

ORIGINAL ARTICLE

Medical identification tag. Are we aware? Cross-sectional, population-based study

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ABSTRACT

Background: Medical identification tags are defined as tags that are worn as bracelets, neck chains, and can be on smartphones. They were initially designed to identify and alert the medical providers of the previous medical history of the patient. In emergencies, the medical provider needs to know the identity of the patient receiving care, so that the medical provider can help the patients and provide them with the optimum treatment they need. The main aim of this study is to establish awareness and credibility of medical identification tags among medical and non-medical healthcare providers in Saudi Arabia.

Methodology: This cross-sectional study was carried out in Saudi Arabia. A standardized questionnaire was sent to healthcare providers and non-healthcare providers using the Google Questionnaire survey.

Result: Out of the 271 responses, around 52% were healthcare providers. Nearly 35% stated they had no clue about medical identification tags, 31% stated they were not sure if they know about medical identification tags, whereas approximately 33% stated that they knew what medical identification tags were.

Conclusion: Medical identification tags may help in saving many lives of patients with chronic diseases, and medical providers need to start advising patients to utilize medical identification tags where the immediate diagnosis is essential to save their lives.

Keywords: Medical identification, emergency medicine, patient education, smartphones.

Introduction

Throughout the years of obtaining medical information from patients, it has been known that medical information or medical records have delivered accuracy for healthcare providers in terms of managing patients with precise intervention required [1]. For the past 50 years, medical identification tags (medical IDs) have played a critical role in diagnosing, treating, and saving lives of many patients with chronic diseases, such as diabetes, hypertension, and prosthetic heart valve transplant [2], through stating the past medical history non-verbally on bracelets, necklaces, and smartphones [3].

It has been estimated that millions of people worldwide have a hidden medical condition that could critically endanger their lives in a possible emergency [1]. As an example, diabetes is one of the prevalent chronic diseases that cause a decreased level of consciousness. According to the World Health Organization, Saudi Arabia has been ranked as the second-highest rate of diabetes in the Middle East [4]. Healthcare providers face several complications in Saudi Arabia in dealing with chronic diseases, such as diabetic patients, which is one of the most common, due to poor awareness; however, precautions must be taken

to avoid serious life-threatening complications, such as diabetic ketoacidosis, hyperglycemic hyperosmolar state, and hypoglycemic coma [4].

Medical IDs have shown great benefits in treating patients with chronic diseases by providing the medical staff with the past medical history, which has an impact on saving patient's lives. A vital role of utilizing medical tags is the practical convenience that aims to be easily detected by healthcare providers due to the convenient location of the device whether on the wrist, neck, or modern smartphones. Moreover, time is critical in terms of emergencies; impending complications are common in terms of delayed treatments that can be substantially decreased by the medical tags that powerfully aid

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the medical personnel in accurately diagnosing and managing the emergency patients. Modern medical IDs are convenient to use due to innovative technology these days. Previously, medical IDs were minimized to body attachments due to the lack of technology. Nowadays, there is a considerable variety of possible ways to gain benefits using technologies, such as modern smartphones that facilitate the medical ID's usage in a much convenient way.

Smartphones, such as iPhones and Samsung, which are the frequently used devices, have wonderfully improved their software systems through caring for their users by programming systems that willingly allow them to input their medical data for potential health emergencies. In Apple devices, the health application launches a section where the users can fill the medical ID form with their medical history, blood type, weight, and height as shown in Figures 1 and 2. Figure 3 shows an illustration of the medical identification on the Android that mimics the Apple identification tags. There is little

literature worldwide concerned with medical IDs and its paramount importance. Moreover, as far as we can tell, to our knowledge, no study had assessed the knowledge and attitude toward medical IDs globally, especially in the middle-eastern regions and Saudi Arabia. Therefore, the ultimate goal of this comprehensive study by heart is to properly explore the prevalence, knowledge, and attitude.

Subjects and Methods

This cross-sectional study was carried out in Eastern Province of Saudi Arabia, from January to July 2019. A pretested standardized questionnaire sent to healthcare providers and non-healthcare providers in the Eastern Province, consisted of 16 questions for non-medical providers and 22 questions for medical providers using the Google Questionnaire survey. The questionnaire was validated by three processes: first, we sent the questionnaire to experts to review its clarity and relevance. After that, we did a cognitive interview to check the internal consistency of items. Finally, we did a pilot study to test the reliability of the questionnaire. The questions aimed to measure the knowledge of both medical and non-medical providers and to see if they consider it important in saving lives. Moreover, the questionnaire aimed to see how the respondents would define medical IDs and their knowledge of the presence of medical IDs on smartphones. The sample size was calculated by using the online free Raosoft website,

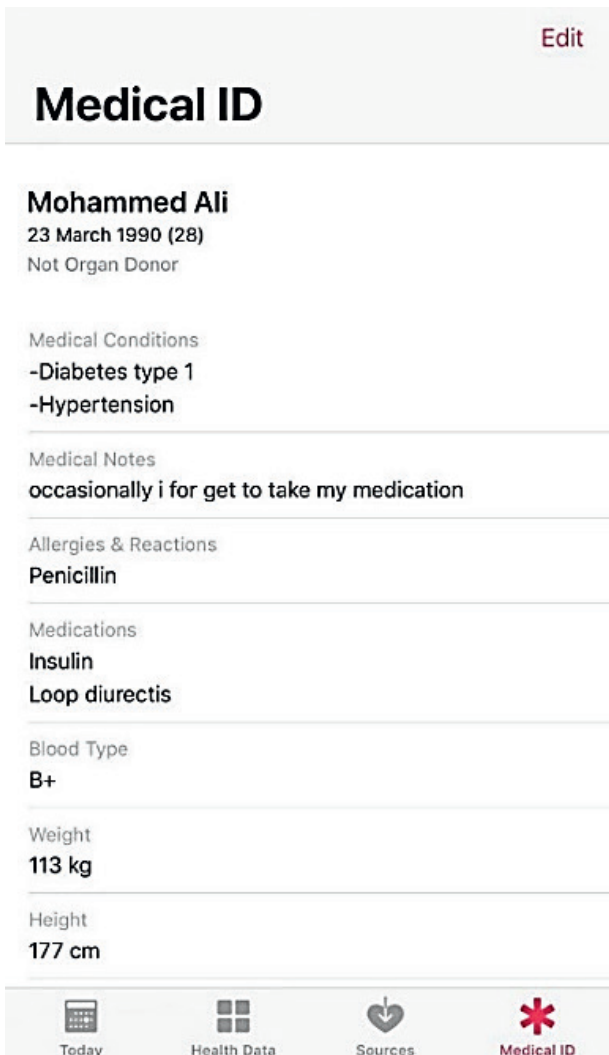


Figure 1. Apple application for Medical Identification.

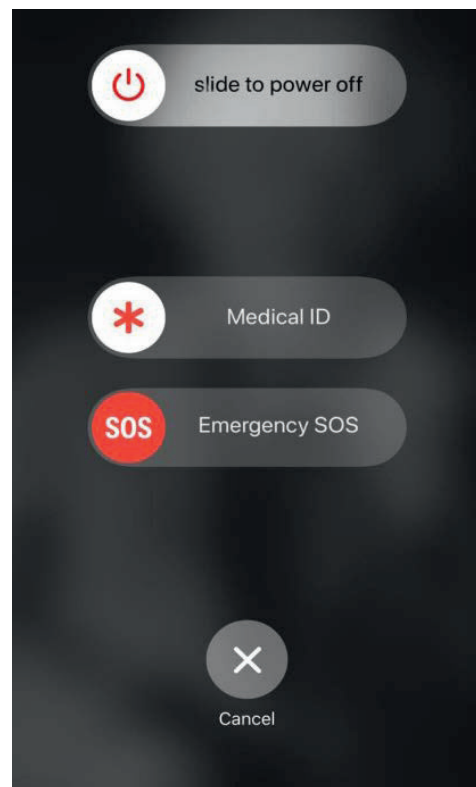


Figure 2. Apple application for Medical Identification.

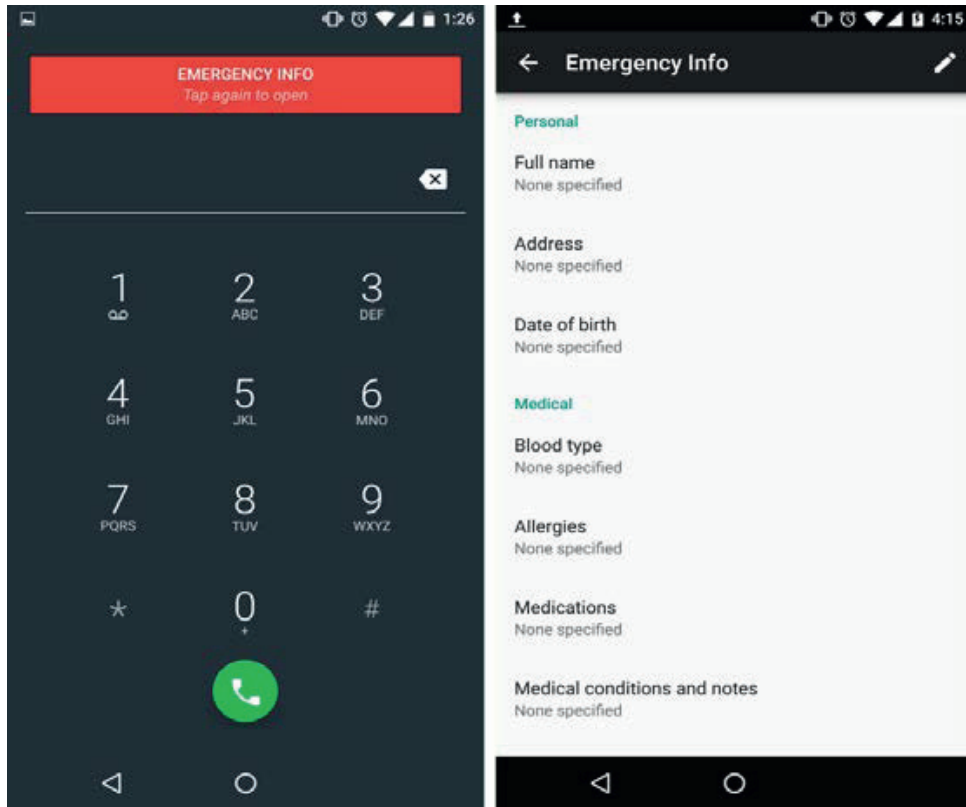


Figure 3. Apple application for Medical Identification.

and it was found that the sample obtained a statistically significant result with a 95% level of confidence equal to 320, estimating that the population is approximately 1 million. The responses reached 271, and then the data were loaded in Statistical Package for the Social Sciences (SPSS) for further analysis. The data were processed and statistically analyzed by using the SPSS v 25.0. The data were analyzed using the chi-squared test to estimate the relationship between categorical variables and were presented in the form of graphs as a visual aid. A p -value < 0.05 was considered statistically significant.

Results

A standardized questionnaire was distributed to individuals living in Eastern Province, Saudi Arabia, containing 16 questions for non-medical providers and 22 questions for medical providers. An estimated 87% of the respondents chose to fill the questionnaire in Arabic. The majority of the responses was accounted for by 180 (66%) females and 91 (34%) males. Out of the 271 responses, around 52% were healthcare providers. Nearly 35% stated that they had no clue about medical IDs, 31% stated that they were not sure if they know about medical IDs, whereas approximately 33% stated that they knew what medical IDs were (Figure 4). Thus, respondents were asked to define medical IDs, only 88 of the respondents, which accounts for approximately 32%, correctly defined medical identification as tools that

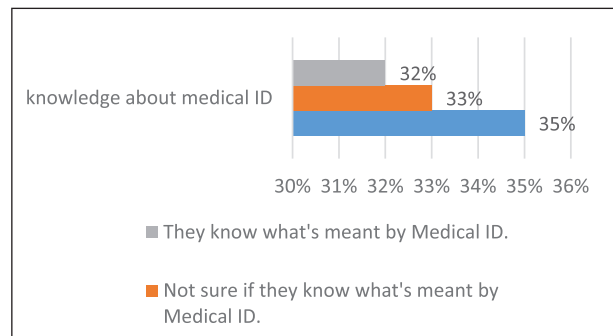


Figure 4. Knowledge about medical ID.

people can add to their medical history, such as chronic diseases, blood type, height, weight, and allergies, whereas 183 (68%) misidentified medical IDs. There was no significant difference in knowledge with regard to medical IDs between the two genders ($p < 0.03$), age groups ($p < 0.06$), or marital status ($p < 0.03$). On the contrary, there was a significant difference in knowledge with regard to medical IDs between healthcare providers and non-healthcare providers ($p < 0.001$). Out of the individuals who knew what medical IDs were, only 29 (33%) added it to their phones, which represent the prevalence of medical IDs among the participants. Healthcare providers (only) were asked about a case scenario on a collapsed person with pulse and breathing rates, only 8.5% of the medical providers looked for

medical IDs on the patients. Around 91 (63%) medical providers stated that they never advised their patients, with chronic diseases, to utilize medical IDs. Figure 4 shows respondents who were asked to check the diseases that they thought were important and can be added to the medical ID. Figure 5 shows respondents who were surveyed on the location of the medical IDs. Figure 6 shows participants who were asked about the diseases that can be stated in the medical IDs. Interestingly, diabetes and pulmonary embolism were the most reported diseases that can be stated in the medical ID.

Discussion

The striking result of our literature review is that there is a marked ignorance of medical IDs and their significance. A study was conducted in the United Kingdom to

investigate the importance of awareness of emergency identification tags stated that 99% of the respondents had heard of emergency identification tags and felt it was important for those who have chronic medical problems [4]. Whereas in the Eastern Province, Saudi Arabia, nearly 35% stated that they had no clue about medical IDs, 31% stated that they were not sure if they know about medical IDs, whereas approximately 33% stated that they knew what medical IDs were. Also, the study that was conducted in the United Kingdom stated that the vast majority of healthcare providers (97%) indicated that it was mandatory for them to search for medical IDs on the patients [5]. On the other hand, healthcare providers, in this study, were asked about a case scenario on a collapsed person with a pulse and breathing rates, only 8.5% of the medical providers looked for medical

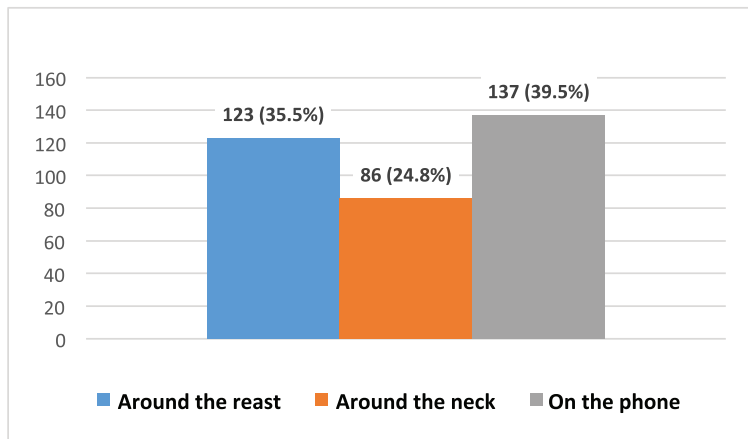


Figure 5. Location of medical ID.

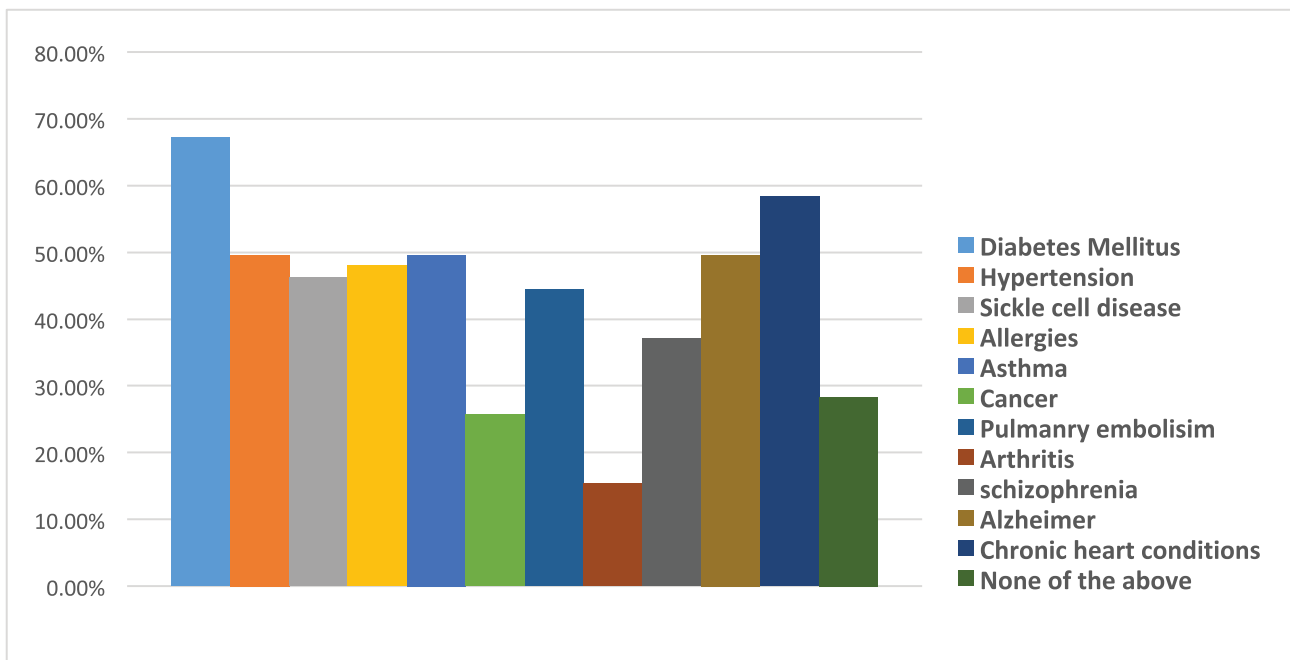


Figure 6. Diseases that can be stated in medical ID s.

IDs on the patients, although the level of their knowledge about medical IDs was significant when compared to other healthcare providers. The crucial benefits of medical IDs are limitless with regard to chronic diseases, such as diabetes, and cardiovascular conditions, such as hypertension, coronary artery syndrome, and known sensitivity to an allergen medication like penicillin, anesthetic drugs [6], and specific food [7]. Drain and Volcheck clearly stated that medical IDs can also help in effective preventions of anaphylactic, which is a systemic, severe, immediate hypersensitivity reaction caused by immunoglobulin E, reactions in pediatrics by accurately identifying the allergic reaction, and stating the medical problem on the medical ID of the patients that will help to treat them in case of possible emergencies [8]. In comparison to the results collected for this article, approximately 52% of the respondents stated it was not important, which reflected a bad attitude toward such healthy precautions that might save their life in case of a potential emergency. The valuable information stated on the medical ID tag is no different from the reliable information conveyed verbally by the patient. For example, if the patient has an allergy to penicillin, he or she will state on their medical tag "penicillin allergy." Diabetic patients stated that they feel "safer" with more peace of mind when they put a medical ID in the form of tattoos [9]. The vital role of medical IDs is optimizing the pre-hospital phase of patient management. It is well known that delayed pre-hospital care is associated with increased mortality and morbidity. For instance, a cerebrovascular accident, like stroke, is a well-known urgent condition that might cause debilitating disease if not treated urgently [10]. The final prognosis depends on how urgently the patient is treated. The interval between the onset of symptoms and the starting of treatment is crucial; hence, the term "time is brain" stresses on the importance of time in nervous tissue damage in acute cerebrovascular accidents [11,12]. Since we live in the era of prosperous technology, an example of a medical tag is medical identification on smartphones; they do not require a passcode to reach the medical file in case of emergencies. Previous literature has not discussed the utilization of smartphones' medical IDs. The healthcare providers can identify the patient's past medical history that will help them to treat the patient's emergency health issue through accessing their medical ID by the use of smartphones easily (Figures 1–3). Patients carry smartphones 24/7, which makes smartphone IDs more consumable and more convenient than other forms of medical ID, such as bracelets, cards, or rings. Some of these forms of medical ID associated with unusual adverse effects; for instance, one article reported an adverse reaction to a medical ID bracelet (phlebitis and restricted venous return at the wrist) [13]. On the other hand, smartphones possess no such risk, which makes them the best choice to be utilized as medical IDs. Additionally, the information can be updated every now and then.

Conclusion

Medical IDs can help in saving many lives of patients with chronic diseases, and medical providers need to start advising patients to utilize medical IDs, where immediate diagnosis is essential to save their lives. According to the results received from the participants, it is important to spread awareness before utilizing medical IDs. Spreading awareness through medical providers will aid to facilitate the utilization of medical IDs by patients and the community. The findings of this article might help emergency physicians and health educators to tailor a suitable health awareness campaign.

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List of Abbreviations

Medical IDs Medical identification tags

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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Consent for publication

Informed consent was obtained from all the participants.

Ethical approval

The research was tentatively approved by King Saudi University for health science, more specifically the College of Medicine Ethical Committee.

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