A Respite Care Information System for Families with Developmental Delay Children through Mobile Networks

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ABSTRACT
In the collaboration of Internet technology and humanities, a matching and appraisal system of the respite care service for families with Children of Developmental Delay (CDD) is designed and implemented through mobile networks. Volunteers and families with CDD form a mobile social network to share their experiences, know-how and expertise in childcare. Moreover, a service management system is also included. Results of half-year field trials demonstrate the superiority and feasibility of the implemented system in quality improvement of the respite care services.

Categories and Subject Descriptors
H.3.5 [INFORMATION STORAGE AND RETRIEVAL]: Online Information Services — Web-based services; H.5.3 [INFORMATION INTERFACES AND PRESENTATION]: Group and Organization Interfaces — Evaluation/methodology and web-based interaction.

General Terms
Design, Experimentation, Management.

Keywords
Respite care service, mobile networks, service management, matching system, appraisal system.

1. INTRODUCTION
Families with CDD require assistance on daily aspects, such as information exchange, professional consultation, economics and spirit [1]. Families with CDD may shyly ask for assistance from outsiders, but many volunteers do not know who needs their help. Therefore, it is necessary to develop a system to match them up. In the paper the families with CDD and volunteers form a mobile social network via modern information communication technologies [2]. The appropriate volunteers will be selected from the mobile social network by the developed matching system to provide the respite care services requested by families with CDD. The authors join with the families with CDD to observe and plan the offered types of respite care services so as to meet their requirements. There are two types of respite care services offered: childcare and trivial things assistance. In the trivial things assistance, volunteers act as agent for cooking, purchasing, housework, and so on. After finishing the respite care service, the volunteer and the family with CDD will evaluate the respite care service and share their experience through the developed appraisal system. Moreover, members of the mobile social network are able to communicate and interact with each other for consultation and care support through the system. In addition, the service management system for the mobile social network services [3] is also developed. Currently, the developed system serves hundreds of users including parents with CDD, volunteers and system managers, and it works well.

2. SYSTEM DESIGN/IMPLEMENTATION
The matching and appraisal system of respite care services is designed and implemented through mobile networks. Twenty five families with CDD were interviewed, including in-depth and focus-group interviews, for requirement analysis, service planning and appraisal. The designed and implemented services contain matching, habit records of CDD, service types, information exchanges and experience sharing, location-based services, authentication, privacy, and management.

In the formed mobile social network, members can use PCs or PDAs to access the offered services through the Internet platform. After successful authentication, personal preferences, types, time periods and requirements of respite care services, and ideal matching conditions can be issued. The system automatically matches up the appropriate volunteer and parents with CDD. The matching criteria are based on the location, service feedback, personal skills and schedules. The matched volunteer can retrieve the habit records of the CDD before the respite care service, and write additional records after the service is completed. Figure 1 shows the scenario of matching service that differs from the man-made matching.

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Information and experiences are exchanged among members through discussion boards, while different authorities are assigned to different member groups. As shown in Figure 2, the management services, such as authority, interface management, report and log analysis, are also developed for administration. Figure 3 (a) shows the request interface of the respite care services via PDA. As a service request is matched successfully, the system will send emails and short messages to notify the volunteer and the parents with CDD. Figure 3 (b) shows the notification via short messages.

3. RESULTS

In the year of 2008 and the beginning of 2009, the research had conducted questionnaire surveys for Angel Heart Family Social Welfare Foundation which serves parents of CDD. These surveys mainly focused on the overall satisfaction of the system operations and functions. The overall satisfaction was raising from 3.9 in the year of 2008 to 4.84 in the year of 2009, on a scale of 1 to 5.

The matching of the respite care services has been offered for half year. There are 196 submitted service requests from families of CDD since November 2008 to June 2009. The implemented system successfully pairs 68 assistance services as well. As the service is completed, parents score volunteers with satisfactory questionnaires, as shown in Figure 4.

The five questions are Q1: overall satisfaction, Q2: professional quality, Q3: service attitude, Q4: service efficiency and Q5: communications. The statistics gained from the questionnaires can be adopted to improve the quality of respite care services for parents with CDD. Nowadays, the average scores in 2008 and 2009 are shown in Figure 5. The results demonstrate that the practicability of the implemented system is capable of improving the quality of the respite care services.

4. CONCLUSIONS

In the paper the matching and appraisal system of respite care services for families with CDD is designed and implemented through mobile networks. The satisfactory questionnaires demonstrate the feasibility and superiority of the implemented system in quality improvement of the respite care services.

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6. REFERENCES

