICS

The range of microorganisms controlled to the probiotic arrangements is varied covering yeasts, moulds and bacteria. Classifications of Probiotics are two, one of them is animal use and another one is human use. Alternatively probiotics used as antibiotics which is used in animal feed and it is used as growth promoters (Cartman and La Ragione 2004). On the other hand, When Probiotics are used by human, it is subject to minimum restrictions and it has many different forms. In super shops, it is very familiar and often get "live bacteria" in dairy-type products and composed tablets or capsules of lyophilized arrangements of microbes in health food shops as which encourage "a healthy gut", etc. In the online shops more or less foodstuffs are start to sell as quasimedical products. Which used for verbal bacterio therapy of abdominal sicknesses. Presently, no widespread session of probiotic bacterium though the greatest conjoint forms obtainable are lactic caustic microorganisms. Those microorganisms are initiate typically in the GIT of animals and humans. The conception that, the usage of commensal microbes is reestablishing the normal micro-flora to the instinctive. A additional period includes individuals that are not typically set up in the Gastrointestinal tract.

1.3: BENEFICIAL USES AND MECHANISM OF ACTION OF PROBIOTICS

The potential benefits that are claimed contain growing also preclusion of several gastrointestinal ailments and improved nutrition. Probiotic containing products are available for animal feed supplements, human nutrition, , and also agriculture. Now some states, probiotics taken prophylactic agents. Southeast Asia also recycled as beneficial mediators. Manufactured goods holding endospores of supporters of the *Bacillus* are recycled commercially as probiotics. They proposal more or less benefits above the more common *Lacto-bacillus* harvests. They can be put in storage indeterminately in a fresh formula (Mazza 1994). Eventually, several viable harvests be located flogged as harvests that bring *Bacillus subtilis* microorganisms. Recent lessons have presented that greatest goods are mislabeled and transport further *Bacillus* classes, including, *B. pumilus*, *B. clausii*, and *Bacillus cereus* strains (Green et al 1999, Hoa et. al. 2000, 2001). Incubation of the microorganism could permit making of anti-microbial mediators. Bacteriocin inhibitory constituents, contributing to the economical prohibiting of pathogens. It is unique issue that care the probiotic influence. Number of *Bacillus*, yield anti-microbial mediators, and maximum 80 different types have been described (Mazza 1994). Antimicrobial mediators are active gram-positive bacteria. Some are active against gram-negative bacteria. An antibiotic composite insulated from a straining of *B. subtilis* found in the probiotic Biosporin with activity against *H. pylori* has been reported (Pinchuk et al 2001). It was saw at least two probiotic strains, BiosubtylNT and Subtyl, products antimicrobial agents that are active against other *Bacillus* species. Little revisions have verified a through probiotic influence of *Bacillus* microorganisms. Preliminary revisions with rooster have providing indication that there are economical prohibiting of *E. coli* 078:K80 by *B. subtilis* (La Ragione et al 2001). A number of lessons have established that *Vibrio harvey* in shrimp is repressed by several *Bacillus* bacterium formers (Rengpipat et al 1998, Vaseeharan and Ramasamy 2003). current revision has defined the classification of an anti-biotic formed by the *B. subtilis* stress establish in the profitable manufactured goods Biosporin, which shown to prevent progress of *Helico-bacter pylori* (Pinchuk et al 2001). Humoral reactions, microorganism antigen could related with the gut-associated lymphoid tissue (GALT). There is tough indication that *B. subtilis* microorganisms arrive the Peyer's areas then mesenteric lymph nodes, plus likely they ensure that by translocation crosswise M cells (Duc et al 2003. In Oggioni et al (2003) training achieved using human monocytes motivated using *B. subtilis* microorganisms, substantial points of TNF- α and IL-1 β be located create to be formed. IFN- γ is active of cell rejoinders. Principally the Th1 reaction, in chance, be there in authority for inspiring phagocytosis. IFN- γ is formed infection, as is TNF- α . These replies advise that here is an innate immune retort and emission of IFN- by peripheral blood mononuclear cells. Oral administration of several probiotic *Lactobacillus* types takes exposed near increase the innate immune system and increase macrophage phagocytosis (Schiffrin et al 1995), NK cell functions (De Simone et al 1993), and production of macrophage lysosomal enzymes +-(Isolauri et al 1995).

Three basic mechanisms have been suggested (i) immunomodulation, (ii) competitive exclusion of gastrointestinal pathogens and (iii) secretion of antimicrobial compounds which suppress the growth of harmful bacteria (Fuller 1991). According to Immunostimulants their mode of action & the way they are recycled, Lipoproteins, polysaccharides, β -glucans, nucleotides, have the ability

to rise phago-cytic facilities by initiating macro-phages. Rengpipat et al (2000) directed use of *Bacillus* sp. providing illness shield via initiating equally cellular and humoral resistant emplacements in shrimp (*Penaeus monodon*). The mechanisms of probiotics apply biotic properties be located quiet below par unstated. The general standings occupation hostility viable barring are regularly used to describe their method of action. Immigration confrontation otherwise viable elimination defines a portent, the aboriginal anaerobic flora bounds the absorption of hypothetically pathogenic (mostly aerobic) flora in the gastric zone (Biourge et al. 1998). Youngman et al. (1984) recounted the properties of probiotics classified in three modes of action: (i) accomplished to adjust the host's defences excluding the essential as well as the learned immune system. This mode of action is significant for the inhibition also healing of transferable sicknesses but also for the conduct of infection of the gastric tract. Probiotic action might be significant used for the extermination of neoplastic mass chambers; (ii) commensal and pathogenic ones, direct effect on further microorganisms. This opinion is significance for the inhibition and remedy of corruptions plus repair of the bacteriological equipoise in the intuitive; (iii) moving bacteriological crops alike poisons and flock harvests, e.g food ingredients and bile salts. Inactivation of poisons also depollution of mass plus nutrition mechanisms in the intuitive. Be present it definite that the thoughtful of outcome(s) a positive probiotic completes be contingent on its metabolic assets, the fragments open at its apparent on the mechanisms concealed.important portions of the bacteriological cell such as DNA influence of standing for its probiotic usefulness. certain probiotic straining describes a specific probiotic act in addition as per a significance this one operative presentation inhibition also cure a definite malady.

1. Immune stimulation

Immunomodulation, is measured vital instrument funding probiosis. In humans and animal replicas take providing tough indication that spoken management of microorganisms motivates the immune system. *Bacillus* prison cell exposed on the way to excite the propagation of humanoid central plasma lymphocytes in vitro. An exciting learning publicized the *B. subtilis* in amalgamation by *Bacterial fragilis* encouraged progress of the GALT in bunnies. Directed to the expansion of preimmune antibody collection. Pro-inflammatory reactions cannot essentially be considered an advantageous article of probiotic connected the sum of auto immune sicknesses. Inflammatory bowel infections containing ulcerative colitis and Crohns infection.

2. Synthesis of antimicrobials

Antimicrobials of probiotics is measured the major instruments that constrain patho-genic microbes in the Gastrointestinal Tract. *Bacillus* classes produce huge quantity of anti-microbials. *Bacillus* classes enclosed in marketable harvests that identified to crop anti-microbials . *B. coagulans* of Probiotic strains are initiate in an amount of salable goods frequently mis-labeled as *Lactobacillus sporogenes*.

3. Other mechanisms

The CE conception is stint frequently recycled to the rooster, manufacturing in addition discusses to the skill of vocally. Controlled microorganisms to encourage the army's conflict beside infective infection. Dissimilar appliances have suggested used for CE representatives comprising

rivalry for army receptor situates, excretion of antimicrobs, creation of stew by produces, such as impulsive oily acids, struggle for crucial health and stimulus the army resistant tasks. *Bacillus* species have newly exposed to transform geno-toxic combinations to reactive harvests in vitro and it projected a probiotic appliance.

1.4: COMMERCIAL HUMAN PRODUCTS

Members of *Lactobacillus* are well-recognized as safe probiotics, available in commercially probiotic products. Recently several studies have been carried out by the researchers around all over the world usage by microorganism formers (Khalil et al 2007, Patel et al 2010). Yields 2 chief clusters, prophylactic used plus this traded as like as strength nutrition complements else original nutriment. *Bacillus* classes recycled contain *B. coagulans*, *B. licheniformis*, *B. pumilus*, *B. clausii*, *B. subtilis*, and *B. cereus*.

1. Prophylactics

Those be there sold for pro-phylaxis of digestive syndromes particular children diarrhea. One more renowned produce is Bactisubtil that conveys single stress of *B. cereus* called IP-5832. The *B. subtilis* part of Bio-sporin is recognized the harvest of iso-coumarin antibiotics, amino-coumarin A, vigorous contrary to *Helicobacter pylori*.

2. dietary supplements and Health foods

Probiotics use in aqua-culture that revenue of guiding infection, improving immune responses, provided that health & enzymatic assistances, & civilizing H₂O value. huge figure of *Bacillus* harvests be situated charity as original food or nutritive complement.

CHAPTER 2

OBJECTIVE

- Know the knowledge of probiotics among the students.to spread the knowledge of probiotic among the normal people. Make the people aware of using probiotic rather than using antibiotic. To spread the knowledge of relationship between probiotics and antibiotics. 1
- Analyze the availability of probiotics and probiotics products in market. By this we can know the number of use of probiotics.

CHAPTER 3

MATERIAL AND METHODS

3.1: questions were made on probiotics and provided to 100 different students, and collected their opinion.

1. Do you know about probiotics?
a) yes b) no c) never heard
2. Do you know the meaning of probiotics?
a) Vitamins b) Supplements c) Antibacterial agents d) Viral Agent
3. Do you know any brand of probiotics?
a) yes b)no
4. If Yes, write down the name of those....
5. What do you think of any side effects of probiotics?
a) yes b)no
6. How is the relationship between probiotics and antibiotics?
a) inversely b) proportionally
7. Do you use probiotics?
a) yes b)no
8. Do you know any probiotic containing food?
a) yes b)no
9. If you get probiotics from any food, mention name....

3.2: Method and Materials (shop)

Survey area was in dhanmondi and panthopath area

Question for shop for probiotics availability

1. Have you any idea about probiotics?

Ans: yes

2. Types of probiotics is available

Ans: Probio and T06

3. Market value of probiotics in Bangladesh...

Ans: 16

4. Which types of probiotics suggested by doctors?

5. Costs of Probiotics...

6. Side effects of probiotics

CHAPTER 4

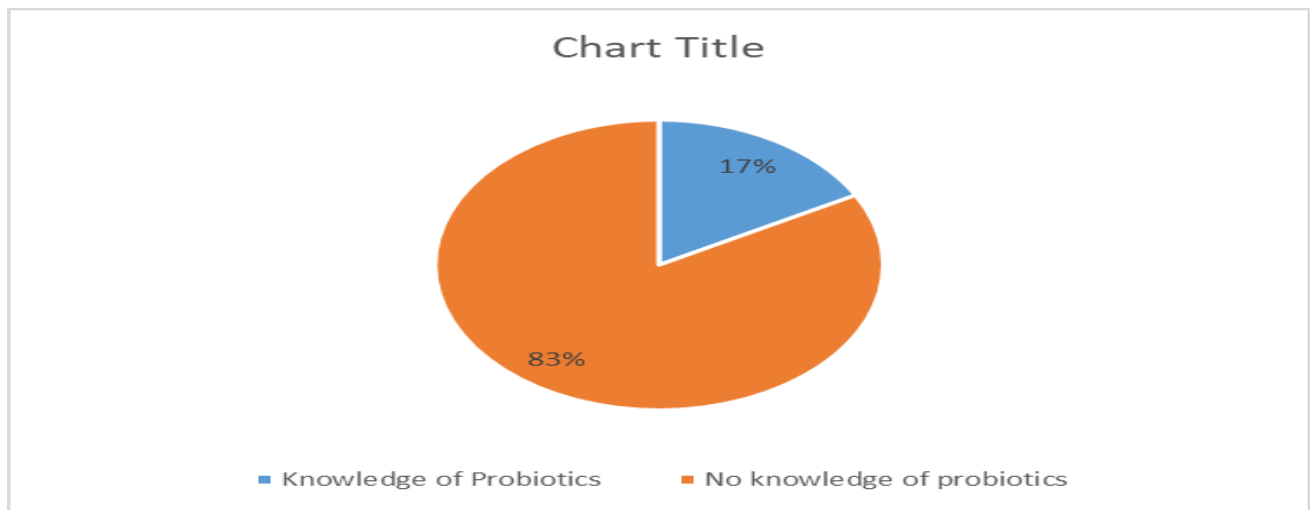
RESULTS & DISCUSSION

Result

Knowledge of Probiotics 17%

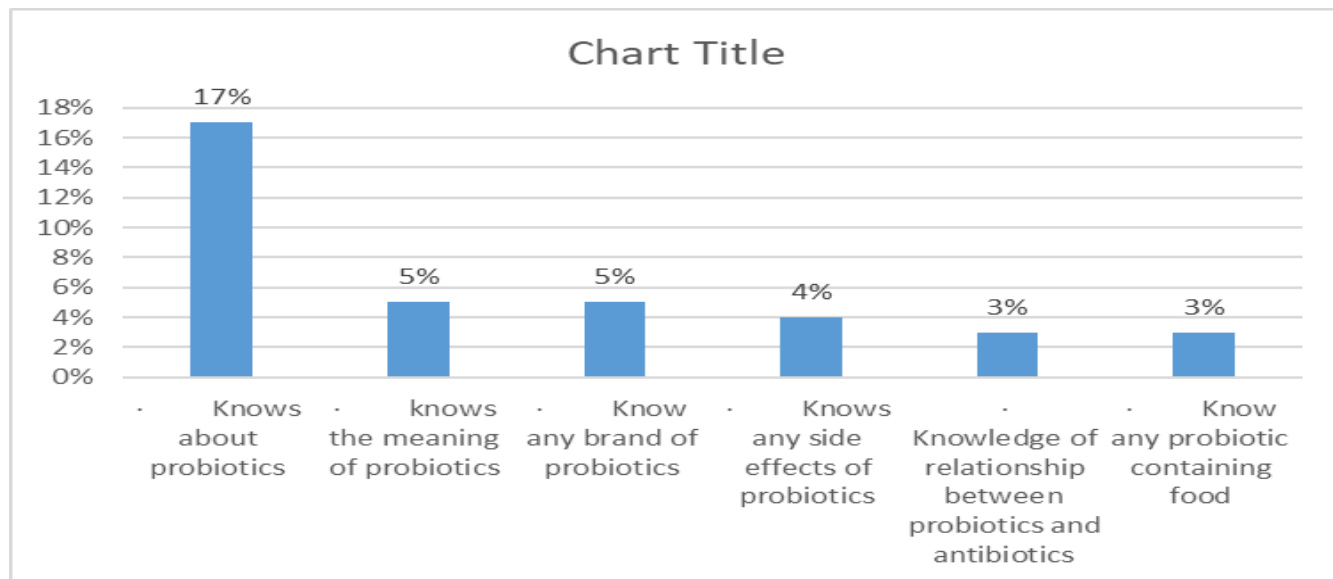
No knowledge of probiotics 83%

1.1:Chart



- Knows about probiotics 17%
- knows the meaning of probiotics 5%
- Know any brand of probiotics 5%
- Knows any side effects of probiotics 4%
- Knowledge of relationship between probiotics and antibiotics 3%
- Know any probiotic containing food 3%

1.2: Chart



All the percent values are from the total number..

Discussion

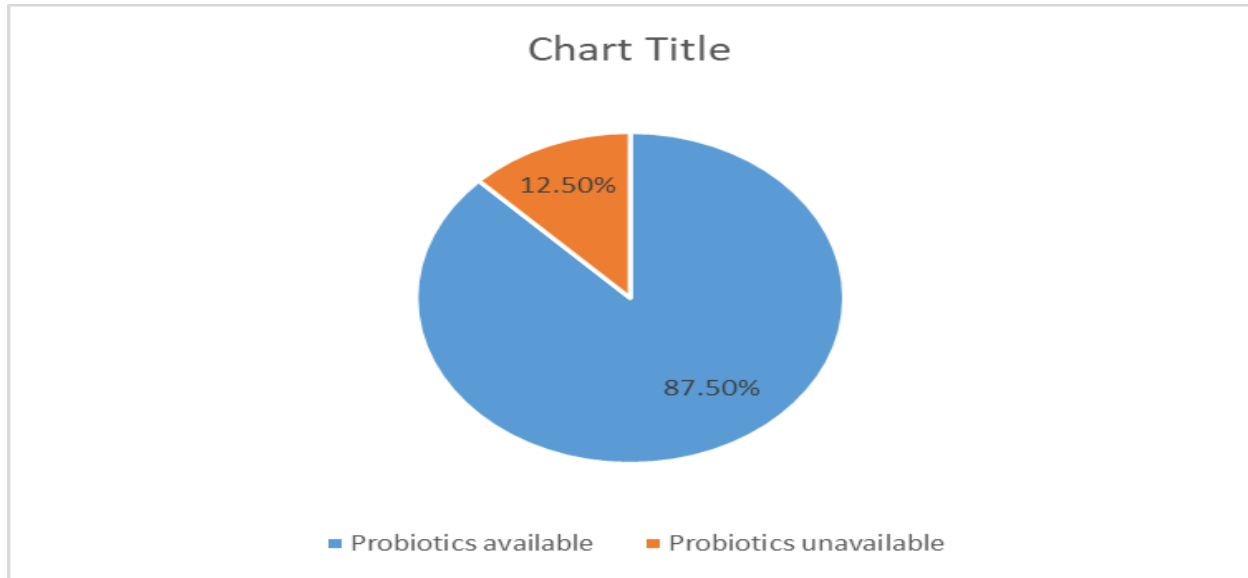
Most of the students do not have the knowledge of Probiotics. As a Pharmacy student they should have vital knowledge of probiotics.

Total Survey in Pharmacy - 40

Probiotics available= (35) 87.5%

Probiotics unavailable= (5) 12.5%

1.3: Chart



Types of available Probiotics

Bangladeshi (30) = 83.11%

Foreign (22) = 61.11%

Good gut (13) = 36.11%

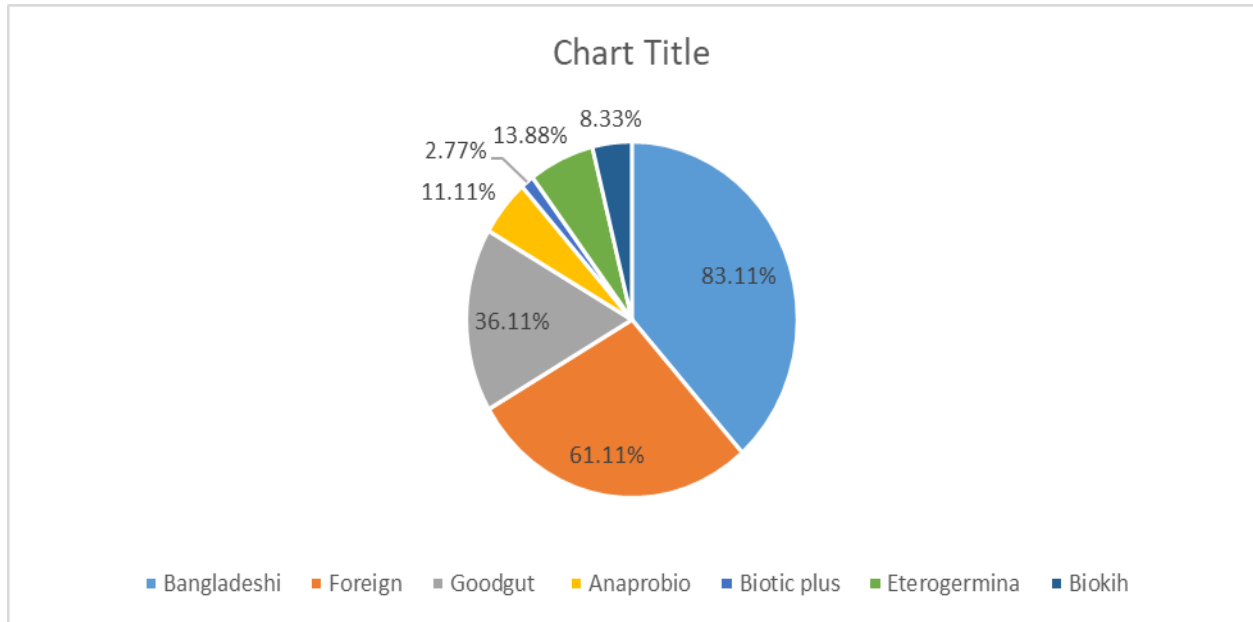
Anapro bio(4) = 11.11%

Biotic plus(1) = 2.77%

Eterogermina (5) = 13.88%

Biokih (3) = 8.33%

1.4: Chart



Discussion:

There is proper availability of Probiotics in our markets but the use is not usual. The sells of probiotics and its products are not up to the target as a result of less knowledge of the use of probiotics.

CHAPTER 5

CONCLUSION

Total study has been shown that knowledge and use of probiotics are less due to less broadcast and expand of it. People should be make aware of this fact by practitioners or through the social medias.

CHAPTER 6

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