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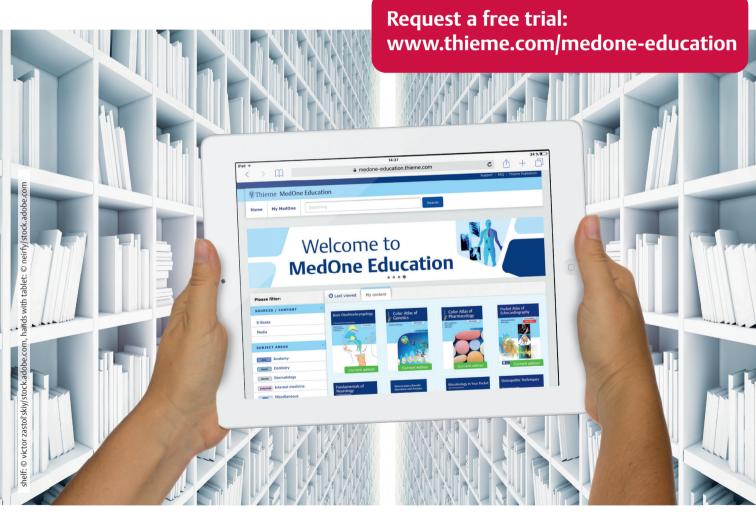
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Editorial

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Dear EAHIL members,

This issue of *JEAHIL* published at the end of September is, as usual, partly dedicated to the EAHIL event held during the past summer. This year's event was the EAHIL 2021 Virtual Workshop, "Crossing the bridge: new challenges, new opportunities", Marmara University, Istanbul, Turkey, 5-8 July 2021.

In the pages that follow, you will be able to read the four papers written by the winners of the four awards for: best oral presentation overall, best oral presentation by a first timer, best poster presentation overall and best poster presentation by a first timer. In addition to these, you will also find two very interesting feature articles written by our colleagues from Finland and from Italy. I wish to once again congratulate the winners on their efforts and success, and to thank all the authors for their contributions. Their efforts, combined with those of the authors of the different reports regularly published in the journal (don't miss Health Libraries Australia's news in this issue), contribute to the task of keeping us all updated in the profession, and to stimulate innovation and creativity in our work teams as well as in our organizations worldwide. Along with the members of the Editorial Board I encourage you to contribute to one of the future issues (see Table below).

Future JEAHIL issues		
Issue 2021	**Theme**	**Deadline**
4 (December)	Infodemics and libraries* (Guest editors: Katri Larmo and Michelle Wake)	5 November
2022		
1 (March)	No-theme issue	5 February
2 (June)	Open: open education, open science...* (Guest editors: Fiona Brown and Petra Björk)	5 May
* Provisional title		

September is a month that marks a sort of new beginning; it is the month of a new academic year, coloured with freshers' weeks and the energising enthusiasm they bring along. I hope that this September will also be the first month of a much-needed post-COVID era.

Federica

Electronic Library of Medicine, Jordan: experience in the digital transformation and managing COVID-19 crisis

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Abstract
During COVID-19 pandemic Electronic Library of Medicine – Jordan (ELM) was on the upfront of dealing with the crisis. ELM worked on a response plan for the Digital Transformation of its online services with focus on COVID-19. The plan strategy consisted of four phases: preparation, implementation, evaluation and sustainability. The immediate management for COVID-19 pandemic was done through having a dedicated COVID-19 Knowledge Center and digitizing all training and educational sessions. An online survey for the evaluation of the impact on the Digital Transformation of library services was done. Evaluation results showed satisfactory impact. The COVID-19 pandemic was an opportunity to ELM, and it even enhanced the library services and training. Challenges concerning sustainability and accreditation of the continuing professional development need to be addressed with concerned authoritative parties within Jordan.

Key words: *digital transformation; electronic library; library; COVID-19; sustainability, Electronic Library of Medicine, Jordan.*

Introduction

The Electronic Library of Medicine – Jordan (ELM) is a program that has been launched in 2013. This program is part of a wider umbrella under the Electronic Health Solutions (EHS) national services in Jordan; where there are three other programs: Hakeem which is the national program for the automation of Health Patient Records in the public sector; Hakeem Academy which is the educational arm of EHS where the aim is to build capacity on the health informatics front and the third program is HDA (Health Data Analytics), whose objectives are big data, data analysis and data mining (1).

ELM provides the service of the medical library on a national level through its electronic library portal and to all healthcare professionals (HCP's) in all sectors: Ministry of Health, Royal Medical Services, King Hussein Cancer Center, private sector and academic sector. Currently, access to library resources and services is free of charge.

ELM was established with the aim of keeping HCP's updated on the latest information related to their clinical practice, with evidence-based practice as the core aspect for clinical information dissemination (2). Through the progress of the program, ELM gained further momentum by enhancing the concepts of integrating the use of the clinical decision support tools databases within the workflow of the health care providers, to support them find answers to clinical questions that arise during their practice. This also allowed ELM to be aligned with the practice of providing continuing professional development for its users (3).

In mid-March 2020, the Jordan government took stringent measures to combat the COVID-19. This started with a three months of total lockdown in country (4). After this period, there have been different measures to deal with the pandemic. All these measures disrupted public and professional aspects of society. During this period the role of virtual and electronic services has increased, hence ELM, as an electronic library, showed excellent readiness to deal with this crisis through providing "remote services, resources and support for research, innovation and public health in the current health crisis" (5).

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This paper will share the experience of ELM in the digital transformation of the library training, awareness and educational sessions, in addition to how ELM managed the COVID-19 crisis.

ELM COVID-19 response plan

It is well known that the challenge the world is facing in conjunction with the pandemic is the "infodemic"; a flood of information and resources on the COVID-19, which posed a major issue to the public and HCP's (6). Hence, at ELM and by March 2020, the immediate response to COVID-19 was creating the COVID-19 Knowledge Center, with the aim of having all information related to the pandemic in one central hub and facilitate the access to all HCP's for updated information that are evidence-based, trustworthy and reliable. ELM Knowledge Center is constantly fueled with information from different content providers and with the local guidelines related to the pandemic.

With the lockdown measures, and not being able to conduct the usual – before pandemic – educational, awareness and training sessions at the different health sites, the need arose for transforming the model of knowledge dissemination digitally. This was the second pillar for the response plan. Preparing for this phase required a strong communication plan. The communication plan was the base that supported the whole process of digital transformation for training programs (7). It was also targeted, first, to policy makers, through ELM consulting committee. A committee that has representation from all health sectors within Jordan. The aim was to get approval and accreditation of the online training and awareness session with the content provided. Secondly, official communication to different health sites and stakeholders to inform them about the plan of knowledge dissemination and start arranging the roll out of the program. Thirdly, to all ELM users through emails, social media posts and other supporting communication channels.

Knowledge and digital transformation: implementation and roll out

The implementation phase started by August 2020. The roll out of the digital sessions started at key hospitals in Jordan. This was a pilot phase to prove the concept and test the process. Three sites were chosen from each health sector. Two types of sessions were done; the training of trainers (TOT) and training of HCP's. TOT sessions were more impactful since those depended on the training coordinators at the hospital sites, these personnel can drive and advise on the proper timing and be a focal point for the ongoing communication and training. Monitoring of the process be updated and answering any request, also was part of the objective of having focal points (8).

The main video conferencing platforms that were used for delivering those sessions are Zoom and Microsoft Teams. At the beginning, technical challenges were faced, due to the lack of proper knowledge on how to deal with those platforms, and also due to change of mode for delivering the sessions from face to face into virtual (9). As the roll out of the program kicked off and more sessions and meetings were conducted online, users were more adoptable to the process and sessions went smoother.

Ongoing progress of the sessions to all users was done, reaching more sites, focusing on frontline HCP's who deal directly with COVID-19 cases. This also included having more flexible timing for sessions to suit all requirements of users. A regular weekly session was announced. Collaboration for sessions were done through having trainers from content providers, academia and medical librarians, ongoing communication on COVID-19 knowledge center updates, sessions and latest information.

During this roll out, research has proved that comorbidities and older population were a major challenge for treating COVID-19 patients (10). ELM in collaboration with medical content providers and the National Epidemiologic Committee introduced the treatment algorithm and comorbidities tool. This was an important milestone in digitally transforming part of the clinical pathways of treatment. Integration of this clinical decision support tool with the National Electronic Health Record Hakeem (EHR) was tested successfully, but no further implementation was done due to security and technical challenges, in a time when a lot of other higher priority projects were in the pipeline (11).

In order to check results and impact on users, and if ELM was able to achieve and be an integral part in the COVID-19 crisis management, ELM committee recommended to conduct an evaluation for the digital transformation program and check impact.

Evaluation and impact: managing the crisis

For the purpose of evaluating the impact of the COVID-19 crisis management and the digital transformation of ELM services, sessions and tools, ELM conducted an online survey through Google forms. The survey was shared with HCP's who attended the awareness and training sessions. It consisted of 10 questions covering different aspects of ELM library services. It was simple easy questions with Yes or No answers, to facilitate gathering feedback. *Table 1* shows these questions and the results received from participants.

Questions (N = 500)	Yes	No
1 Were the online training sessions beneficial?	480	20
2 Were timing proposed for these sessions' suitable timings?	452	48
3 Did you use the content of the training in your practice?	463	37
4 Did you collect Continuing Professional Development (CPD) credits from the Knowledge Center?	132	368
5 Would you attend other online sessions if expanded to other treatment and care plan options?	484	16
6 Did you use the COVID-19 Knowledge Center?	420	80
7 Did you use the comorbidities treatment algorithm option?	383	117
8 Did you attend any other training online for the updates on COVID-19?	478	22
9 Did attending the online sessions and using the COVID-19 knowledge center have an impact on your practice?	491	9
10 Was (ELM-Jordan) library successful in delivering messages?	480	20

Table. 1. *Online survey questions and feedback received from participants.*

As shown in Table 1 the total number of participants in these surveys were 500. The results collection ex-cluded any uncompleted or unanswered survey. The survey was shared with participants attending online sessions for the period from December 2020 to March 2021. No criteria for selection was mandated, the only condition was that a participant had attended one on-line session.

Figure 1 shows the results from these online surveys. Results show excellent impact. At the beginning of the roll out, it was challenging and unexpected that users would easily adopt new ways and forms of receiving knowledge. Overall users were satisfied with the online sessions, the content was also relevant to their practice. Most users used the COVID-19 Knowledge Center on ELM, and mostly agreed that the library was successful in delivering the messages. The one question that was with least satisfaction was related to the CPD, but an explanation for this is that Jordan is still in the early stages of implementing the CPD program in health sector. According to Younes et al. (12) "participating in CPD activities in Jordan is compromised by lack of mandatory laws and barriers related to staff shortage, heavy workload, limited funds, lack of time, and cost". There are limitations for the data used in this survey mainly due to the selection criteria, lack of other mea-sures such as a section for notes to provide further feedback on the provided services. No collection for specific parameters such as the profession were col-lected, but the whole purpose was to measure satisfac-tion of users in order to present it to stakeholders.
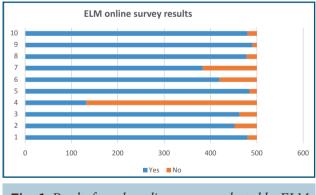

Fig. 1. *Results from the online survey conducted by ELM.*

In addition to the online survey, feedback data was col-lected through a face to face questionnaire from physi-cians at the King Hussein Cancer Center. It was not included in these results. Mainly, physicians there felt more supported through the digital transformation of

services, with their busy schedule, and they believe that it provides a more flexible way of updating them with library services better than before.

Future perspectives and recommendations

Results and feedback from users on how ELM managed the COVID-19 crisis with the digital transformation of the services related to COVID-19 were satisfactory. Surprisingly, HCP's were more flexible and adopted the usage of online library services beyond than expected. This allowed ELM to start adopting a different approach on how to provide digital services to its users (13).

Apart from COVID-19 knowledge center sessions, ELM started sessions on the different library topics such as: how to conduct PubMed and NLM search, how to reference, retrieving data from clinical decision support tools and many others. ELM also started collaborations with regional librarians to conduct sessions online and share the experience of their institutions. Expanding those services and collaborating with regional and global organizations would add an extra layer of depth to users of ELM.

According to Frick et al. (14) and to "avoid being caught unprepared by future crises, digital transformation must be further driven to ensure collaboration".

Now, since lockdown measures are easing, a blended approach for sessions is recommended, in fact, depending only on online services may limit proper interaction and communication. Using a blended approach is much recommended for any health related services (15).

Updating knowledge center with other related topics and having a more interactive approach to knowledge management is also recommended. This will support all HCP's fight "infodemic" (16). This new way of digital communication will support in building better health literacy among the public too.

As with other middle- and lower-income countries, the major challenge for ELM is the budget, due to the economic hardship that Jordan economy is facing. Building a more robust and sustainable model is needed.

The digital transformation of the library work has voiced out the knowledge and spread communication easier than physical communication. Surprisingly, users have been interacting more and benefiting more than

before which is a great opportunity for ELM to expand its services and enhance patient care all across Jordan. Achieving a more sustainable model is key; this can be reached through collaborations and partnerships with other local, regional and international organizations, as well as start approaching users with fee paid services that can be provided by the library (17).

Acknowledgements

REFERENCES

1. "Hakeem program." Electronic Health Solutions. Technology for Better Healthcare in Jordan [Internet]. 2015 [cited 2021 Aug 12]. Available from: www.ehs.com.jo/en/content/hakeem-1
2. Nazer LH, Tuffaha H. Health care and pharmacy practice in Jordan. Can J Hosp Pharm. 2017;70(2):150-5.
3. Brassil E, Gunn B, Shenoy AM, Blanchard R. Unanswered clinical questions: A survey of specialists and primary care providers. J Med Libr Assoc. 2017;105(1):4-11.
4. Badarin E. Jordan's economic, security and political challenges under Covid-19. Mediterr Polit [Internet]. 2020;00(00):1-9. Available from: https://doi.org/10.1080/13629395.2020.1850624
5. Yuvaraj M. Global responses of health science librarians to the COVID-19 (Corona virus) pandemic: a desktop analysis. Health Info Libr J. 2020;37(4):337-42.
6. World Health Organization (WHO). Novel Coronavirus. Vol. 205, Situation Report – 205. 2020.
7. Haugh D. Communicating with medical library users during COVID-19. J Med Libr Assoc. 2021;109(1):107-11.

8. Hosseinpoor AR, Bergen N, Schlotheuber A. Promoting health equity: WHO health inequality monitoring at global and national levels. Glob Health Action. 2015;8(1).

9. Radu MC, Schnakovszky C, Herghelegiu E, Ciubotariu VA, Cristea I. The impact of the COVID-19 pandemic on the quality of educational process: A student survey. Int J Environ Res Public Health. 2020;17(21):1-15.

10. Vila-Córcoles, A, Ochoa-Gondar O, Satué-Gracia EM, Torrente-Fraga C, Gomez-Bertomeu F, Vila-Rovira A, et al. Influence of prior comorbidities and chronic medications use on the risk of COVID-19 in adults: A population-based cohort study in Tarragona, Spain. BMJ Open. 2020;10(12):1-13.

11. Sutton RT, Pincock D, Baumgart DC, Sadowski DC, Fedorak RN, Kroeker KI. An overview of clinical decision support systems: benefits, risks, and strategies for success. npj Digit Med [Internet]. 2020;3(1):1-10. Available from: http://dx.doi.org/10.1038/s41746-020-0221-y

12. Younes NA, Abualrub R, Alshraideh H, Abu-Helalah MA, Alhamss S, Qanno' O. Engagement of jordanian physicians in continuous professional development: Current practices, motivation, and barriers. Int J Gen Med. 2019;12:475-83.

13. Golinelli D, Boetto E, Carullo G, Nuzzolese AG, Landini MP, Fantini MP. Adoption of digital technologies in health care during the COVID-19 pandemic: Systematic review of early scientific literature. J Med Internet Res. 2020;22(11).

14. Frick NRJ, Möllmann HL, Mirbabaie M, Stieglitz S. Driving digital transformation during a pandemic: Case study of virtual collaboration in a German hospital. JMIR Med Informatics. 2021;9(2):1-13.

15. Gong J, Ruan M, Yang W, Peng M, Wang Z, Ouyang L, et al. Application of blended learning approach in clinical skills to stimulate active learning attitudes and improve clinical practice among medical students. PeerJ. 2021;1-13.

16. Eysenbach G. How to fight an infodemic: The four pillars of infodemic management. J Med Internet Res. 2020;22(6).

17. Machovec G. Pandemic Impacts on Library Consortia and Their Sustainability. J Libr Adm [Internet]. 2020;60(5):543-9. Available from: https://doi.org/10.1080/01930826.2020.1760558

preVIEW: from a fast prototype towards a sustainable semantic search system for central access to COVID-19 preprints

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Abstract

The current COVID-19 pandemic emphasizes the use of so-called preprints – a type of publication that is not subject to peer review. Due to its global relevance, there is an immense number of COVID-19-related preprints every day. To help researchers find relevant information, we have developed the semantic search engine preVIEW which currently integrates preprints from seven different preprint servers. For semantic indexing, we implemented various text mining components to tag, for example, diseases or SARS-CoV-2 specific proteins. While the service initially served as a prototype developed together with users, we present a re-engineering towards a sustainable semantic search system, which was inevitable due to the continuously growing number of preprint publications. This enables easy reuse of the components and allows rapid adaptation of the service to further user needs.

Key words: *text mining; COVID-19; information retrieval.*

Introduction

The current COVID-19 pandemic poses new challenges for information providers due to the large volume of publications. The World Health Organization refers to the overabundance of correct and incorrect information during a disease outbreak as an *infodemic* (1). This makes it difficult for individual researchers to distinguish between research evidence and disinformation. According to (2), "more than 30,0000 of the COVID-19 articles published in 2020 were preprints". Since preprints are a form of publication that is not subject to peer review, a wide range of quality can be expected. On the other hand, publishing preprints allows for rapid dissemination of – potentially very valuable – information.

Since the outbreak of the COVID-19 pandemic, there has been a high demand for the immediate availability of COVID-19-related research results, making COVID-19-related preprints of great value. To assist researchers during this time, we developed the semantic search engine preVIEW, which specifically focuses on COVID-19-related preprints, and made it publicly available at an early stage of development at https://preview.zbmed.de (3). Currently, this search engine includes more than 36,000 preprints from seven different preprint servers.

Using specialized text mining components focused on SARS-CoV-2/COVID-19 related terms, which we have further extended over time, e.g., with mutant strain detection, we have developed a semantic search system and several additional features to support researchers.

While we started preVIEW as an *ad-hoc* prototype based on user needs, the long-term integration of preprint servers and text-mining-based semantic search engines into digital information services is essential. Therefore, we have invested in re-engineering the components to develop a modular software system that can be integrated into various library digital information services in the future.

Below we describe our architecture in more detail and provide a brief overview of preVIEW features.

Methods

The re-engineered version of preVIEW has been developed with a microservices cloud-native architecture pattern in mind (4, 5). A focus of the re-engineering development is a clear separation between concerns. The refactoring resulted in three core microservices: *The User Interface Service*, the *Search Service*, and a *Terminology-Annotation Service*. In addition, two supporting services, the *Semantic Lookup Service* and an *Authentication Service*, are reused from the service landscape portfolio. This refers a set of (micro-) services that are shared within the department and are either services that cover cross-cutting topics such as authentication and authorization or can be used in different contexts. The basic idea of this approach is to shorten the time frame to release due to reuse. The services and their interconnection are shown in *Figure 1*. All services are encapsulated for deployment in an Open Container Initiative (OCI) (6) compatible image format and run in a compatible runtime environment (7). The *Terminology Annotation Service* focuses on retrieving preprints from various sources, harmonizing them into a common format, and enriching them with semantic concepts by applying terminology recognition using established named-entity recognition methods – including machine learning and rule-based ap-

proaches. A more detailed description of this service can be found here (3). In its current version, it annotates the following entity classes: disease names (mapped to Medical Subject Headings (MeSH) thesaurus concepts), human gene/protein names (mapped to HUGO Gene Nomenclature Committee (HGNC) concepts), SARS-CoV-2 specific proteins (mapped to Universal Protein Resource (UniProt) concepts if available) and, as a new entity type, SARS-CoV-2 virus variants classified as variants of concern or high concern according to (8). In order to detect those virus variant mentions, we developed a simple rule-based approach using manually curated terminology lists based on the information given in (8) and extended by further synonyms.

The *Search Service* and the *Index Service* form the central pillars of the semantic search engine. The semantic annotations provided by the *Terminology-Annotation service* are indexed by the Index Service, i.e., an Elasticsearch (9) instance. The *Search Service* was developed using Flask (10) and exposes and secures some functions of the Elsasticsearch index via a REST interface. To secure the interaction with the service, the Open ID Connect (OIDC) protocol [11] is used. The *Authentication Service*, a Keycloak instance (12), handles authentication and user management.
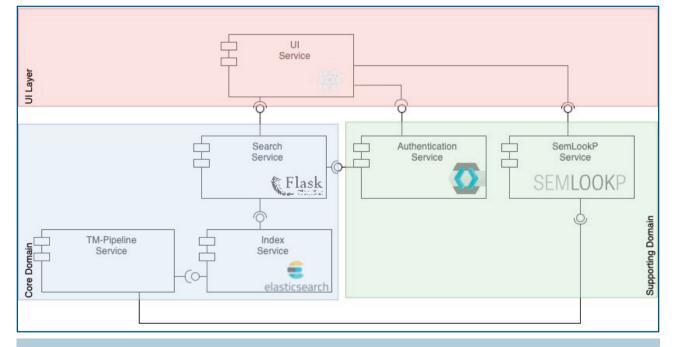

Fig. 1. *Component diagram of the preVIEW System.*

The *User Interface Service* uses the provided REST interface to create a suitable application. User authentication is integrated via OIDC and the *Authentication Service*. Information about semantic terms is retrieved via the *Semantic Lookup Service* using the provided REST API. The *Semantic Lookup Service* (release in preparation) builds on the Ontology Lookup Service (OLS) (13) and the Ontology Xref Service (OxO) (14) and provides a unified access to semantic resources.

The preVIEW *user interface* (UI) itself is developed using the React framework (15). The UI is a composition of loosely coupled components. Each component is developed and tested in isolation and is available through a component repository. To archive a similar look and feel to our application, all presentation components use the Elastic UI kit (16). Technically, each visible component consists of a representation component that handles the UI and an included "container" component that handles the business logic. This allows the UI to be migrated without changing the business

logic. *Figure 2* shows a screenshot of the current preVIEW user interface with color-coded boxes representing some reusable UI components.

Results

The re-engineering focused on reusability without compromising the look and functionality of the service available at https://preview.zbmed.de. A brief description of the main features of preVIEW is given below.

The main page lists the available abstracts and displays relevant metadata such as title, authors, source (i.e., the preprint server), the date, and links to the original source (including full text). Examples are shown in *Figure 2* in the center, outlined in green. Abstracts can be expanded for a single document individually for all documents. Above the document list (outlined in blue) is a search bar that contains several functions, which are explained in more detail in the next section. In addition, we offer the following func-
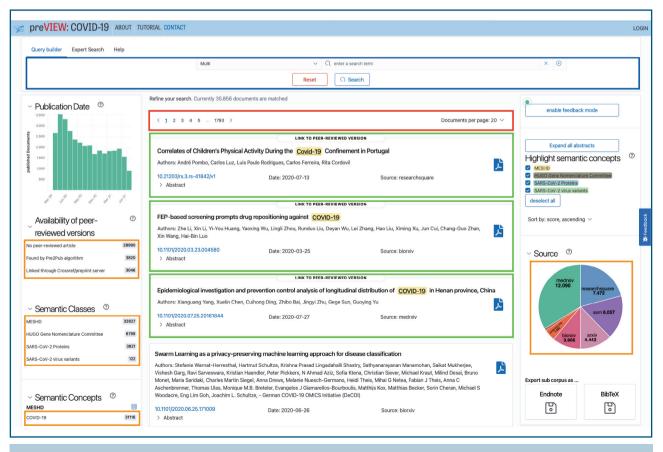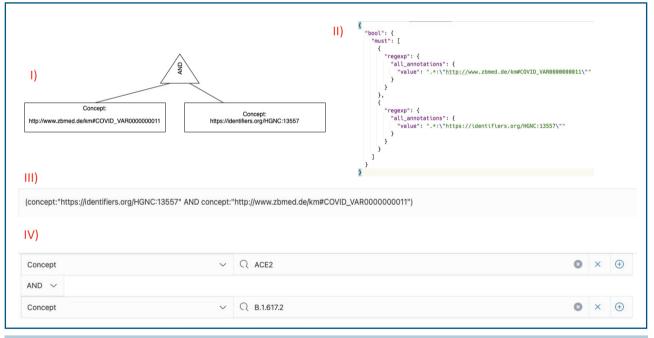

Fig. 2. *Screenshot of preVIEW with the major UI components highlighted.*

tions depicted in *Figure 2*: on the right side, you can select or deselect the highlighting of the found concepts; on the left side, there is an overview of the five most frequently occurring concepts for each terminology. These concepts can be easily added to the search query by clicking on them. In addition, you can also filter by semantic classes, i.e., you can, for example, select all preprints that contain at least one virus variant of interest. The bar chart on the left shows a distribution by publication date. Again, a specific month can be added to the search query by clicking on the corresponding bar. The documents found can be exported in currently two different formats, either EndNote or BibTeX. In the following, we would like to highlight two UI components of the application that are well suited for reuse in other library systems. First, the Search *Query component* and second, the *Semantic Information Widget component*. The *Search Query Component* provides translation be-

tween different query languages and query construction methods. The primary purpose is to translate different query languages into the format used by our *Search Service*. The basis of this component is a composite pattern (17) where the branches are operations (AND, OR, NOT) and the leaves are predicates that allow defining a search on a specific field (e.g., title, author) or using a specific function (e.g. expand_concept). The composite is used to construct the abstract syntax tree (AST) of a search query. Several subcomponents are capable of constructing such an AST. First, an ANTLR-based (18) parser for a custom preVIEW-specific search query language. This allows advanced users to create more complex search queries in a domain-specific language. Second, a UI component, *Query Builder Component*, which allows interactive query building. Translations to or from other languages, like SRU/Z39.50 (19), can be easily added, as these additions are already provided for in

Fig. 3. *A Search Query shown in AST (I), ElasticSearch DSL(II), preVIEW DSL (III) and Query Builder Component (IV).*

the architecture. *Figure 3* shows a query displayed in the *Query Builder Component (IV)*, the custom query language of the preVIEW system (III), as an AST (I) and in the elastic search query syntax (II).
The *Semantic Information Widget Component* integrates semantic information provided by the *Semantic*

Lookup Service into a handy widget. Preferred name, alternative spellings and a description of a semantic concept are displayed in a pop-up window. Cross-references - relationships to other semantic concepts - are also displayed, if available. Related hierarchical information about a concept is displayed as well.

Fig. 4. *Semantic Information Widget Component. The Widget example shows information about the semantic concept "Coronavirus Infections" form MeSH. Within the widget, different information views of the semantic concept can be selected by the user via tab selection. The screenshot visualizes the tab "Alternative Names" on the left and the tab "Hierarchy" on the right.*

Within the application, the widget opens by clicking on a semantic annotation. *Figure 4* shows the widget.

Discussion

The semantic search engine preVIEW was developed due to the acute need during the current COVID-19 pandemic. As the number of so-called preprints has increased tremendously, there is a need for digital information services that facilitate the retrieval of these types of publications. Semantic search engines commonly used by information specialists, such as LIVIVO (20), do not integrate preprints. Therefore, we have developed a service that focuses exclusively on COVID-19 related preprints. Since preprints are not manually indexed by experts, text mining components were included to allow automatic indexing of relevant concept classes. Hence, information search and extraction must be facilitated by using automated methods based on machine learning and rules.

While the initial prototype was developed with a clear focus on rapid development and integration of various preprint resources, the architecture was already reaching its limits. This was partly due to the ever-increasing number of preprints, which affected the performance of the service, and partly due to increasingly complex application requirements, which were costly to implement. The architecture described in this paper emphasizes components that are reusable and can be shared among different services.

The development of the preVIEW system with loosely coupled, reusable components occur at the microservices level, in the backend code, i.e., the services that are invisible to the user, and at the user interface level, the UI components. One advantage that arises at both levels is that a component/service can be developed and tested in isolation. This allows a developer to focus on a single task, and the components can be viewed as LEGO bricks that are independent but have compati-

ble connection interfaces. Thus, they can be freely combined to build different application and software systems; similar to the LEGO system. However, this freedom also has the disadvantage of complex dependencies, as components may depend on each other and require specific versions. Package managers (such as helm, npm) are available to alleviate the problem, but compatibility between versions must be maintained or changes must be communicated efficiently, as package managers are no help in this regard.

Although developing a software system like the preVIEW application based on loosely coupled microservices and front-end components presents some challenges, the benefits of isolating concerns and the resulting independence are worth the effort. This is because the components developed for the preVIEW application can and are already being reused. For example, the *Semantic Information Widget Component* is being reused as part of the German Central Health Study Center COVID-19 (21). A service that bundles information about clinical, epidemiological and public health studies in Germany related to COVID-19. A component for highlighting semantic annotations in texts will also be integrated into another internal project.

Conclusions

We presented the re-engineering of our semantic search engine preVIEW COVID-19, which was initially developed as a prototype due to the acute need during the current pandemic. The transformation into a sustainable service – consisting of several microservices – not only resulted in a fast system, but also enables rapid action in the future. It simplifies the adaptation of the services to user needs and enables the reuse of components in other digital information services. With the set of services and components presented, we are also able to rapidly develop new prototype services in specialized areas to help researchers find relevant information to advance science.

Acknowledgements

REFERENCES

1. WHO. Infodemic [Internet]. [cited 2021 Sep 2]. Available from: https://www.who.int/westernpacific/health-topics/infodemic
2. Else H. How a torrent of COVID science changed research publishing — in seven charts. Nature. 2020 Dec 16;588(7839):553-553.
3. Langnickel L, Baum R, Darms J, Madan S, Fluck J. COVID-19 preVIEW: Semantic Search to Explore COVID-19 Research Preprints. Stud Health Technol Inform. 2021 May 27;281:78-82.
4. Kratzke N, Quint P-C. Understanding cloud-native applications after 10 years of cloud computing - A systematic mapping study. Journal of Systems and Software. 2017 Apr;126:1-16.
5. Alshuqayran N, Ali N, Evans R. A Systematic Mapping Study in Microservice Architecture. In: 2016 IEEE 9th International Conference on Service-Oriented Computing and Applications (SOCA) [Internet]. Macau, China: IEEE; 2016 [cited 2021 Sep 2]. p. 44-51. Available from: http://ieeexplore.ieee.org/document/7796008/
6. Open Container Initiative. Open Container Initiative - Open Container Initiative [Internet]. [cited 2021 Sep 2]. Available from: https://opencontainers.org/
7. Merkel D, others. Docker: lightweight linux containers for consistent development and deployment. Linux journal. 2014;2014(239):2.
8. CDC. Coronavirus Disease 2019 (COVID-19) [Internet]. Centers for Disease Control and Prevention. 2020 [cited 2021 Sep 3]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/variants/variant-info.html

9. Elasticsearch B.V. Elasticsearch: The Official Distributed Search & Analytics Engine [Internet]. Elastic. [cited 2021 Sep 3]. Available from: https://www.elastic.co/elasticsearch

10. Pallets Organisation. Welcome to Flask — Flask Documentation (2.0.x) [Internet]. [cited 2021 Sep 2]. Available from:
https://flask.palletsprojects.com/en/2.0.x/

11. OpenID Foundation. OpenID Connect | OpenID [Internet]. 2011 [cited 2021 Sep 2]. Available from: https://openid.net/connect/

12. Red Hat, Inc. Keycloak [Internet]. [cited 2021 Sep 2]. Available from: https://www.keycloak.org/

13. Côté RG, Jones P, Apweiler R, Hermjakob H. The Ontology Lookup Service, a lightweight cross-platform tool for controlled vocabulary queries. BMC Bioinformatics. 2006 Feb 28;7(1):97.

14. Jupp S, Liener T, Sarntivijai S, Vrousgou O, Burdett T, Parkinson HE. OxO-A Gravy of Ontology Mapping Extracts. In: ICBO. 2017.

15. Facebook Inc. React – A JavaScript library for building user interfaces [Internet]. [cited 2021 Sep 2]. Available from: https://reactjs.org/

16. Elasticsearch B.V. Elastic UI [Internet]. [cited 2021 Sep 2]. Available from: hhttps://elastic.github.io/eui

17. Gamma E, editor. Design patterns: elements of reusable object-oriented software. Reading, Mass: Addison-Wesley; 1995. 395 p. (Addison-Wesley professional computing series).

18. Parr TJ, Quong RW. ANTLR: A predicated-LL (k) parser generator. Software: Practice and Experience. 1995;25(7):789–810.

19. National Information Standards Organization (É.-U.), American National Standards Institute. Information retrieval (Z39.50): application service definition and protocol specification : an American national standard [Internet]. 2003 [cited 2021 Sep 2]. Available from:
https://www.loc.gov/z3950/agency/Z39-50-2003.pdf

20. Müller B, Poley C, Pössel J, Hagelstein A, Gübitz T. LIVIVO – the Vertical Search Engine for Life Sciences. Datenbank Spektrum. 2017 Mar 1;17(1):29-34.

21. Schmidt CO, Darms J, Shutsko A, Löbe M, Nagrani R, Seifert B, et al. Facilitating Study and Item Level Browsing for Clinical and Epidemiological COVID-19 Studies. Studies in Health Technology and Informatics. 2021;281:794-8.

The experience and attitude of TMU faculty and researchers toward predatory journals and research productivity

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Abstract

A questionnaire related to journal submission was sent to researchers for a 2-week period to investigate the submission status as well as the problems faced by Taipei Medical University faculties and researchers. This study has two major findings including the experience of predatory journals and calculations of academic performance point, and discusses users' cognition and their needs from the library and the university, as well as the library policy and services related to predatory journals. The Authors of this paper hope that the research results can serve as reference for other medical libraries planning to provide relevant services.

Key words: *open access journals; predatory journals; library services; journal impact factor.*

Introduction

In 2020, almost 60% of the papers in the name of Taipei Medical University (TMU) are published in open access journals, researchers also place a high priority on Journal Impact Factor (JIF) because of tenure and promotion needs. Since a feature report (1) on predatory journals from a local business magazine was released in 2019, some researchers mentioned that similar problems were encountered. Although there's still no agreed definition, as to what constitutes predatory publishing, only a consensus that it exists (2), to publish in deceptive journals does affect researchers' reputation, decreases research productivity and wastes research effort and budget. The aim of the study is therefore to investigate the submission status in predatory journals as well as the problems and needs faced by the TMU researchers from 11 colleges, 11 research centers, a center of general education, as well as our 3 affiliated hospitals.

Research method

This study was based on a questionnaire survey, using Google Forms to construct online questionnaires. A questionnaire related to the journal submission was sent to the researchers for a 2-week period, from 31 October to 15 November 2020 via email. The authors used SPSS for descriptive statistics and one-way ANOVA analysis. Participants answered the following 6 questions:

Q1 Basic information, including institutional affiliation and job titles.

Q2 Could you tell me if you have experienced the following conditions in the past?

- you are called for paper by unfamiliar journals;
- you are invited as a reviewer by unfamiliar journals;
- you are invited as an editor by unfamiliar journals;
- you submit to a journal which is not what you expected, but with a similar name, and the JIF it claims is simply deceptive;
- the journal you submit has a JIF, but when you need to calculate the performance points, you find that the journal has been suppressed by the Journal Citation Reports (JCR) and the latest JIF of the journal is not available;
- the journal you submit has a JIF, but when you need to calculate the performance points, you find that the JIF is different from the year you submitted and much lower than the value of the year.

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Q3 Have your articles ever been published in a predatory journal? Can you give a description of the process?
- What are your expectations for help from the library?
- What are your expectations for help from the university?

Q4 What do you think the university can do when the journal you submitted to has a JIF, but when you need to calculate the performance points, you find that the journal has been suppressed by the JCR and the latest JIF of the journal is not available? Or do you have any idea how other universities operate?

Q5 What do you think the university can do when the journal you submitted to has a JIF, but when you need to calculate the performance points, you find that the JIF is different from the year you submitted? Or do you have any idea how other universities operate?

Q6 Thank you for filling out the questionnaire. Would you like to spend more time with the library to have a thorough discussion of your experience and ideas?
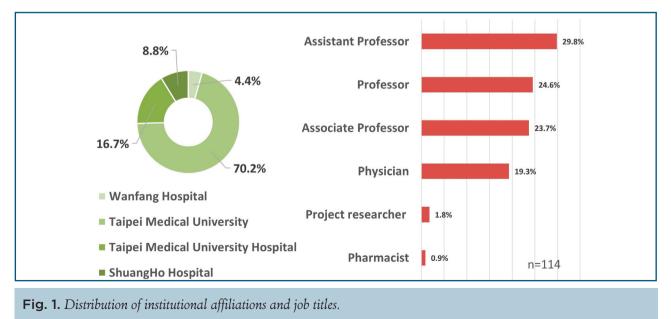
Research findings

1,286 questionnaires were sent and 114 valid questionnaires were returned, resulting in a response rate of 8.9%. 70.2% of respondents come from universities, 29.8% from affiliated hospitals, and 78.1% have faculty position (*Figure 1*).

The main findings are divided into two parts: the experience of predatory journals and calculations of academic performance point.

The experience of predatory journals

1. The ANOVA analysis shows that there is no significant difference between the experience of predatory journals and "affiliated institutions" or "positions".
2. All respondents have received call for papers emails from unfamiliar journals, and approximately 80% of them have been invited as a reviewer. Furthermore, over a half of them have been invited as an editor (*Figure 2*).
3. 14% of the respondents have accidentally published articles in a predatory journal.
4. As to issues related to predatory journals, 36.5% of the respondents felt that there was no need for assistance from library. 31.3% of the respondents expect the library to provide blacklists. (See *Figure 3* for other details)
5. 53.01% of the respondents felt that there was no need for assistance from the university. Rest of the respondents hope that the university could help them withdraw the submitted articles, develop negotiation skills, provide legal advice, etc.

Calculations of academic performance point

When quantifying the research productivity, the performance points are calculated and the latest JIF is needed

Fig. 1. *Distribution of institutional affiliations and job titles.*

Have you ever experienced... (multiple-response variety)

Been invited to contribute to an unfamiliar journal — 100.0%

Been invited as a reviewer by an unfamiliar journal — 80.7%

Been invited as an editor by an unfamiliar journal — 64.0%

Submitted to journals with very similar titles — 7.0%

n=114

Fig. 2. *Experience with unfamiliar journals.*

in the formula to abide by the university rules. 15.8% of the respondents have experienced the JCR journal suppression, the JIF became not available which turns the score into zero. 30.7% of the respondents have experienced the JIF value decrease dramatically which minimize the points. For both conditions, about 20% of respondents think the current measure is working fine, but more than 50% of respondents believe that the university should modify the calculation standard value (for example the year selection of the JIF) (*Figure 3*) and some respondents believe that JIF should not be the only indicator.

Discussion

A journal without JIF is not necessarily a predatory journal

The study found that 14% of the respondents admit to having accidentally published articles in a predatory journal. In their description of the manuscript submission experience, the respondents viewed predatory journals as journals with similar names, journals in which their review process are extremely rapid, journals in which withdraw drafts are not allowed, and other methods in accordance with the publications described in predatory journals. However, one-third of the respon-

About predatory journals, what are your expectations for help from library?

No need — 36.5%

Blacklist — 31.3%

Journal Quality Confirmation — 10.4%

Other — 7.0%

Remind message — 5.2%

Consultation — 4.3%
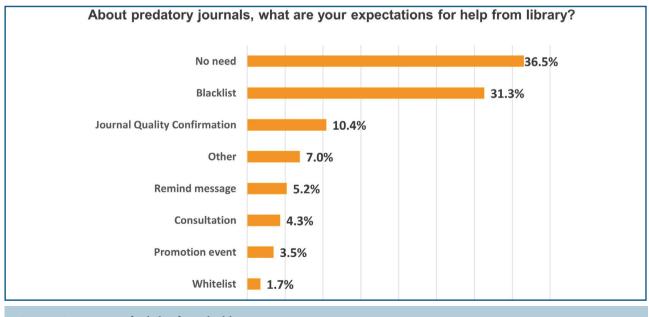
Promotion event — 3.5%

Whitelist — 1.7%

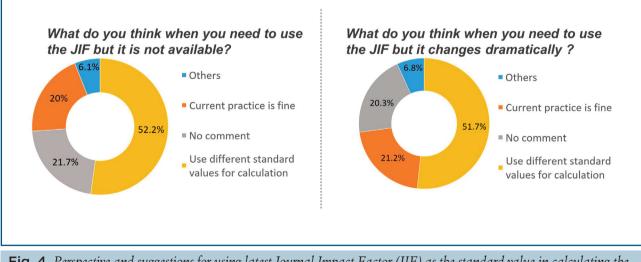**Fig. 2.** *Expectations for helps from the library.*

dents indicated that the journals suppressed by JCR were predatory journals. According to JCR suppression policy (3), "Suppressed journals represent anomalies in citation behavior and exceed category-based norms" and "Journals that show evidence of citation distortion will not receive a Journal Impact Factor". To sum up, predatory journals are very often open access journals, but journals without a JIF or suppressed by JCR are not necessarily a predatory journal, the definitions are different.

The role of the library

More than 60% of the respondents expect the library to provide journal title lists, consultation and promotion events, etc. TMU library has launched Preliminary Check Service of Journal (http://library.tmu.edu.tw/predatory/) since October 2019. The service website describes some predatory journal characters and principles of identification, it is also a portal for all TMU faculty and researchers to submit journals for initial inspection. Librarians will check the journal basic information, and the result will be replied to the applicant as well as announced in TMU internal network for our faculties to browse. TMU faculty and researchers can also book an in-person or online meeting with reference librarians for further discussion or consultation about specific journal titles. As to promotion activities, the TMU library will continue to invite speakers to give lectures on the topic of predatory journals and record the lecture as an online training course. Besides, the library will also collect fre-

quently encountered journal submission problems or precautions, and promotes them in university or college-level meetings and in new faculty orientation. Studies (4, 5) show that fake impact factor, flattering language, grammatical flaws, article processing charge, non-journal affiliated contact e-mail addresses, etc. usually appear in spam from predatory journals. Researchers should be well informed to protect their own reputation as authors and that of science. We think it is appropriate for the library to promote in this way since all of the respondents have received call-for-papers e-mails from unfamiliar journals.

Conclusion

Based on the research findings, the measures related to TMU library are in line with the imagination of the researchers. The TMU library will strengthen the following measures to help our researchers not to submit articles to predatory journals even by accident: provide the existing reference title list of predatory journals on the Internet, encourage faculty and researchers to apply for our preliminary inspection services of journals for basic background checks, and provide customized advisory services to individual case. Hopefully, the above services will reduce submission to predatory journals and save more time and money for researchers. Regarding the opinions on the performance points calculation these will be submitted to the appropriate units of the university for further consideration.

Fig. 4. *Perspective and suggestions for using latest Journal Impact Factor (JIF) as the standard value in calculating the research performance.*

REFERENCES

1. Lu P, Tien M, Yang J, Chen Y, Yang M. [The history of academic black market: why Taiwan became the cash cows of predatory journals]. CommWealth Magazine. 2019;(669):84-95[Chinese].

2. Grudniewicz A, Moher D, Cobey KD, Bryson GL, Cukier S, Allen K, et al. Predatory journals: no definition, no defence. Nature. 2019;576(7786):210-2.

3. Clarivate. Journal Citation Reports: Reference Guide 2021 [updated June 2021; cited 2021 Aug-21]. Available from: https://clarivate.com/webofsciencegroup/wp-content/uploads/sites/2/2021/06/JCR_2021_Reference_Guide.pdf.

4. Sousa FSDO, Nadanovsky P, Dhyppolito IM, Santos APPD. One year of unsolicited e-mails: The modus operandi of predatory journals and publishers. Journal of Dentistry. 2021;109.

5. Lund BD, Wang T. An analysis of spam from predatory publications in library and information science. Journal of Scholarly Publishing. 2020;52(1):35-45.

Training of subject specialist librarians in developed countries: a model offering regarding medical librarianship for Turkey

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Abstract
Medical librarianship (ML) has become one of the vital issues today. Expert librarians /information professionals can assist their users in cooperation with academics on issues that fall within their field. In developed countries, specialist librarianship gains importance in Information and Document Management (IDM) education. This study aims to present an idea about the training given in medical librarianship first and then in other specialties (Law Librarianship, Engineering Librarianship, etc.).

Key words: *medical librarianship; librarianship; specialist librarianship.*

Subject expertise can contribute greatly to the development of a country because the subject expert gives the most accurate information to the researcher. For example, in medical librarianship the evidence-based movement has emerged in the past few years in response to changes in the health care arena. Signaling this new orientation, many diverse disciplines and specialties have begun to attach the term evidence-based to their titles: cardiology, pediatrics, surgery, nursing, gastroenterology, diagnostic radiology, disease management, pathology, midwifery, complementary or alternative medicine, and health policy. Evidence-based librarianship and its sub-branches, which are closely related to medical librarianship, have a great place in today's world (1).

It has been observed that undergraduate education in the field of librarianship is low in the developed countries of America and Europe, but it is proportionally more developed in graduate education. The main reason for this is that students of engineering, law, medicine, pharmacy, etc., after completing their undergraduate education, complete their master's degree in librarianship and good subject librarians. In Turkey and in other developing countries, courses should be given under the main title of Medical librarianship and other subject librarianship. In undergraduate courses, only the maintenance and use of the library or catalog rules training should not be given. Subject expertise in library studies is very important (2). The student who receives this training should be employed in these fields. In other words, specialist librarians are needed as much as medical workers or engineers in a country. The specialization of librarians in certain fields is another important issue in increasing the employment of library graduates. Librarians who deal with more than one area in a library both provide less efficiency and increase librarian unemployment, because they take care of many jobs.

All activities affecting librarianship are an important point in all other fields, especially in Medical Librarianship. The ability of librarians to store information, copy as needed, and manage it at a level that cannot be changed by any other source shows that librarians are the profession with the highest potential in this regard. Professor of Information Services Management at the University of Sheffield, Stephen Pinfield, "examined that subject librarians, who still constitute a significant group of senior staff in most academic libraries, continue to play an important role in the delivery of library services, and this applies to both traditional and electronic library services"(3).

There is no verifiable reason to abandon activities that increase the visibility and importance of librarianship in the missions of medicine and other fields.

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If librarianship does not work in these fields in a related way, or if there are no people with knowledge in these fields and it does not spread all over the world, it is likely that libraries will appear in the "luxury" category. As N.B. Giuse said "I believe we have no choice but to move into the clinical setting; to avoid doing this is to deny our future in the information age" (4).

Thanks to the subject expert librarians, the success of universities is undeniable. Because the researcher can conduct research directly on the subject together with a librarian who is an expert in his field and his own teachers in any subject he wants. To give an example: suppose a medical student heard a certain term from her teacher in an anatomy lesson that day.

When the student first goes to the library's website to make an appointment with the Medical Librarian to do research on that specific term, he is taken to the medical books of the subject specialist librarian to conduct research in this field, and the student is given extensive information and this information is supported by materials. If necessary, additional support is obtained from the university professor. In this way, the student learns the desired information in the most accurate way.

Almost 40 years ago, clinical librarians in the Hartford Hospital program worked with physicians to better serve patients. Changes in information seeking behaviours on patients were recorded in diaries. Ultimately, they determined that the information provided by clinical librarians for house officers positively influenced patient health and management in 20% of cases. Kuller et al. noted that when the selection of relevant clinical articles by librarians and physicians was analyzed, there was no significant difference in usage (4). So, according to this excerpt from the Bulletin of the Medical Library Association, the importance of medical librarians is undeniable.

You can find specific aspects of our study and survey results below.

Istanbul University in Research (IU) Information and Document Management students and all the people working in the field of librarianship in Turkey were evaluated. In the questionnaire form, six questions were asked, and the questions were evaluated under three factors. The factors were: in the first part, demographic characteristics of the participants (age, occupation, department); in the second part, open-ended questions, while the third part was based on multiple-choice questions. Six systematic online questionnaires with their questions and data were saved on the hard disk. A separate title was used in the database for each systematic review. The questionnaire was applied to the Department of Information and Document Management students at undergraduate and graduate levels and people working in libraries, and the results were evaluated. The questions asked for the questionnaire were:

1 Do you find the training on librarianship within the Information and Document Management Departments sufficient?
2 Should a separate course be opened on Medical Librarianship in the Information and Document Management Department (BBY)?
3 In Turkey, can the Information and Document Management Department give Evidence-Based Medical Librarianship Education?
4 Is there a library serving the medical field in Turkey that can help users with existing health cases?
5 Do you think subject matter expertise in librarianship, which is frequently performed in the United States and Europe, can be adapted to Turkey?
6 Do you support the operation of subject expert librarians in Turkey?

Results of the analyzed articles, research and studies on the subject within the scope of Medical librarianship (ML), and other specialized areas of education in developed countries, could be adapted to fit Turkey. Teaching curricula in developed countries are shaped to provide librarianship competencies in subject areas. This new model should be started in Turkey. The importance of the trainer's training should be highlighted to increase the quality of education in the field of specialization required. Most of the participants expressed their concerns about this issue.

The future of librarians who know no bounds in research is linked to subject expertise. For the librarians to be effective, thorough knowledge of the relevant information resources of the discipline they serve is essential and expected. In addition, familiarity with the subject matter, as well as an understanding of the research philosophies, processes and trends of the respective disciplines improves the quality of services librarians deliver to their user communities (5). The issue of librarianship awareness will cease to be a luxury and transform into a requirement worldwide, including in Turkey.

REFERENCES

1. Eldredge JD. Evidence-based librarianship: an overview. Bulletin of the Medical Library Association. 2000;88(4):289-302.

2. Marshall ML. Training for medical librarianship. Bulletin of the Medical Library Association. 1946;34(4):247-65.

3. Pinfield S. The changing role of subject librarians in academic libraries. Journal of Librarianship and Information Science. 2001;33(1):32-8.
Available from:
https://doi.org/10.1177/096100060103300104

4. Lipscomb CE. Clinical librarianship. Bulletin of the Medical Library Association. 2000;88(4):393-95.

5. Pali U. Kuruppu. Recruitment of science and technology librarians. Science & Technology Libraries. 2006;27:1-2:11-39.
DOI: 10.1300/J122v27n01_03

Information literacy skills are required in finding reliable toxicological information resources

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Abstract

Chemicals are a part of modern life, but they are potentially hazardous. Consumers, regulatory authorities, information specialists, researchers, students, and toxicologists need access to evidence-based safety information about chemicals either in their ordinary life or in their work to protect their own health, that of other co-workers and ultimately the environment in which we all live. The most important open sources of safety information are databases such as PubMed and PubChem and open access scholarly journals, as well as websites of regulatory authorities and research institutions. This paper discusses the need for toxicological information literacy and its contents for all to identify reliable information. Reliable open access sources for toxicological information of chemicals are also provided.

Key words: *chemical safety; hazardous substances; public health; information literacy; access to information.*

Introduction

Our contemporary society would not be possible without the use of chemical substances. They are used in endless ways: to make plastics and all kinds of items, as food additives, as ingredients in cosmetics, as pesticides and in pharmaceutical preparations to mention but a few possible applications. The use of chemicals may pose health effects; hence it is necessary to study the chemicals in a toxicological perspective (1).

The word "toxicology" stems from the Greek word *toxikon* meaning a poison arrow. Initially toxicology was the study of poisons only (2). This evolved gradually to a modern science dealing with harmful effects of chemical and physical factors to living organisms. It secures safe use of chemicals. Today toxicology builds upon the most branches of biological and physical sciences such as biology, chemistry, molecular biology, public health, and engineering (3).

The need for chemical and toxicological information has increased, and the Internet is likely today's choice to find such information. As it is known, the quality of information on the Internet in general is questionable (4, 5). Many of the best sources of chemical information are available only by subscription. Numerous potential information users outside subscribing organizations are left empty-handed. The current open access movement is changing this slowly but steadily, see for example (6). The aim of this article is to discuss the toxicological information needs and toxicological information literacy of different groups of people. We also list reliable open access toxicological information resources.

Toxicological information users and their needs

There is a wide spectrum of ways that toxicological information is available, from original data of toxicity tests and scientific experiments to scientific papers, reports of expert authorities, instructions, safety data sheets, hazard and precautionary statements extending to the pictograms on the packaging of the chemical (to the public in their everyday life). The types of toxicological information and diversity of information sources pose challenges for students and experts (3). Urgent information is needed when an exposure to harmful chemical or poisoning has or is suspected to have taken place.

Students and teachers

Commonly, toxicological education begins in secondary school or in high school, preferably as a part of science or health education lessons. The information taught

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must be easy to understand and compatible with the students' anticipated interests and experiences. These kinds of topics include the hazards of smoking, alcohol, illicit drugs and environmental pollutants (7-10). Pupils in primary school should be familiarized with very hazardous chemicals, toxic plants, and animals.

At the university level, toxicology is taught as a part of pharmacy, medicine, or environmental health studies. Some universities also offer specialized toxicology education, such as the master's degree programmes in toxicology or PhD programmes in toxicology. It is essential that students taking toxicology courses should have good information literacy skills – it is a basic requirement for effective and active learning. These skills also need continuous improvement. The amount of information is expanding exponentially, and information technology is continuously evolving.

Important aspects of teaching information skills are academic publishing, sources of scholarly information, searching techniques, ethical issues, and presentation of the information. Productive collaboration between the library and the faculty has been proven to be bene-ficial in teaching and learning these skills as well as promoting the maturity of students into fully information literate persons (11-13).

Researchers and professional toxicologists

It is anticipated that toxicology researchers will have gained basic information skills before embarking on an academic career or employment in the enterprises producing or testing chemicals. However, there are areas such as open science, research data management and presentation skills where updated knowledge is needed. Scholarly publishing is being transformed from a traditional printed format to an open access model, both use peer review as the quality control. It is necessary to be aware of reliable open publishing channels in one's own discipline and how to deal with article processing charges. Data management planning and issues related to data storage and making data open may also raise questions. It is important that skills are updated and modern techniques such as chemical structure searching are put to effective use. Selected high quality open access databases are listed in *Table 1*.

Name	URL	Content
DOAJ	https://doaj.org/	Peer reviewed scholarly journals and articles.
PubChem	https://pubchem.ncbi.nlm.nih.gov/	Chemical information such as properties, biological activities, safety, and toxicity available in organized form. Structure based search possible.
PubMed	https://pubmed.ncbi.nlm.nih.gov/	Citations for biomedical and life sciences literature including full text links to selected free articles.
PubMed Central	https://www.ncbi.nlm.nih.gov/pmc/	Full-text archive of biomedical and life sciences journal articles.

Table. 1. *Selected high quality open access databases providing chemical and toxicological information mainly for students and researchers (3, 14, 15).*

Regulatory authorities and decision makers

The regulation of chemicals by society is based on two aspects. First, evidence based scientific knowledge about the effects of chemicals constitutes the foundation. Second, chemical legislation legitimizes the imposition of regulatory measures. However, the legislative process is not based on only the available scientific information. It is a political decision involving different stakeholders and often conflicting interests (16, 17). This can be seen clearly when decisions are made on locating new industrial plants that generate pollutant emissions. Industrialists are concerned with the new plant's financial prospects whereas politicians are interested in other issues such as employment and support to the economy. In contrast, environmental activists emphasize the detrimental impacts of the putative man-

ufacturing plant's emissions and its effects on the natural environment and human health, see e.g., case Finnpulp (18). The decision whether to build the plant must be based on a procedure that strives to reconcile these different interests.

Regulatory authorities must have a good knowledge about the appropriate legislation but also about updated scientific issues on a level applicable to their regulatory work (19-21). They produce – in collaboration with specialized toxicology experts – reports about the safety of chemicals and evaluate authorization applications of chemicals.

The authorities also create information packages and maintain websites about chemical and toxicological properties of chemicals (*Table 2*). One could say that they act as safety information brokers and disseminators.

Name	URL	Content
American Association of Poison Control Centers	https://www.aapcc.org/	Representative of US poison centers.
eChem Portal	https://www.echemportal.org	Portal to sources of chemical information.
European Association of Poison Centres and Clinical Toxicologists	http://www.eapcct.org/index.php?page=links	Links to poison centers in several countries.
European Chemicals Agency (ECHA)	https://echa.europa.eu/	Chemical information and regulation of chemicals in the European Union.
European Food Safety Authority (EFSA)	https://www.efsa.europa.eu/	Food-related risks and food safety.
European Medicines Agency (EMA)	https://www.ema.europa.eu/en	Regulation of human and veterinary pharmaceutical and herbal products in the European Union.
European Monitoring Centre for Drugs and Drug Addiction	https://www.emcdda.europa.eu/	Information on illegal drugs in Europe.
Food and Drug Administration (FDA, USA)	https://www.fda.gov/home	Regulation of foodstuffs, pharmaceutical products, medical devices, and tobacco in the USA.
International Chemical Safety Cards	https://www.ilo.org/dyn/icsc/showcard.home	Health and safety information on chemicals, especially for the workplace and emergency services.
National Institute of Alcohol Abuse and Alcoholism	https://www.niaaa.nih.gov/	Information about alcohol.
National Institute of Environmental Health Sciences (NIEHS, USA)	https://www.niehs.nih.gov/	Information on the effect of the environment and environmental hazards to people.
National organizations of different chemicals	URLs in (14) or can be searched from the Internet: https://www.chemsafetypro.com/	General and national specific information about chemicals.

Name	URL	Content
National Toxicology Program (NTP, USA)	https://ntp.niehs.nih.gov/	Toxicological information about potentially hazardous substances.
Societies of toxicology National, pan-national and global sources	Examples: https://www.toxicology.org/ https://www.iutox.org/	Collaboration between scientists. Discussions. Scientific meetings. Member societies.
Stockholm Convention	http://chm.pops.int/	Information on Persistent Organic Pollutants (POP). Includes also links to Basel Convention (hazardous waste) and Rotterdam Convention (substances of Prior Informed Consent / importing of hazardous chemicals and pesticides).
US Environmental Protection Agency (US EPA)	https://www.epa.gov/	Information on environmental pollutants and environmental protection.
World Health Organization (WHO)	https://www.who.int/	Global perspective: chemicals, alcohol, tobacco, biological weapons, air pollution.

Table. 2. *Selected high quality websites of recognized operators providing information about all chemicals (3, 14).*

Chemically risky occupations

Many workers in several occupations are potentially exposed to hazardous chemicals (22). Ideally these chemicals should be replaced with less harmful alternatives or preferably completely safe alternatives. Since often this is not possible, the workers and their superiors need to be aware of the toxic properties of chemicals. The management and lower-level supervisors must encourage workers to avoid personal exposure e.g., by instructing the employees about the risks when handling these substances and what kind of protective equipment they should use. Pictograms, chemical labels and safety data sheets are used for this purpose. Workers who disseminate safety information among their colleagues play a key role in ensuring the safety of the entire workplace.

Accidents in the transportation of hazardous products pose risks not only to the drivers, but also to the rescue teams and to the environment. Therefore, professional drivers of vehicles carrying such products are trained to understand the chemical labels and the cargo is labeled with pictograms designed by competent authorities (23).

Consumers

The substantial number of chemicals ubiquitous in today's world and the unfamiliarity of the public with scientific terms may raise concerns and even "chemophobia" (irrational fear of chemicals) (24, 25). Scientific journals and databases are not suitable sources of information for lay-persons. The information needs to be edited and simplified to a level where it can be understood without an academic background; this can involve the preparation of safety data sheets and international chemical safety cards.

While Internet search engines like Google and webpages like Wikipedia are commonly used, there are well known issues regarding their reliability. The internet is a huge virtual universe of material - anyone can publish "findings" without subjecting their data to peer review. Thus, it is amazingly easy to distribute incorrect or falsified information. Without a prior knowledge of toxicology, it is difficult or impossible to discern the difference between jewels and rubbish (4, 5). National and international chemical regulatory authorities maintain websites in their field of operation (Table 2). These websites offer verified information in formats suitable for non-specialists.

Conclusions

The present Internet environment usually confuses links found with the search engines with reliable information

sources. This may lead even to the misconception that all the information listed on the search engines is equally valid and can be used as scientifically based facts and knowledge.

The most challenging aspect in toxicological information literacy is that it also needs an awareness of the basic literacy of several scientific disciplines. One must have a good knowledge of chemistry, biology, biochemistry, pharmacology, pathology, physiology, molecular biology, medicine, public health, and economics. Extra challenge is to make overall picture about information of these specialized disciplines. In addition, toxicologists need to articulate intelligibly and to understand when statistics have been used correctly, have a sound understanding of research practices and a good knowledge about the basic language and symbols needed in discussing about chemical compounds.

This very breadth of the knowledge is also the greatest challenge that information specialist and library work about toxicology must overcome in combatting mis- and malinformation about chemical substances. The library must also be active in disseminating these skills and reliable sources of toxicological information to everyone, not just to one's own students and academics.

At the very least, individuals without good toxicological information literacy skills should not openly counsel people on safety issues surrounding many kinds of chemicals; a life and death matter to humans and the other species with which we share our existence on planet Earth. The libraries have an increasingly important role in actively producing and disseminating reliable and evidence-based information to everyone.

Acknowledgements

REFERENCES

1. Penningroth S. Essentials of toxic chemical risk: Science and society. Boca Raton, FL: CRC Press/Taylor & Francis Group; 2010.

2. Loomis TA, Hayes AW. Loomis's essentials of toxicology. 4th ed. San Diego, CA: Academic Press; 1996.

3. Wexler P, Gilbert S, Mohapatra A, Bobst S, Hayes A, Humes S. Information resources in toxicology : volume 1: background, resources, and tools. 5th ed. London: Academic Press; 2020.

4. Lederman A, Lederman S. The chemical safety gateway: Beyond Google's limitations. J Chem Heal Saf. 2018;25(3):11–6. DOI: 10.1016/j.jchas.2017.11.001

5. Kearney TE, Lieu D, Singer N, Tsutaoka B, Ho R, Olson K. Investigating the reliability of substance toxicity information found on the internet in pediatric poisonings. Pediatr Emerg Care. 2013;29(12):1249–54. DOI: 10.1097/PEC.0000000000000022

6. Björk B-C. Open access to scientific articles: a review of benefits and challenges. Intern Emerg Med. 2017;12(2):247–53. DOI: 10.1007/s11739-017-1603-2

7. Kerkvliet NI, Mingo K, Bloomfield M. Hydroville Curriculum Project: A successful toxicology outreach program for high school teachers and students in Oregon. Comments Toxicol. 2002;8(2):209–17. DOI: 10.1080/08865140210508

8. Schwartz-Bloom RD, Halpin MJ, Reiter JP. Teaching high school chemistry in the context of pharmacology helps both teachers and students learn. J Chem Educ. 2011;88(6):744–50. DOI: 10.1021/ed100097y

9. Godin EA, Kwiek N, Sikes SS, Halpin MJ, Weinbaum CA, Burgette LF, et al. Alcohol Pharmacology Education Partnership: Using chemistry and biology concepts to educate high school students about alcohol. J Chem Educ. 2014;91(2):165–72. DOI: 10.1021/ed4000958

10. Hamrick LA, Harter SR, Fox CL, Dhir M, Carrier RL. Just say know to drugs! a high school pharmacology enrichment program for a rural population. J Am Osteopath Assoc. 2019;119(3):199–207. DOI: 10.7556/jaoa.2019.031

11. Junisbai B, Lowe MS, Tagge N. A Pragmatic and Flexible Approach to Information Literacy: Findings from a Three-Year Study of Faculty-Librarian Collaboration. J Acad Librariansh. 2016;42(5):604–11. DOI: 10.1016/j.acalib.2016.07.001

12. Gilman NV, Sagàs J, Camper M, Norton AP. A faculty-librarian collaboration success story: Implementing a teach-the-teacher library and information literacy instruction model in a first-year agricultural science course. Libr Trends. 2017;65(3):339–58. DOI: 10.1353/lib.2017.0005

13. Smith MD, Dailey AB. Improving and Assessing Information Literacy Skills through Faculty-Librarian Collaboration. Coll Undergrad Libr. 2013;20(3–4):314–26. DOI: 10.1080/10691316.2013.829370

14. Wexler P, Gilbert S, Mohapatra A, Bobst S, Hayes A, Humes S. Information resources in toxicology : volume 2: the global arena. 5th ed. London: Academic Press; 2020.

15. Sharma N. The journey of DOAJ from 2002 to 2019: The developing supplier of scholarly literature. Libr Philos Pract. 2020;Article number 4159. URL: https://digitalcommons.unl.edu/libphilprac/4159/

16. McCarty LS, Borgert CJ, Posthuma L. The regulatory challenge of chemicals in the environment: Toxicity testing, risk assessment, and decision-making models. Regul Toxicol Pharmacol. 2018;99:289–95. DOI: 10.1016/j.yrtph.2018.10.001

17. Bond A, Pope J, Retief F, Morrison-Saunders A. On legitimacy in impact assessment: An epistemologically-based conceptualisation. Environ Impact Assess Rev. 2018;69:16–23. DOI: 10.1016/j.eiar.2017.11.006

18. EUWID Pulp and Paper. Finnpulp committed to build pulp mill in Kuopio [Internet]. 2021 [cited 2021 May 20]. Available from: https://www.euwid-paper.com/news/singlenews/Artikel/finnpulp-committed-to-build-pulp-mill-in-kuopio.html

19. McCarty LS, Borgert CJ, Mihaich EM. Information quality in regulatory decision making: Peer review versus good laboratory practice. Environ Health Perspect. 2012;120(7):927–34. DOI: 10.1289/ehp.1104277

20. Maynard R. Scientific information needs for regulatory decision making. J Toxicol Environ Heal - Part A. 2003;66(16–19):1499–502. DOI: 10.1080/15287390306437

21. Northage C, Marquart H. Occupational Exposure Information Needs for Regulatory Risk Assessment of Existing Chemicals. Appl Occup Environ Hyg. 2001;16(2):315–8. DOI: 10.1080/10473220118728

22. Kauppinen T, Uuksulainen S, Saalo A, Mäkinen I. Trends of occupational exposure to chemical agents in Finland in 1950-2020. Ann Occup Hyg. 2013;57(5):593–609. DOI: 10.1093/annhyg/mes090

23. UNECE. ADR 2021: Agreement concerning the International Carriage of Dangerous Goods by Road [Internet]. 2020 [cited 2021 May 20]. Available from: https://unece.org/transportdangerous-goods/adr-2021-files

24. Bearth A, Saleh R, Siegrist M. Lay-people's knowledge about toxicology and its principles in eight European countries. Food Chem Toxicol. 2019;131:110560. DOI: 10.1016/j.fct.2019.06.007

25. Saleh R, Bearth A, Siegrist M. Addressing Chemophobia: Informational versus affect-based approaches. Food Chem Toxicol. 2020;140:111390. DOI: 10.1016/j.fct.2020.111390

Promoting the history of medicine through special collections: the experience of Campus Bio-Medico University Library (Rome, Italy)

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Abstract
Preserving the history of medicine is an important task for health sciences librarians. In this regard, the provision of special collections can play a significative role. This article presents the initiative of the University of Rome Campus Bio-Medico Library (UCBML) in creating valuable sources for the history of medicine through the establishment of several special collections. The aim of this article is to highlight the importance of special collections to promote issues relating to the field of medical history.

Key words: *Campus Bio-Medico University Library; medical university libraries; special collections; history of medicine.*

Introduction

Special collections of academic libraries can play an important role in the intellectual life of their parent institution, supporting and enhancing the education, research, and service activities of the university. However, because the majority of users in medical libraries are interested in current information, it is quite unusual that an academic medical library maintains special and rare book collections. Nevertheless, preserving the history of medicine has an important value as it can give to students and practitioners a new understanding of their medical profession through an ethical, cultural, and social perspective.

Since its beginning in 1993, the University of Rome Campus Bio-Medico Library (UCBML) has worked to achieve these educational goals. For this purpose, the Library curates, preserves, and provides access to rare books and special collections relating to the history of medicine. The presence of these collections fulfills the specific needs of the university, as they contribute to a better understanding of the historical and cultural context of medicine as well as the developments in medical techniques and practices.

The historical collections

UCBML preserves an outstanding historical collection consisting of a main collection of older print books dating from the early 1800s to 1945, and a more modest collection of sixteenth-, seventeenth- and eighteenth-century imprints. These non-circulating collections are stored in closed stacks at the Club House, the university's boardroom for business meetings and social events.

The majority of these books are from the collection of Professor Leonardo Donatelli (1911-1992). It comprises over 700 volumes from the sixteenth to the early nineteenth century, focusing on important works in anatomy, surgery, and pharmacology. Very valuable are the herbals, such as the early seventeenth-century edition of Castore Durante's Herbario Nuovo. There are also richly illustrated anatomical textbooks, including a rare 1677 edition of Thomas Bartholin's Anatomia Bartholiniana. These treasures open new perspectives for studying past and current medicine, enriching the teaching and learning experience at the university. Because rare books are testimonies of a historical event or activity, handling and reading a medical rare book

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represent a unique opportunity for students to gain a deeper understanding of the past of their profession. Another important collection is that bequeathed by Professor Gioan Battista Dell'Acqua (1901-1991), containing around 250 titles of old medical books (*Figure 1*). Contrarily to Leonardo Donatelli collection, Dell'Acqua's library is not recognized as a rare book collection. Yet, this collection is a useful resource for students and researchers who have an interest in the history of medicine. In fact, it reflects the history of scientific publishing companies and the advance of medical and health sciences during the early decades of the twentieth century, thanks to the presence of several textbooks printed by the most notable European publishers of that period, such as Springer-Verlag, Urban & Schwarzenberg, Victor Masson, and Gaston Doin.

Fig. 1. *This showcase exhibits a selection of old medical books from the Dell'Acqua collection.*

The Himetop collection

For any academic library, it is fundamental to identify ways to increase visibility and awareness of the collections. At UCBML, there is an interesting example of a collaborative project based on the combination of a special collection with a digital resource. This is the *Himetop – Historical Medical Topographical Database*, a free access, collaborative on-line database (available at www.himetop.net) launched in 2007 by the Campus Bio-Medico University. The purpose of this tool is to provide access to photographic and bibliographic documentation about places and material memories related to the history of medicine of local geographical areas. The bibliographical sections of the database contain relevant titles held at UCBML. All these titles are housed in a separate range and treated as a special collection, covering more than 500 books and pamphlets related to sites or objects of medical-historical interest around the world, including old hospitals, monuments, birthplaces, tombs, commemorative plaques, museums, botanical gardens, etc.

Students are directly involved in the creation of new records for the Himetop database. Therefore, the relationship between this free database and the "Himetop" collection offers a positive way to promote outreach and collaboration between library staff, students, and faculty members, increasing the use of UCBML's special collections not only for the university's community, but also for a broader audience of scholars and researchers outside the institution.

The Biography collection

The life and work of figures of the past can be very inspiring, giving the students a sense of encouragement. For this reason, UCBML had built up a sizeable collection of biographical sources of individuals who have contributed to the advancement of medicine and science. A separate shelving location is devoted to this special collection consisting of more than 1,200 titles, many of which are in English. The collection is arranged alphabetically by the subject's name and all titles are classified under one call number of the Dewey Decimal Classification (920). It contains a wide range of sources, including biographies and autobiographies, memoirs, diaries, speeches, papers, epistolary books, obituaries, and biographical dictionaries. Rare and old books are also present in this collection, some of which are very valuable, such as the *Lives of British Physicians*, published in 1830 by the prestigious John Murray.

This biographical collection covers not only great figures and Nobel Prize winners but also lesser-well known people, providing insights into their lives and professional work. In this perspective, the collection has a great relevance in the promotion of the ethical and cultural values of the medical profession. It is a source of inspiration and motivation for students: reading the life of a physician can be very instructive, allowing students

to get an understanding of their future specialty practice through a more humanizing perspective.

Conclusions

Special collections of medical books have strong research and educational potential as they provide opportunities for new insights into the medical profession. UCBML offers a useful example of how special collections can enhance student's interest in the history of medicine. For example, access to historical medical collections gives a chance to learn about the past through rare books.

However, special collections do not need to contain many rare or valuable materials, but rather they should have some particular attribute. The personal library of Dell'Acqua, for instance, is not a rare book collection as such, but it provides invaluable insights into the socio-historical context of medicine in the twentieth century as it reflects the developments of medical publishing of that period.

The Library holds also special collections built around the history of people, buildings, places, and material memories. In particular, the collection of biographical works about medical and scientific figures is a highly valuable source for the promotion of the social, cultural, and ethical aspects of medicine. Students can find in these stories the moral and cultural foundations necessary to guide them in their future profession.

In conclusion, the Library's special collections offer many stimulating ways to humanize medicine, supporting the Campus Bio-Medico University's educational goals.

REFERENCES

1. Borghi L. Repairers of Broken Walls: Ten Years of Himetop – The History of Medicine Topographical Database. Medic. 2017 Dec;25(2):11-20.
2. Chaplin S. The medical library is history. RBM Rare Books Manuscr Cult Herit. 2014 Sept 1;15(2):146-56. doi: https://doi.org/10.5860/rbm.15.2.427
3. Gakobo J. The role of the special collection in the academic library. Int Libr Rev. 1985 Oct; 17(4):405-18.
4. Harris VA. Use of special collections as an opportunity for outreach in the academic library. J Libr Adm. 2012 Jul 2;52:294-303. doi: https://doi.org/10.1080/01930826.2012.684508
5. himetop.net [Internet]. Himetop – The History of Medicine Topographical Database [accessed March 18, 2021]. Available from: http://himetop.wikidot.com/
6. Preziosi P, Paolucci P. Figure di maestri: il professor Leonardo Donatelli e la sua biblioteca. Un'esperienza di catalogazione di una raccolta storica. Medic. 2018 Dec;26(2): 87-90.
7. Shedlock J, Sims RH, Kubilius RK. Promoting and teaching the history of medicine in a medical school curriculum. J Med Libr Assoc. 2012 Apr;100(2): 138-41. doi: 10.3163/1536-5050.99.100.2.014

Letter from the President

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Dear EAHIL Colleagues,

I'm writing this Letter from the garden of our summer cottage in rural southern Sweden, where I also participated in the 2021 Istanbul Workshop. The Workshop was a success, and I am very impressed by how quickly the EAHIL community has adapted to the digital solutions and continued our meetings and networking. Even though I appreciated being able to sit in my garden for the Workshop, in my opinion, nothing beats meeting face to face. I think I can speak for most of us in wishing that many of us will be able to meet in Rotterdam next year. At the closing ceremony, we saw two very inspiring and attractive videos from our upcoming meetings in Rotterdam 2022 and Trondheim 2023, and I'm already looking forward to participating.

Planning an international event is a task that takes a lot of effort and must be initiated well in advance of the event. To ensure that our long list of successful events continues beyond 2023, the EAHIL Executive Board is looking for bids to organise the 2024 and following events. Please check the Guidelines for conference & workshop organisers for information on how to prepare a bid. You will also find a map of the previous event locations on the page, which might prompt you into action.

At the Council meeting in Istanbul, we had a follow-up interactive session from the previous Council meeting in Basel. At the Basel meeting, the EAHIL Board asked for input from Council members on how EAHIL as a whole (not only the Executive Board and Council) could act on the five objectives for the organisation listed in the EAHIL statutes. The session in Istanbul took the discussion further and resulted in a list of suggestions, which will be on the agenda for the next meeting of the Executive Board.

Many of the ideas from the Basel Council meeting were about communication, connecting with other members, building relationships, collaboration, and the visibility of EAHIL. Our organisation has several communication channels, and our Communications officer Petra Björk has great ambitions regarding the level of activity in our different channels. As Communications officer Petra can post information from the Board to all members and interested stakeholders, but to take our communication to the next level, make EAHIL more visible and enhance possibilities for collaboration, we need you, the EAHIL members, to assist with content. Don't hesitate to contact Petra (petra.bjork@ki.se) if you have ideas or content for our channels. Let's make the EAHIL channels more active together to maintain the EAHIL spirit between events.

Report from the Public Health Information Group's virtual meeting 6th July 2021

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Public Health Information Group (PHIG, http://eahil.eu/sig-2/public-health-information-group/) met on 6th July via Zoom. Including the PHIG secretary and co-chairs there were 25 in attendance.

In the light of the challenges faced by librarians and information professionals we decided to share experiences on the challenges we faced and what solutions we found regards to our working practices. The themes described below were discussed.

Digitalization

There was digitalization prior to the pandemic, but the pace and volume of digitalization has been even more rapid. This includes developments such as document delivery, user education and active use of online collaboration tools.

Supporting systematic reviews

Since the pandemic there has been an increase in the need for systematic review support and specifically carry out literature searches.

We discussed the importance finding the balance between what's reasonable within the available time and the purpose of the work (e.g., a student doing master thesis vs. a research group doing a meta-analysis). It is important the service user to know and understand that help is available. At times a consultation session is enough, with guidance on how to carry out a search. In other circumstances, it is better that the information professional carries out the literature search. During this discussion one attendee mentioned useful database: TRID, an integrated database that combines the records from TRB's Transportation Research Information Services (TRIS) Database and the OECD's Joint Transport Research Centre's International Transport Research Documentation (ITRD) Database. TRID provides access to more than 1.3 million records of transportation research worldwide: https://trid.trb.org/

Online teaching

We shared ideas on how to keep participants engaged and interested during online teaching sessions. One idea was to record the "lecture part" of the teaching and on live sessions do the hands-on practical

information retrieval tasks. Also, to give a practical hands-on exercise to do in break out rooms to encourage participation. An image from @EthicsInBricks was mentioned that could be used when teaching to get participants to keep their videos on, to strengthen the interaction in the group. https://twitter.com/EthicsInBricks/status/1399396527030915081/photo/1 None of us like to stare at blank screens.

Collaboration tools, communication, and professional support

We discussed the merits of collaboration tools as well as their flaws (Teams, wikis, Zoom, chat). Some tools work well with smaller teams, but not so well with big groups. Overall, we agreed it is useful to a wide-ranging tool at our disposal.

We finished the meeting discussing the possibility of PHIG collaboration and establishing a project programm, e.g., to help teaching the complex search strategies, to have a list of specialist resources / or a wiki specific for research on public health.

The minutes of the meeting can be read on our SlideShare: https://www.slideshare.net/EAHILPHIG/eahil-istanbul-2021-online-public-health-information-group-meeting

Memories from EAHIL AHILA Scholarship recipient

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Memories from the EAHIL 2021 Virtual Workshop, Marmara University, Istanbul, Turkey, 5-8 July 2021
"Crossing the bridge: new challenges, new opportunities"

I am very grateful to the EAHIL board who offered me the scholarship to attend the EAHIL 2021 virtual workshop. It was my first time as an EAHIL participant and I don't regret a minute. So far it was the largest conference I have attended. The conference completely exceeded my expectations. The Workshop was a great learning and inspirational experience, mainly because of the content of the workshops and the many wonderful and intelligent librarians in attendance. The keynote speakers and the plenary sessions contributed to a better understanding of our different roles as librarians.

I learnt a lot from the topics which were presented at the conference, especially sessions on COVID 19. The plenary session by Prof Dr. Rümeyza Kazancıoğlu on 'Medical education during COVID-19 and its future implications' was so interesting. Furthermore, the interactive workshops were also interesting because I learned a lot, especially in the workshop on 'Identifying evidence-based medicine instructional opportunities in health sciences' which was beneficial to me. Also interesting was the topic on 'Scientific integrity, research misconduct and retractions: what can be the role of research libraries?' I learned about different kinds of research misconduct, reasons for retraction and what research libraries can do.

I also found the interactive workshop we had with Dr. Wichor Bramer on 'Comparing search strategies: the effects of our choices' very helpful. From this interactive workshop I learned how to develop research, how to combine search strategies, what terms to use and much more. These lessons will definitely help me in my research work.

During the conference we had an opportunity to see the city of Istanbul though virtually, however it was wonderful, it was like I was present physically. The virtual tour of the Topkapi Palace was really awesome, because we were shown all the four beautiful courts of the palace. It was indeed an amazing experience for me.

Furthermore, I would like to thank the Conference organizers and EAHIL for this wonderful opportunity. I look forward to attending future conferences physically and hopefully meet some of the amazing people I interacted with online. The knowledge gained from the conference will help me in my profession to improve library service delivery at my institution.

An update from Health Libraries Australia

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Where did 2020 go? For those of us in Australia who lived through the past year's uncertainties and fears about COVID, weathering the restrictions of lockdowns and working-from-home (and for some, schooling from home); trying to make sense of the patchwork of state border controls, testing and quarantining requirements; and on top of all that, a faltering vaccination roll out, it was unthinkable that 2021 would bring more of the same. But more than half way through this year, it seems that we were overly optimistic that 2021 would see it all resolved. This is 'take-two', and we are getting used to a new COVID-normal.

For health librarians in Australia there were many adjustments to be made. Because the effects of COVID were different in different states, some were able to continue in their normal workplaces, but for others, the libraries were closed for the lockdown periods. Some libraries were repurposed and used as call centres for contact tracing or other public health facilities, and even as vaccination hubs. Some librarians themselves undertook training in contact tracing, while other versatile ones were redirected to the front lines where, dressed in full PPE (personal protective equipment), they took on new roles in emergency departments, testing sites and other public reception areas. Along more traditional lines, our reference librarians used their expert literature search skills to inform their organisations' responses to the pandemic, and shared their expertise to contribute to international calls for help.

HLA very quickly made a statement to support our health library colleagues everywhere.

We coordinated our collective outputs and produced a list of COVID literature searches: https://aliahla.wikis.alia.org.au/COVID-19_Live_Literature_Searches

HLA's online seminars – 'Future Gazing - Innovation, Disruption, Transformation!' and 'Now, Next and Beyond' COVID-19 – Health Librarians' Experiences' record some of the experiences of Australian health librarians (recordings are available here:
https://aliahla.wikis.alia.org.au/HLA_Professional_Development_Education_and_Training)

Another big adjustment for HLA was the difficult decision to cancel our plans for an annual in-person conference for the second year running, as many organisations have had to do. In 2021 we have instead run a series of topical lunchtime smorgasbord events, scheduling a couple each month. All the pieces were in place – health librarians hungry for knowledge and professional support, willing presenters, an online platform, and a program committee who knew how to organise events; but it took a pandemic to provide the stimulus to bring it all together.

The seminars and workshops have proven to be enormously popular and show that there is a real thirst for accessible, high quality, affordable (free for our members) and relevant professional development. (The program is here: https://aliahla.wikis.alia.org.au/HLA_Professional_Development_Education_and_Training) Of course,

we miss our face-to-face networking opportunities, the online equivalent just doesn't cut it. Without the annual conferences as a focal point, it's been much more difficult to develop relationships, learn from each other, and further discussions about joint projects, and almost impossible for international collaborations with groups such as EAHIL.

The HLA committee held our annual strategic planning meeting in May this year, and re-assessed our strategic priorities for the coming years. I'm pleased to report that we have reinforced our goal of developing our international collaborations. We have recently expanded our HLA committee and our JoHILA Editorial Board membership to include a representative from the New Zealand Health Libraries Group. We will be talking with our NZ colleagues in November about joint initiatives.

Developing a systematic approach to education and ongoing professional development for health librarianship is a major strategic priority for HLA, and likely to be so for at least the next four years. Our parent association (ALIA) has announced what has been referred to as a 'bold' new approach to developing the workforce, known as the Professional Pathways Initiative. Moving from its original focus on the future of library education, the initiative has been expanded to encompass workforce goals of diversity and inclusiveness. Mechanisms are proposed that will change the 'entry points' into the profession (currently it is the education providers who decide who is eligible to enter a course of study). Non-LIS qualified individuals may be directed into alternative training routes (such as certificate and microcredential units), enabling some without LIS professional qualifications to be certified as library and information 'professionals'.

For health librarians, this is a big shift, as we have for many years, modelled our education on the model used by the clinical health professions. For professional recognition (registration), health professionals must have an initial generalist or base tertiary qualification (whether medical, nursing or any of the allied health professions), and then channel into one of the specialist areas of practice through professional association or college-based training and ongoing CPD. Removing the initial LIS academic qualification is likely to place health librarians with administrative and other non-professional workforce groups.

Profiling health librarians as an integral part of the health information professional workforce has been a strategic goal for a number of years and HLA has collaborated in research that has led to the census of the HIDDIN (Health Information, Digital, Data, Information and (K)Nowledge) Workforce. The researchers have collaborated in the production of a book entitled *The specialist digital health workforce: now and in the future* (edited by Butler-Henderson K., Day K., & Gray,K. Doi: 10.1007/978-3-030-81850-0_5; due to be launched in September this year). Two case studies (in the chapters *Working as a health librarian*, and *Working as a health research information specialist*) have been written by EAHIL members.

A third chapter, co-authored by two of our HLA committee members, is entitled: Competencies, education, and accreditation of the HIDDIN workforce, builds in part, on the competency review of the health information professions that HLA presented in a poster at the EAHIL conference in Basel in 2019 (https://aliahla.wikis.alia.org.au/images/9/94/HLA_Competencies_review_poster_2019.pdf)

The chapter concludes:

> Our analysis has found a paucity of competency-based tertiary education programs for the HIDDIN professions, which may have led to the apparent mismatch between the content-based education and training programs offered by education providers and the needs of employers for graduates who are a good fit for the available jobs, as well as programs for upskilling current employees. Alternative education pathways that may be competency-based include certificates and microcredentials. These are emerging as a more agile response to the needs of the workplace and it remains to be seen if they will replace the more traditional model of academic education, or develop in parallel or in partnership with it.

Other projects that we have on the go include the revision of our *Guidelines for Australian Health Library and Information Services* (the previous edition was published in 2008) which will update the evidence base that informs the objectives in the four Guideline Areas. These standards could form the basis of a framework for accrediting health libraries, similar to the system of hospital accreditation.

So what next, is there a future beyond the world of recurrent pandemics? There is no doubt that we in Australia have been relatively lucky, largely due to our being a geographically isolated island. We are not, however, out of the woods yet; we are seeing rising numbers of each day's new cases in our two most populous states; less than 16% of the total population are fully vaccinated, and only half have had the first dose; on the positive side, the vaccination rates are rising.

With the media channels and commentary dominated by news about Covid, the Olympics have been a welcome diversion in lockdown, and a positive effect beyond the excitement and exhilaration of watching one of your country's athletes win an event. The pervasive tragedy of the pandemic has changed our national psyche forever; everyone will remember their personal losses, re-directions and 'gaps' in the expected courses of their lives, protracted isolation from family who can't come home, and general feelings of powerlessness. But we cannot revert to the populist patriotism of a previous political era, narrowly focusing on local concerns and giving in to simplistic, insular and nationalistic thinking.

The Olympics have allowed us to feel less isolated, and more like a society that can work together to achieve big, common goals. For health librarians, we must continue to connect online, expand our horizons, share our knowledge with our international colleagues and collaborate where there is potential to achieve common goals.

Publications and new products

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Dear friends,

here is why it could be better to set new year's resolutions in September.

As adults, while the summer is almost done, the ninth month of the year appears full of promise, and when it comes to new starts and setting goals, September seems to be the new January. Here is why:

- *since we were trained to a "back-to-school" mind set since we were kids, somehow we are also emotionally and psychologically set to think about September as the start of a new year;*

- *differently from what typically happens in January, September sees more business-focused goal setting. It happens because we are relaxed and have lowered our rhythm during the summer lazy days; we are full of new energy as we begin to focus on what needs to get done before the end of the year;*

- *advice or collaboration might be needed to set new goals, but it can be threatening to reach people and receive their feedback when they focus on Christmas vacations and holiday parties like they usually do in January;*

- *if your new resolutions are set in September, your job might almost be done by January, when everyone else is starting.*

Whatever we choose to do, as we are emerging from the pandemic shutdowns, let us not forget what the pandemic has taught us, the awareness of how precious life is and how short it may be. It has shown us how we are vulnerable, fragile and need to discover new ways of living. Therefore, togetherness and cooperation, no matter the existing differences among us, are prerequisites. Let us try to look at the future with confidence and positivity.

So, happy new goals, everybody!

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- **Adoption of peer review of literature search strategies in knowledge synthesis from 2009 to 2018: an overview.**
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- **A qualitative study of maternal health information seeking indicates required improvements in community health worker services**
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- **Knowledge, attitude and behaviour of dental health care providers toward health electronic record systems in Saudi Arabia.**
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  Information specialists and researchers working together for health promotion: benefits from school-work educational programs at the National Institute of Health in Italy.
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Obituary of Roy Tabor.
David Stewart, Lynette Domoney, Michael Carmel and Bob Gann

FROM THE WEB HTTPS://WWW.BIBLIO-PROJECT.EU/

- **BIBLIO - Boosting digital skills and competencies for librarians in Europe**
  The BIBLIO project aims to address the skills gap consequential from the digital transformation in the library sector. To the purpose, starting October 4th, an open and free of charge MOOC training course at EQF level 5 has been planned to support the up-skilling and re-skilling of library professionals and individuals interested in a career in librarianship.
  It offers:
  - state-of-the-art curricula developed and delivered by experts under high-quality standards
  - 26 modules covering transferrable and digital skills
  - a flexible weekly workload and schedule of 8-10 hours/week that can be completed at your pace
  - personalised support provided by experienced lecturers

- opportunity to meet and cooperate with peers from all over the world
- certification under the European and national qualification frameworks
- opportunity for participants who will complete the MOOC successfully to enlist in a specialised training programme and certify as Community engagement and communication officers or Digital transformation facilitators.

  We all know that experience in librarianship is a plus and not mandatory; therefore, it is a choice and a worthy possibility to improve ourselves. The course will require an 8-10 hour weekly commitment, and participants with a 75% success rate of online assessments will receive the course certificate.

  Grab the chance and share the <u>registration link</u> with your network so that other librarians across Europe can take part in this training opportunity.

- **Library Science Talks**

The Zentralbibliothek Zürich, the Association of International Librarians and Information Specialists (AILIS) and the CERN Scientific Information Service annually organise the <u>Library Science Talks</u>. Started in June 2021, the series of events offers a library and archive staff the opportunity to learn from and exchange ideas with well-known personalities from the world of libraries, archives and information services. The next future events will be:

- Monday, 11 Oct 2021, 17:15, Host: CERN
  Marie-Pierre Pausch (University Luxembourg): The Learning Centre University Luxembourg

- Tuesday, 16 Nov 2021, 17:15, Host: ZBZ
  Ina Blümel (Technische Informationsbibliothek Hannover): The architect in the library lab.

Due to COVID-19, the Library Science Talks will initially take place over a live stream. Please visit <u>this website</u> for further information and the recordings of past events.

- **The EU Health Policy Platform**

<u>The EU Health Policy Platform</u> is a collaborative online tool that makes it easy for European Commission services, health-related interest groups and stakeholders to communicate. This initiative is funded through the EU's fourth Health Programme 2021-2027, and the platform's working language is English.

In addition to running the Web Platform, which facilitates online discussion, collaboration and frequent webinars, the Platform team also organises the <u>EU Health Award</u>. This Award recognises cities, NGOs and schools whose initiatives improve public health in the European Union. The ceremony is held as part of the EU Health Policy Platform's Annual Meeting for health stakeholders. The meeting is open to health interest groups and EU staff and focuses on current and future EU health priorities. It also gives participants the opportunity to network and gives stakeholders the chance to present their activities.

The European Commission, whose Directorate-General for Health and Food Safety moderates the Web Platform and coordinates Commission's input, would like to invite all health stakeholders active in the field of health or interested in EU Health Policy to join the EU Health Policy Platform. Please, take a look at the <u>Rules of procedure</u> and the <u>user guide</u>; see how the Platform works and get an idea of its benefits.

You can register and get involved in European Health Policy!

Special Issue: Shane Godbolt
Health Information & Libraries Journal

Read the Issue > bit.ly/35kqAMg

This **special issue** of **HILJ** has been published to celebrate the life and work of Shane Godbolt. The issue not only records the astonishing achievements of a unique medical health librarian, but also records the development of medical/health care librarianship, and the contributions of many of those who were involved with her in these developments, over half a century.

About the Journal: Published by the Health Libraries Group in conjunction with Wiley, HILJ aims to promote debate about new health information developments with an emphasis on communicating evidence-based information both in the management and support of healthcare services.

Find out more about HILJ at: **Follow us** on Twitter **@HILJnl**
onlinelibrary.wiley.com/journal/14711842

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