The Role of Normal Flora in Human Life

Khaled.Z.Alshaikhi[1], Naif.A.A.Badahdah[2], Fawzi.S.Alhtairshi[3], Ibrahim.A.Alshehri[4], Fahad.S.Abolinain[5], Zohour.A.Baamer[6], Khdegah.M.Sarhan[6], Yusuf.N.Alharazi[7], Hassan.A.Alzahrani[8], Rayan.A.Almatrafi[9]

Laboratory specialist at the regional laboratory in Mecca[1]
Laboratory specialist at forensic toxicology services[2]
Laboratory technician at forensic toxicology services[3]
Laboratory specialist in the Health Compliance Department[4]
Laboratory specialist in the Jamoum sector[5]
Laboratory technician at Bahra PHC[6]
Laboratory technician at the forensic toxicology services department[7]
Senior Laboratory Specialist at the forensic toxicology services department[8]
Laboratory technician at King Faisal Hospital[9]

Abstract

This study aims to what is natural flora, what is its effect on human health, where is natural flora found in the human body, A questionnaire was prepared via Google Drive and distributed to the population aged 25-55 years, men and women, in the city of Mecca. As for the questionnaire, it was distributed via the social networking program (WhatsApp) for the purpose of distancing for fear of the presence of the Corona virus, 490 questionnaires were distributed, and 470 responses were obtained via email to the principal researcher. This study concluded that natural plants live with the body's systems in a state of harmony based on symbiosis with each other by 87.5%. They are natural plants that are important for their presence in the human body by 100%, and are friendly to humans by 71.4%.

Keywords: the role, of normal flora, in human life.

Normal flora' is commonly used, it is really a misnomer. Microbial flora has spatial and temporal complexity that differs by individual, body niche, age, geographic location, health status, diet and type of host (1, 2). Even within the same individual, the composition of the microbial flora can vary according to changes in diet, stress, sexual behavior, medication, hormonal changes and other host-related factors (3–6). With this caveat in mind, the field of 'normal flora' can be examined for common predominant types of flora present within body niches and shared functional traits. The adult human body contains 1014 cells, of which only 10%compose the body proper and 90% are accounted for by members of the microflora (7). The predominating types of species in humans differ according to the body niche (oral cavity, skin, vagina, stomach, ileum, colon or urinary tract), normal flora found in the oral cavity has been found to vary by the area sampled (tooth enamel, tongue, gingivital surface, saliva) and the state of periodontal health (8,9) the oral cavity contains a wide mixture of microbes,

which are mainly anaerobic bacteria. Gagliardi et al. sampled normal flora in the healthy esophagus during upper endoscopy procedures in 30 patients and the predominant flora was found to be Streptococcus viridans (10). Lactobacilli and alpha- hemolytic Streptococcus species are frequently isolated on tonsils of healthy children (9, 11). Lactobacillus species that have the ability to adhere to mannose-containing receptors, such as L. plantarum, have a distinct advantage in surviving in the oral cavity (12). Results from different studies profiling predominant flora may be difficult to compare as subject age, sampling techniques (washing of the surface, aspirates or biopsies), diet, sampled location and microbiological assay techniques may produce significantly different results. Fewer bacteria exist in the stomach (usually below 103 /g due to acidic lumen). Helicobacter pylori has been found in patients with peptic ulcers and gastric neoplasia, but is also found in 60% of healthy hosts, which casts suspicion that this microbe is always a cause for gastric disease (13–15). The concentration of microbes increase as progression is made down the intestinal tract: small intestine (º104 / ml contents), to 106 –107/ml at the ileocecal region and 102 –1011 /g in the colon. The intestinal microflora consists of 1011 organisms/gram of feces with over 500 different species, ranging in concentrations from 102 –1011 /ml luminal contents (16). Although the variety of organisms is complex, generally there are more anaerobic microbes than aerobes (17). The development of new techniques and genetic probes has allowed better characterization of the types of organisms that comprise the normal intestinal flora. Franks et al. developed six 16S rRNA-targeted oligonucleotide probes that can detect at least 66% of the anaerobic fecal flora in humans (18). When these probes were used to characterize the flora in nine healthy human volunteers, Bacteroides species accounted for 20% of the total fecal population, Clostridium coccides and Eubacterium rectale accounted for 29%, Gram-positive bacteria accounted for 12% and Bifudobacterium species accounted for 3%of the fecal flora. These probes may prove very valuable in the characterization of the microecologic profiles, but more research is needed.

Material and Methods:

The study began in (the city of Mecca in the Kingdom of Saudi Arabia), and the study ended with writing the data collection in September 2024. The researcher used descriptive analysis, an approach that uses quantitative or qualitative description of the social phenomenon (the role of normal flora in human life). The independent variable (percentage of normal flora in the human body) and the dependent variable (the percentage of normal flora in an organ of the human body). This type of study is characterized by analysis, reason, objectivity, and reality. It is also concerned with individuals and societies, as it studies the variables and their impact on the health of the individual, society, and the consumer, and the spread of diseases and their relationship. For demographic variables such as age, gender, nationality, and marital status. Status and occupation (19), and use the Excel 2010 Office suite pie chart to sort the results (20). The questionnaire is a wonderful and useful tool for collecting a huge amount of data, but the researchers were not able to conduct personal interviews with the participants in the online survey, due to social distancing rules at the time to prevent infection between participants and researchers and vice versa (Coronavirus sharing has not completely disappeared. of the community), and the questionnaire was only answered electronically, because the questionnaire consists of fifteen questions, all of which are closed-ended.

Results and discussion:

The percentage of approval to participate in the questionnaire was 100%. The percentage of participants' ages was as follows: 25-34 years old was 37.5%, the percentage of ages 35-44

years was 12.5%, and 45-55 years old was 50%. The gender of male and female participants was equal at 50% for males. And females, and their nationalities were all 100% Saudi men and women, and their professions were as follows: male and female government employees 50%, housewives and students (equal) 12.5%, private sector employees 25%, and their educational status was as follows: male and female university graduates 62.5%, high school and diploma holders. Postgraduate studies (Master's and Doctorate) are equal to 12.5% for each of them. As for their answers to the questionnaire questions, they were as follows: First question: Each body system declares a state of emergency when anything occurs that results in an imbalance in the body? Question 2: The normal flora is a group of microorganisms, including bacteria and fungi, that exist and live naturally in some internal or external organs of the body? Question Three: The natural flora lives with the body's systems in a state of harmony based on the symbiosis between them? Yes, 87.5%, and I don't know, 12.5% and 0%. The fourth question: Is it important for natural flora to be present in the human body? Yes 100%. Question five: Organisms that are friendly to humans and are scientifically called natural flora? Yes 71.4% and I don't know 28.6% and no 0%. Question Six: The deal concluded between the body and the natural flora requires that the body provide shelter for this flora and food, with the natural flora assisting the internal organs in a way that leads to the health of the body? Yes, 75% and I don't know, 25%. Seventh question: The natural flora spares no effort in serving the human body? Yes, 75% and No, I don't know, 25%. Question 8: Natural flora stimulates lymphatic tissue and fatty acids? Yes, and I don't know, they are equal 50%. The ninth question: An imbalance in the natural flora may occur for various reasons, including: harsh diet, taking antibiotics, eating unhealthy meals, diarrhea, poor digestion, environmental pollutants, life pressures, chemotherapy, genetic factors.? Yes 87.5% and I don't know 12.5%. Question 10: Antibiotics kill the natural flora along with harmful microorganisms, which will require the formation of natural flora forces to impose a state of security within the body? Yes 87.5% and no 12.5%. Question eleven: If the natural flora rate decreases for any reason, eating dairy products, especially yogurt and labneh, helps restore it? Yes 75% and I don't know 25%. Question 12: The natural flora concluded a permanent peace treaty with the human body and adhered to it. This treaty requires the human body to commit to providing a suitable environment and appropriate food for the natural flora? Yes, 75%, and No, I don't know (they are equal) 12.5%. Question thirteen: Does the natural flora help the body absorb food and water? Yes 75% and I don't know 25%. Question fourteen: Do you have previous information about natural flora? Yes 75% ,no 25%. Question 10: Antibiotics kill the natural flora along with harmful microorganisms, which will require the formation of natural flora forces to impose a state of security within the body? Yes 87.5% and no 12.5%. Question eleven: If the natural flora rate decreases for any reason, eating dairy products, especially yogurt and labneh, helps restore it? Yes 75% and I don't know 25%. Question 12: Did the natural flora conclude a permanent peace treaty with the human body and adhere to it? This treaty requires the human body to commit to providing a suitable environment and appropriate food for the natural flora. Yes, 75%, and No, I don't know (they are equal) 12.5%. Question thirteen: Does the natural flora help the body absorb food and water? Yes 75% and I don't know 25%. Last question: Do you have previous information about natural flora? (table no.1)

Table:no-1: The role of normal flora in human life according to participants

The role of normal flora in human life	Yes	No	I don't know
Normal flora is a group of microorganisms, including bacteria and fungi, that exist and live naturally in some	87.5%	12.5%	0%

internal or external organs of the body.			
The natural flora lives with the body's systems in a state of harmony based on the symbiosis between them	87.5%	12.5%	0%
natural flora important for its presence in the human body?	100%	0%	0%
Organisms that are friendly to humans and are scientifically called natural flora?	71.4%	0%	26.5%

There is a study entitled (Normal flora: diversity and functions) in 2000, lynne V. McFarland,

He mentioned that natural vegetation" is a dynamic ecosystem with wide diversity microbes and their functions. These functions provide one of most powerful guards against infection by opportunistic pathogens and enables the body to function efficiently. Disturbance of the natural microenvironment on a large scale. A variety of factors may have serious consequences. Colonization by multiple bacterial species makes it difficult Distinguish the specific contributions of each type separately symbiotic interactions.

Conclusion:

It concludes that natural plants live with the body's systems in a state of harmony based on symbiosis with each other by 87.5%. They are natural plants that are important for their presence in the human body by 100%, and are friendly to humans by 71.4%.

Acknowledgment:

To start with, I would like to Praise God and thank the researchers whose help me to complete this study, and who make the project come to light.

WORKS CITED

Savage DC. Microbial ecology of the gastrointestinal tract. Annu Rev Microbiol 1977; 31: 107–33. 3.
Salminen S, Isolauri E, Onnela T. Gut flora in normal and disordered states. Chemotherapy 1995; 41: 5–15.
Keane FE, Ison CA, Taylor-Robinson D. A longitudinal study of the vaginal flora over a menstrual cycle. Int J STD AIDS 1997; 8: 489–94.
Martin HL Jr, Richardson BA, Nyange PM, Lavreys L, Hillier SL, Chohan B, Mandaliya K, Ndinya-Achola JO, Bwayo J, Kreiss J. Vaginal lactobacilli, microbial flora, and risk of human immunodefciency virus type 1 and sexually transmitted disease acquisition. J Infect Dis 1999; 180: 1863 –8.
Marshall JC. Gastrointestinal flora and its alterations in critical illness. Curr Opin Clin Nutr Metab Care 1999; 2: 405 –11.
Priestley CJ, Jones BM, Dhar J, Goodwin L. What is normal vaginal flora? Genitourin Med 1997; 73: 23–8.
Hooper LV, Bry L, Falk PG, Gordon JI. Host-microbial symbiosis in the mammalian intestine: exploring an internal ecosystem. BioEssays 1998; 20: 336–43.
Listgarten MA. Structure of the microbial flora associated with periodontal health and disease in man., A light and electron microscopic study. J Periodontol 1976; 47: 1–18. 9- Stjernquist-Desatnik A, Holst E. Tonsillar microbial flora: comparison of recurrent tonsillitis and normal tonsils. Acta Otolaryngol 1999; 119: 102–6
Gagliardi D, Makihara S, Corsi PR, Viana A, de T, Wiczer MV, Nakakubo S, Mimica LM. Microbial flora of the normal esophagus.
Marushko IuV. The colonization resistance of the tonsils in healthy and frequently ill children. Lik Sprava 1998; 1: 115 –7
Ahrne S, Nobaek A, Jeppsson B, Adlerberth I, Wold AE, Molin G. The normal Lactobacillus flora of healthy human rectal and oral mucosa. J Appl Microbiol 1998; 86: 88-94.
Smith VC, Genta RM. Role of Helicobacter pylori gastritis in gastric atrophy, intestinal metaplasia, and gastric neo- plasia. Micr tech 2000;48:313-20
Quartero AO, Numans ME, de Melker RA, de Wit NJ. In-practice evaluation of whole-blood Helicobacter pylori

test: its usefulness in detecting peptic ulcer disease. Br J Gen Pract 2000; 50: 13–6.
Parente F, Cucino C, Bollani S, Imbesi V, Maconi G, Bonetto S, Vago L, Porro GB. Focal gastric inflammatory infiltrates in inflammatory bowel diseases: prevalence, im- munohistochemical characteristics, and diagnostic role. Am J Gastroenterol 2000; 95: 705–11.
Salminen S, Bouley C, Boutron-Ruault M-C, Cummings JH, Franck A, Gibson GR, Isolauri E, Moreau M-C, Roberfroid M, Rowland I. Functional food science and gastrointestinal physiology and function. Br J Nutr 1998; 80: S147–71.
Hentges DJ. The anaerobic microflora of the human body. Clin Infect Dis 1993; 16: S175–80.
Franks AH, Harmsen HJM, Raangs GC, Jansen GJ, Schut F, Welling GW. Variations of bacterial populations in hu- man feces measured by fluorescent in situ hybridization with group-specific 16S rRNA-targeted oligonucleotide probes. Appl Environ Microbiol 1998; 64: 3336– 45.
Alserahy, Hassan Awad, et al (2008), The thinking and scientific research, Scientific Publishing Center, King Abdul-Aziz University in Jeddah, the first edition
Al Zoghbi, Muhammad and AlTalvah, Abas (2000), Statistical system understanding and analysis of statistical data, first edition, Jordon- Amman.