Pakistani Healthcare Professionals Views and Opinions About Use of Wireless Handheld Devices in Healthcare Environment

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Abstract
This study explored reactions and perceptions of medical professionals to the use of wireless technology in the Pakistani healthcare setting. A questionnaire was developed and 300 medical professionals were surveyed with 97 completed survey forms returned. Regression analysis of the data indicated that clinical performance and better quality of services would be the key determinants in using wireless technology in Pakistani healthcare. These medical professionals indicated that in order to continuously use the technology, training and technical supports were essential. They also indicated that the introduction of such a technology will result in the attraction of more practitioners, save time, save effort and provide high quality information. Collectively, these factors, in the opinion of these professionals will reduce inaccuracies in data.[1]

Keywords: Wireless technology, user perceptions, Pakistani Healthcare, PDAs

1. Introduction

Pakistan's ministry for healthcare has predicted that Pakistan is realising significant advantages from the emerging information economy. This is reflected in the recent infrastructure investment and other technological developments. Despite this development, it appears that Pakistan is lagging behind in healthcare service provision.

The slow adoption of technological development and wireless handheld devices in the developing countries, like India and Pakistan is due to a lack of support with respect to infrastruc-

ture and management [1-3]; the perceived complexity and cost of the technology [2, 4, 5]; the sensitive nature of information and logistics involved in a healthcare facility [6, 7]; the nature and type of risk involved [5, 8] and the pressure for high quality of care. Other factors include high litigation cost, a lack of infrastructure, the extent of integration with existing health systems [7] and the necessity to have other resources to support technology infrastructure [5, 8].

While the use of technology is rising, there is limited empirical research available into the attitudes of healthcare professionals in using or

adopting wireless technologies. Previous studies using existing models to predict behaviour determinants of adoption of technologies in healthcare have demonstrated their inadequacy. Further, the uptake of wireless and handheld devices is either on an individual level or on a very small scale but not at organisational levels in most of the healthcare facilities. There is limited research available on determinants and factors that are critical to understanding user perceptions of technologies specific to healthcare on a larger scale. Therefore, any knowledge of these factors of adoption of wireless technology

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will help the healthcare administrators to develop appropriate policies in order to address the ever increasing demands of heath services. This is more valid in the case of Pakistan because of the demands placed on the healthcare services and rising interest in wireless technologies in the health domain. All these factors have given impetus to this study [1, 9-11].

The main research question asked in this study is "How do users perceive Wireless Technology in the Pakistani Healthcare Environment?"

The culture of Pakistani environment has always encouraged the use of technology. This is high on the agenda at both state and federal government levels. The healthcare sector in Pakistan is operating in an environment of an intense regulatory framework as well as the imperatives of cost reductions. It also has pressures with respect to a high level of competition, expectation of high quality of services, high demand for services and limited resources. In summary there is a demand for the sector to provide high quality of care – anytime anywhere. This research in particular does not study the process involved in the uptake of the technological development, rather it assumes that a decision has been made at some stage to use wireless technology. While the decision to use is a preliminary phase only, the actual use may happen over a period of time. During this phase it is anticipated that factors such as familiarity with various products, infrastructure requirements, cost and an investigation into the changes needed in clinical process will be evaluated. In addition factors such as the quality of care, the support of management, changes in policies and procedures, security, availability of appropriate wireless application and trust and knowledge in the technology need to also to be considered. Consideration of all these factors will facilitate the adoption and hence the use of wireless handheld devices in Pakistani healthcare environment. The scope of this study is restricted to these aspects.

Our pervious studies have indicated that existing studies that have used some of the accepted prediction models of user perceptions of technology were found to be inadequate in a healthcare context. Chismar and Wiley-Patton [12] applied the Extended Technology Acceptance Model (TAM) to the Healthcare Environment to predict Internet use and found that perceived usefulness was significant and ease of use was not significant. Lapointe et al. [13] established that TAM as devised by Davis et al [14] was not adequate for health systems while studying the dynamics of IT adoption in a major change process in health delivery in Australia. They reasoned that adoption/resistance factors may be group related as opposed to the fundamental basis of TAM which is individualistic. TAM is also influenced by intra and inter organisational factors, it has linkages to cultural and environmental factors as well as the complexity of the environment. In addition Suomi, [15] found that relative advantage, strong network externalities available and the rich availability of information through different communication channels are key factors for innovation and adoption while introducing electronic patient records to hospitals. It should be noted that these factors are not discussed in any of the TAM models.

Other researchers, for example Spil and Schuring [16] examined six studies in the healthcare domain and established that perceived usefulness is a predictor of technology acceptance but ease of use was not found to be significant. Additionally, in a study that was conducted to understand physicians' use of online systems and to assess an electronic disability evaluation system, Horan et al., [17] found that in order to diffuse technology in an organisation, it is important to ascertain physicians' behaviour, their workflow practices and their perceptions regarding the value of specific information systems.

In essence, these recent studies appear to be indicating that the current models of technology acceptance or its derivatives are not suitable to predict the user perceptions of wireless technology in the healthcare environment. Strong support can also be derived from three specific studies that have tested TAM models in healthcare. These studies, conducted by [18-20] established that ease of use was not significant in a clinical domain. Further, recent studies conducted by Howard et al. [21] also established that ease of use was not significant while determining factors of adoption in a clinical domain in regard to wireless technology. Further, Ivers and Gururajan [22] also found that there are other factors beyond the TAM models influencing the acceptance of technology.

Interviews conducted with 30 Queensland nursing staff members by [1] revealed that clinical usefulness of wireless technology is far more significant than ease of use factors as established in TAM. Another focus group discussion with the Western Australian senior health managers by [1] also indicated that aspects of clinical usefulness such as integration of clinical data may be a more significant factor than ease of use. [21] also identified clinical usefulness as having is far more influence than the ease of use factor while determining factors of adoption of wireless technology in the Indian healthcare domain. This variation from the accepted TAM model requires further empirical investigation in order to explain why this is the case in healthcare. Therefore, there is a need to identify attributes that assist in the understanding of the user perceptions and their reactions to using a technology in a given healthcare context.

There appears to be a basis to identify factors that contribute to the perceptions of using a technology or intentions to using a technology in healthcare settings. Given that wireless technologies have started making in-roads, the overarching purpose of this research is to identify these factors in the Pakistani healthcare system. The rationale of this is justified by the fact that subcontinent is a strong player in software technologies, especially medical applications. Further, subcontinent facilitates

'health tourism' for the middle-east people, due to the advancement in medical technology and reduction in cost in offering high quality health services (as highlighted by various print media). However, our initial review of available literature indicated that this area is under-researched. Collectively, these aspects formed the basis for this study [10, 11, 23, 24].

2. Methodology

An examination of IS studies indicated that there is a necessity for a suitable research method, as has indeed been confirmed by Straub [25]who called for new efforts to validate the instruments that IS researchers were using. In Boudreau and his team in 2001, [26] after a review of MIS Quarterly, Communications of the ACM and Information & Management over the period 1997 and 1999, published in MIS Quarterly (vol. 25, p1) the statement that "findings suggest that the field (of IS) has advanced in many areas, but, overall, it appears that a majority of published studies are still not sufficiently validating their instruments". Therefore, we felt that if technology issues were to be studied with respect to a specific domain, then user involvement with the technology issues forms a major part in establishing the factors influencing such a study. This was endorsed by [27] in the statement that '… knowledge is gained, or at least filtered, through social construction such as language, consciousness, and shared meanings (p.81)'.

The research question posed in this study dictates the need to have quantitative research methods, while the behavioural component of the same investigation dictates qualitative research methods. In essence, to answer our research question, we require both methods. Qualitative methods will help us to understand the domain and the context in a practical sense. Quantitative methods will assist us to generalise our findings. The rationale for this approach is

based on the notion that behavioural components require a thorough understanding of how users apply wireless technology in a given organisational setting in order to understand the behavioural issues. This is best extracted or accomplished by a qualitative approach, as we need to extract a number of 'tacit' aspects. A quantitative instrument then can be developed (from the qualitative data) to extract the quantitative aspects such as the opinion scores. This approach is also endorsed by authors with a great deal of experience in research methods in information systems, for example [28].

Considering the above, the suitability of one research method over the other had to be carefully weighed. Based on these, this study identified the exploratory approach to be suitable as an initial investigation. This approach is particularly favourable in confirming the direction of the study and the variables chosen for the study, as well as helping to refine the literature. The exploratory approach allows the researcher to eliminate irrelevant variables as they are identified and to include new relevant variables as they emerge.

Thus the principles of each method were applied to this study. Due to the similarities in cultural, social, political, and demographics of Pakistani and Indian healthcare environment, the initial exploratory phase was adapted from earlier research carried out in the Indian healthcare environment by one of the authors of this paper. The research was conducted using a qualitative approach to establish the direction for the study based on the Indian healthcare environment. Indian and Pakistani healthcare environments are also very similar in the context of technology uptake and ICT infrastructure. This was then followed up with a main study using the quantitative approach. In summary, the approach is based on the development of the instrument from the qualitative interviews, using the statements provided by interview participants. This has provided relevance and reliability to our quantitative instrument.

3. Data Collection

As argued above, the qualitative approach (individual interviews) was used to collect initial sets of themes for the adoption of wireless technology by the physicians. The qualitative data were collected originally from India and this data were used to develop an instrument. The qualitative data collection exercise was not repeated for the Pakistani healthcare environment, as both countries lie in the same region with similar social values, cultural values, customs, demographics, and other similar characteristics for healthcare professional across the healthcare industry.

The main reason for this approach was that previously tested instruments were found to be inadequate in healthcare settings for Pakistan. For example, the previous instrument omitted the context in which the technology was used. The data from the interviews were used to develop a specific range of questions to gather more detailed views from the wider population. The main questionnaire was divided into three parts namely, personal, management, application and a section asking for demographic information. The questionnaire was developed to gather healthcare professional's views and opinions about uses of wireless handheld devices. Questions were related to organizational support, clinical performance, training, report writing, communication, clinical process, documentation, ergonomics, usability and perceived advantages of wireless handheld devices in a healthcare setting (a copy of the questionnaire is provided in the appendix).

This survey instrument was pilot tested to capture the information reflecting the perceptions and practices of those adopting wireless technology in the healthcare system. It was particularly focussed on what internal and external environmental factors would shape the adoption of wireless technology and the extent of their influence.

The survey instrument developed from the qualitative data analysis con-

sisted of two phases. The first phase concentrated on the demographic characteristics of the healthcare facility and the healthcare professionals. Most of the questions in this phase were either "Yes or No" or selecting the appropriate answers from the provided list of options. Second phase of the questionnaire collected information about adoption and usage of wireless handheld devices in the healthcare environment. The questions in this phase enabled the respondent to answer on five-degree likert type scale (strongly agree, (5) agree, do not know, disagree, and strongly disagree (1). Most of the questions in this section focused on the views, perceptions, and opinions of health care professionals towards uses/adoption of wireless handheld devices in a healthcare setting. To minimise the bias, questions were worded carefully with open ended phrases and non-leading information. A full peer review of the questionnaire was conducted through academic and healthcare researcher in this domain to ascertain the reliability and validity of the instrument.

In the subcontinent, healthcare professionals are exposed to a limited level of technology for data retrieval and storage. Pakistani healthcare professionals are using a mix of electronic and manual processes to manage their client and communications needs. Some of the information is kept on a desktop computer while the remaining is stored manually on paper. In some healthcare facilities, information is stored on the local computer, while other healthcare facilities are running fully integrated local area networks. Most of the healthcare professionals surveyed for this research were aware of PDAs and handheld PCs, some of them are already using smart phones, wireless pagers, and other devices to communicate remotely. For example one senior physician mentioned that he is aware of a patient wearing a digital device to register heart information remotely [23, 29, 30].

The survey was distributed to 300 physicians randomly chosen from the telephone book with a covering letter explaining the goals and objectives of the study. In order to improve the response rate healthcare facilities were contacted through the top and middle management, who were part of the data collection exercise. A total of 97 responses were received (a 32% return). This response rate compares favourably with other studies, for example Temple et al., [31] had a response rate of 10.8% when surveying physicians in the United States of America. Similar responses were reported for surveys with other professionals, for example a response rate of 8.8% was reported by [32] in a survey of American Urologists.

The physicians who responded were aware of wireless technology, or were using some form of wireless technology in their workplace. We included certain administrative type physicians in order to identify aspects pertaining to the use of wireless technology in administration. Demographic details were not recorded to guarantee anonymity. The survey responses were then entered into a spreadsheet file. A Visual Basic interface was written to generate numerical codes for various elements of the survey for data analysis using SPSS. The coded spreadsheet file was then copied onto a SPSS file format.

4. Results

Data was initially analysed for reliability by calculating Cronbach Alpha. The Cronbach Alpha had a reliability value of .861 and this value shows that the instrument is reliable and can undergo further statistical analysis.

An initial correlation matrix was obtained from the statistical software package, SPSS. Regression analysis was conducted on variables that were significantly correlated with each other with the dependent variable of "Do you believe the use of wireless handheld device would enhance your clinical performance?" This was done against the technically enabling independent variables of

1) Do you believe more training is required to be comfortable in using wireless handheld devices?

2) Do you believe technical support is important in the handling of wireless handheld devices?

Output from this regression is shown in table one.

R Squared	Level of Significance	F statistic	Regression Sum of Squares	Residual sum of squares	Coefficient (Constant)	Coefficient (1)	Coefficient (2)
0.607	0.000	71.8	562.32	364.18	0.012 (se=0.318)	0.264 (se=0.116)	0.574 (se=0.100)

Table 1: Regression analysis on factors that practitioners consider will enhance clinical performance

The regression was highly significant (p<0.01) indicating that practitioners considered that the implementation of wireless technology would enhance clinical performance provided adequate training and technical support was available.

Further regression analysis was done with the same dependent variable, namely "Do you believe the use of wireless handheld device would enhance your clinical performance?" This was done against the managerially significant independent variables of

1) Do you believe the implementation of wireless technology will attract more practitioners?

2) Do you believe the use of wireless handheld device would help save time?

3) Do you believe the use of wireless handheld device would help save effort?

4) Do you believe the use of wireless handheld device will help delivery of high quality information?

Output from this model is shown in table two below.

Parameter	Value
R-squared	0.812
Level of Significance	0.000
F statistic	98.317
Regression Sum of Squares	752.4
Residual sum of squares	174.1
Constant (standard error)	.423 (0.347)
Coefficient (1)	.568 (0.093)
Coefficient (2)	.158 (0.086)
Coefficient (3)	.286 (0.089)
Coefficient (4)	−.187 (0.094)

Table 2: Regression analysis on factors that practitioners consider will enhance clinical performance

The regression was highly significant (p<0.01) indicating that practitioners considered that the implementation of wireless technology would enhance clinical performance and that it would save time, effort and would attract more practitioners. Practitioners also believed that wireless hand held devices would also help with the delivery of high quality information.

Further analysis was done with the dependent variable of "Do you believe the use of wireless handheld device would provide better quality of service to the patient?" This was done against the data quality independent variables of

1) Do you believe the use of wireless handheld device will help delivery of high quality information? and

2) Do you believe the use of wireless handheld devices can effectively reduce documentation inaccuracy?

Output from this regression is shown in table three.

R Squared	Level of Significance	F statistic	Regression Sum of Squares	Residual sum of squares	Coefficient (Constant)	Coefficient (1)	Coefficient (2)
0.309	0.000	20.84	333.91	745.05	-0.352 (se=0.712)	0.575 (se=0.206)	0.519 (se=0.147)

Table 3: Regression analysis on factors that practitioners consider will provide better quality service

The regression was highly significant (p<0.01) indicating that practitioners considered that a quality service depended on the delivery of high quality information and a reduction of documentation inaccuracies.

5. Discussion

This paper looks at the factors that influence the adoption of wireless handheld devices in healthcare environment in the Pakistani environment.

The factors considered important by practitioners were analysed using regression and it is apparent that in general, practitioners are in favour of adopting the technology provided there is adequate training and technical support. This confirms studies undertaken by [1, 2, 33] where a lack of support with respect to management and infrastructure were reported as being a major factor associated with the slow adoption of wireless technology in developing countries. This aspect needs to be considered by

management and it is imperative that resources are allocated to ensure that sufficient technical support is provided.

Practitioners consider wireless technology to be useful in terms of saving time and effort as well as attracting more practitioners to the hospital system. Another factor in favour of the technology is the perception by practitioners that higher quality, more accurate data will be produced. Perhaps this perception is related to the previously stated drive

by hospitals and practitioners for the 'health tourism' dollar and a need to demonstrate quality through the use of technology.

In order to achieve clinical performance, the design of an effective human-computer interface, while challenging, constitutes a key factor for the acceptance of the technology and its routine use by healthcare workers [34]. This is an important development consideration as the relevant information should be easy to navigate and read, and has to be presented in an organised fashion when required within the resource limitations (e.g. screen size and bandwidth) of a wireless handheld environment. Usability factors are not only likely to constitute an acceptance barrier, but can also be the cause of medical errors. [35] argue, 'While it may be easy and common to blame operators for accidents [or errors], investigation often indicates that an operator "erred" because the system was poorly designed' (p. 301). Therefore, medical errors can also occur due to poor usability. Taken together, these factors would contribute to reduce medical errors. By implication, it is important to involve users in the design of the wireless applications, thereby maximising their clinical performance. The practitioners in this study did relate high quality services to reduced documentation inaccuracy and there was a belief that handheld devices can reduce these inaccuracies. Therefore the argument [35]espouse about good usability is especially important if the high quality expectations of these practitioners are to be maintained.

Simply acquiring and implementing wireless technology alone would be insufficient to accomplish clinical performance and, subsequently, drive adoption and diffusion. Wireless technology should be integrated with process improvement and organisational change. Process improvement requires the optimisation of clinical processes and should be supported by technology, rather than driven by it [36]. This is supported by our findings where clinicians indicated that the use of a wireless handheld device would

enhance clinical performance provided they were able to deliver high quality information. Ultimately, this is likely to generate significant, positive patient outcomes and financial improvements within health organisations. This is implied by the respondents suggesting that use of the technology will attract more patients and save time and effort in their work.

The empirical evidence collected from this study suggests that aspects associated with saving time and effort are important factors and that it will influence the use of wireless technology in the given setting. Work by [37-39] also confirms this assertion. While the cost aspects were not directly explored in this study, saving effort, saving time, reduction in inaccuracies and high quality information are budgetary components that need to be included in any benefit/cost analysis of the technology. While existing research in this area argues that wireless technology has the potential to decrease charting time and medical errors and enhance patient care quality, there is no evidence that comparisons of costs before and after the implementation of wireless technology have been made. This suggests that further research is required to prove the cost effectiveness of the technology, to this end perhaps a balanced scorecard approach that allows to factors such as savings in time and effort may be a more appropriate analysis tool. If the cost of the technology is counted against easily calculated, and obvious tangible benefits only then the true benefits of the technology may not be realised and this could have important implications on clinical usefulness and could threaten widespread adoption.

6. Limitation

This study is an initial attempt to understand the views and opinions of the healthcare professional towards the wireless handheld devices from the perspective of developing countries. The study is limited to the Punjab province in Pakistan and we were not able to measure the actual usefulness and ease of use of the

wireless handheld devices in a healthcare setting. While this study attempts to identify issues that contribute to the uses/adoption of wireless handheld devices, issues. Factors such as the type of mobile device used and other specific technical aspects could not be covered. Therefore it is a limitation of this study in that it can not provide a comprehensive overview of the situation. With this limitation in mind we suggest that a further comprehensive study is required to generalise the findings of this research.

7. Conclusion

This study explored medical practitioners' perceptions and their reactions towards introducing a wireless technology in a Pakistani healthcare context. The practitioners have asserted that clinical performance and quality of service are two main determinants to the acceptance of such a technology. The contributing factors towards clinical performance and quality of service are training required to use the technology in a clinical setting and technical support required to maintain the technology. The advantages of using such a technology appear to be attracting more patients, saving time, saving effort and realising high quality information. These collectively will lead to reductions in data inaccuracies. An effective benefit/cost analysis must include intangible factors such as savings in effort and improved accuracy and it is suggested that a balanced scorecard approach to analysis of effectiveness would be a useful tool.

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Appendix: Copy of Survey

Wireless Technology Adoption Survey
Project funded by the Queensland Nursing Council
Wireless Technology Adoption Survey

Section A (Demographics)

1. Healthcare Organisation Name

_____

2. What type of organisation is this? (Tick one)

☐ Private Hospital ☐ Public Hospital ☐ Others (Please Specify) _____

3. Gender

☐ Male ☐ Female

4. How long have you been working in the medical field? (Tick one)

☐ Less than 2 years ☐ 3-10 years ☐ More than 10 years

5. What is you age group? (Tick One)

☐ Less Than 23 ☐ 23-29 ☐ 30-36 ☐ 37-43 ☐ More Than 43

6. Which of these role best describe your nursing position? (Tick one)

☐ Staff/General Duty   ☐ Clinical Nurse Specialist   ☐ Office Nurse
☐ Certified Registered Nurse   ☐ Nurse Administrator   ☐ Certified Nurse Midwife
☐ Nurse Manager/Head Nurse   ☐ Certified Nurse Aide   ☐ Nurse Consultant
☐ Nurse Practitioner   ☐ Nurse Educator   ☐ Others _____

7. Highest Education Completed (Tick one)

☐ Diploma/Certificate   ☐ Associate Degree   ☐ Advanced Practice Certificate Program in Nursing
☐ Bachelor's Degree   ☐ Master's Degree   ☐ Doctorate
☐ No Additional Degree ☐ Others _____

8. Primary Clinical Focus (Tick all that applies)

☐ None   ☐ Oncology   ☐ General Practice   ☐ Orthopaedics
☐ AIDS   ☐ Paediatrics   ☐ Public Community Health   ☐ Mental Health
☐ Critical Care   ☐ Public Health ☐ Dialysis   ☐ Neonatal
☐ Drug/Alcohol Treatment ☐ Neurology   ☐ Emergency Care   ☐ Occupational Health
☐ Family Health   ☐ Cardiac Care ☐ Geriatrics   ☐ Rehabilitation
☐ Medical – Surgical   ☐ Transplants   ☐ Others _____

Section B (Personal Factors)

10. Do you believe wireless handheld devices are helpful in medical/healthcare sector?
☐ Yes ☐ No

11. Do you use wireless handheld devices? (e.g. PDA, Mobile Phones, Bluetooth…)
☐ Yes ☐ No

12. Which of these devices do you use, or had used in healthcare? (Tick all that applies)
☐ PDA ☐ PC/Laptop/Notebook ☐ Pager ☐ PC Tablet ☐ Mobile smart phone
☐ Others _____

13. If yes, are you confident in the usage of wireless handheld devices?
☐ Yes ☐ No

14. If you are provided with a wireless handheld device with wireless connectivity, would you use it?
☐ Yes ☐ No

15. Select the setting where you may use wireless handheld devices? (Tick all that applies)
☐ Hospital/Clinic (In-patient) ☐ Public Health ☐ HMD
☐ Hospital/Clinic (Out-patient) ☐ Nursing Home ☐ Mental Facility
☐ Private Practice ☐ Physician Offices ☐ Assisted Living
☐ Home Healthcare ☐ Ambulatory Care ☐ Others _____

16. Are you aware of any of the following technical wireless technology terms? (Tick all that applies)
☐ Access Points ☐ GSM ☐ WEP ☐ CDMA ☐ WPAN
☐ 802.1X ☐ 3G ☐ 802.11a ☐ SMS ☐ 802.11b
☐ iPod ☐ Voicemail ☐ 802.11g ☐ DoCoMo ☐ Bluetooth

17. What is your preferred mode of data entry? (Tick one)
☐ Hand-Writing ☐ Keyboard/Mouse
☐ Speech Recognition ☐ Scanning/Imaging Devices (e.g. Barcode, Scanner…etc)
☐ Touch Screen ☐ Others _____

Section C (Personal, Management & Application Factors)
Please check the answer closest to the measurement scale.

Personal	Always	Often	Seldom	Rarely	Never
18. Does the culture in your organisation support wireless technology adoption?					
19. Do you believe that the introduction of wireless technology will reduce the burden of your workload?					
20. Do you believe the implementation of wireless technology can enhance the organisation's public image as technically advanced?					
21. Do you believe the use of wireless handheld device would enhance your clinical performance?					

22. Do you believe the implementation of wireless technology will attract more practitioners?					
Management	**Always**	**Often**	**Seldom**	**Rarely**	**Never**
23. Do you believe the use of wireless handheld device would help save time?					
24. Do you believe more training is required to be comfortable in using wireless handheld devices?					
25. Do you believe the use of wireless handheld device would help save effort?					
26. Do you believe technical support is important in the handling of wireless handheld devices?					
27. Do you believe the use of wireless handheld device would reduce overall costs?					
Application	**Always**	**Often**	**Seldom**	**Rarely**	**Never**
28. Do you believe the use of wireless handheld devices can effectively reduce medical errors?					
29. Do you believe the use of wireless handheld devices can increase more contact time with patients?					
30. Do you believe the use of wireless handheld device enhances clinical workflow?					
31. Do you believe the use of wireless handheld device would improve efficiency through greater real-time communication?					
32. Do you believe the use of wireless handheld device would provide better quality of service to the patient?					
33. Do you believe the use of wireless handheld device will help delivery of comprehensive information?					
34. Do you believe the use of wireless handheld device will help delivery of high quality information?					
35. Do you believe the use of wireless handheld devices can effectively reduce documentation inaccuracy?					
36. Do you believe wireless handheld devices can make access to data easy?					
37. Do you believe the implementation of wireless devices would have a positive impact on patient safety?					