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Mentoring Digital Competency Development: A comprehensive review on key issues, gaps and opportunities

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Abstract
This review evaluates the role of mentors in developing digital competencies, synthesizing insights from recent studies. The methodology includes searching for literature using online databases such as Web of Sciences, Scopus, and Google Scholar. Key issues include limited psychological support, technology barriers, inconsistent mentoring quality, and a lack of structured programs. The gaps exhibit the need for more studies on different populations, the cultural aspects of digital mentoring, and the underrepresentation of women and minorities. Future research should focus on developing mentoring models embedding digital skills and cultural elements, longitudinal studies, and the relationship between digital literacy and mentoring effectiveness.

Keywords: Mentoring, Digital Competency, Key Issues, Opportunities

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1.0 Introduction

The digital age has transformed numerous sectors, necessitating the development of digital competencies across various disciplines. In conjunction, mentoring has emerged as a pivotal approach to facilitate the quest for digital competencies or skills development. As technology continues to evolve, the ability to navigate and leverage digital tools and platforms has become an essential skill for both individuals and organizations. Given this, mentorship has become vital for helping people acquire these skills by offering direction and assistance on their digital learning paths (Dabbagh & Kitsantas, 2019). In recent years, due to the evolution of the digital landscape, the need for attention to integrating digital skills and competencies in the mentoring frameworks has soared. Moreover, there has been a greater acknowledgment of embedding digital skills into mentoring frameworks and an increasing body of evidence exploring how mentorship contributes to developing digital competence (Hussain, 2023).

Effective mentoring is vital for developing digital skills across various groups, helping individuals in education and career transitions to succeed in a rapidly changing digital landscape where adaptability and innovation are key. Hammarén et al. (2022) support the notion that targeted mentoring interventions can significantly enhance digital skills, which are increasingly important for

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career progression in various fields. This review seeks to synthesize existing research on mentoring for digital competency development, providing a comprehensive review of key issues, gaps, and opportunities for both current practice and future research. Through this analysis, the review aims to contribute to a deeper understanding of how mentoring can be optimized to equip individuals with the digital skills necessary to address current and future challenges in an increasingly digital world.

2.0 Literature Review

2.1 Digital Competency

Digital competencies encompass a range of skills necessary for effective engagement with digital. Digital competency, as outlined by the European Digital Competence Framework, includes five areas such as information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving (Oliynyk et al., 2024). These domains reflect the wide range of skills needed to successfully navigate the digital landscape, which is critical for expanding a digitally literate society. The concept of digital competence is evolving and is crucial for lifelong learning and professional development. In the 21st century, these skills are essential for personal and professional success, significantly enhancing the effectiveness of mentoring programs.

O'Donovan et al. (2024) highlight that structured mentoring programs enhance care professionals' confidence in digital tools, improving care outcomes. Mentoring partnerships that include digital competency are essential for promoting effective communication and information transfer. Effective digital pedagogies empower educators to facilitate student learning and engagement by using digital media and resources, enhancing overall educational effectiveness (Bitakou et al., 2023). Integrating technology into mentoring relationships enhances the learning experience for both mentors and mentees, promoting a collaborative atmosphere (Tabar & Zadhasn, 2023). Nevertheless, digital competencies are essential in terms of mentoring since the mentor directs mentees through acquiring these competencies targeted at their respective careers. Because digital technologies continue to evolve, frameworks and definitions surrounding digital competence may change, and it presents new challenges and exciting opportunities for mentorship to assist individuals in gaining an advantage within the rapidly changing digital landscape.

2.2 Mentoring

Mentoring is generally considered a developmental partnership, where the mentor is usually a prominent figure who works alongside a mentee with less experience. Kram (1983) defines mentoring as a dynamic developmental relationship between the parties involved. Zainol and Salam (2021) emphasized mentoring as a long-term relationship in academic and training learning, where the mentor offers fundamental guidance and support to their mentee.

The growing body of literature on digital mentorship highlights avenues such as digital inclusion initiatives that can further enhance effectiveness in various professional contexts. For instance, mentoring initiatives focusing on digital skills can substantially improve participants' attitudes toward technology and their technical capabilities, essential for adapting to modern workplace demands (Petrou et al., 2023). Moreover, Kivekäs et al. (2024) highlight that structured mentoring programs can enhance care professionals' confidence in digital tools, leading to improved care outcomes. Leitheiser (2024) revises that mentorship is an evolving process requiring both parties to set explicit norms and expectations. The reciprocal interaction benefits the mentee and contributes to the mentor's professional development, as mentors gain insights and skills through their engagement with mentees (Astrove & Kraimer, 2021). In these relationships, mentors will mentor their protégés, who will help mentees gain practical experience in negotiating the world of digital technology, while the mentees, in return, give their mentors new insight into developing technologies and trends. The relational dynamics of mentoring are further explored by Schatz Oppenheimer and Goldenberg (2023), who discuss how mentors can enhance their interpersonal skills and reflective practices through mentoring roles, promoting social justice and diversity. Thus, this reciprocal process encourages continuous learning for both the mentor and the mentee, enabling them to develop their digital skills and adapt to the changing tech-driven environment.

3.0 Methodology

The review, inspired by PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), began by compiling a comprehensive list of potential studies through searches in Scopus and Web of Science (WOS). Using the Boolean operator, the keywords used for the review included "mentor" OR "mentorship" OR "mentoring" AND "digital skills" OR "digital competency" OR "digital skills" AND "skill development". The search was limited to articles published in English between 2020 and 2024, focusing on the role of mentoring and digital competency development in social sciences. The search yielded 116 studies (i.e., Scopus = 63, WOS = 53). Further exclusion criteria were for articles that were not full text, not in English, lacked empirical data, were irrelevant to the research topic, or had insufficient focus on mentoring and digital competencies. Moreover, duplicate records are removed, and the remaining studies are screened based on their titles and abstracts. The final data were qualitatively extracted from 11 relevant articles, encompassing author names, publication years, key issues in digital mentoring, identified gaps, and opportunities for future research. The data was extracted, thematically analyzed, and coded to thoroughly analyze relevant studies, providing an overview of the actual mentoring context in digital competency development.

4.0 Findings

The rapid evolution of technology has necessitated the development of digital competencies across various sectors. Mentoring has emerged as a pivotal strategy for fostering these competencies. This review synthesizes and yields several findings from relevant literature on the potential role of mentoring in digital competency development, focusing on the key issues, the gaps, and the opportunities for future research in digital mentoring.

4.1 The Key Issues in Digital Mentoring

Key issues refer to significant problems or challenges a study must address. The first key issue revolving between digital competencies and mentoring is limited psychological support. Digital mentoring often lacks the emotional and psychological support that traditional face-to-face mentoring provides. Gehreke et al. (2021) note that mentees' statements in digital peer mentoring programs are significantly shorter than those in non-digital formats, indicating a potential lack of depth in communication. This brevity can hinder the development of trust and rapport, which are essential for effective mentoring relationships. Kaufman et al. (2021) further emphasize that digital mentoring can facilitate discussions on sensitive topics, but it requires mentors to possess strong empathetic skills to create a non-judgmental environment. The absence of these emotional connections can limit the overall effectiveness of digital mentoring initiatives.

The second issue is technology-related barriers, which include inadequate access to devices and poor digital literacy among mentors and mentees, which often hamper the implementation of digital mentoring. Amrullah (2023) asserts that successful digital mentoring requires access to hardware and software and training in the necessary skills for engaging in digital communication. This is particularly critical for care-experienced youth, who may already face social and emotional challenges. Furthermore, Gehreke et al. (2024) point out that interpersonal and organizational skills are vital for building effective mentoring relationships. However, these skills can be challenging to cultivate purely digitally. The lack of familiarity with digital tools can lead to frustration and disengagement, further exacerbating the challenges faced in digital mentoring.

The third issue is the inconsistency in the quality of mentoring relationships, which can notably vary in the digital context, often due to the lack of structured frameworks and support systems. Lorenzetti et al. (2020) suggest that reverse mentoring can alleviate social isolation and enhance technological confidence among older adults. However, this requires a well-defined structure to ensure that both parties benefit. Moreover, Lafontan et al. (2023) emphasize the need for tailored mentoring programs that address the specific challenges faced by diverse groups, such as highly skilled migrant women. Without such tailored approaches, the effectiveness of digital mentoring can be compromised. The inconsistency in quality can lead to varying outcomes for mentees, making it crucial to establish best practices for digital mentoring.

The last concern is a lack of structured mentoring programs. Many digital mentoring initiatives lack a structured framework, leading to ambiguity in roles, expectations, and outcomes. Mentors and mentees may struggle to define goals and measure progress without clear guidelines and objectives. According to Norman et al. (2021), structured mentoring programs that include defined roles, regular check-ins, and measurable outcomes can significantly enhance the effectiveness of mentoring relationships. The absence of such structures can result in both parties' lack of accountability and commitment. Table 1 summarizes the author(s), year(s), analyses of reviewed articles, and the key issues about mentoring and digital competencies.

4.2 Gaps Identified

Table 1. The key issues in digital mentoring

Author	Year	Analyses of Reviewed Articles	The Key Issues in Digital Mentoring
Kaufman, Levine, Casella & DuBois	2021	Mentees in digital peer mentoring programs often give shorter responses than those in traditional formats, suggesting less depth in their communication.	Limited Psychological Support
Henwood	2023	Digital mentoring can help discuss sensitive topics, but mentors need strong empathy to ensure a safe space.	
Amrullah	2023	Successful digital mentoring needs access to technology and training in digital communication skills, especially for care-experienced youth who may face social and emotional challenges.	Technology-Related Barriers
Gehreke, Schilling, & Kauffeld	2024	Interpersonal and organizational skills are essential for effective mentoring relationships, but they can be hard to develop in a wholly digital setting.	
Lorenzetti, Nowell, Jacobsen, Lorenzetti, Clancy, Freeman & Paolucci	2020	Reverse mentoring can reduce social isolation and boost tech confidence in older adults, but it needs a clear structure for both parties to benefit.	Inconsistent Quality of Mentoring Relationships
Lafontan, Hougaard, Knutstad, Jensen, & Jerpseth	2023	Tailored mentoring programs are needed to help diverse groups, like skilled migrant women because digital mentoring might not work well without them.	
Norman, Mayowski, Wendell, Forlenza, Proulx, & Rubio	2021	Structured mentoring programs with clear roles, regular check-ins, and measurable goals can significantly improve mentoring relationships, while a lack of structure can lead to less accountability and commitment from both sides.	Lack of Structured Mentoring Programs

The study uncovered significant gaps that reveal relevant deficiencies or areas where there is a lack of information, research, or resources on mentoring and digital competencies. First, there is inadequate research on the specific digital competencies needs of various populations or demographics. Many mentoring programs do not adequately assess the baseline digital skills of mentees and mentors, leading to a mismatch between the mentor's support and the mentees' actual needs. This gap highlights the need for research that identifies the specific digital competencies challenges faced by different demographic groups, enabling the development of more targeted mentoring interventions.

In addition, there is a real need for more research into how cultural competency affects digital competencies and mentoring, especially as our educational spaces become more diverse. Mentors and mentees come from various backgrounds, and their cultural differences can influence how they interact with digital technology and each other. We can better understand their unique challenges by exploring this intersection of digital skills and cultural awareness.

There is a notable scarcity of longitudinal studies that assess the long-term impacts of digital mentoring on skill development and career progression. Mutmainah (2024) found that peer mentoring significantly improved soft skills in clinical practice, yet such relationships' long-term benefits remain underexplored. This lack of longitudinal data limits our understanding of how digital mentoring influences career trajectories over time, particularly for marginalized groups. Future research should fill this gap by conducting studies that track mentees' progress over extended periods, providing insights into the sustainability of mentoring impacts.

Moreover, the literature reveals a significant gap in the representation of women and minorities in leadership roles within digital mentoring contexts. Henwood (2023) discusses how digital mentoring can be leveraged to increase opportunities for these underrepresented groups, yet it remains underutilized. This gap indicates a pressing need for research focused on developing tailored digital mentoring programs that specifically address the unique challenges faced by women and minorities in higher education settings. The lack of diverse role models in digital mentoring can perpetuate existing inequalities and limit the potential for broader societal change.

Consequently, the literature also reveals gaps such as limited integration of advanced technologies (e.g., AI-based mentoring), insufficient focus on diverse industries, and inadequate metrics to evaluate mentoring outcomes (Hammarén, 2022; Suwandi, 2024). Table 2 summarizes the gaps in digital mentoring plus the author(s), year(s), and digital mentoring gaps.

Table 2. The gaps in digital mentoring

Author(s)	Year(s)	The Gap in Digital Mentoring
Author's own	2024	Limited research on specific digital competencies in various populations and demographics
Author's own	2024	Limited investigation of cultural elements in digital mentoring
Mutmainah	2024	Lack of Longitudinal Studies
Henwood	2023	Underrepresentation of Women and Minorities
Hammarén; Suwandi	2022; 2024	Limited Technology Integration, Lack of Industry Diversity, Inadequate Evaluation Metrics

4.3 Opportunities for Future Research

Based on the explored key issues and gaps, future research opportunities include but are not limited to developing digital mentoring frameworks that integrate digital competencies and diverse populations, incorporating cultural elements in digital mentoring, conducting longitudinal studies to assess the long-term impact of mentoring programs; investigating strategies to increase the representation of women and minorities in mentoring; and exploring the relationship between digital literacy, digital technology, digital industry, and mentoring effectiveness.

Integrating Artificial Intelligence (AI) into digital mentoring frameworks opens the door for enhancing skill development. Mutmainah (2024) suggests introducing AI training can empower students to navigate future challenges effectively. This perspective aligns with Amrullah (2023), who argues for the importance of mentoring models incorporating digital technology to improve research competencies among educators. Future research could explore the effectiveness of AI-enhanced mentoring programs in various educational contexts, assessing their impact on both mentee outcomes and mentor effectiveness. Additionally, studies could investigate how AI can personalize mentoring experiences based on mentees' needs and learning styles.

Following that, developing hybrid mentoring models that combine digital and face-to-face interactions may offer a more balanced approach to skill development. Norman et al. (2021) advocate for robust mentor training programs that recognize the need for multiple forms of mentoring to guide underrepresented researchers through unique challenges. By exploring hybrid models, researchers can assess how different mentoring formats can complement each other to enhance the overall mentoring experience. This approach also facilitates the development of stronger relationships between mentors and mentees, as face-to-face interactions help build trust and rapport. Thus, it might help integrate digital technology and foster better mentoring relationships.

Given the increasing diversity in educational settings, research on cultural competency in mentoring is essential. Understanding how cultural differences impact mentoring relationships can inform the development of training programs for mentors. This research could explore best practices for fostering inclusive mentoring environments that respect and celebrate diversity, ultimately leading to more effective mentoring outcomes. This exploration might help to understand the quality of mentoring relationships and limited psychological support issues. As the demand for digital competencies continues to grow, researchers and practitioners have the opportunity to collaborate to develop mentoring efforts that are not only effective but also inclusive and supportive of diverse populations, industries, and contexts.

5.0 Discussion

The findings underscore mentoring's pivotal role in digital competency development. The key issues reveal the critical areas to be explored and improved, such as limited psychological support, technology-related barriers, inconsistent quality of mentoring relationships, and lack of structured mentoring programs. In contrast, the gaps highlight areas requiring immediate attention, such as limited research on specific digital competencies in various populations, limited investigation of cultural elements in digital mentoring, lack of longitudinal studies, underrepresentation of women and minorities, limited technology integration, lack of industry diversity, and inadequate evaluation metrics. Nevertheless, mentoring can enhance digital skills and help individuals navigate today's tech-driven world. As such, opportunities for future research should explore mentoring models that leverage digital competencies to enhance learning and development across diverse populations and contexts, but not limited to developing digital mentoring frameworks that integrate digital competencies and diverse populations, incorporating cultural elements in digital mentoring; conducting longitudinal studies to assess the long-term impact of mentoring programs; investigating strategies to increase the representation of women and minorities in mentoring; and exploring the relationship between digital literacy, digital technology, digital industry, and mentoring effectiveness.

Theoretically, the study contributes to understanding mentoring in the digital age, emphasizing the need for adaptive frameworks and innovative technologies. The findings support existing theories on the role of mentoring in skill development, highlighting the importance of personalized and context-specific mentoring approaches in enhancing digital competencies (Lave & Wenger, 1991). Practically, the study underscores the need for structured mentoring programs that incorporate best practices. Organizations must invest in robust mentoring programs integrating digital tools in various contexts. Policymakers should incentivize cross-sector research to enhance the scalability and inclusivity of mentoring frameworks. Organizations and educational institutions should invest in training mentors and integrating digital tools to facilitate effective mentoring (Anderson & Rainie, 2020).

The emerging trends include virtual mentoring, as there is an increased reliance on digital tools to overcome geographical barriers (Hussain et al., 2023). Moreover, AI Integration is a rising early-stage exploration of AI for personalized mentoring experiences (Hammarén, 2022). Next, sector-specific insights focus on education and healthcare, with limited exploration in sectors like manufacturing (Suwandi, 2024). In conjunction, developing evaluation metrics by creating standardized tools to measure mentoring outcomes effectively (Rahal et al., 2023). By exploring these trends, future research can contribute to creating more effective and inclusive mentoring programs for digital competencies development.

6.0 Conclusion & Recommendations

This review investigated the significant role of mentoring in developing digital competencies by exploring the key issues, gaps, and opportunities. While traditional mentoring models remain relevant, the review provides a basis for enhancing mentoring practices in the digital era. As digital technologies continue to evolve, the role of mentors in guiding mentees through these changes becomes increasingly vital. Future research should explore mentoring models that leverage digital competencies to enhance learning and development across diverse populations and contexts, but not limited to developing digital mentoring frameworks that integrate digital competencies and diverse populations, incorporating cultural elements in digital mentoring, conducting longitudinal studies to assess the long-term impact of mentoring programs; investigating strategies to increase the representation of women and minorities in mentoring; and exploring the relationship between digital literacy, digital technology, digital industry, and mentoring effectiveness. Thus, by exploring these recommendations, stakeholders can create more impactful and inclusive mentoring programs, empowering professionals to thrive in a digitalized-technology-driven world.

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Paper Contribution to Related Field of Study

The review may contribute to educational technology and professional development by reviewing and analyzing mentoring and digital competencies. It offers valuable insights for researchers, educators, and policymakers aiming to enhance digital competencies through strategizing and effective mentoring practices.

References

Amrullah, A. (2023). Enhancing research competence of Islamic religious education teachers through the mentoring model in the era of digital technology. *IJESS, 2*(1), 1–15. https://doi.org/10.33650/ijess.v2i1.7117

Anderson, J., & Rainie, L. (2020). The future of digital skills. Pew Research Center.

Astrove, S. L., & Kraimer, M. L. (2021). What and how do mentors learn? The role of relationship quality and mentoring self-efficacy in mentor learning. *Personnel Psychology, 75*(2), 485-513. https://doi.org/10.1111/peps.12471

Bitakou, E., Ntaliani, M., Demestichas, K., & Costopoulou, C. (2023). Assessing massive open online courses for developing digital competences among higher education teachers. Education Sciences, 13(9), 900. https://doi.org/10.3390/educsci13090900

Dabbagh, N., & Kitsantas, A. (2019). Personal learning environments: The future of learning in the digital age. *In N. Dabbagh & A. Kitsantas (Eds.), Personal Learning Environments in Higher Education: A Framework for Student-Centered Learning,* pp. 1–20. IGI Global. doi:10.4018/978-1-7998-0865-0.ch001

Gehreke, L., Schilling, H., & Kauffeld, S. (2024). Effectiveness of peer mentoring in the study entry phase: A systematic review. *Review of Education, 12*(1). https://doi.org/10.1002/rev3.3462

Hammarén, M., Jarva, E., Mikkonen, K., Kääriäinen, M., & Kanste, O. (2022). Scoping review of intergenerational learning methods for developing digital competence and their outcomes. *Finnish Journal of EHealth and EWelfare, 14*(4), 364–379. https://doi.org/10.23996/fjhw.122044

Henwood, F. (2023). Mentoring of female and minority leaders in higher educational settings. *Ascilite Publications*. https://doi.org/10.14742/apubs.2023.545

Hussain, S. H. M., & Tasnim, R. (2023). Enhancing undergraduates' digital competencies through mentoring. *Environment-Behaviour Proceedings Journal, 8*(SI15), 253-259. https://doi.org/10.21834/e-bpj.v8isi15.5096

Kaufman, M. R., Levine, D., Casella, A., & DuBois, D. L. (2021). E-mentoring to address youth health: A systematic review. *Adolescent Research Review, 7*(1), 63–78. https://doi.org/10.1007/s40894-021-00172-3

Kram, K. E. (1983). Phases of the mentor relationship. *Academy of Management Journal, 26*(4), 608–625. https://doi.org/10.5465/255910

Kivekäs, E., Kinnunen, U., Ikonen, J., & Saranto, K. (2024). Mentoring professionals to use digital tools in-home care. https://doi.org/10.3233/shti240129

Lafontan, S.R., Hougaard, P. F., Knutstad, U., Jensen, K. T., & Jerpseth, H. (2023). Caught in the middle - Experiences of student peer mentors in nursing education: A qualitative study. *Education Sciences, 13*(3), 323.

Lave, J., & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. *Cambridge University Press.*

Leitheiser, K., & Benge, M. (2024). Extension mentor's discussion and action guide. Edis, 2024(1). https://doi.org/10.32473/edis-wc451-2024

Lorenzetti, D., Nowell, L., Jacobsen, M., Lorenzetti, L., Clancy, T., Freeman, G., & Paolucci, E. O. (2020). The role of peer mentors in promoting knowledge and skills development in graduate education. *Education Research International, 2020*, 1–9. https://doi.org/10.1155/2020/8822289

Mutmainah, S. (2024). Building digital skills and introducing AI for santri through a training program at the as-sunniyah islamic boarding school in kencong *Jember. International Journal of Community Service Learning, 8*(1), 23-35. https://doi.org/10.23887/ijcsl.v8i1.76313

Norman, M., Mayowski, C. A., Wendell, S., Forlenza, M. J., Proulx, C. N., & Rubio, D. M. (2021). Delivering what we PROMISED: Outcomes of a coaching and leadership fellowship for mentors of underrepresented mentees. *International Journal of Environmental Research and Public Health, 18*(9), 4793–4810. https://doi.org/10.3390/ijerph18094793

O'Donovan, S., Scully, S., Donnellan, A., & Ryan, L. (2024). Digital competency in nutrition education – an educator's perspective. Proceedings of the Nutrition Society, 83(OCE4). https://doi.org/10.1017/s0029665124007006

Oliynyk, V., Gushchyna, N., Kondratova, L., & Касьян, С. (2024). Developing digital competence of teachers in postgraduate education using google workspace for education. Cte Workshop Proceedings, 11, 356-380. https://doi.org/10.55056/cte.662

Petrou, C., Jameel, L., Nahabedian, N., & Kane, F. (2023). A call for digital inclusion initiatives in mental health services: an integrative review. *Journal of Psychiatric and Mental Health Nursing, 30*(5), 911-941. https://doi.org/10.1111/jpm.12931

Rahal, M., & Others. (2023). The assessment of mentorship programs on pharmacy students' technological skills. *Pharmacy Practice, 21*(3), 7–12. https://doi.org/10.18549/pharmpract.2023.3.2853

Schatz Oppenheimer, O., & Goldenberg, J. (2023). The impact of professional mentoring on mentors of novice-teachers. *International Journal of Mentoring and Coaching in Education, 13*(1), 122-141. https://doi.org/10.1108/ijmce-08-2022-0070

Suwandi, Y. W. (2024). Improving the competence of SMEs customers through digital mentoring. *Journal of Community Development in Asia.* https://doi.org/10.32535/jcda.v7i1.2849

Tabar, S. H. S. A. & Zadhasn, Z. (2023). Digital mentorship: mentor-mentee relationships in virtual spaces. AI and Tech in Behavioral and Social Sciences, 1(2), 12-18. https://doi.org/10.61838/kman.aitech.1.2.3

Zainol, J. & Salam, A. (2021). An audit on mentor-mentee program: mentees perceptions on mentors. *Bangladesh Journal of Medical Science, 20*(4), 840–847. https://doi.org/10.3329/bjms.v20i4.54143