

Title	糖尿病患者ピアサポートサービス設計のための心理変容機能の表現に関する研究
Author(s)	大澤, 郁恵
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Description	Supervisor:池田 満, 知識科学研究科, 博士

氏名	大澤 郁恵		
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論文審査委員	主査	池田 満	北陸先端科学技術大学院大学 教授
		小坂 満隆	同 教授
		金井 秀明	同 准教授
		溝口 理一郎	同 教授
		米田 隆	金沢大学 准教授

## 論文の内容の要旨

Services are required to meet diverse needs in rapidly changing market conditions. The same issue occurs on peer support services for diabetic patients. The peer support services among diabetic patients have functions of improving their psychological aspects. Psychological concerns, burdens and the other psychological problems often prevent the diabetic patients from carrying out their diabetic self-management for keeping their blood sugar level. One of the problems of the existing peer support services is that the services don't suit enough to patients' various lifestyles, individual values, social needs and the others which change by time. The focus of discussion is how to tailor services to such various conditions and environments. The standardized psychological functions are already proposed in order to adaptively design the contents of the services. On the other hand, it is also important to understand the different types of psychological functions which can be applied to diverse types of patients and various contexts.

The question is how to reveal the various psychological functions. One of the approaches is an incremental approach by improving psychological functions with practice through collaborations with patients and medical professionals. The steps of the incremental approach are assuming the typical psychological functions, designing services of the peer support services, observing the services and revising the assumed psychological functions. The issue of the approach is that the psychological functions are too abstract to share and represent the psychological functions. This ambiguity of the psychological functions results in the inconsistency of the incremental processes. Same understanding of such invisible functions is not able to be built among designers. Accordingly, it failed to discuss and revise the idea of psychological functions without even notice. Since the concepts of the psychological functions depend on the person, the written psychological functions are not always understood in a same way. A method of the representation is required for a clearer representation of the psychological functions. One of the reasons why the psychological functions have remained unclear is that the concepts of the psychological supports are not well defined. Therefore, the

conceptual definition of the psychological functions is necessary to represent the psychological functions.

The purpose of this research is to define the concepts of the psychological functions and verify how the definition contributes to the incremental design process of revising the psychological functions with practice. Ontology is adapted to define the concepts of the psychological functions. An issue of defining concepts is that there is almost neither a single model of the concepts everyone agrees with, nor obvious criteria to define the concepts of the psychological functions. The theory and the method of conceptual definitions are discussed in ontology engineering. The concepts of the service functions are proposed based on the theory. The design process is divided into four steps; modeling psychological functions based on previous research, designing the services, offering the services, and evaluating and accumulating the opinions. In this research, online peer support services are designed, and the defined psychological functions are adapted to the four steps.

As the result, the contributions of the definition of the psychological function to the process of revising psychological functions are confirmed. (1) The contribution on modeling psychological functions is that the conceptual definitions show the viewpoints to see psychological functions and that the viewpoints clarify what the each previous finding mentions. The clarification enables unified comprehension of the psychological functions based on various findings concerning psychological functions. (2) The contributions on designing services are 3: expressing implicit purposes of the online systems of the peer support services, representing reasons why the systems are changed, and keeping the consistency of the design of the functions. (3) The contributions on offering the services are 2: The first contribution is improving accuracy of sharing psychological functions with users. The definitions of the psychological functions play the role of checking items of consistency between the psychological functions and explanations of the psychological functions. The second contribution is making sure whether the psychological functions have correctly been understood by patients or not. (4) The contributions on evaluating and accumulating the opinions are 5: discriminating adequate opinions from opinions which are inconsistent with the constructed functions, differentiating between discussions on psychological effect and discussions on actions to cause the psychological effects, representing and recording the detail of targeting patients that psychological functions are supposed to be adapted to, evaluating and expressing intended communication among patients, and distinguishing the opinions on the psychological supports themselves from opinions on the way to promote the support. In conclusion, these results suggest that the conceptual definition contributes to the process of revising psychological functions of the peer support services for diabetic patients.

Keywords: Service design, Psychological support, Peer support, Diabetic self-management, Ontology.

## 論文審査の結果の要旨

糖尿病患者コミュニティに期待される医療サービス上の機能は、患者間交流により、望ましい患者心

理変化を起こすことにある。また、患者の語りを中心とした医療サービスを実現するうえで、重要な機能を提供することも期待されている。本研究は、糖尿病患者ピアサポートサービスの設計において、医療現場(医療者・患者・ファシリテータ等)でサービス機能に関する理解を共有し、その維持・改善のための建設的な議論を支える手法を構成することを目的としている。このために、行為・原理・心理変化といったコミュニティ機能に関連する概念をオントロジーとして明確にし、コミュニティ機能の設計意図を表現する枠組みを示している。

本研究の中核となる患者心理変容モデルは、医療分野の実践研究・心理分野の理論研究の既成の成果から心理変容の機序を説明する原理的な知識を抽出し、医療関係者との議論を踏まえて機能オントロジーとして統合したものである。患者コミュニティ機能における原理を概念化する目的は、設計者が想定した患者行為とその患者自身の心理変化が生じるまでの関係を明示し、意図した機能の意義を共有し、その有効性を評価・議論しやすくすることにある。このことを確認するために、提案モデルに基づいて糖尿病患者 SNS を開発・試運用した上で、インタビューと質問紙調査により心理変容モデルの理解・納得・批判に関する患者の意見を収集し、モデルの妥当性を検証している。さらに、ることを、関係者から収集した経験知の蓄積、オントロジーの改良・拡張の記録、機能の追加・変更の記録から、糖尿病患者ピアサポートサービスの改良設計が適切に進められることを確認している。

本研究の学術的意義は、糖尿病患者コミュニティにおける患者間コミュニケーションの心理的効用について、概念的構成をオントロジーとして明確にし、コミュニティのサービス設計に関する議論の基礎とすること、また患者・医療者関係者間でサービス機能の共有理解を深化させるための基礎とすることが可能であることを、理論的・実証的に明らかにした点にある。また、本研究で示された心理変容機能の表現は、

他の慢性疾患等の患者ピアサービス機能の定義に応用可能であると考えられる。

以上、本論文は、糖尿病患者ピアサポートサービス設計について心理変容機能を明確にする表現を示したものであり、学術的に貢献するところが大きい。よって博士(知識科学)の学位論文として十分価値あるものと認めた。