Attitudes Toward Computarization as a Factor of Improvement of Employees' Quality Performance in the University Clinical Centre Tuzla

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Original paper
SUMMARY
Informatization is process which facilitate flow, preparation and approach to information's. Computer informatization significantly influence successful of management, making possible good data overview which are necessary for d action of decision. The aim was: to investigate attitudes of health workers in regard to computer informatization of hospital institutions; to investigate influence of sociodemographic characteristics of health workers on attitude in regard to informatization, with special attention on informatics education and use of computers; to explain difference in attitudes of health worker in regard to informatization and different factors. Investigation was done during May/June 2009. at Department of Surgery and Department of Internal Medicine of University Clinical Center Tuzla. Investigation included 60 health workers (20 with middle/high school – 15 female and 4 male, 20 with higher – 16 female and 4 male and 20 with high (university) education – 11 male and 9 female). Likert questionnaire was used to obtain attitude of examinees. Results were presented as average and percentage value. Significance of differences was obtained by X-square test, and value of $p<0$, 05 as statistically significant. On base of obtained results it was concluded that – majority of examinees have positive attitude in regard to computer informatization; majority of employees with some informatics education have more positive attitudes in comparison with employees without informatics education; it suggest necessity of additional informatics education toward to further development of computer informatization at University Clinical Center Tuzla and consequently further improvement of work quality in general sense; younger examinees with high and higher education have more positive attitudes in comparison with older, that should be include in further plans of inormatizatuon and education of employees.
Key words: Computer informatization – Attitudes – Helath workers

1. INTRODUCTION

Main condition for any kind of considerations about computer informatization of some system, including the health system, is informatics „literacy"of those who will use the computer (1). New generations of health workers are in that sense „more literate", but not all of them are fully released of fear, and there are plenty of reasons to this.

1.1. Informatization

Informatization is a process alleviating flow, storage and access of information. Informatization significantly affects the success of management, providing to the decision makers a clear overview of data, needed for the decision making. Informatization has been implemented in several ways, and during the past twenty years it has been inseparable from the computerization process, in fact provision of the devices that may quickly and successfully replace the manpower in information management.

Particularly important types of informatization are organisation and education. Organisation enables that available funds are applied for the purpose, while education enables decision makers to fully utilize the available information, and provides to the executive worker to give over the major part of their workload to computers.

There are certain stereotypes, prejudices and negative attitudes about use of computers in health, as well as in other branches.

Stereotypes, judgments and beliefs are that all members of certain group (or, for example, computers of certain producer or supplier) have similar features, regardless the differences between them. Stereotypes usually lead to prejudices – negative attitudes towards people (or goods) belonging to certain group. Both, stereotypes and prejudices are usually enormous obstacles (2).

The attitude means determined, usual relations towards people or events (e.g. introduction of informatization into health care institution, introduction of certain procedures and guidelines, and similar). They are usually expressed by words „I do not like such people, procedures, situations" and similar. Attitudes may be positive and negative, depending on the subjective experience of certain values. Things, occurrences and ideas that we like have positive value, while those that we do not like and that we fear of have the negative value. Therefore, the attitudes could be defined as a tendency to positively or negatively react to some person, situation or object (3).

In the widest possible sense, prejudices are statements associ-

ated to belief in their accuracy–although those statements are not backed up by facts nor based on arguments, but are made without previous checking of their accuracy or without previous consideration about them. Social psychology defines prejudices as types of attitudes which obviously lack the justification, which are logically ungrounded, and which are followed by intellectual emotions that reflect and are resistant to changes. The term „prejudice" in this sense may include positive and negative attitude. Frequently, prejudices imply negative relation. Speaking about prejudices in that sense, imply: judgment, underestimation, hostile attitude, readiness to start action against groups or occurrences being prejudiced against (2,3).

Positive attitude refers to interest of workers, readiness to accept informatics – communication technology in daily work. Positive attitude is a condition for successful introduction of hospital informatics system(4).

Application of different informatics – communication solutions require changes within the organisation of work and standardization of work procedures in health institutions. Introduction of information systems comes spontaneously, as a condition to respond to the requirements of increased efficiency in provision of health care services, with full supervision of the business performance.

Since the end of the sixties of the last century, it was evident that health care costs may not constantly increase, in fact that unlimited growth of health care costs does not automatically mean better health of the population. Therefore, those who plan health care, asked for more efficient possibilities for use of limited sources. When the defined priorities and programmes were about to be implemented, it was found out that certain relevant information were missing. Health managers realized that they needed urgently such information to enable commencement and control of the progress and outcome of the interventions. Main areas that lacked information the most are planning of needs for health workers and evaluation of the health care department's efficiency (5).

New technological achievements in medicine at the University Clinical Centre in Tuzla required definition of project task, development of applicative modules aimed at the development of integrated hospital information system.

1.2. Hospital information system

Hospital information system is an integrated communication computer system for exchange of information in the health care process, whose users are health workers and health care users. Main functions of this information system are: collection of medical and administrative data, processing and analysis of data and documents about finance operations, saving and storing medical records, communication and integration, supervision, search for information, data analysis, support to decision making and education. Hospital information system connects all parts of hospital into a unified system. Development of each health information system relies currently to modular and distributed approach (4,5).

Considering the importance of informatization in the development of staff performance quality (improvement) within the University Clinical Centre Tuzla, the study was done about the attitudes and level of knowledge on the informatics among health workers medical in the University Clinical Centre Tuzla.

1.3. Objectives of the assessment

Assess the attitude of health workers toward computer informatization of hospital institutions;

Assess the impact of socio-demographic characteristics of health workers to the attitude toward computer informatization, with particular emphasis on informatics education and use of computers;

Explain differences in attitudes of health workers toward computer informatization, considering the identified factors.

2. EXAMINEES AND METHODS

The assessment was done during May / June 2009 at the Surgery Clinic and Clinic for Internal Diseases of the University Clinical Centre Tuzla. The assessment included 60 health workers in total (20 with high school degree – 16 female and 4 male; 20 with associate degree – 16 female and 4 male; and 20 with university degree – 11 male and 9 fe-

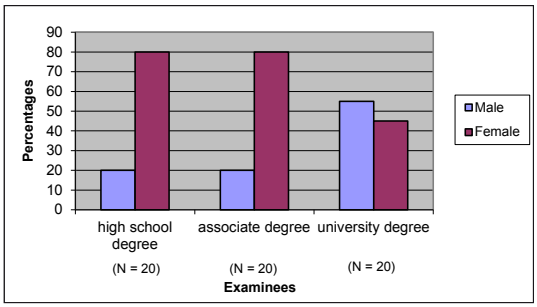

Figure 1. Design of examinees sample according to gender and educational degree

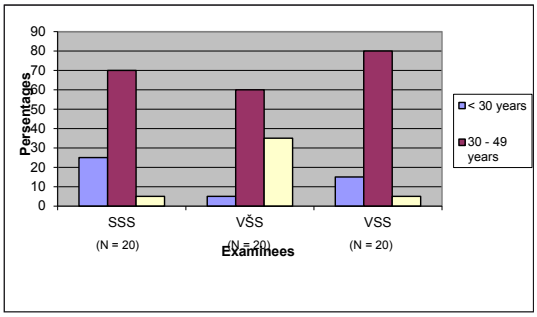

Figure 2. Distribution of examinees according to educational degree

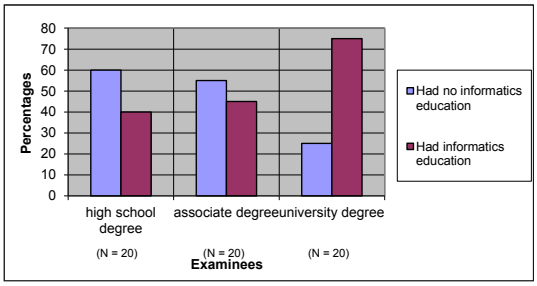

Figure 3. Distribution of examinees according to education during regular school education and educational degree

male). Figure 1 shows the design of the assessees' sample.

The Likert's assessment method was used (6), which is most frequently used to express the attitude structure of assessees. Likert scale is a type of attitudes' scale comprising of several statements about different aspects of some attitudes. It is given to assessee to express the level of his/her agreement or disagreement for each separate statement, according to the five-level scale, including: „I do not agree at all ", „I do not agree ", „I agree and I do not agree ", „I agree ", „I fully agree ". Each answer of the assessee is scored appropriately (from 1 to 5), and by summarizing the scores for each statement, the total score is obtained, which expresses the attitude of the assessee, either positive or negative toward the object of the attitude. The used questionnaire included ten statements, so that the minimum number of scores could be 10, and maximum 50. Results are presented as average values and percentage participation. Significance of differences was determined utilizing Hi-square test, and differences at the level p<0,05 were defined as significant.

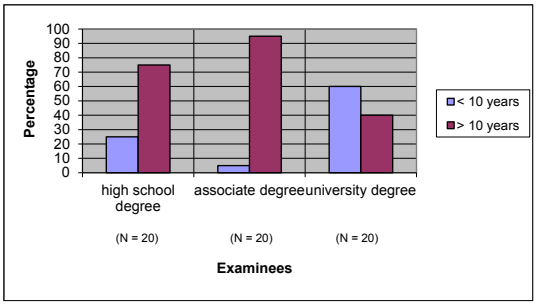

Figure 4. Distribution of examinees according to work experience and educational degree

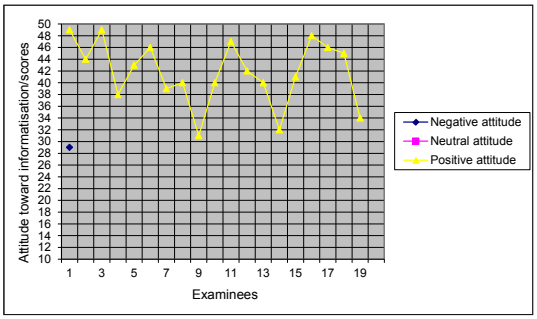

Figure 5. Distribution of examinees with high school degree according to attitude toward the computer informatization

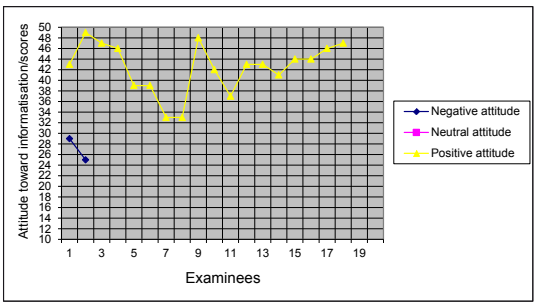

Figure 6. Distribution of examinees with associate degree according to attitude toward the computer informatization

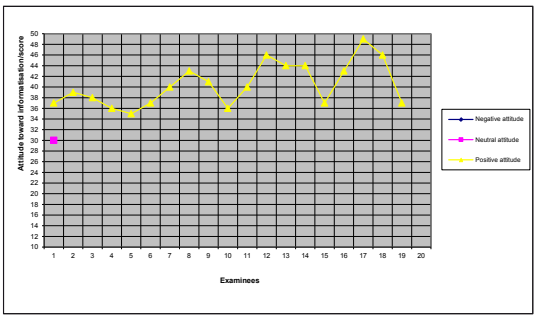

Figure 7. Distribution of examinees with university degree in relation to the attitude towards the computer informatization

3. RESULTS AND DISCUSSION

Among 60 interviewed health workers, most of them were aged from 30 to 49, and the least below 30 years of age (Figure 2). The examinees with high school degree in 60% of cases, and with associate degree in 55% cases, did not attend, during regular school education, the informatics of similar subjects. However, the examinees with university degree did not have informatics subject during regular school education only in 25% cases (Figure 3). In the Brumini's study from 2007 (4) implemented in Croatia, significantly higher percentage of examinees had informatics education in all three levels of educational degree. Out of all 75% of the examinees with high school degree, 95% with associate degree and only 40% with university degree had the work experience over ten years (Figure 4).

Among 20 examinees with high school degree, only one had a neutral attitude, while the remaining 19 had the positive attitude (Figure 4) (p<0,05). Similar attitudes are presented by the interviewed examinees with associate degree. However, only two examinees had negative, while the remaining 18 had significantly positive attitude (p<0,05) toward informatization (Figure 5).

The examinees with university degree had mainly positive attitude (19 of 20 examinees) (p<0,05) toward informatization; while only one of 20 had neutral attitude (Figure 6).

Possible positive impact of informatics education to the attitude toward informatization is presented in the Figure 8. However, the examinees with certain informatics education in all three assessed groups (high school, associate and university degree) had more scores in average (more positive attitude) according to Likert scaling, in comparison with those who did not have any education in informatics, through the differences are statistically insignificant.

The study that has been recently implemented in Croatia, including 1171 assessees employed in health care system, showed also that informatics education was connected to the positive attitude toward informatization in all three levels of education, with significant statistic importance (4).

Younger assessees with high school and associate degree had more positive attitude toward informatization in comparison with the older ones, while in case of the university degree, the attitudes were balanced in all three age groups (Figure 9).

Results obtained from the analysis of attitudes toward informatization are interesting, depending on the fact that with use of computers, higher scope of work is performed than earlier. However, the assessees with high school and associate degree who stated that with use of computers they perform higher scope of work than earlier (10 years ago) had lower number of

scores according to Likert scale (more negative attitude) than the assessees who perform lower scope of work with computers, though the differences are statistically insignificant.

The assessees with the associate degree, who perform majority of work with computers, had more positive attitude toward informatization that those who said that they do minor part of their workload with computer, but their difference is statistically insignificant (Figure 10).

Informatization process is unavoidable and continues regardless the temporary decrease of speed, because to achieve the global health – communication system, the first step to connect to information "highway" is to network all the health workers (5).

To speed up the steps, it is necessary to define the situation in the system available within the University Clinical Centre Tuzla, starting from identification of informatics "literacy", followed by work on systematic education and removal of negative attitudes and prejudices toward the unknown and "complicated thing", which only "takes my precious time", as may be frequently heard among the health workers, particularly the older ones.

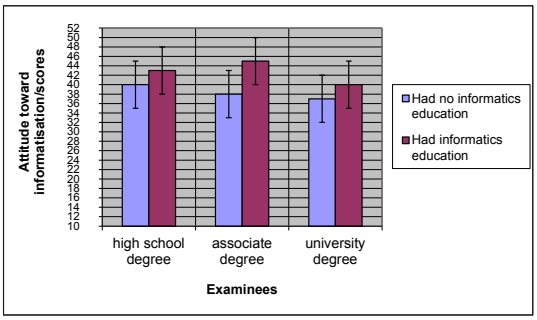

Figure 8. Overview of attitude towards informatization according to informatics education and professional degree

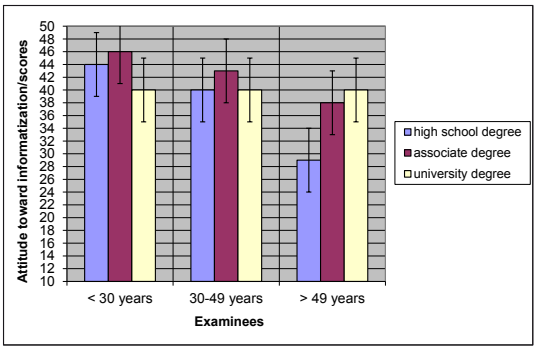

Figure 9. Overview of attitudes toward the computer informatization according to educational degree and age

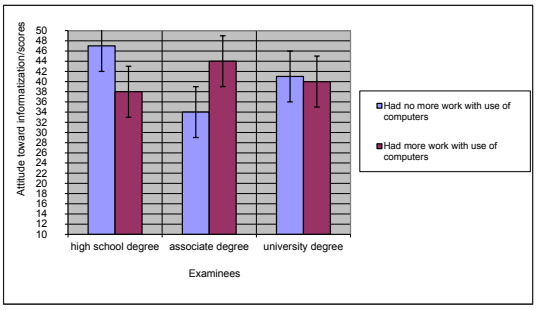

Figure 10. Overview of attitudes toward the computer informatization in relation to the fact that more work is done with use of computers than earlier

4. CONCLUSION

Majority of employees with high school degree and associate degree have positive attitude toward informatization, which is significant data.

It is important that majority of those who had certain informatics education have positive attitude in comparison with those who did not have such an education.

First and second conclusion are important indicators for the need of additional informatics education, aimed at further informatization implemented at the University Clinical Centre in Tuzla, and for the development of performance quality in general.

Younger employees with high school degree and associate degree have more positive attitudes than the older ones, which should also be taken into consideration in further informatization plans and eventual education of employees.

This assessment was based on the questionnaires and small sample of examinees, while the future, more comprehensive assessment would provide more consistent solutions.

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