Effects of Knowledge of Evidence Based Practice and Organizational Culture on Innovation Behavior of University Librarians

대학도서관 사서의 근거기반실무 지식과 조직문화 인식이 혁신행동에 미치는 영향

Kapseon Kim (김갑선)*

Contents

ABSTRACT : The purpose of this descriptive correlational study was to explore the effect of knowledge of evidence-based practice (K-EBP) and organizational culture on the innovation behavior of university librarians in South Korea. The structured survey questionnaire consisted of four sections and 60 items. The four sections were concerned with K-EBP, organizational culture, innovation behavior, and EBP-related activities and demographic. The respondents were librarians working in 101 university libraries in South Korea. The results of this study were as follows. First, K-EBP indicated that the respondents had excellent practical skills, but their ability to appraise critically, apply knowledge and to conduct research was weak. Second, the questionnaire scores for K-EBP were significantly positively correlated with those for organizational culture and innovation behavior. Higher K-EBP scores corresponded to higher scores for relation-, innovation-, and task-oriented organizational culture. Third, K-EBP outcomes differed significantly by age group, education level, employment type, job title/seniority, reading of academic journal articles, and attendance at conferences. Organizational culture differed significantly with age. Innovation differed significantly with both age and conference attendance. Fourth, in the hierarchical multiple regression analysis, factors predicting K-EBP scores were education level and reading academic journals. Fifth, the multiple regression analysis identifying factors predicting innovation revealed statistically significant regression coefficients for overall K-EBP and for innovation- and hierarchy-oriented organizational culture. The regression coefficient for perception of a hierarchy-oriented organizational culture was negative. To promote innovation behavior of librarians, we need to foster an innovative organizational culture characterized by communication and cooperation, and improve the ability of librarians to engage in EBP. Educational programs that promote librarian engagement in research-related activities are needed.

KEYWORDS : Evidence Based Practice, Knowledge of Evidence Based Practice, Innovation Behavior, Organizational Culture, University Librarians

요 약 : 본 연구는 대학도서관 사서가 지각하는 근거기반실무 지식과 조직문화 인식유형이 혁신행동에 미치는 영향을 파악하기 위한 서술적 상관관계 연구이다. 연구결과는 다음과 같다: 근거기반실무 지식은 조직문화 인식, 혁신행동과 통계적으로 유의한 양적 상관관계가 있었다. 근거기반실무 지식이 높을수록 관계지향, 혁신지향, 업무지향의 조직문화 인식이 높은 것으로 나타났다. 근거기반실무 지식은 연령, 교육 정도, 고용 유형, 직위, 학술지의 정기적 읽기, 학술대회 참여 여부에서 유의한 차이가 있었다. 혁신행동에서 유의한 차이가 나타난 변인은 연령과 학술대회 참가 여부 이었다. 근거기반실무 지식에 영향을 미치는 변인은 교육정도, 학술지의 정기적 읽기로 나타났다. 혁신행위의 인식은 연령과 학회참석과 유의적 관계가 있었다. 대학도서관 사서의 혁신행동에 영향을 미치는 변인은 근거기반실무 지식, 혁신지향 조직문화, 위계지향 조직문화로 나타났다. 특히, 위계지향 조직문화 인식은 부정적 영향을 미치는 것으로 나타났다. 대학도서관 사서들의 혁신행동을 이끌어 내기 위해서는 소통과 협력의 혁신적 조직문화를 조성하며, 근거기반실무 적용을 위해 사서의 연구활용능력을 강화하고, 연구 관련 활동을 촉진하는 다양한 교육프로그램의 개발과 지원이 조직 및 도서관계 차원에서 필요하다.

주제어 : 근거기반실무, 근거기반실무 지식, 혁신행태, 조직문화 , 대학도서관 사서

* Assistant Professor, Faculty of Liberal Arts, Jungwon University
 (kapskim@jwu.ac.kr / ISNI 0000 0004 6358 6811)

Ⅰ. Introduction

1. Background

Academic librarians, as the main individuals responsible for managing library information services, should take the lead in innovations in libraries and be cognizant of changes in the management of university libraries. These changes include policy changes, the continuing development of information technology, and increased demand for high-quality information services, declining budgets, and increasing material acquisition costs. To ensure the continuous development of university libraries, innovation is needed based on the professionalism of librarians and the wider organizational culture.

Librarians' innovation behavior should be prioritized. Innovation behavior can be defined as the process of solving problems critically, and creating, accepting, using, and disseminating new ideas. Studies of innovation on the part of librarians are attempts to support goal-oriented and creative library management and to provide practical benefits by identifying aspects of organizational structure and members' perceptions of the library staff and internal resources. However, although librarians' innovation behavior is highly important for development at the personal and organizational level, there have been few studies on this behavior.

In order to provide basic data for the management of university libraries and the development of librarianship, this study, using the "Knowledge of evidence-based practice (K-EBP)" (Upton & Upton, 2006), is expected to reveal an association of knowledge of evidence-based practice and organizational culture on the innovation behavior of university librarians.

In particular, this study intends to investigate the effect of the degree of perception of 'knowledge' of evidence-based practices of university librarians and organizational culture on innovation behavior, with emphasis on 'research evidence' among various 'evidences' of evidence-based practice. The reason why this study focus on 'research evidence' is that among the various evidences constituting the evidence-based practice, research evidences are considered to be the core and fundamental foundation for maintaining the professionalism of libraries and librarians and promoting continuous development (Kim, 2019, 44).

2. Objectives of the study

The main purpose of this study was to determine the effects of K-EBP (Upton & Upton, 2006)

and organizational culture on innovation behavior among university librarians.

The specific objectives were as follows:

1. To identify the extent of K-EBP, and assess perceptions of organizational culture and innovation behavior of university librarians.

2. To identify the correlations among questionnaire scores on K-EBP, organizational culture, and innovation behavior of university librarians.

3. To identify differences in K-EBP, organizational culture, and the innovation behavior of university librarians according to their demographic characteristics.

4. To identify factors that affect the innovation behavior of university librarians.

Ⅱ. Literature Review

1. Research trends in evidence-based practice

The concept of evidence-based practice (EBP) began in the 1990s with evidence-based medicine (EBM). Currently, the scope of its application is expanding to all academic fields associated with practical fields of applied theory (nursing science, pedagogy, social sciences, social welfare science, library and information science, etc.).

The researcher believes that EBP is not a completely new concept for practitioners. Indeed, long before the concept of evidence-based practice emerged, practitioners sought out and referred to the latest research results or scientific knowledge as a basis for problem solving and decision making aimed at improving the field of practice. To emphasize again, the concept of evidence-based practice is not new, nor is it a new works activity in practice. The concept merely emphasizes and focuses new awareness on the rational bases of problem solving and decision making that serve to ground practice. EBP is intended to define the daily practices of practitioners in terms of academic concepts and to identify and review them as academic phenomena.

Research trends in the field of library and information science (LIS) related to evidence-based practice can be broadly classified into four types: defining evidence-based practice; identifying the substance of such evidence; identifying obstacles to applying evidence-based practice; and examining experiences of applying evidence-based practice (Kim, 2019, 45-46).

First, the definition and discussion of evidence-based practice in the field of LIS (Booth, 2002;

2007; Eldridge, 2000; Hallam, 2018; Pyo, 2009; Todd, 2009) cover diverse trends. EBP's early conceptual initiation in the LIS field embraced the EBM concept, so EBP was regarded simply as an approach based on evidence, in which practitioners identified and applied the best scientific knowledge and focused on improving the quality of actual work. The current extended definition (evidence-based library and information practice, EBLIP) considers evidence-based practice as a structured process for decision-making, and a variety of discussions aimed at identifying the components or steps of this decision-making process continue (Koufogiannakis & Brettle, 2016; Miller, 2017). The definition of EBLIP in library and information science was extended to the decision-making process because, unlike the fields of medicine and nursing, LIS is judged by both academic and practical criteria. Medicine and nursing practices are based on scientific and objective knowledge in the natural sciences, and the aim was to apply these scientific research results to improve practice. On the other hand, given that LIS research and library practice are closer to the social than to the natural sciences, specific and particular social contexts, such as regional contexts, must be considered in addition to shared scientific objective knowledge. Therefore, LIS has expanded its scope to a comprehensive decision-making process that includes work improvement in practice (Hallam, 2018, 4).

Second, along with the expansion of existing definitions, the original basis in research evidence is also expanding in various ways. In particular, in the early stages of the discussion to identify the substance of evidence underlying evidence-based practice (Brettle, 2017; Eldredge, 2000; Gillespie, 2014; Gillespie et al., 2017; Koufogiannakis, 2012), emphasis was placed on a narrow concept of scientific research. However, as the definition of evidence-based practice expands to incorporate the decision-making process, the type of evidence deemed valid is also diversifying. Recent research has divided evidence into "hard evidence" and "soft evidence" (Koufogiannakis, 2012) based on whether it is officially published. In addition, knowledge has been classified as research evidence, professional knowledge, and local evidence (Koufogiannakis, 2011, 53) according to the content attributes of the evidence. "LIS practitioners use not only research evidence but also expertise and field evidence when making decisions" (Koufogiannakis, 2011, 53).

Third, some studies have identified obstacles to librarians' use and production of research as a core basic activity related to EBP (Booth, 2011; Jamali, 2018; Kim, 2005; Pyo, 2010). For example, Booth (2011) analyzed 55 EBLIP studies by applying thematic synthesis and suggested that the barriers encountered when applying EBLIP included five major domains: the environment (pace of change, poor access to the evidence base, and language and cultural barriers), evidence

(limitations of the evidence base, and inappropriate orientation of research), workplace (lack of time, financial resources, infrastructure, and/or organizational support), profession (leadership, lack of research culture, professional characteristics, communication difficulties, need for skills/training, need for education, and failure to implement), and paradigm (limitations of EBLIP).

Fourth, the most frequently discussed topic in EBP scholarship has to do with the practical experiences that practitioners encounter when applying evidence-based practices in the field (Bayley, Ferrell, & McKinnell, 2009; Koufogiannakis, 2012; 2013; Luo, 2018; Miller et al., 2017; Muellenbach, 2017). For example, Miller et al. (2017, 126-129) categorized the EBP experience of university librarians as "empowering, intuiting, affirming, connecting, noting, and influencing".

The degree of librarians' experience with EBP affects the development and quality of information services, it is important to understand it when considering a librarian's innovation behavior. However, research exploring the relationship between EBP and innovation behavior is lacking. This study aims to assess the influence of evidence-based practical knowledge required for librarians to engage in EBP on their innovation behavior.

2. Organizational culture

Organizational culture is composed of the social and psychological environments recognized by members of an organization. When the organizational culture constitutes a climate that supports innovation behavior, the thinking, attitudes, and behaviors of organization members can change innovatively.

Organizational culture has been defined in various ways depending on the perspective of scholars and the research focus. Generally, organizational culture can be regarded as a generic term for the values, beliefs, customs, traditions, norms, skills, and symbolic systems shared by members of an organization; it is a concept that gives the members a sense of unity and behavioral guidance within the organization.

This study aimed to apply the Competing Values Model proposed by Cameron and Quinn (1999) as an analysis framework to identify the characteristics of organizational culture. This model has the advantage of being able to analyze the organizational culture in a multi-faceted way as having both advantages and disadvantages as the organization engages in mutually exclusive and contradictory competitive relationships.

The model defines four cultures, the relational (clan), innovation (adhocracy), hierarchy, and

task (market)-oriented cultures, using two dimensions: (1) flexibility and discretion versus stability and control; and (2) external focus versus internal focus and integration (Cameron & Quinn, 1999; Parker & Bradley, 2000; Quinn & Kimberly, 1984).

A relational-oriented culture can also be considered a group culture or a human relations model. This sort of organization values members' trust, participation through teamwork, loyalty, and morale. In this type of culture, the greatest emphasis is placed on maintaining family-like relationships within the organization. Emphasis is placed on organizational members, unity, cooperation, shared values, and participation in the decision-making process. This sort of culture conveys strong interest in developing individual skills and creating a family atmosphere, with human consideration of the members of the organization. The innovation-oriented culture, also known as a development culture or open system model, emphasizes organizational change and flexibility and focuses on the ability to adapt to the external environment encountered by the organization. Because this approach requires an organizational culture that is highly interested in the growth and development of the organization, it places great importance on challenge, adventure, creativity, innovation, and resource acquisition in members of the organization based on a change orientation and flexible responsiveness to the external environment. The core concern of the innovation culture is whether employees are given autonomy and free discretion in their job performance. A hierarchy-oriented culture, also known as a hierarchy culture or internal process model, reflects the values and norms of the bureaucracy, emphasizing official orders and rules, centralized control, and stability. It has characteristics of a bureaucratic culture that emphasizes order and control via a hierarchical order, compliance with rules and laws, standard practices, stability, documents and formats, reports and information management, and clear responsibility for business processing. The task-oriented culture, also known as a rational culture or rational goal model, is a culture type that emphasizes achievement of the organization's performance goals and productivity in performing tasks. Organizations dominated by these cultural characteristics emphasize the value of achieving goals, planning, and efficiency, and they reward performance (Cameron & Quinn, 1999; Parker & Bradley, 2000; Quinn & Kimberly, 1984).

3. Innovation behavior

Most organizations recognize the innovation of members as crucial for an organization to continue to grow and develop. The non-profit organization and the university library also need to identify facilitating factors that affect innovation behavior at the organization or individual

level and to reduce obstacles to support and induce innovation among members.

Innovation work behavior is defined as individual actions directed at generating, processing, and implementing new ideas, including new product ideas, technologies, procedures, and work processes, with the goal of increasing the effectiveness and success of the organization (Bos-Nehles & Veenendaal, 2019; Janseen, 2000; Kleysen & Street, 2001).

Research on innovation in other fields suggests that the factors influencing innovation behavior among organizational members can be divided into organization-level and individual-level factors. Organization-level factors include the supervisor's leadership, organizational culture type, organizational structure, organizational support, and the reward system. Individual-level factors include learning orientation, commitment, and knowledge sharing. Recently, innovation studies have been changing from an organization-level, macroscopic perspective to a microscopic perspective focused on how the members of an organization participate and engage in innovation.

In the case of library organizations, empirical studies related to innovation are scarce. This is because the primary research interest of LIS has traditionally considered the efficient processing and management of materials, and research on the behavior of librarians is relatively meager (Kim, 2016).

In particular, as pointed out by Brundy (2015), most of the research on innovation in the library consists of theoretical and conceptual studies on organizational innovation, and many aspects are considered mainly in terms of organizational and service innovation following the introduction of information technology.

Considering the practice of library organization as an approach to librarians' innovation, an organizational approach and individual approach are needed. This study aimed to determine whether K-EBP at the individual level and perception of organizational culture affect the innovation behavior of librarians.

Innovation is an attempt to effectively change, improve, and develop existing practices or methods. EBP is expected to act as an important factor in motivating the individual innovation behaviors of librarians because EBP seeks to support decision making using the best user-centered scientific knowledge, beginning with reflecting on practices and raising problems. In addition, if librarians recognize the library organizational culture as a supportive one wherein they can apply their fresh and reasonable ideas, such recognition of the library organizational culture is expected to promote the innovative behavior of librarians.

Ⅲ. Method

1. Research design

This study uses a descriptive correlational design to explore the effects of K-EBP and organizational culture on the innovation behavior of academic librarians. This study applied Upton and Upton's (2006) measurement tool (EBPQ) for the following reasons. First, the statistical reliability of the measurement tool (Cronbach alpha coefficient of the entire measure = 0.87; that of the knowledge subscale (K-EBP) = 0.91) (Upton & Upton, 2006, 456) was secured. Second, it is not only applicable to medical health professionals, such as nurses, given that "it has been translated into various languages and widely applied to various professions" (Upton, 2014). Third, although it was developed for nurses, the application context and terminology of the items are universal, so it has the advantage of being quick and easy to apply without restrictions in the LIS field. Fourth, the evidence underlying the evidence-based practice that the measure intends to assess is focused on the research basis of studies. That is, the reason for examining only knowledge/skills of evidence-based practice (K-EBP, 14 items) from among the 24 items in the measurement tool, excluding practice and attitude, is that the practitioner's knowledge level is the basis of executive power when applying evidence-based practice. Hence, it was judged to be an influencing factor predicting the innovative behavior of the organization (Kim, 2019, 47).

2. Definition

1) Knowledge of evidence-based practice: K-EBP has been defined as "research and information technology skills and the ability to interpret the literature and apply it to particular cases" (Upton & Upton, 2006, 457). These authors introduced the 24-item Clinical Effectiveness and Evidence-Based Practice Questionnaire for Nurses (EBPQ), on which responses are given via 7-point Likert scales. The EBPQ consists of the following sections: practice/use of EBP (six items), attitudes regarding the clinical effectiveness of EBP (four items), and knowledge/ skills of EBP (K-EBP, 14 items). In this study, only 14 questions (Likert 7-point scale) related to 'knowledge' were applied to measure the level K-EBP. Higher scores correspond to higher K-EBP.

2) Organizational culture: Nursing Organizational Culture Measurement Tool (20 items, 5-point

Likert scale), based on the Competing Values Model (Cameron & Quinn, 1999; Quinn & McGrath, 1985), developed by Kim, Han, & Kim (2004) was used. They divided organizational culture into relation-oriented (five items), innovation-oriented (five items), hierarchy-oriented (five items), and task-oriented (five items) types. A higher score corresponds to a higher perceived organizational culture.

3) Innovation behavior: Innovation behavior is characterized by the introduction and application of new ideas, products, processes, and procedures at the individual, team or organization level (Janssen, 2000). Individual Innovative Behavior developed (14 items; 6-point Likert scale) by Kleysen and Street (2001) was used. They broke down innovation behavior into five stages: looking for opportunities, generating ideas, supporting research, and application of ideas. A higher score corresponds to a higher level of innovation behavior.

3. Respondents

The respondents in this study were librarians working in 101 university libraries in South Korea that had at least six permanent librarians, according to the Research Information Statistical System (Rinfo). Nonprobability sampling was used to identify 636 potential respondents; the overall response rate was 16.03% (N = 101). The reason for limiting the library size was because librarians working there were expected to have extensive practical experience and appropriate social interactions within and without the library organization.

4. Measurement tools

A descriptive survey method was used in this study. The structured survey questionnaire consisted of four sections and 60 items. The four sections were concerned with K-EBP (14 items; 7-point Likert scale), organizational culture (20 items; 5-point Likert scale), innovation behavior (14 items; 6-point Likert scale), and demographic and EBP-related activities (12 items). Higher scores on individual items represented greater agreement with the statement contained therein.

In this study, the methods for measuring K-EBP, organizational culture and innovation behavior developed by Upton & Upton (2006), Kim, Han, & Kim (2004), and Kleysen & Street (2001) were adapted for librarians and libraries. A few terms were changed to make them more applicable to librarians; for example, the term "useful (clinically applicable)" (Upton & Upton, 2006) was

replaced by "practical applicability". Demographic data on age, years of librarian experience, job title, and area of work, gender, and final degree were obtained. EBP-related activities were indexed in terms of awareness of the term EBP, the frequency of reading academic journals, attending conferences and so on.

5. Statistical analysis

SPSS software (ver. 22.0; SPSS Inc., Chicago, IL, USA) was used for all analyses.

First, frequencies, percentages, and means and standard deviations were generated for the demographic data; means and standard deviations for K-EBP, organizational culture, and innovation behavior data were also calculated. Correlations between K-EBP, organizational culture, and innovation behavior data were analyzed using Pearson's correlation coefficient. T-tests, ANOVA, and Scheffé tests were used to compare differences in K-EBP, organizational culture, and innovation behavior data as a function of demographic characteristics and EBP. Finally, hierarchical multiple regression was used to identify the effects of K-EBP and organizational culture on innovation behavior.

6. Limitations of the study

The limitations of this study were as follows. First, the response rate (16.03%) was low so the data may not be fully representative of librarians working in university libraries in South Korea. Second, the use of a self-report questionnaire may have encouraged socially desirables responses.

Ⅳ. Results

1. Respondent characteristics

The demographic characteristics of the respondents are as follows. The average age was 45.8 years. Those over the age of 41 were the highest at 70.3% (71). By gender, female were 52.5% (53) and male were 47.5% (48). In education level, above master's degree was 53.5% (54) and bachelor's degree was 46.5% (47). The average librarian experience was 19.6 years. 20~37 years was the highest at 70.3% (71) and 6~19 years was 20.8% (21). Regular employed type was

89.1% (90). In terms of position, above head librarian was 31.7% (32), staff librarian was 31.7% (32), senior librarian was 21.8% (15), assistant manager librarian was 14.9 (15). By major work, information services was 45.05 (45) and information service support 55.0% (55) (Table 1).

〈Table 1〉 General characteristics of the respondents (N = 101)

Characteristics	Categories	Frequency	(%)	M ± S D
Age (y)	21-29	9	8.9	45.87 ± 10.253
	30-39	21	20.8	
	≥ 40	71	70.3	
Gender	Male	48	47.5	
	Female	53	52.5	
Education level	Bachelor's degree	47	46.5	
	Master's degree or above	54	53.5	
Years of librarian experience	1-5	9	8.9	19.64 ± 10.699
	6-19	21	20.8	
	20-37	71	70.3	
Employment type	Permanent	90	89.1	
	Non-regular	11	10.9	
Job title/seniority	Staff librarian	32	31.7	
	Assistant-manager librarian	15	14.9	
	Senior librarian	22	21.8	
	Above head librarian	32	31.7	
Major role	Information services	45	45.0	
	Other	55	55.0	

2. Evidence-based practice-related activities

The EBP-related activities of the respondents are summarized in Table 2.

〈Table 2〉 Data regarding evidence-based practice(EBP)-related activities (N = 101)

Variables		Frequency	(%)
Awareness of the term EBP	Know it well	6	5.9
	Somewhat familiar	13	12.9
	Not familiar but have heard of it	44	43.6
	Never heard of it	38	37.6
Frequency of reading academic journal articles	Often	7	7.0
	Sometimes	64	64.0
	Never	29	29.0
Conferences	Attended	35	35.0
	Never attended	65	65.0

Variables		Frequency	(%)
When to apply EBP	When teaching other librarians	0	0.0
	To be a competent professional	32	31.7
	To understand the procedures I need to undertake	11	10.9
	When an error occurs	8	7.9
	When asked to fulfil new duties	50	49.5
How to solve the problem	Browse resources (e.g., articles, journals, textbooks, internet)	79	78.2
	Ask colleagues or a senior librarian	18	17.8
	Ask a professor or other expert	4	4.0

3. Degree of K-EBP, organizational culture, and innovation behaviors

The degree of the K-EBP, organizational culture, and innovation behavior questionnaire data are given in Table 3.

〈Table 3〉 Degree of knowledge of evidence-based practice (K-EBP), organizational culture, and innovation behavior (N=101)

Variables	Mean ± SD	Real range	Available range
K-EBP	74.70 ± 11.56	31-98	14-98
Organizational culture	66.44 ± 9.18	38-100	20-100
Relation-oriented	17.71 ± 4.11	5-25	5-35
Innovation-oriented	20.57 ± 4.55	6-30	6-42
Hierarchy-oriented	15.55 ± 3.96	5-25	5-35
Task-oriented	12.59 ± 2.65	4-20	4-28
Innovation behavior	62.74 ± 10.98	32-84	14-98

The item with the highest K-EBP score was the ability to share ideas and information with colleagues (5.8 ± 0.91). The next, in order, were: the ability to review one's own practice (5.71 ± 0.94), ability to monitor and evaluate librarians (5.5 ± 1.06), dissemination of new ideas about care to colleagues (5.5 ± 1.02), awareness of major information types and sources (5.46 ± 1.02), and the gap between theory and practice' (5.46 ± 0.93) (Table 4).

The K-EBP item with the lowest score was critical analysis of evidence against work standards (4.76 ± 1.08). The next, in order, were: ability to determine the validity of the evidence (4.92 ± 1.09), ability to convert information needs into a research question (5.11 ± 1.10), ability to understand research results and statistical analysis and to use information technology (5.18 ± 1.16), and knowledge of how to retrieve evidence (5.31 ± 1.06) (Table 4).

〈Table 4〉 Scores for each items of K- EBP in the evidence-based practice questionnaire (EBPQ) (N=101)

Variables	M±SD	Ranking
1. Research skills	5.33±1.17	8
2. Ability to understand research results and statistical analysis results, and to use information technology Information Technology (IT) skills	5.18±1.16	11
3. Monitoring and reviewing of practice skills	5.5±1.06	3
4. Converting your information needs into a research question	5.11±1.10	12
5. Awareness of major information types and sources	5.46±1.02	5
6. Ability to identify gaps in your professional practice	5.46±0.93	5
7. Knowledge of how to retrieve evidence	5.31±1.06	9
8. Ability to analyze critically evidence against set standards	4.76±1.08	14
9. Ability to determine how valid (close to the truth) the material is	4.92±1.09	13
10 Ability to determine how useful the material is	5.31±1.03	9
11. Ability to apply information to individual cases	5.41±0.98	7
12. Sharing of ideas and information with colleagues	5.8±0.91	1
13. Dissemination of new ideas about care to colleagues	5.5±1.02	3
14. Ability to review your own practice	5.71±0.94	2
Total (14 items)	5.34±1.0385	

The highest score for each items of organizational culture was 'mutual understanding, trust and respect' (3.68±0.93) (relation-oriented), followed by 'humane and family-like' (3.63±0.88) (relation-oriented), 'recognizing and challenging environmental changes' (3.58±0.86) (innovation-oriented). The lowest score for each items of organizational culture was 'emphasis on competition among members' (2.64±0.91) (task-oriented), followed by 'difficulty in changing work procedures and rules' (2.92±1.02) (hierarchy-oriented), 'achieve competitive goals' (3±0.91) (task-oriented) (Table 5).

〈Table 5〉 Score for each items of organizational culture (N=101)

Variable	M±SD	Ranking
Relation-oriented		
Humane and family-like	3.63±0.88	2
Participatory, comfortable atmosphere	3.52±0.90	4
Mutual understanding, trust and respect	3.68±0.93	1
Community spirit	3.44±0.94	10
Close and private exchange	3.44±0.92	10
Innovation-oriented		
Acquire current information and support continuous learning	3.49±0.97	7
Allow to try new ideas	3.44±0.97	10
Recognizing and challenging environmental changes	3.58±0.86	3
Allow new attempts and trial and error	3.42±0.99	13
Dynamic and active	3.14±0.96	14
Emphasizing the attitude of responding to rapidly changing environments	3.51±1.05	5

Variable	M±SD	Ranking
Hierarchy-oriented		
Focus on existing procedures and practices2.	3.14±1.01	14
Difficulty in changing work procedures and rules	2.92±1.02	19
Conformity, prefer acceptance posture	3.01±0.92	16
Bureaucratic (authoritative) works procedures	3.01±1.03	16
Stability-oriented	3.48±0.83	8
Task-oriented		
Achieve competitive goals	3±0.91	18
Emphasis on competition among members	2.64±0.91	20
Emphasize efficient management	3.5±0.87	6
Focus on achievement of department	3.46±0.83	9
the average score by item	3.32±0.94	

The highest score was for each items of innovation behaviors 'pay attention to non-routine issues' (4.81±0.92), followed by 'recognize opportunities to make a positive difference' (4.76±0.86), 'looking for opportunities to improve an existing process, technology, product, services or work relationship?' (4.69±0.85). The lowest score for each items of organization culture was 'take the risk to support new ideas' (3.85±1.13), followed by), experiment with new ideas and solutions' (4.30±1.05), 'test-out ideas or solutions to address unmet needs?' (4.31±0.93), 'test-out ideas or solutions to address unmet needs?' (4.32±0.96) (Table 6).

〈Table 6〉 Score for each items of innovation behaviors (N=101)

Factors	Variable	M±SD	Ranking
Opportunity exploration	Looking for opportunities to improve an existing process, technology, product, services or work relationship	4.69±0.85	3
	Recognize opportunities to make a positive difference in work, department, organization, or with customers	4.76±0.86	2
	Pay attention to non-routine issues in work, department, organization, or the market place	4.81±0.92	1
Generativity	Generate ideas or solutions to address problems	4.51±0.91	7
	Define problems more broadly in order to gain greater insight into them	4.50±0.93	8
Formative investigation	Experiment with new ideas and solutions	4.30±1.05	13
	Test-out ideas or solutions to address unmet needs	4.31±0.93	12
	Evaluate the strengths and weaknesses of new ideas	4.45±0.91	9
Championing	Try to persuade others of the importance of a new idea or solution	4.32±0.96	11
	Push ideas forward so that they have a chance to become implemented	4.35±1.02	10
	Take the risk to support new ideas	3.85±1.13	14

Factors	Variable	M±SD	Ranking
Application	Implement changes that seem to be beneficial	4.65±0.91	4
	Work the bugs out of new approaches when applying them to an existing process, technology, product, or service	4.65±0.95	4
	Incorporate new ideas for improving an existing process, technology, product, or service into daily routines	4.58±0.97	6

4. Correlations among questionnaire scores on K-EBP, organizational culture, and innovation behavior

The questionnaire scores for K-EBP were significantly positively correlated with those for organizational culture and innovation behavior ($r = 0.270$, $p < 0.006$ and $r = 0.605$, $p < 0.001$, respectively). Notably, higher K-EBP scores corresponded to higher scores for relation-oriented ($r = 0.206$, $p < 0.039$), innovation-oriented ($r = 0.197$, $p < 0.049$), and task-oriented ($r = 0.206$, $p < 0.039$) organizational culture.

There was a statistically significant positive correlation between scores for relation-oriented ($r = 0.761$, $p < 0.001$), innovation-oriented ($r = 0.770$, $p < 0.001$), and task-oriented ($r = 0.714$, $p < 0.001$) organizational culture and innovation behavior (Table 7).

〈Table 7〉 Correlations among questionnaire scores on K-EBP, organizational culture, and innovation behavior

Variables	K-EBP r(p)	Organizational culture	Innovation behavior r(p)				
		Organizational culture r(p)	Relation-oriented r(p)	Innovation-oriented r(p)	Hierarchy-oriented r(p)	Task-oriented r(p)	
K-EBP	1						
Organizational culture	0.270 (0.006)	1					
Relation-oriented	0.206 (0.039)	0.761 (<0.001)	1				
Innovation-oriented	0.197 (9.049)	0.770 (<0.001)	0.582 (<0.001)	1			
Hierarchy-oriented	0.048 (0.637)	0.164 (0.102)	-0.155 (0.122)	-0.377 (<0.001)	1		
Task-oriented	0.206 (0.039)	0.714 (<0.001)	0.315 (0.001)	0.606 (<0.001)	-0.039 (0.697)	1	
Innovation behaviors	0.605 (<0.001)	0.409 (<0.001)	0.414 (<0.001)	0.443 (<0.001)	-0.211 (0.034)	0.326 (<0.001)	1

5. Questionnaire scores on K-EBP, organizational culture, and innovative behavior according to demographic characteristics

K-EBP differed significantly among age groups are (F = 5.037, p < 0.008), and according to education level (F = -3.54, p < 0.001), employment type (F = 3.165, p < 0.002), job title/seniority (F = 2.916, p < 0.038), and status regarding the reading of academic journal articles (F = 10.325, p < 0.001), and attendance of conferences (F = 3.50, p < 0.001). Questionnaire scores on organizational culture differed significantly with age (F = 6.442, p < 0.002). Questionnaire scores on innovation behavior differed significantly with both age (F = 0.044, p < 0.001) and conference attendance status (F = 0.277, p < 0.001) (Table 8).

〈Table 8〉 Questionnaire scores on K-EBP, organizational culture, and innovation behavior according to demographic characteristics (N = 101)

Characteristics	Categories	F	K-EBP			Organizational culture			Innovative behavior			p
			Mean	SD	t or F (p)	Mean	SD	t or F (p)	Mean	SD	t or F (p)	
Gender	Male	48	76.88	9.07	1.817 (0.072)	67.19	7.73	0.782 (0.436)	64.31	9.63	1.373	0.173
	Female	53	72.74	13.21		65.75	10.34		61.32	11.99		
Age (y)	20-29	9	68.22	16.74	5.037 (0.008) a〈c	66.56	8.56	6.442 (0.002) b〈c	55	8.93	3.218	0.044 a〈c
	30-39	21	69.81	15.66		60.43	10.29		61.1429	14.99		
	≥ 40	71	76.97	8.43		68.20	8.23		64.1972	9.40		
Education level	Bachelor's degree	47	70.57	12.41	-3.54 (0.001) a〈b	67.60	9.92	1.19 (0.238)	61.17	11.59	-1.348	0.181
	Master's degree or above	54	78.30	9.51		65.43	8.44		64.11	10.34		
Years of librarian experience	1-5	9	71.33	15.04	1.529 (0.222)	63.93	8.33	1.794 (0.172)	61.67	13.68	0.821	0.443
	6-19	21	73.07	14.23		64.75	11.98		60.86	11.92		
	20-37	71	76.36	8.72		67.90	7.58		63.93	9.74		
Employment type	Permanent	90	75.92	10.45	3.165 (0.002)	66.63	9.07	0.617 (0.538)	63.44	10.73	1.859	0.066
	Part-time	11	64.73	15.55		64.82	10.28		57.00	11.84		
Job title/ seniority	Staff librarian	32	70.34	15.15	2.916 (0.038) a〈c	66.53	11.89	1.488 (0.223)	60.19	13.18	0.963	0.413
	Assistant-manager librarian	15	74.47	8.50		62.00	7.40		62.67	9.58		
	Senior librarian	22	79.14	7.87		67.50	7.85		64.86	8.41		
	Above head librarian	32	76.13	9.56		67.69	7.20		63.88	10.72		
Major role	Information services	45	76.07	12.00	1.018 (0.311)	65.60	8.14	-0.692 (0.490)	63.53	11.73	0.699	0.486
	Other	55	73.69	11.27		66.87	9.89		61.98	10.46		
Read academic journal articles?	Often	7	87.43	5.26	10.325 (<0.001) b,c〈a	61.86	10.56	0.930 (0.398)	64.57	18.41	2.468	0.090
	Sometimes	64	76.03	8.57		66.83	7.24		63.98	8.51		
	Never	29	68.55	14.90		66.69	12.38		58.83	12.60		
Attend conferences?	Attended	35	79.91	8.38	3.50 (0.001) b〈a	67.23	8.97	0.626 (0.533)	65.77	11.02	2.241	0.027 b〈a
	Never attended	65	71.83	12.17		66.02	9.39		60.78	10.39		

a, b, c, d: Scheffé test
f = frequency

6. Factors predicting K-EBP

Hierarchical multiple regression including demographic and EBP-related activities as independent variables was used to identify factors predicting K-EBP. Overall, the model was significant (F = 4.246, p ≤ 0.001; R² = 0.300; adjusted R² = 0.230). Education level (β = 0.22, p = 0.03) and reading journals (β = -0.24, p = 0.03) predicted K-EBP (Table 9).

〈Table 9〉 Factors predicting K-EBP

Factor	B	S. E.	β	t	p
Gender	-3.50	2.34	-0.15	-1.50	0.14
Age	1.08	3.29	0.06	0.33	0.74
Education level	4.99	2.26	0.22	2.21	0.03
Years of librarian experience	0.03	0.18	0.02	0.15	0.88
Employment type	-3.53	4.67	-0.10	-0.76	0.45
Job title/seniority	-0.72	1.21	-0.08	-0.60	0.55
Major role	-1.51	2.15	-0.07	-0.70	0.48
Reading journals	-5.06	2.31	-0.24	-2.19	0.03
Conference attendance	-4.41	2.74	-0.18	-1.61	0.11
F = 4.246, *p* ≤ 0.001; R² = 0.300; adjusted R² = 0.230					

7. Factors predicting innovation behavior

Multiple regression analysis including K-EBP, organizational culture, innovation behavior, demographic characteristics, and EBP-related activities as independent variables was carried out to identify the factors predicting innovation behavior among academic librarians. Statistically significant regression coefficients were found for K-EBP (β = 0.57, p = 0.000), innovation-oriented organizational culture (β = 0.22, p = 0.009), and hierarchy-oriented organizational culture (β = -0.17, p = 0.006). Notably, perception of a hierarchy-oriented organizational culture had a negative regression coefficient (R² = 0.560, adjusted R² = 0.468, F = 6.076, p ≤ 0.000) (Table 10).

<Table 10> Factors predicting innovation behavior

Factors	Dummy variable	B	SE	β	t	p
Knowledge of evidence-based practice		0.53	0.09	0.57	5.86	0.00
Organizational culture						
Relation-oriented		0.42	0.26	0.16	1.60	0.11
Innovation-oriented		0.53	0.31	0.22	1.72	0.09
Hierarchy-oriented		-0.46	0.25	-0.17	-1.88	0.06
Task-oriented		0.01	0.44	0.00	0.03	0.98
Gender	Male*					
	Female	-0.06	2.03	0.00	-0.03	0.98
Age		-0.37	0.34	-0.34	-1.10	0.28
Education level	Bachelor's degree*					
	Master's degree or above	0.13	1.90	0.01	0.07	0.95
Years of librarian experience		0.19	0.31	0.19	0.62	0.54
Employment type	Permanent*					
	part-time	-2.53	3.60	-0.07	-0.70	0.48
Job title/seniority	Staff librarian*					
	Assistant-manager librarian	-1.10	3.08	-0.04	-0.36	0.72
	Senior librarian	-0.91	2.83	-0.04	-0.32	0.75
	Above head librarian	-0.47	2.89	-0.02	-0.16	0.87
Major role	Information services*					
	Others	-1.76	1.70	-0.08	-1.04	0.30
Reading journals	Often					
	Sometimes	4.85	3.65	0.22	1.33	0.19
	Never	4.21	4.31	0.18	0.98	0.33
Conference attendance	Attended*					
	Never attended	-1.58	2.22	-0.07	-0.71	0.48

*Reference category
$R^2 = 0.560$, adjusted $R^2 = 0.468$, F = 6.076, $p \leq 0.000$

Ⅴ. Discussion

1. K-EBP

The average K-EBP item score for the academic librarians in this study was higher than that for nurses (Brown et al., 2009; Kim & Lee, 2016; Kim et al., 2013; Koehn & Lehmam, 2008; Lee, 2005; Lim et al., 2011; Son et al., 2012). We attribute this difference to the type of daily work engaged in; librarians largely deal with information, while nurses care for patients.

Most of our respondents were unaware of the term EBP; although they applied it in their daily work, EBP is seldom discussed explicitly in academic communities and so was largely an unfamiliar term in Korea (Table 2). More of the respondents read journal articles than attended academic conferences, regarding the latter as being aimed at academic researchers. Although many of the librarians had an advanced library and information science (LIS) degree, they cited a "psychological sense of distance" and personal cost as barriers to attending conferences.

While the results suggested that the respondents had excellent practical skills, their ability to critically appraise and apply knowledge, and to conduct research, was weak. These results suggest that librarians should have access to education programs to address these skill deficits.

K-EBP differed significantly with age, education level, employment type, job title/seniority, and status with respect to reading academic journal articles and attending conferences: older age, higher education level, regular employment, higher employment status, and greater exposure to academic journals and conferences appear to promote K-EBP. These findings are similar to those reported for K-EBP with respect to the role, position, and level of education of nurses (Eizenberg, 2011) and, in another study, the clinical experience, position, and level of education of nurses (Thiel & Ghosh, 2008).

To increase K-EBP, which was shown to be a factor influencing innovation behavior in this study, it is necessary to expand opportunities for continuing education. In particular, it is necessary to strengthen the "research literacy" of librarians (Kim, 2005) to improve university librarians' competency to evaluate research outcomes and apply practical work. Research literacy includes not only the ability to read research literature, evaluate the usefulness of the research results, and apply them to improve the understanding of LIS practice, problem solving, and decision making, but also the ability to actively conduct research to solve practical problems.

2. Organizational culture

Perceptions of organizational culture differed significantly among age groups. According to previous research concerning perceptions of organizational culture in other sectors, even if the culture of an organization is largely homogenous, perceptions thereof still differ among staff with different roles.

In this study, older age and greater work experience were associated with the perception of working within an innovation-oriented organizational culture; this is likely because senior librarians

are more experienced and have more administrative authority than junior librarians. The organizational culture at university libraries is often considered relation-oriented and highly homogenous; librarians have similar goals and typically work together for a long time. A task-oriented organizational culture was rarely reported by respondents, likely because libraries are perceived to provide a public service. The respondents stated that cooperation is important for achieving common goals; they were not competing to reach these goals. The likelihood of reporting working within a task-oriented organizational culture varied significantly with age, education level, work experience, and employment type. While senior librarians place importance on eventually being in charge of the library, junior librarians are task-oriented; they are focus on completing the tasks required to first qualify as a librarian. Part-time librarians are particularly focused on the completion of tasks, given their employment conditions.

3. Innovation behavior

A review of the distribution of scores for innovation behavior in this study suggests that respondents are seeking opportunities for change and to improve their work by inspiring interest and innovation, but their ability to evaluate and assess ideas for the practical application of new ideas is weak, and their efforts to advocate for innovation externally and to take risks are minimal (Table 7).

Innovation behavior was significantly related to age and conference attendance, similar to the findings for K-EBP. A study on nurses reported that the degree of innovation increased with age, rank, and work experience (Kang & Ko, 2013). High-ranking employees have a locus of internal control; they show higher levels of self-motivation and more aggressively pursue innovation.

In this study, K-EBP was correlated with relation-, innovation-, and task-oriented organizational cultures. Meanwhile, innovation behavior increased in the context of innovation-, relation-, and task- organizational cultures, while a hierarchy-oriented organizational culture had a negative correlation with innovation behavior (Table 8).

Shared goals, community awareness, and improved working conditions would likely promote innovation behavior among university librarians. A relation-oriented organizational culture promotes innovation behavior because it is characterized by flexibility and autonomy, similar to a family or community environment (Cameron & Quinn, 1999). A task-oriented organizational culture supports innovation behavior due to its stable and controlled structure, which emphasizes

the role of the external environment (Quinn & McGrath, 1985); such a culture encourages higher performance and productivity of staff.

Multiple regression analysis showed that K-EBP, as well as innovation-oriented and hierarchy-oriented organizational cultures, affected innovation behavior. Notably, hierarchy-oriented organizational culture had a negative impact on innovation behavior. A hierarchy-oriented organizational culture causes tension among staff members; it emphasizes rules, inflexible work processes, control, and adherence to norms and rigid practices. It also emphasizes the safety of staff and secure handling of data according to the rules of the organization. Organizations should strive to avoid the negative aspects of hierarchical culture.

Innovation-oriented organizational culture, which was identified as a factor associated with innovation behavior, is based on change; it is characterized by a flexible and autonomous structure that pays equal attention to external environmental factors (Cameron & Quinn, 1999) and personal growth and change (Quinn & McGrath, 1985). When working within an innovation-oriented organizational culture, librarians pursue new ideas and creative ways to work, and members readily participate in innovations because they want to work more efficiently.

The innovation-oriented organizational culture of university libraries faces external pressures; management of the environment of libraries, innovations in information services, and personal growth of librarians are important.

Hierarchy-oriented organizational culture emphasizes standards, procedures, control, and rules (Quinn & McGrath, 1985). A hierarchy-oriented organizational culture may be advantageous for a library when data-driven processing (e.g., classification, cataloging, and database construction) is needed. However, a hierarchy-oriented organizational culture that strictly adheres to established procedures and regulations limits adaptation to societal changes and impairs the ability to deliver high-quality information services in response to emerging social trends.

Previous studies reported an association between innovation-oriented organizational culture and innovation behavior. Organizational culture may be largely homogenous, but can still vary according to the different roles and staff members within the organization.

The results of this study could inform strategies that mitigate the negative aspects of a hierarchical structure while also promoting an innovation-oriented organizational culture. To promote engagement in K-EBP by university librarians, the library organization culture should emphasize interactive communication among staff members and foster relationships based on mutual interests.

Ⅵ. Conclusion

As the innovation competency and actions of librarians are regarded as key elements in library innovation, which enhances the competitiveness of library organizations, research interest in the innovation behavior of librarians is increasing. This study attempted to identify the degree of K-EBP- and EBP-related activities among university librarians in Korea and to identify the impact of K-EBP and awareness of organizational culture on innovation behavior.

This study demonstrated that the degree of K-EBP and organizational culture perception of university library librarians can affect the sort of innovation behavior that induces change at both the individual and organization levels. First, because K-EBP is important to promote innovation behavior, organizational support should be provided so that librarians can strengthen and demonstrate their EBP competencies. To promote EBP, education programs at the individual library and academic levels must be developed for librarians, to foster a communicative and collaborative culture. Second, because the organizational culture is also very important in promoting innovation behavior, it is necessary to establish an effective and healthy culture. Third, K-EBP and an innovation-oriented organizational culture were identified as factors influencing innovation behavior. Various educational opportunities should be provided to promote innovation behavior at the organizational level.

This study provides a basis for further research on the innovation behavior of librarians. It could also help librarians to better understand innovation behavior, and sheds light on how such behavior and K-EBP are related to the organizational culture. Understanding the factors associated with innovation behavior among librarians could aid in the development of education programs for librarians, and in turn improve the culture of the library.

References

Booth, A. (2002). From EBM to EBL: two steps forward or one step back? Medical Reference Services Quarterly, 21(3), 51-64.

Booth, A. (2007). Evidence in "real time": the story of an international workshop. Health Information and Libraries Journal, 24(3), 227-231.

Booth, A. (2011). Barriers and facilitators to evidence-based library and information practice: An international perspective. Perspectives in International Librarianship, 2011:1.

doi: 10.5339/pil.2011.1

Bos-Nehles, A. C. & Veenendaal, A.A.R. (2019). Perceptions of HR practices and innovative work behavior: the moderating effect of an innovative climate. The International Journal of Human Resource Management, 30(18), 2661-2683. https://doi.org/10.1080/09585192.2017.1380680

Brettle, A. (2017). Gathering evidence for routine decision-making. Evidence Based Library and Information Practice, 12(4), 193-198.

Brown, C. E. et al. (2009). Nursing practice, knowledge, attitudes and perceived barriers to evidence-based practice at an academic medical center. Journal of Advanced Nursing, 65(2), 371-381. Doi: 10.1111/j.1365-2648.2008.04878.x

Brundy, C. (2015). Academic libraries and innovation: a literature review. Journal of Library Innovation, 6(1), 22-39. Available: https://sasuf.org/wp-content/uploads/2018/03/innovations-in-academic-libraries-and-information-systems.pdf

Cameron, K. S. & Quinn, R. E. (1999). Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework. New York: Addison-Wesley Inc.

Eizenberg, M. M. (2011). Implementation of evidence-based nursing practice: nurses' personal and professional factors? Journal of Advanced Nursing, 67(1), 33-42. https://doi.org/10.1111/j.1365-2648.2010.05488.x

Eldredge, J. D. (2000). Evidence-based librarianship: an overview. Bulletin of the Medical Library Association, 88, 289-302.

Germano, M. A. (2011). Library leadership that creates and sustains innovation. Library Leadership and Management, 25(1), 1-14.

Gillespie, A. M. (2014). Untangling the evidence: introducing an empirical model or evidence-based library and information practice. Information Research, 19(3). Available: http://www.informationr.net/ir/19-3/paper632.html#.XD3W-LAUmUk

Gillespie, A. M. et al. (2017). What do Australian library and information professionals experience as evidence? Evidence Based Library and Information Practice, 12(1), 97-108.

Hallam, G. (2018). Being evidence based makes sense! an introduction to evidence based library and information practice (EBLIP). Forschung und Praxis, 2018, AR 3227. Available: https://edoc.huberlin.de/bitstream/handle/18452/20275/AR_3227_Hallam_Preprint_BFP_2018.pdf?sequence=1&isAllowed=y

Islam, M. A., Agarwal, N. K., & Ikeda, M. (2017). Effect of knowledge management on service

innovation in academic libraries. IFLA Journal, (2017, June 5). https://doi.org/10.1177/0340035217710538

Jamali, H. R. (2018). Use of research by librarians and information professionals. Library Philosophy and Practice (e-journal). 1733. Available: https://digitalcommons.unl.edu/libphilprac/1733

Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behavior. Journal of Occupational and Organizational Psychology, 73(3), 287-302.

Jantz, R. C. (2012). Innovation in academic libraries: an analysis of university librarians' perspectives. Library & Information Science Research, 34, 3-12. https://doi.org/10.1016/j.lisr.2011.07.008

Kang, Kyeong Hwa & Ko, Yu Kyung (2013). Change commitment and learning orientation as factors affecting the innovativeness of clinical nurses. Journal of Korean Academy of Nursing Administration, 19(3), 404-413.

Kermani et al. (2017). Relationship between innovation climate and innovative behavior of librarians: case study in organization of libraries, museums and documentation center of Astan Quds Razavi. International Journal of Information Science & Management, 15(1), 59-72.

Kim, Jeong Sook, Gu, Meek-Ock, & Jo, Sun-Yon (2013). Factors influencing evidence-based practice readiness for tertiary general hospital nurses. Journal of the Korea Academia-Industrial Cooperation Society, 14(6), 2945-2957.

Kim, Kapseon (2005). Perceived barriers to research utilization by korean university librarians. The Journal of Academic Librarianship, 31(5), 438-448. https://doi.org/10.1016/j.acalib.2005.05.005

Kim, Kapseon (2016). Research trends on librarians' behaviors in Korea. Journal of Korean Library and Information Science Society, 47(4), 309-337. Available: https://www.kci.go.kr/kciportal/landing/article.kci?arti_id=ART002181208

Kim, Kapseon (2019). Perceived knowledge of evidence-based practice among university librarians. Journal of Korean Library and Information Science Society, 5(1), 43-60. DOI: 10.16981/kliss.50.1.201903.43

Kim, Kyoung Yun & Lee, Eunjoo (2016). The Relationship among critical thinking disposition, nursing process competency and evidence-based practice competency in nurses working in hospitals. Journal of the Korean Data & Information Science Society, 27(2), 451-461.

Kim, Moon-Sil, Kim, Ji-Hyun, & Han, Su-Jeong (2004). The development of the nursing organization culture measurement tool. The Journal of Korean Nursing Administration Academic Society, 10(2), 175-184.

Kleysen, F. & Street, R. F. (2001). Towards a multi-dimensional measure of individual innovative behaviour. Journal of Intellectual Capital, 2, 284-296.

Koehn, M. L. & Lehman, K. (2008). Nurses' perceptions of evidence-based nursing practice. Journal of Advanced Nursing, 62(2), 209-215. https://doi.org/10.1111/j.1365-2648.2007.04589.x

Koufogiannakis, D. (2011). Considering the place of practice-based evidence within evidence based library and information practice (EBLIP). Library and Information Research, 35(111), 41-58.

Koufogiannakis, D. (2012). Academic librarians' conception and use of evidence sources in practice. Evidence Based Library and Information Practice, 7(4), 5-24.

Koufogiannakis, D. (2013). EBLIP keynote: what we talk about when we talk about evidence. Evidence Based Library and Information Practice, 8(4), 6-17.

Koufogiannakis, D. & Brettle, A. (2016). Being Evidence Based in Library and Information Practice. London: Facet.

Lim, Kyung Choon et al. (2011). Registered nurses' knowledge, attitudes, and practice about evidence-based practice at general hospitals in Korea. Journal of Korean Clinical Nursing Research, 17(3), 375-387.

Luo, L. (2018). Experiencing evidence-based library and information practice (EBLIP): academic librarians' perspective, College & Research Libraries, 79(4), 554-567.

Miller, F. et al. (2017). How academic librarians experience evidence-based practice: a grounded theory model. Library and Information Science Research, 39(2), 124-130.

Muellenbach, J. (2017). Australian academic librarians' experience of evidence based practice involves empowering, intuiting, affirming, connecting, noticing, and impacting. Evidence Based Library and Information Practice, 12(4), 268-270.

Parker, R. & Bradley, L. (2000). Organisational culture in the public sector: evidence from six organizations. International Journal of Public Sector Management, 13(2), 125-141. https://doi.org/10.1108/09513550010338773

Pyo, Soon-Hee (2009). A study on the content and methodology of evidence-based library and information practice. Journal of the Korea Society for Information Management, 26(1), 351-370.

Pyo, Soon-Hee (2010). The study on the applying methods for EBLIP in Korean librarianship. Journal of the Korean Society for Information Management, 44(3), 219-239. Available: https://www.kci.go.kr/kciportal/ci/sereArticleSearch/ciSereArtiView.kci?sereArticleSearchBean.artiId=ART001474343

Quinn, R. E. & Kimberly, J. R. (1984). Paradox, planning, and perseverance: guidelines for

managerial practice. In J. R. Kimberly & R. E. Quinn (Eds.). Managing Organizational Transitions. Homewood, IL: Dow Jones-Irwin, 295-313.

Quinn, R. E. & McGrath, M. R. (1985). The transformation of organizational cultures: a competing values perspective. In Frost, PJ et al. editors. Organizational Culture. Beverly Hills: Sage Publications, 314-334.

Scupola, A. & Nicolajsen, H. W. (2010). Service innovation in academic libraries: is there a place or the customers? Library Management, 31(4/5), 304-318.
https://doi.org/10.1108/01435121011046362

Sheih, C. S. (2015). Organizational innovation behavior in Taiwan's university libraries: a quantitative study. Journal of Educational Media & Library Sciences, 52(3), 231-267.
DOI: 10.6120/JoEMLS.2015.523/0018.RS.AM

Son, Youn-Jung et al. (2012). The influence of information retrieval skill on evidence based practice competency in clinical nurses. Korean Journal Adult Nursing, 24(6), 635-646.

Thiel, L. & Ghosh, Y. (2008). Determining registered nurses' readiness for evidence-based practice. Worldviews on Evidence-Based Nursing, 5(4), 182-192.
https://doi.org/10.1111/j.1741-6787.2008.00137.x

Todd, R. J. (2009). School librarianship and evidence based practice: progress, perspectives and challenges. Evidence Based Library and Information Practice, 4(2), 78-96.

Upton, D. & Upton, P. (2006). Development of an evidence-based practice questionnaire for nurses. Journal of Advanced Nursing, 53(4), 454-458.

Upton, D., Upton, P., & Scurlock-Evans, L. (2014). The reach, transferability, and impact of the Evidence-Based Practice Questionnaire: a methodological and narrative literature review. Worldviews on Evidence-based Nursing, 11(1), 46-54.