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Multi-Sided Platform for Sexually Transmitted Diseases

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Introduction:

World health organization defines 'Sexually Transmitted Diseases' (STDs) are defined as infections that are passed from one person to another through sexual activity. The main causes of STDs are bacteria, viruses, yeasts and parasites. There are more than 20 types of STDs. STDs affect both men and women. More than 1 million STDs are acquired every day worldwide. Each year, there are an estimated 357 million new infections with 1 of 4 STDs: chlamydia, syphilis, gonorrhea, and trichomonasis. In 2016, as per Center for disease prevention (CDC) reports, there has been 1.59 million cases of chlamydia, 468514 cases of gonorrhea, 27814 cases of syphilis and 628 cases of congenital syphilis. All these infections saw a significant rise in incident rates when compared to 2015. STDs have a profound influence on social and reproductive health. STDs can lead to serious consequences beyond the immediate impact of the infection. Some STDs can increase the risk of acquiring HIV. Mother-to-child transmission of STDs can result in stillbirth, congenital deformities and prematurity.

Lack of awareness of sexually transmitted diseases and lack of proper sex education have been touted to be the important causes in rise of Sexually Transmitted Diseases (STDs). Young individuals in the age group of 16–24 years are considered to be at more risk for STDs compared to older adults. More than 50% of these young population do not receive proper sex education and are not aware of STDs. Educators feel very awkward in teaching such topics. Besides, poor treatment seeking behavior is also observed as young individuals are not comfortable in visiting the doctors for treatment. This situation represents an excellent opportunity of an information technology based platform that could provide clinically correct information, emotional reassurance and behavior skills to assist individuals seeking help and guidance by anticipating the needs of the user.
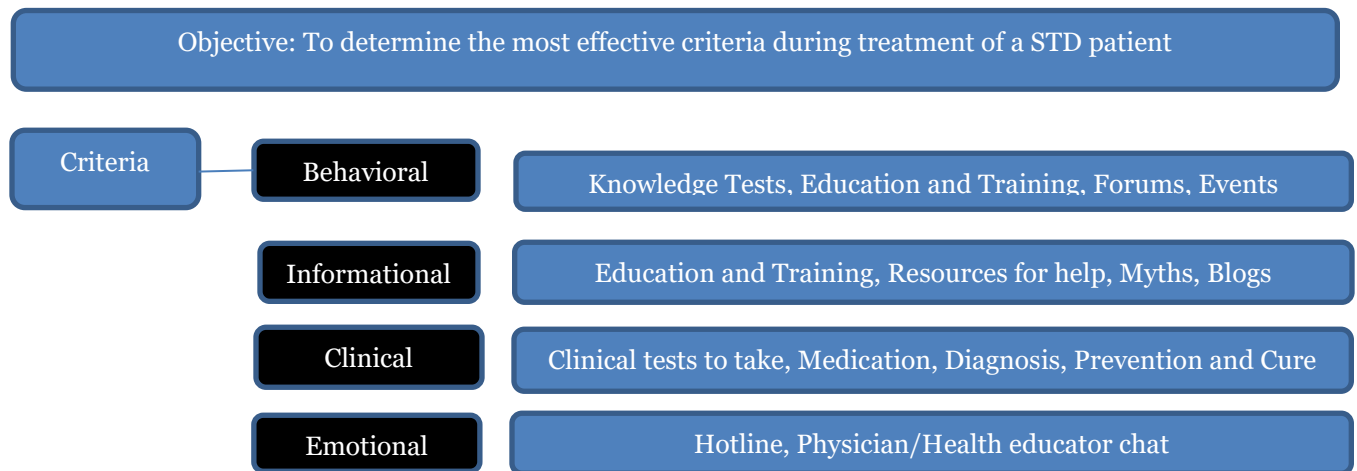
In this paper, we develop a web-based IT artifact to provide information in a non-threatening environment, and access to self-help and educational resources to increase awareness about STDs and a reduction of STD cases among vulnerable people in the form of information products. We make use of Analytical hierarchal process (AHP), a multicriteria decision making algorithm to anticipate the information needs of the patients based on the stage of their condition, personality and diseases progression. This Design Science Research proposal contributes with a novel for developing information products and validation process through an adaptation

Conceptual Framework:

Typically a patient realizes that he/she has infected an STD when symptoms manifest. At this stage, most patients are looking to understand the nature of their problems and whether they are indeed suffering from STD's. They need access to clinical information like symptoms, treatment, diagnosis & medication. In the second stage, when they understand medical information, they look for resources to get them tested and seek medical help. Subsequently, if they are tested positive, they deal with various emotional issues such as taboo in the society, challenges of informing and getting the partner tested. In this 3rd stage, they need

emotional support. As the treatment or management of the disease begins, the patient need information about on managing the condition. Based on this patient journey and the personality of the patients, we build on the developing matching algorithms to paint the user interface screen

It is a multi-criteria decision making method which ratio scales from paired comparisons of criteria, and allows for some small inconsistencies in judgments. Inputs can be actual measurements, but also *subjective opinions*. As a result, ratio scales (weightings) and a consistency index will be calculated. For decision making with multiple inputs from different stakeholders, the geometric mean of individual inputs is used. Based on these methods we have calculated the importance of criteria and sub-criteria for all these methods and their relation to the objective.

Objective: To determine the most effective criteria during treatment of a STD patient

Criteria	Behavioral	Knowledge Tests, Education and Training, Forums, Events
	Informational	Education and Training, Resources for help, Myths, Blogs
	Clinical	Clinical tests to take, Medication, Diagnosis, Prevention and Cure
	Emotional	Hotline, Physician/Health educator chat

Evaluation:

Our framework is evaluated through the implementation of an artifact. The artifact is deployed on a web server and acts like an educational platform that matches the different groups that are at a higher risk in dealing with sexually transmitted diseases. The patients will have access to physician lists, computer based therapy, peer support, self-help resources, educational materials, regardless of their geographical location, and without having to engage in an often embarrassing face-to-face interaction. The physicians will be able to reach a higher number of potential patients and increase their productivity by providing care to more than one patient at any given point in time.

Contributions:

Health information systems research has been ripe with development (Agarwal et al. 2010), however the taboo ridden sensitive areas have not been privy to IS adoption. This paper informs the IS Research Community of how educational application on sexual health issues can be implemented, by providing a theoretical framework for building and evaluating these artifacts. The framework developed, addresses an interesting and current topic; provides the community with a tool that can have significant impact on the population that does not have access to sex education; and, creates a mold that is applicable to the development of other computer based health education artifacts.