

The Effects of Professional-Based Education upon the Interest of a Disadvantaged Population in Implant-Related Treatment

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Abstract

Introduction: The purpose of this project was to report the value of a strategy to motivate a disadvantaged population, limited in their opportunities for information, regarding dental and oral care with specific reference to dental implants.

Material and Methods: An informative lecture from a dentist about oral care, restoration of missing teeth and implants was conducted for 500 subjects who were inmates of the Sharjah Central Prison (United Arab Emirates). A survey instrument was completed by the subjects both before and after the lecture. The responses from the surveys were tabulated and analyzed.

Results: The interest of patients in replacement of missing teeth significantly increased after the lecture, $p < 0.001$. The preferred method of replacement changed significantly after the presentation, $p < 0.001$. The knowledge of the subjects regarding implants significantly increased after the lecture, $p < 0.001$. Some of the subjects requested implant treatment.

Conclusions: Instruction by a dentist significantly improved the interest of a population with limited education background and poor socioeconomic class in replacement of missing dentition with an implant.

KEY WORDS: Dental implants, survey, patient education, missing teeth

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INTRODUCTION

There is increasing awareness of the importance of oral and dental health. Its value is being increasingly accepted not only with regard to preventing or alleviating of pain but also with regard to nutrition and local and systemic disease. In addition, the value of an esthetic appearance and a healthy smile are today highly prized. As a consequence, the options for tooth replacement are of importance to the population.¹ With the development of technological improvements in implant dentistry, the options for treatment have been considerably expanded. The long term predictability of dental implants, because they are not vulnerable to dental caries, appears improved relative to that of the natural dentition. Thus, fixed prostheses supported by implants may have an excellent prognosis. In addition, implants provide further stability for removable prostheses.

It is important however that the public receive appropriate information regarding the advantages of the available options for tooth replacement. Today, the internet is an important form of education which much of the lay public utilizes for information and communication.³ It offers opportunities to learn about prosthetic options including implants. However, this medium is more likely to be used by individuals in middle to higher socioeconomic strata.⁴ The public sector having lesser economic resources who often are in greater need for prosthetic treatment are less likely to avail themselves of these services because of lack of education and limited finances.⁵

Other means of education may be employed. One possibility is education by dental professionals. Often, introductory explanations by dental health care professionals can allow the patients to seek further knowledge either from friends or

via the internet. This approach will be most successful if the initial presentation or contact with the dental health care professional significantly increases the understanding and awareness of the patient.⁴ This study examined the usefulness of a presentation by a prosthodontist/implantologist and a general dentist team to a prison population to increase their awareness and motivation in seeking further dental care for missing teeth.

METHODS

A cohort of 500 male prisoners was randomly selected to participate in the study. The cohort was not segregated by age, educational background, or reason for incarceration. All subjects agreed to participate in the study. The population was administered a questionnaire designed to identify the patient's interest in tooth replacement for missing teeth, the patient's preferred treatment modalities, and the patient's perceived obstacles to the preferred treatment. This questionnaire (Figure 1) which was available in 5 languages was administered both before and after a 1 hour standardized presentations by a dentist in the language that the prison cohort understood. The subjects of the presentation included general principles of oral health, the value of tooth replacement, the options for tooth replacements and the advantages of each restorative option. The questionnaires were scored and a cross tabulation test performed for the group using SPSS.⁶

RESULTS

The interest of the cohort in replacement of missing teeth was significantly increased after attending the educational lecture (Table 1, $p < 0.001$). The preferred method of replacement was influenced by the presentation. Before

the lecture 30% of the patients chose a bridge, 17.2% a removable partial denture and 52.8% an implant. After the lecture, there was a significant change in the preferences of the subjects, Table 2. Only 21.2% of patients chose the bridge option while the rest, 78.8%, chose an implant as their preferable replacement option, $p < 0.001$. Before the lecture, 57.6% of patients had some received some information about implant therapy. This significantly increased to 95.2% after the lecture, Table 3, $p < 0.001$. However, both before and after the lecture, cost was the main reason for patients not selecting implants, Table 4. Before the lecture 34% of patients chose unclearness about implant procedure as an obstacle to treatment. After the lecture this number decreased to 10.8%.

DISCUSSION

The opportunity to obtain further information and become aware of new options and opportunities for health improvement frequently has a significant impact both on attitudes and dental health-care decisions. In general the internet is utilized by individuals of higher economic class who frequently are better educated. Individuals who economically or educationally disadvantaged are less likely to utilize these opportunities to gain information for dental healthcare decision-making^{7,8} and thus other means of information surfing are needed. This study, utilizing a prison population, demonstrated the effectiveness of a presentation by a dental professional. The presentation to the population changed the perception of the group and motivated a significant number of the subjects to consider implant treatment as an option to improve their oral health and their appearance.

Questionnaire

Name: **Age:** 0-39 40-59 +

Gender: Male Female

1. Do you have any missing teeth? Yes No

2. If yes, are you interested to replace the missing teeth? Yes No

3. If yes, which treatment option do you prefer?
 Bridge Removable Implant

4. If implant, are you aware of implant therapy? Yes No

5. If yes, what is the most probable obstacle?
 Very costly
 Fear of Surgical procedure
 Not clear about the procedure

Figure 1: Questionnaire used for study.

In a similar study, Alani et al.⁹ showed that discussion and the opportunity to review options reflect upon the discussion resulted in a number of subjects reconsidering their original treatment decisions. The utilization of advanced technologies in health care such as dental implants in countries with large uneducated populations is challenging. In studies by Chowdhary,¹⁰ Al-Omiri,¹¹ and Shigli¹² lack of knowledge and the perception that implants were extremely costly was common and prevented third world populations from considering dental implants as a treatment option. Interestingly, however, even in more affluent countries, samples of Swedish, Japanese, and American populations reported that dental implants were too costly,¹³ However, a relationship of trust between patient and dentist can improve the receptivity of patients to implant treatment.¹⁴ These results are similar to those of Alani et al.⁹

Table 1: Percentage of Interest in Replacing Missing Teeth Before and After Informative Lectures

		Before	After	Significance Level
Interested in Replacing Missing Teeth	Yes	87.2%	97.6%	.000 Sig
	No	12.8%	2.4%	

Table 2: Percentage of Each Treatment Option Selected

		Before	After	Significance Level
Preferable Treatment Option	Bridge	30%	21.2%	.000 Sig
	Removable P.D.	17.2%	.0%	
	Implant	52.8%	78.8%	

who reported that reflection and discussion can make individuals reconsider their initial treatment decisions. As it relates to patient awareness of implant treatment options, almost half of patients in this study were unaware of the nature of implant procedures and their prognosis prior to the presentation. Pragati¹⁵ reported that although around one million dental implants are inserted each year worldwide, the information available to the patients regarding the procedure and its success is often fragmentary. Chowdhary et al.¹⁰ reported that only 23.24% of the Indian urban population had heard of dental implants as a treatment option for replacing missing teeth.

A further issue that requires consideration is the quality and accessibility of the information available to the consumer.⁵ A variety of tools have been prepared by healthcare constituencies, but they vary in quality, i.e., the clarity and organization of the information. In addition, the accessibility of these tools may vary. Finally the education and background of the consumer may limit the opportunity to utilize these tools.⁴ Individuals in the lower socioeconomic levels may not have availability of the internet or lack the opportunity or the skills to use a computer for DVD or other electronic materials. Literacy may also be limited and thus the ability to read brochures and fact sheets may

Table 3: Percentage of Public Awareness About Implants

		Before	After	Significance Level
Awareness of Implant Therapy	Yes	57.6%	95.2%	.000 Sig
	No	42.4%	4.8%	

Table 4: Percentage of Obstacles Affecting Implant Selection

		Before	After	Significance Level
Most Probable Obstacle	Cost	52.4%	54%	.077 N.S.
	Fear.	9.6%	9.6%	
	Unclear	34%	10.8%	
	Cost and Fear	4%	25.6%	

be lacking. While labor-intensive, the use of personal interactions between healthcare personnel and the patient may be appropriate to assist many of these individuals. However the interaction between the healthcare provider and the patient also requires some examination.⁴ Charles described three different types of medical decision-making. The first is doctor-centered. In this model, the healthcare provider has established credibility with the patient and makes the significant decisions. In the second type, patient-centered, the patient acquires sufficient information to become confident in his or her decision-making abilities. The third type, a combination of the first two, is one in which the

healthcare provider and the patient jointly make the medical decision. This model appears to have been effective in this study. Dental care, as most health-related issues, requires patient commitment to complement the dental care provided by the clinician to be most effective. The increased awareness demonstrated by the subjects in this study suggests that the hour lecture was effective in providing the subjects with useful, quality, information that could influence the subjects' decision-making process. Indeed a number of the subjects in the study subsequently volunteered to be treated in the prison with dental implants as part of an implant training program for dentists. However, more

than half of patients reported cost to be significant. This result is comparable to several other studies. Van der Wijk et al.¹⁶ observed that the high cost of the implants is one of the major limiting factors in the willingness of patients to undergo treatment. This clearly indicates the necessity for dentists and the implant industry to take the necessary steps in reducing costs and thus creating opportunities for treatment.

In conclusion it would seem that personal interactions with health care professionals may be an effective way to motivate individuals whose opportunities to independently seek improved health are limited. While this approach is more resource-intensive, such initial contacts can motivate individuals to seek further information and opportunities for improved health care as a result of their initial encounters.

CONCLUSIONS

Conclusion 1: Information delivery was helpful in dental healthcare decision processes for a prison population. Conclusion 2: Financial factors are perceived as a significant obstacle in subjects' choice of implant treatment. ●

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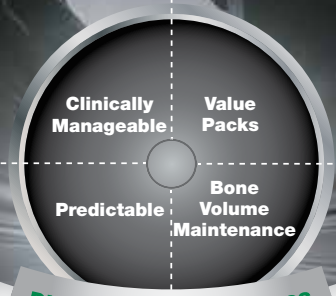
Disclosure

The authors report no conflicts of interest with anything mentioned in this paper.

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