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Health Informatics Internship: What Are the Students Perceptions Regard Internship Effectiveness?

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Abstrak

Program magang memungkinkan siswa untuk mendapatkan pengalaman praktis sambil belajar dari para profesional. Sayangnya, beberapa hambatan dikaitkan dengan magang, termasuk kurangnya tujuan yang ditentukan, tidak ada bimbingan atau bimbingan, tugas yang tidak jelas, tenggat waktu yang ketat, tidak ada peluang untuk pertumbuhan atau perolehan keterampilan baru, tidak ada peluang jaringan, pengecualian dari rapat, dan pelatihan yang tidak memadai. Dengan demikian penelitian ini bertujuan untuk mengevaluasi program magang informatika kesehatan (HI) tingkat universitas. Peneliti melakukan pendekatan cross-sectional. Penelitian ini mengumpulkan data dengan menggunakan kuesioner. Paket Statistik untuk Ilmu Sosial (SPSS) 26.0 (Versi 26) digunakan dalam analisis data. Para siswa menunjukkan bahwa magang secara positif memengaruhi pembelajaran, keterampilan interpersonal dan pribadi, serta prospek pekerjaan mereka. Namun, mereka juga menemui beberapa kendala ketika hendak bertemu dengan koordinator magang. Beberapa bias mungkin ada dalam pelaporan. Responden mungkin secara tidak sengaja salah menafsirkan pertanyaan, mengungkapkan pendapat mereka secara tidak akurat, atau hanya salah memahaminya. Akhirnya, kurangnya pertanyaan terbuka mencegah responden untuk mengungkapkan pendapat mereka secara komprehensif. Peneliti merekomendasikan bahwa soft skill harus ditekankan dalam kurikulum untuk HI dan manajemen informasi kesehatan (HIM). Pengawas lapangan harus memahami bidang HI dan tanggung jawab peserta magang, yang memungkinkan mereka untuk menerapkan sebagian dari apa yang telah mereka pelajari.

***Kata kunci*:** *Internship, Health informatics, Students Perceptions.*

Abstract

Internship programs allow students to gain practical experience while learning from professionals. Unfortunately, several barriers are associated with internships, including a lack of defined objectives, no guidance or mentorship, poorly defined tasks, strict deadlines, no opportunities for growth or the acquisition of new skills, no networking opportunities, exclusion from meetings, and insufficient training. Thus, this study aimed to evaluate the state of health informatics (HI) internship programs at the University level. The researcher conducted a cross-sectional approach. This study collected data using a questionnaire. The Statistical Package for Social Sciences (SPSS) 26.0 (Version 26) was used in data analysis.The students indicated that internships positively influenced their learning, interpersonal and personal skills, and employment prospects. However, they also encountered some challenges when they intended to meet with the internship coordinator. Some bias may be present in the reporting. Respondents may have inadvertently misinterpreted the questions, inaccurately expressed their opinions, or simply misunderstood them. Finally, the lack of open-ended questions prevented respondents from expressing their opinions comprehensively. The researcher recommended that soft skills should be emphasized in the curriculum for HI and health information management (HIM). The site supervisor must understand the HI field and the interns' responsibilities, allowing them to apply some of what they have learned.

Keywords: Internship, Health informatics, Students Perceptions.

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1. INTRODUCTION

An internship can provide individuals with intellectual and emotional growth throughout their lifetimes, regardless of their chosen career path. Evaluation and development of internship programs have received increased attention in recent decades. However, multiple challenges are identified with internships, including a lack of clarity, mentorship, poorly defined work, tight deadlines, limited growth opportunities, exclusion from meetings, and inadequate training (Hora et al., 2020; McAllister & McKinnon, 2009).

Typically, internships are temporary positions and can be paid or unpaid. Student internships (or cooperative education) originated in the United States in the early 20th century (Driscoll, 2006; Sutiman et al., 2022). The origins of internships can be traced to the history of experiential learning, the introduction of school-to-work programs, and the development of career academies, career exploration programs, and service-learning initiatives. Internships as any carefully monitored work or service experience in which a student has intentional learning goals and reflects actively on what is being learned throughout the experience (Abeysekera, 2006; Callanan & Benzing, 2004). Furthermore, According to previous internships are divided into developmental stages: anticipation, exploration, competence, and culmination (Sweitzer & King, 2013). Internships provide you with a deeper understanding of the workplace. This experience allows professional values and norms to be learned and internalized. An internship allows students to connect their theoretical and practical knowledge since each should contribute to the other (Gashaw, 2019; Sgroi & Ryniker, 2002).

Some disciplines require more comprehensive evaluations of their internship programs than others to determine their efficiency and define their strengths and weaknesses. Primarily Health Informatics (HI) is a relatively recent discipline. The HI is the interprofessional field that studies and peruses the effective use of biomedical data information and knowledge for scientific inquiry, problem-solving, and decision-making motivated by the efforts to improve human health (A. A. Alhur & Alhashash, 2022; Longenecker et al., 2012). HI, programs and internships require extensive evaluation and investigation due to their interdisciplinary nature. The demand for highly qualified health informatics and information management (HIIM) workers is increasing to improve the quality of health care and education (Borycki et al., 2014; Parker et al., 2017). Consequently, Saudi Arabian colleges and universities offer programs in health informatics (HI), health information systems (HIS), and health information technology (HIT). For instance, the University of Hail offers undergraduate and graduate degrees. In the Master of Health Informatics (E-Health) program at the University of Hail, students come from various backgrounds, including physicians, nurses, health informaticists, radiologists, and pharmacists. Higher education primarily aims to prepare students for future careers with the required skills and knowledge (A. A. Alhur & Alhashash, 2022; Santiago, 2009). Developing a competency-based workforce of health informatics and information management (HIIM) professionals with excellent technical skills is essential to improving health care.

Despite their significant usefulness in healthcare, both HI and HIT continue to face several obstacles on a global level. HI, and health information technology (HIT) are closely related; however, HI has several unique characteristics. The HI and HIT curricula are designed to achieve the different educational goals of students. As a result, developing knowledge that instructors can teach with varying levels of experience, goals, and teaching styles can be pretty challenging. Moreover, it has been demonstrated that specialists in health informatics work with diverse healthcare professionals from multiple disciplines to improve healthcare processes and solve problems (Longenecker et al., 2012; Strawbridge et al., 2019), emphasizing the significance of preparing students with communication and teamwork skills. An investigation in 2014 indicated that students should be taught specific courses before entering the HI workforce (Zhang et al., 2014). Moreover, some students might prefer the technical aspects of HI over healthcare, but some may need help with their commitment. The HI internship allowed the student to familiarise themself with various electronic medical records (EMR) components. Furthermore, researchers reported that learning how to use and implement health information systems is an important component of health informatics training (Borycki et al., 2014; Parker et al., 2017). In addition, it provided the chance to learn how to integrate electronic medical records into a computerized system. During the

internship, the students understood how to collect and process data and utilize electronic health records. The biomedical informatics internship, similar in some aspects to the HI internship, offers additional opportunities to contribute to their educational or professional success. It can become a sustainable component of the educational ecosystem in the biomedical/health informatics (Altuwaijri, 2011; Unertl et al., 2018). Furthermore, training with solid methodology is necessary for the effective implementation of various health information systems and the application of technology in healthcare. During the COVID-19 pandemic, a higher percentage of interns in HI, public health, and healthcare administration preferred on-site training over virtual training. This result may occur due to the practicality and technical nature of the HI discipline (Bugis, 2020; Linkov et al., 2021). Students can apply their knowledge during the internship effectively and efficiently with the help of the proposed pandemic model.

Overall, university students nationwide are expected to obtain adequate knowledge, skills, perspectives, and values before entering the workforce and assuming their civic duties. Moreover, today, employers require workers to possess soft skills such as adaptability, critical thinking, strong communication skills, and interpersonal skills (Hirudayaraj et al., 2021; Lee et al., 2019; Truong & Laura, 2015). Unfortunately, graduating students often encounter significant differences between what they learned in college and what they experience in the real world. According to an examination by a group of researchers, students conceptualized internships more critically and multifacetedly than official definitions (Huang & Huang, 2004; Wang, 2002). According to a study conducted in 2019, industry-university collaboration was the most challenging aspect of internships for students. It was only possible to conduct a successful internship program with a proper structure and clear assessment guidelines (Gashaw, 2019). Nevertheless, many graduate students have difficulty adjusting to professional expectations. Regrettably, previous study state among Saudi Arabian HI graduates, only 32.2% believed they benefited from the curriculum they studied during their internship (A. Alhur et al., 2022). This high percentage demonstrates the importance of the issue in the country. It also demonstrates the need to conduct considerable research to find a solution and understand the current state of these internships.

Superior seminars are another proper method for engaging learners because they allow them to share their experiences and what they have learned with their classmates in a positive, supportive environment. They will also be able to discuss with the internship coordinator their concerns and problems with the staff and supervisor (Pan et al., 2018; Sweitzer & King, 2013). The importance of students in assessing their experiences and receiving feedback from their instructors and supervisors using predefined criteria that reflect their ability to learn cannot be overstated. Moreover, instructors must utilize the work-integrated learning approach as it is a seamless transition between learning in the classroom and its practical application in a real-world context based on theories of the experiential learning (Abu et al., 2011; Garwe, 2020; Huo et al., 2020). HI, interns work with healthcare professionals from multiple disciplines to enhance healthcare processes and solve problems. Thus, the diversity of backgrounds that HI interns engage with emphasizes the significance of practical evaluation and investigation into the interns' perceptions. There needs to be more research investigating the HI discipline, especially regarding internship effectiveness and interns satisfaction around the globe. Therefore, the study aims to evaluate the HI internship at the University of Hail from the interns' experiences. Through this investigation, we'll understand the internship's current state and allow researchers to study its issues in depth. Internship programs require continuous evaluation to ensure interns improve their skills and knowledge.

2. METHODS

The present research employed a cross-sectional approach. The survey was disseminated electronically to all the health informatics students' interns (48) studying at the Universityof Hail, Saudi Arabia. All the respondents were informed of the research purpose and voluntarily participated in the study. The researchers targeted the required participants and collected their demographic information, such as gender and age. The questionnaire consisted of 18 items divided into six sections; questions (1-2) addressed the participant's demographic information, while items (3-4) concerned evaluating the internship's characteristics. A series of questions from (5-7) related to the personal impact, and from (7-11) asked about the interpersonal (social) impact. The following items (11-14) assessed the academic (learning) impact. The final section was about the impact of employment (job-specific) items (14-18).

The questionnaire was sent online to the interns a week before their one-year internship finished using a five-point Liker-scale from 1 'strongly disagree' to 5 'strongly agree.' The researcher used SPSS (Version 27.0) to perform the statistical analysis. The results of this study were obtained by using various statistical functions. The researcher computed the means, standard deviations, frequencies, and percentages. Illustrates of the gender distributions is show in Figure 1.

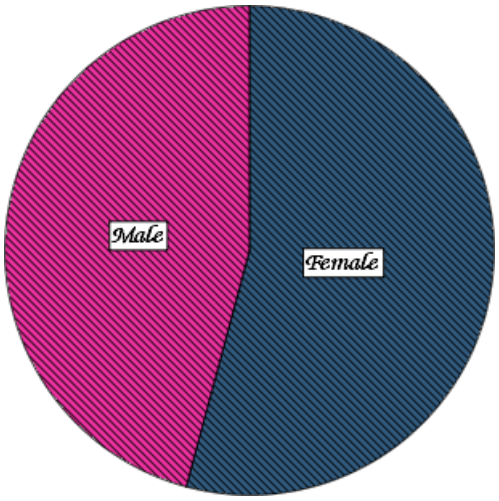

Figure 1. Gender Distribution

A total of 84 interns' students from the college of public health and health informatics, department of health informatics at the University of Hail, Saudi Arabia, participated in this study. The following table shows the participants' demographic information, including gender and age. The study participants comprised 48, 22 males and 26 females. They aged 23-25 were 44,and the rest were aged more than 25 years old participants 89.8% and 8.2%, respectively. The present study used an adapter for a questionnaire to collect data. There were 18 items in the questionnaire divided into six sections. A Likert scale was used to evaluate the participants' responses, ranging from 1 'strongly disagree'to 5 'strongly agree'. An online questionnaire was distributed to interns in the health informatics program at the University of Hail. The Statistical Package for Social Sciences (SPSS) 26.0 (Version 26) was used.

3. RESULTS AND DISCUSSION

Results

The present study aims to assess the HI internship's effectiveness and provide future suggestions. The current section pursues to present the findings of this investigation. The findings were presented and tabulated according to the research questions as show in Table 1.

Table 1. Participants' perceptions of The Internship effectiveness in health informatics

No.	Item	Scale					Mode
	Characteristics Of the Internship	1(%)	2(%)	3(%)	4(%)	5(%)	
1	Was your site supervisor available to meet when needed?	8.2	8.2	16.3	40.8	24.5	4
2	Was your internship coordinator available to meet when needed?	28.6	12.2	12.2	32.6	12.2	4
	Personal Impact						
3	I believe in my ability to make a difference.	8.2	4.1	4.1	36.7	44.9	5
4	I can recognize my personal strengths	4.1	0	4.1	44.9	44.9	4&5
5	I have the ability to persevere in difficult tasks	4.1	0	0	20.4	73.5	5
	Interpersonal (Social) Impact						
6.	I can be understanding and appreciative of people with diverse backgrounds.	4.1	0	0	40.8	53.1	5
7	I have the ability to work cooperatively with others	4.1	4.1	4.1	24.5	61.2	
8	I have the ability to communicate effectively (listen and articulate ideas).	4.1	0	0	36.7	57.1	
9	I have increased my ability to be a leader	4.1	4.1	0	40.8	49.0	
Academic (learning) Impact							
10	I have acquired knowledge from the job duties I performed	2.1	0	4.1	40.8	49.0	
11	I have broadened my critical thinking skills (reasoning, problem-solving)	4.1	0	16.3	49.0	28.6	
12	I have the ability to connect academic subject matter to the "real world.	8.2	0	24.5	44.9	20.4	
	Employment (Job Specific) Impact						
13	I broadened my future employment possibilities.	8.2	12.2	12.2	36.7	28.6	
14	I developed realistic ideas about the work world	8.2	0	8.2	36.7	44.9	
15	I developed specialized technical skills	8.2	0	8.2	49.0	32.7	
16	I narrowed my future possible career choices	8.2	12.2	12.2	44.9	20.4	

Base on Table 1, the first section of the questionnaire was about the characteristics of the internship, it indicated the availability of the site supervisor, whereas 40.8% reported the unavailability of the internship coordinator when needed. The second section centered on the personal impact, and the findings revealed that only 12.3% disagreed about their ability to

make a difference. Furthermore, 89.0% of the interns recognized their strengths. Also, their ability to persevere in complex tasks was demonstrated at 93.9%. The third part focused on the Interpersonal (Social) Impact: The first item aimed to assess the interns' ability to understand and appreciate people with diverse backgrounds. The result indicated that 93.9% of the participants agreed they could do so. Moreover, they demonstrated that they could not work cooperatively with others by only 8.4% and 4.1 not sure (neutral), and 85.7% could. Furthermore, the majority claimed that communicating effectively (listening and articulating ideas) was 93.8%. Based on the lastitem of the section, 89.8% of the respondents reported an improvement in their ability to lead.

The fourth section focused on the academic (learning) impact; the first item was about acquiring knowledge from the job duties performed. Most respondents agreed that they obtained knowledge from their internship period, 89%, while only 2.1% claimed otherwise. Moreover,16% reported being unsure (neutral), whereas 77.6% demonstrated that they broadened their critical thinking skills (reasoning, problem-solving). Among therespondents, 8.2% reported they could not access the academic subject matter in the real- world environment, and 24.5% needed clarification (neutral) regarding their ability in thistype of connection. Lastly, the fifth section focused on employment (job-specific) impact regarding broadening their future employment possibilities by more than half; 65.3% believed so, while 20.4% disagreed. The second item illustrated that 81.6% developed realistic ideas about the work world. Additionally, the interns indicated they developedspecialized technical skills by 81.7%. The third item shows that they could narrow their future possible career choices to 65.3%, and 20.4% disagreed.

Characteristics of the Internship

This part obtained information regarding the internship's characteristics the result of characteristics of internship is show in Table 2.

Table 2. Characteristics of the Internship

Item	N	Mean	Std. Deviation
1. Was your site supervisor available to meet when needed?	48	2.33	1.191
2. Was your internship coordinator available to meet?	48	3.13	1.468
Valid N (listwise)	48		

Table 2 indicates that approximately 24.5% of participants strongly agree with the statement that the site supervisor is available to meet with if necessary. The standard deviation is 1.192, and the mean is 2.33. However, only 12.2% strongly agree with the statement about the site supervisor being available if needed. In contrast, 28.6% strongly disagree with that statement, with a mean of 3.13 and a standard deviation of 1.468.

The Personal Impact of the Internship

The result of personal impact of the internship is show in Table 3.

Table 3. Personal Impact

Item	N	Mean	Std. Deviation
1. I believe in my ability to make a difference.	48	1.92	1.200
2. I can recognize my personal strengths.	48	1.71	0.898
3. I have the ability to persevere in difficult tasks	48	1.38	0.866
Valid N (listwise)	48		

Base on Table 3, there were three items in this section, the first being that I believe I can make a difference. Participants reported 8.1% and 4.1% of total disagreement and disagreement, respectively, with 1.92 mean scores and 1.200 standard deviations. In response to the following item, "I have the ability to recognize my personal strength," 44.9% and 44.9% of respondents expressed total agreement and agreement, respectively, with a mean score of 1.71 and a standard deviation of 0.898. The final item in this section is that I can persevere with challenging tasks. 73.5% of participants completely agreed, with a mean score of 1.38 and a standard deviation of 0.866.

Interpersonal (Social) Impact

Four items have been asked of participants in the interpersonal impact section. The result of. Interpersonal (Social) Impact is show in Table 4.

Table 4. Interpersonal (Social) Impact

Item	N	Mean	Std. Deviation
1. I can be understanding and appreciative of people with diverse backgrounds.	48	1.58	0.871
2. I have the ability to work cooperatively with others	48	1.63	1.044
3. I can communicate effectively (listen and articulate ideas).	48	1.54	0.874
4. I have increased my ability to be a leader	48	1.67	0.907
Valid N (listwise)	48		

Base on Table 4, the first item was that I could understand and appreciate people with diverse backgrounds. They indicated that 50.3% strongly agree with the mean score of 1.58 and standard deviations of .871. The second was that I could work cooperatively with others; the respondents showed 61.2 strongly agreed, the means score was 1.63, and the standard deviations were 1.044. Overall, professional development was more likely for students who communicated better with clients. Furthermore, students with better overall appearances (i.e., those who dressed more appropriately and professionally) experienced more excellent professional development. In the third item in this section, as I can communicate effectively (listen and articulate ideas), the participants reported only 4.1 strongly disagree with a mean score of 1.54 and standard deviations of .874. The last item was that I had increased my leadership abilities, and they claimed that 40.8% agreed with the statement while 49.0% agreed with a mean score of 1.67 and a standard deviation of 0.907.

Academic Impact

The academic (learning) impact section has asked participants to complete three items. The result of academic learning impact is show in Table 5.

Table 5. Academic (learning) Impact

Item	N	Mean	Std. Deviation
1. I have acquired knowledge from the job duties I performed	48	1.71	0.988
2. I have broadened my critical thinking skills (reasoning, problem-solving)	48	2.00	0.923
3. I have the ability to connect academic subject matter to the real world	48	2.29	1.071
Valid N (listwise)	48		

Base on Table 5, the first was that I acquired knowledge from my job duties. The scores indicated that 2.1% strongly disagreed and 0% strongly agreed, with a mean of 1.71 and standard deviations of .988. Concerning the second item, which was that I had broadened my critical thinking skills (reasoning, problem-solving), only 28.6 respondents 100% agreed with the mean score of 2.002.00 and the standard deviation of .923. Problem-solving is vital and can be applied at home, work, and in the community. Lastly, I believe I can connect academic subject matter to real-world situations. The participants reported that just 20.4% agreed and 8.2% strongly disagreed, with a mean score of 2.29 and a standard deviation of 1.071.

Employment Impact

As part of the employment impact section, participants are asked to respond to four statements. The result employment impact is show in Table 6 .

Table 6. Employment (Job Specific) Impact

Item	N	Mean	Std. Deviation
1. I broadened my future employment possibilities.	48	2.33	1.260
2. I developed realistic ideas about the workworld	48	1.88	1.142
3. I developed specialized technical skills	48	2.00	1.092
4. I narrowed my future possible careerchoices	48	2.42	1.200
Valid N (listwise)	48		

Base on Table 6, first, I have broadened my employment opportunities. A mean score of 2.33 and a standard deviation of 1.260 indicate that 28.6% of respondents strongly agreed. I developed realistic views of the work environment. 44.9% of respondents agreed, while the mean score was 1.88 and the standard deviation was 1.142. According to the thirditem in this section, which relates to developing specialized technical skills, 49.0% of participants agreed with a mean score of 2.00 and a standard deviation of 1.092. While most interns participated in an investigation, they gained new knowledge and skillsduring their internship period. Lastly, they claimed that 49.0% of respondents agreed, and 20.4% strongly agreed with the statement that I had narrowed my career choices. It is based upon a mean score of 2.42 and a standard deviation of 1.200.

Discussion

The findings showed different perceptions of the effectiveness of the HI internship at the University of Hail. The majority of the respondents illustrated overall satisfaction. However, there were small groups of participants who claimed otherwise. This research study investigated five areas. First, students were asked to assess their internship experiences based on internship characteristics. A second area was to assess students' personal impact. Assessing interpersonal (social) impacts was the third area. In the fourth area, we assessed academic (learning) impact. Lastly, we evaluated the employment impact (job-specific). Regardless of their worksite, most respondents indicated issues with supervisors. 65.3% claimed the unavailability of the site supervisor when needed; however, research indicated that the supervisor on the job site and the academic advisor is vital to students' success (Williams et al., 2020).

This result showed that 89.9% during the internship observed their strengths, which seems consistent with previous research findings which indicated that internship programs allow students to have a sense of self-confidence and motivation (Park, 2019). Furthermore, the participants also reported that most of them can understand and

appreciate people with diverse backgrounds. Most companies have employees from different nations with different religions and backgrounds. Thus, respecting all the cultures of the interns is a requirement, and all the interns need specific skills, and soft skill is one of them. Previous study provided valuable suggestions that integrating language skills with other cultural knowledge could be reinforced in developing students' ability to work in multicultural settings (Tuna & Razı, 2016). 81.6% claimed they have better expectations regarding future careers due to theinternship. Nevertheless, an investigation in 2019 aimed to examine health informatics internships in Saudi Arabia. The study's findings demonstrated that the least agreed- upon statement among interns and graduates was that the internship program will improve their understanding of health informatics' roles and responsibilities in the future (Altuwayrib & Win, 2019; Gashaw, 2019).

A previous study has demonstrated one of the interns, I think my internship plays a huge role in my future career ... I think [it will] stand out in my applications. From our analysis, only 2.1% disagree that they acquired knowledge from the internship experience. Internships offer opportunities for individuals to develop leadership skills that can lead to greater productivity, economic independence, and employment flexibility (Gault et al., 2000; Thompson et al., 2021). According to our participants, 16.4% reported the unavailability of the supervisor, and 16.3% were not sure (neutral) if their supervisor was available to meet them when needed. It is clear that interns require supervision mainly at the beginningof the internship period and when transforming from one position to another. Moreover, providing immediate comments and guidance by the site or academic supervisor for the interns is vital for their learning process. Feedback from mentors is highly effective in increasing the learning (A. A. Alhur & Alhashash, 2022; Callanan & Benzing, 2004). However, a recent study in 2022 in Saudi Arabia revealed that meetings with internship supervisors were sometimes challenging for interns. Among the respondents, 81.7% agreed with developing and improving their technical knowledge during the internship. However, in addition to technical knowledge, young workers need noncognitive skills. Furthermore, it has been suggested that students who attend schools focusing onemployment skills will have an easier time finding employment (Cruz et al., 2020; Darche & Stam, 2012). For an internship to be successful, three strategies are necessary: problem-based learning, union, and service-learning (Dras & Miller, 2002; Nilsson & Ellström, 2012).

Providing suitable internship positions is essential for a successful internship program, allowing interns to engage in a practical role and practice the knowledge they acquired during their studies. Both governments, enterprises, and universities should work together to achieve this goal. Our result indicated overall satisfaction with the internships. The present findings are consistent with another research that found that friendly and supportive environments supported universities and organizations' internship programs. In general, the students had a satisfactory experience, their soft skills were considered adequate, and they felt more confident about their prospects for employment. Internship experience contributed to their better understanding of the working world (Jawabri, 2017; Jin, L., Clothey & McCommons, 2020). In addition to gaining hands-on experience, interns were able to evaluate the gap between research and practice by interacting with knowledge-user partners. As the HI discipline overlaps many fields, interns must understand the gaps in education and professions. Acknowledging the importance of mentorship in a successful educational experience is imperative. In the health information management (HIM) field, more research must be done on mentoring (Hamelin & Paradis, 2018; Lloyd & Fenton, 2008). However, the researcher found that the participants reported that they could persevere in challenging roles during their internship. Therefore, internships in HI allow interns to believe in their abilities and recognize their strengths. Interns were able to work effectively with people from different backgrounds and cultures. Furthermore, the internship enables them to

preserve in complex tasks. In many ways, interns can contribute directly to the organization's daily operations (McAllister & McKinnon, 2009; van Wingerden et al., 2018).

Multiple recommendations will be indicated by the researcher and must be considered. Firstly, the researcher believed that soft skills should be emphasized in the curriculum for HI at both undergraduate and postgraduate levels. Furthermore, regarding the internship, the site supervisors must have a solid understanding of the HI field and interns' roles to allow them to apply some of what they learned during college. Next, we highly recommended weekly continuous assessments of the interns' learning outcomes. We suggest conducting ongoing reviews of interns' learning outcomes by the experts in the HI field from college every week to ensure they take full advantage of their internship. Another recommendation is that a full year for the internship is a too long period, thus adding one semester to the HI undergraduate program at the University of Hail is more advantageous; we believe that a semester consisting of five courses related to information technology (IT), information systems (IS), and data analysis, along with a six-month internship, will enable the student to acquire better knowledge, particularly in the technical part of the field.

The current investigation has some implications. Firstly, the use of a cross- sectional design limits these findings. Secondly, the small sample size of 48 interns in this study means that our results cannot be generalized; a similar study should be conducted with a larger sample of interns from different institutions. Furthermore, some bias may be present in the reporting. Respondents may have inadvertently misinterpreted the questions, inaccurately expressed their opinions, or misunderstood them. Finally, the lack of open-ended questions prevented respondents from expressing their views comprehensively. Further investigation should be conducted to identify the barriers associated with this issue. Assessing and evaluating an HI internship must not be underestimated. Interns need to be engaged in an organization whose core aim is developing and improving the intern’s ability to enhance their critical skills and work with modern health information technology. HI, interns should not train for more than a week in the reception; they will benefit highly from their knowledge if they prepare in organizations that focus on artificial intelligence (AI), machine learning, computational analytics, scientific research, and other vital areas related to HI discipline they may require better knowledge and improve their skills more efficiently and effectively. Their interests should be one of the primary considerations; some interns have a particular aspect and are passionate about it; therefore, they should choose where and what to practice in their internship.

4. CONCLUSION

This study reveals that HI is relatively new and overlaps with other disciplines, increasing its complexity and significance. The primary purpose of the present study was to evaluate the effectiveness of the HI internship. The paper also aims to suggest improving the HI internship at the University of Hail. The interns demonstrated overall satisfaction with internships concerning the characteristics of the training, personal impact, Interpersonal (Social) Impact, academic impact, and employment impact. They also encountered some challenges when they intended to meet with the internship coordinator.

5. REFERENCES

Abeysekera, I. (2006). Issues relating to designing a Work-Integrated Learning (WIL) program in an undergraduate accounting degree program and its implications for the curriculum. *Asia-Pacific Journal of Cooperative Education*, *7*(1). https://ssrn.com/abstract=2326048.

Abu, M. J., Yusof, K. N. C. K., & Tahir, I. M. (2011). Business and Accounting Studentsâ€TM Perceptions on Industrial Internship Program. *Journal of Education and Vocational Research*, *1*(3), 72–79. https://platform.almanhal.com/Files/2/101479.

Alhur, A. A., & Alhashash, K. A. (2022). Investigating Students' Perceptions of Health Informatics Education: What Action Needs to Be Taken? *International Journal of Education, Teaching, and Social Sciences*, *2*(2), 31–40. https://doi.org/10.47747/ijets.v2i2.684.

Alhur, A., Alhur, A., & Alanazi, D. N. (2022). The Examining The Clinical Nutrition Internship Effectiveness from Interns' Perceptions. *International Journal of Education, Teaching, and Social Sciences*, *2*(2), 52–61. https://doi.org/10.47747/ijets.v2i2.713.

Altuwaijri, M. (2011). Health information technology strategic planning alignment in Saudi hospitals: A historical perspective. *Journal of Health Informatics in Developing Countries*, *5*(2). https://jhidc.org/index.php/jhidc/article/view/75.

Altuwayrib, S., & Win, K. T. (2019). *Internship Programs for Undergraduate Health Informatics Students in Saudi Arabia*. https://doi.org/10.21203/rs.2.17215/v1.

Borycki, E. M., Griffith, J., Reid, P., Kuo, M.-H., & Kushniruk, A. W. (2014). Do Electronic Health Records Help Undergraduate Students Develop Health Informatics Competencies? *UvicSpace*. https://doi.org/10.3233/978-1-61499-432-9-838.

Bugis, B. A. (2020). The impact of the COVID-19 pandemic on internship activities at health organizations in Saudi Arabia. *Hospital Topics*, *99*(1), 22–28. https://doi.org/10.1080/00185868.2020.1826894.

Callanan, G., & Benzing, C. (2004). Assessing the role of internships in the career-oriented employment of graduating college students. *Education+ Training*, *46*(2), 82–89. https://doi.org/10.1108/00400910410525261.

Cruz, M. L., Saunders-Smits, G. N., & Groen, P. (2020). Evaluation of competency methods in engineering education: a systematic review. *European Journal of Engineering Education*, *45*(5), 729–757. https://doi.org/10.1080/03043797.2019.1671810.

Darche, S., & Stam, B. (2012). College and career readiness: What do we mean? A proposed framework. *Drafted Manuscript*. https://eric.ed.gov/?id=EJ981993.

Dras, D. D. V., & Miller, K. M. (2002). Learning outside the classroom: The undergraduate gerontology internship. *Educational Gerontology*, *28*(10), 881–894. https://doi.org/10.1080/03601270290099877.

Driscoll, J. (2006). A century of internships: A quick history of internships and co-ops in the business world. *Journal of Accounting Education*, *16*(3), 507–516. http://www.na-businesspress.com/JAF/McKnight_abstract.html.

Garwe, E. C. (2020). Does the timing of work integrated learning affect graduate employability outcomes? *South African Journal of Higher Education*, *34*(5), 192–209. https://hdl.handle.net/10520/ejc-high-v34-n5-a15.

Gashaw, Z. (2019). Challenges facing internship programme for engineering students as a learning experience: a case study of Debre Berhan University in Ethiopia. *IOSR Journal of Mechanical and Civil Engineering (IOSRJMCE)*, *16*(1), 12–28. https://www.academia.edu/download/58308789/B1601021228.pdf.

Gault, J., Redington, J., & Schlager, T. (2000). Undergraduate business internships and career success: Are they related? *Journal of Marketing Education*, *22*(1), 45–53. https://doi.org/10.1177/0273475300221006.

Hamelin, A.-M., & Paradis, G. (2018). Population health intervention research training: The value of public health internships and mentorship. *Public Health Reviews*, *39*(1), 1–13. https://doi.org/10.1186/s40985-018-0084-9.

Hirudayaraj, M., Baker, R., Baker, F., & Eastman, M. (2021). Soft skills for entry-level engineers: What employers want. *Education Sciences*, *11*(10). https://doi.org/10.3390/educsci11100641.

Hora, M. T., Parrott, E., & Her, P. (2020). How do students conceptualise the college internship experience? Towards a student-centred approach to designing and implementing internships. *Journal of Education and Work*, *33*(1), 48–66. https://doi.org/10.1080/13639080.2019.1708869.

Huang, I. C., & Huang, P. W. (2004). The relation between practical training values and job involvement: A study of college students majoring in tourism, leisure, recreation, and hospitality. *Journal of Tourism Studies*, *10*(1), 63–79. https://www.tandfonline.com/doi/abs/10.1080/02508281.1995.11014750.

Huo, Y., Wong, D. F., Ni, L. M., Chao, L. S., & Zhang, J. (2020). Knowledge modeling via contextualized representations for LSTM-based personalized exercise recommendation. *Information Sciences*, *523*, 266–278. https://doi.org/10.1016/j.ins.2020.03.014.

Jawabri, A. (2017). Exploration of internship experience and satisfaction leading to better career prospects among business students in UAE. ,. *American Journal of Educational Research*, *5*(10), 1065–1079. https://doi.org/10.12691/education-5-10-8.

Jin, L., Clothey, R., & McCommons, B. (2020). Implementing Effective Internships: A Case Study of Work-Integrated Learning in a Chinese Undergraduate University. *Front Educ China*, *15*, 482–504. https://doi.org/10.1007/s11516-020-0020-x.

Lee, M. F., Sohod, S. N. M., & Ab Rahman, A. (2019). Exploring The Mastery Level of Critical Thinking and Problem Solving Skill among The Technical Undergraduate. *Journal of Technical Education and Training*, *11*(3), 9–14. https://doi.org/10.30880/jtet.2019.11.03.002.

Linkov, F., Khanijahani, A., Swanson-Biearman, B., & Akinci, F. (2021). Remote internship: Practical approaches to sustaining student internships amid public health epidemics. *Journal of Health Administration Education*, *38*(1), 363–376. https://www.ingentaconnect.com/content/aupha/jhae/2021/00000038/00000001/art00011.

Lloyd, S. S., & Fenton, S. H. (2008). Mentoring health information professionals in the department of veterans affairs. *Perspectives in Health Information Management/AHIMA, American Health Information Management Association*, *5*(4). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2293284/.

Longenecker, B., Campbell, M., Landry, J., Pardue, J. H., & Daigle, R. (2012). A health informatics curriculum congruent with IS 2010 and IMIA recommendations for an undergraduate degree. *Information Systems Education Journal*, *10*(2), 15. http://isedj.org/2012-10/N2/ISEDJv10n2p15.html.

McAllister, M., & McKinnon, J. (2009). The importance of teaching and learning resilience in the health disciplines: A critical review of the literature. *Nurse Education Today*, *29*(4), 371–379. https://doi.org/10.1016/j.nedt.2008.10.011.

Nilsson, S., & Ellström, P. E. (2012). Employability and talent management: challenges for HRD practices. *European Journal of Training and Development*, *36*(1), 26–45. https://doi.org/10.1108/03090591211192610.

Pan, J., Guan, Y., Wu, J., Han, L., Zhu, F., Fu, X., & Yu, J. (2018). The interplay of proactive personality and internship quality in Chinese university graduates' job search success: The role of career adaptability. *Journal of Vocational Behavior*, *109*, 14–26. https://doi.org/https://doi.org/10.1016/j.jvb.2018.09.003.

Park, C. (2019). *Internship Experiences for A Diverse Population: A Mixed-Methods Study of California Community College Students*. California State University.

Parker, K. R., Srinivasan, S. S., Houghton, R. F., Kordzadeh, N., Bozan, K., Ottaway, T., & Davey, B. (2017). Health informatics program design and outcomes: Learning from an early offering at a mid-level university. *Education and Information Technologies*, *22*, 1497– 1513. https://doi.org/0.1007/s10639-016-9506-9.

Santiago, A. (2009). Impact of sandwich course design on first job experience. *The Asia-Pacific Education Researcher*, *18*(2), 205–217. https://www.researchgate.net/profile/Andrea-Santiago-.3/publication/240822532_Impact_of_Sandwich_Course_Design_on_First_Job_Experience/links/55cc759608aeca747d6c2bf4/Impact-of-Sandwich-Course-Design-on-First-Job-Experience.pdf.

Sgroi, C. A., & Ryniker, M. (2002). Preparing for the real world: A prelude to a fieldwork experience. *Journal of Criminal Justice Education*, *13*(1),]187–200. https://doi.org/10.1080/10511250200085411.

Strawbridge, J., Barlow, J., O'Leary, A., Spooner, M., Clarke, E., Arnett, R., Langley, C., Wilson, K., & Gallagher, P. (2019). Design and evaluation of a new national pharmacy internship program in Ireland. *American Journal of Pharmaceutical Education*, *83*(4). https://doi.org/10.5688/ajpe6678.

Sutiman, S., Sofyan, H., Arifin, Z., Nurtanto, M., & Mutohhari, F. (2022). Industry and Education Practitioners' Perceptions Regarding the Implementation of Work-Based Learning through Industrial Internship (WBL-II). *International Journal of Information and Education Technology*, *12*(10), 1090–1097. https://doi.org/10.18178/ijiet.2022.12.10.1725.

Sweitzer, H. F., & King, M. A. (2013). Stages of an internship re-visited: Facilitating learning and development through engagement. *Journal of Human Services*, *33*(1), 56–72. https://www.nationalhumanservices.org/assets/Journal/journal-of-human-services_fall-2013.pdf#page=58.

Thompson, M. N., Perez-Chavez, J., & Fetter, A. (2021). Internship experiences among college students attending an HBC: A longitudinal grounded theory exploration. *Journal of Career Assessment*, *29*(4), 589–607. https://doi.org/10.1177/1069072721992758.

Truong, H. T., & Laura, R. S. (2015). Essential soft skills for successful business graduates in Vietnam. *Sociology Study*, *5*(10), 759–763. https://doi.org/10.17265/2159-5526/2015.10.001.

Tuna, ÿzlem K., & Razı, S. (2016). Integrating Culture into ELT Classes: What, Why, and How? *Procedia - Social and Behavioral Sciences*, *232*, 41–48. https://doi.org/10.1016/j.sbspro.2016.10.009.

Unertl, K. M., Yang, B. Y., Jenkins, R., McCarn, C., Rabb, C., Johnson, K. B., & Gadd, C. S. (2018). Next generation pathways into biomedical informatics: Lessons from 10 years of the Vanderbilt Biomedical Informatics Summer Internship Program. ,. *JAMIA Open*, *1*(2), 178– 187. https://doi.org/10.1093/jamiaopen/ooy030.

van Wingerden, J., Derks, D., & Bakker, A. B. (2018). Facilitating interns' performance: The role of job resources, basic need satisfaction and work engagement. *Career Development International*, *23*(4), 382–396. https://doi.org/10.1108/CDI-12-2017-0237.

Wang, Y. F. (2002). Evolution of higher education in hospitality in Taiwan. *Journal of Human Ecology and Technology*, *3*(4), 453–464. http://ir.westcliff.edu/wp-content/uploads/2019/06/Transforming-higher-education-in-Vietnam.pdf.

Williams, T., Pryce, D. K., Clark, T., & Wilfong, H. (2020). The benefits of criminal justice internships at a historically black university: An analysis of site supervisors'

evaluations of interns' professional development. *Journal of Criminal Justice Education*, *31*(1), 124– 140. https://doi.org/10.1080/10511253.2019.1671468.

Zhang, C., Reichgelt, H., Rutherfoord, R. H., & Wang, A. J. A. (2014). Developing health information technology (HIT) programs and HIT curriculum: The Southern Polytechnic State University experience. *Journal of Information Systems Education*, *25*(4), 295. https://jise.org/Volume25/n4/JISEv25n4p295.html.