

SCIENTIFIC AND PRACTICAL COMPETENCIES, COMMUNICATION SKILLS, EVALUATION AND ABILITY TO WORK AMONG THE GRADUATES OF SPORTS REHABILITATION

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Abstract

This study aimed at identifying scientific and practical competencies, communication skills, evaluation and ability to work among the graduates of sports rehabilitation in the faculty of sports sciences at Mu'tah University, and the differences in competencies according to the variables of gender and academic estimation. The study sample consisted of (81) male and female graduates, with (42) males (51.9%) and (39) females (48.1%). The study used the descriptive approach due to its compatibility to the study nature, and the questionnaire was used as the study instrument for data collection. The study instrument consisted of (4) domains (scientific and practical competencies, communication skills, evaluation, ability to work), where each domain included (6) items. The study data were analyzed by using (SPSS), where the means, standard deviations, t-test, one-way Anova, and least significant difference were used. The results revealed that the degree of having competencies in general was medium and for all the questionnaire's domains. The results revealed that there are no differences between males and females in the level of having competencies and for all the questionnaire's domains. As for the variable of academic estimation, the results revealed that there are statistically significant differences between the categories of academic estimation, where the differences were in favor of the higher academic estimate.

Based on the results, the study recommended the necessity of urging the principals in the department of sports rehabilitation to cope with the new developments in their domain and update the academic plan in order to increase the focus on the courses related to health sciences, such as functional anatomy and physiology, in addition to enhancing students to participate in the projects of scientific research within their specialties, especially as the university assigns several scholarships supported by the ministry of higher education.

Keywords: Sports rehabilitation. Scientific and practical competencies. Communication skills. Evaluation, Ability to work

RESUMEN

Este estudio tuvo como objetivo identificar competencias científicas y prácticas, habilidades comunicativas, de evaluación y capacidad de trabajo entre los egresados de rehabilitación deportiva de la facultad de ciencias del deporte de la Universidad Mu'tah, y las diferencias en competencias según las variables de género y estimación académica. La muestra del estudio estuvo compuesta por (81) hombres y mujeres graduados,

Manuscrito recibido: 20/01/2024

Manuscrito aceptado: 15/02/2024

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siendo (42) hombres (51,9%) y (39) mujeres (48,1%). El estudio utilizó el enfoque descriptivo debido a su compatibilidad con la naturaleza del estudio, y se utilizó el cuestionario como instrumento de estudio para la recolección de datos. El instrumento de estudio estuvo compuesto por (4) dominios (competencias científicas y prácticas, habilidades comunicativas, evaluación, capacidad para trabajar), donde cada dominio incluyó (6) ítems. Los datos del estudio se analizaron mediante SPSS, donde se utilizaron las medias, las desviaciones estándar, la prueba t, Anova unidireccional y la diferencia menos significativa. Los resultados revelaron que el grado de posesión de competencias en general fue medio y para todos los dominios del cuestionario. Los resultados revelaron que no existen diferencias entre hombres y mujeres en el nivel de tener competencias y para todos los dominios del cuestionario. En cuanto a la variable de estimación académica, los resultados revelaron que existen diferencias estadísticamente significativas entre las categorías de estimación académica, donde las diferencias fueron a favor de la mayor estimación académica.

Con base en los resultados, el estudio recomendó la necesidad de instar a los directores del departamento de rehabilitación deportiva a afrontar los nuevos desarrollos en su campo y actualizar el plan académico para aumentar el enfoque en las carreras relacionadas con las ciencias de la salud, como anatomía y fisiología funcional, además de potenciar la participación de los estudiantes en los proyectos de investigación científica dentro de sus especialidades, máxime porque la universidad asigna varias becas apoyadas por el ministerio de educación superior.

Palabras clave: Rehabilitación deportiva. Competencias científicas y prácticas. Habilidades comunicativas. Evaluación. capacidad para el trabajo

Introduction

The specialty of sports rehabilitation is one of the branches of health sciences within the domain of sports sciences that are interested in helping those suffering from physical disabilities or injuries recover their kinetic abilities and practice their daily life naturally (Cummings, 2020). Just like other domains, sports rehabilitation requires specialized scientific knowledge and skills. Therefore, it is necessary to provide several factors that contribute to satisfying the requirements of labor work inside or outside Jordan. Accordingly, the graduates who desire to work in this domain should be ready to acquire a set of the necessary scientific skills and competencies (McKay, et al., 2020). Indeed, working within the domain of sports rehabilitation requires a deep understanding in sports sciences as well as other sciences, such as physics

and medical sciences. Since the work domains in the specialty of sports rehabilitation are diverse, the students in this specialty can work in different places, including the departments of motor rehabilitation in hospitals, where they can provide services to the motor system patients and help them restore their physical functions after injury. Also, they can work with kinetically disabled individuals, where they can help those individuals develop the necessary motor skills to perform the daily life tasks (Al-Husseini, 2022). Those graduates can also help the elderly maintain their health and physical activity, and provide the services of sports rehabilitation to the injured athletes (Garrett et al., 2020).

The graduates of sports rehabilitation have the opportunity to work in sports clubs and sports clinics belonging to clubs, where they provide the services of sports rehabilitation to the injured athletes who seek recovery and a better physical performance, in addition to the opportunity of working in schools and universities, in which they can provide the services of sports rehabilitation to the injured athlete students (Chandler et al., 2021).

Based on the above-mentioned, we can see that the graduates of sports rehabilitation can work in several important jobs; therefore, they should have scientific and practical competencies and skills, such as evaluating the physical status of the injured individuals and implementing the programs of sports rehabilitation. Therefore, graduates should have acquired those skills during practicum courses (Knuttggen, 2018). The behavioral and personal skills are considered as an important factor in the abilities and readiness of graduates to work in their domain of specialty. (Myers, 2021) suggested that working after graduation in the specialty of sports rehabilitation requires personal and behavioral skills, such as the ability to communicate effectively with the patients and their families as well as with injured athletes and their coaches, and the skills of collective work and problem-solving. Therefore, graduates should have developed these skills during university education and extra-curricular activities, such as specialized courses and social events inside and outside university. Studies revealed that the individuals who have the necessary personal, scientific and practical competencies and skills have a good opportunity to work in the domain of sports rehabilitation (McKay et al., 2020) and (Chandler et al., 2021). Furthermore, it is worth noting that high academic achievement in university has a prominent role in acquiring knowledge outcomes that help empowering graduates in their domain of specialty (Al-Husseini, 2023). The researcher suggested that when students in the specialty of sports rehabilitation are more ready to work in this domain, they will have more opportunities to obtain work in Jordan, particularly in the private sector, where employers seek to employ those with higher academic

achievement. Therefore, this study aimed to highlight scientific and practical competencies, communication skills, evaluation and ability to work among the graduates of sports rehabilitation in order to contribute to enhancing our future understanding concerning the way of preparing students to work in the domain of sports rehabilitation, and contribute to developing the training and educational programs that satisfy the needs of students. Indeed, this study may have a role in improving the quality of services to the individuals who suffer from physical disabilities or injuries. Also, this study is important, since it contributes to developing the domain of sports rehabilitation as a whole. Indeed, recognizing the scientific and practical competencies, communication skills, evaluation and ability to work among graduates of sports rehabilitation will contribute to developing the training and educational programs which, in turn, improves the quality of the graduates of sports rehabilitation.

The study importance

The importance of this study lies in identifying the following objectives:

1. Identifying the extent of having the scientific and practical competencies, communication skills, evaluation and ability to work among graduates of sports rehabilitation.
2. Identifying the differences in having the scientific and practical competencies, communication skills, evaluation and ability to work according to the variable of gender.
3. Identifying the differences in having the scientific and practical competencies, communication skills, evaluation and ability to work according to the variable of academic estimate.

The study questions

1. What is the extent of having the scientific and practical competencies, communication skills, evaluation and ability to work among the graduates of sports rehabilitation?
2. Are there statistically significant differences in having the scientific and practical competencies, communication skills, evaluation and ability to work according to the variable of gender?
3. Are there statistically significant differences in having the scientific and practical competencies, communication skills, evaluation and ability to work according to the variable of academic estimate?

The study terms

Sports rehabilitation: it is the process of the injured athlete's restoration to his previous functional level before injury (the American College of Sports Medicine, 2023).

Competencies: they refer to knowledge, skills, situations and values that enable individuals to perform a task or a number of tasks effectively (UNESCO, 2015).

The study domains

The spatial domain: Jordan/ the faculty of sports sciences at Mu'tah University/ department of sports rehabilitation.

The human domain: the graduate students from the department of sports rehabilitation.

The temporal domain: the first semester of the academic year (2022-2023).

The study procedures

The study was conducted by using the descriptive approach due to its compatibility to the study nature, where the researcher developed a questionnaire that consisted of (4) domains, and each domain included (6) items. The questionnaire was introduced to a number of specialized faculty members, where some items were modified. The graduates completed the questionnaire and responded to its items after clarifying the way of responding to the items by the researcher.

The study population: the study population consisted of all the graduates in the second semester and the summer semester during the academic year (2022-2023), with a total of (81) male and female graduates, with (42) males and (39) females.

The study sample: the researcher suggested including all the study population as the study sample, with a total of (81) male and female graduates, in order to guarantee the accuracy of data. The characteristics of the sample individuals are illustrated in (Table 1, 2).

Communication and evaluation skills among the graduates of sports rehabilitation had high reliability values, where the reliability value was (0.928) for the scientific skills and competencies, (0.904) for the practical skills and

Table 1. The characteristics of the sample individuals.

Variable	Category	Number	Percentage (%)
Gender	Male	42	51.9
	Female	39	48.1
	Total	81	100
Academic estimation	Pass	18	22.2
	Good	16	19.8
	Very good	25	30.9
	Excellent	22	27.2
	Total	81	100

Table 2. The reliability for the domains of scientific and practical competencies, communication and evaluation skills among the graduates of sports rehabilitation (n=81).

Competencies	Number of items	Cronbach alpha (α)
Scientific skills and competencies	6	0.928
Practical skills and competencies	6	0.904
Personal and communication skills	6	0.911
The ability to analyze and evaluate in the domain of sports rehabilitation	6	0.932
The total score of competencies and skills and using them among the graduates of the Sports Rehabilitation Department	24	0.976

competencies, (0.911) for the personal and communication skills, (0.932) for the ability to analyze and evaluate in the domain of sports rehabilitation, and (0.976) for the total score of competencies and skills and using them among the graduates of the Sports Rehabilitation Department. These values reflect high reliability values, as they are more than the minimum value, which is considered as a threshold for accepting reliability values in this type of exploratory studies, which is (0.60).

Displaying and discussing the results

The first question: What is the extent of having the scientific and practical competencies, communication skills, evaluation and ability to work among the graduates of sports rehabilitation?

In order to answer this question, the researcher calculated the means and standard deviations, and a 3-level classification scale was used to describe the levels of means, as follows:

1.00 – 2.33...low

2.34 – 3.67...medium

3.68 – 5.00...high

The researcher used the following formula to calculate the class length

$$\text{Class length} = \frac{\text{Highest response limit} - \text{lowest response limit}}{\text{Number of classification categories}}$$

$$\text{Class length} = \frac{(5 - 1)}{5} = 1.33$$

Accordingly, the following tables show the results of the first question (Table 3).

Classification of mean values (1.00 – 2.33 low; 2.34 – 3.67 medium; 3.68 – 5.00 high)

Table (3) shows the values and levels for the mean scores to which the graduates of sports rehabilitation have the scientific and practical competencies, as well as communication and evaluation skills. By reviewing the mean values, we can see that the highest level was for the scientific and practical competencies, where this domain had a mean of (3.24). This value was medium according to the used classification scale. Also, we can see that personal and communication skills as well as the ability to analyze and evaluate in the domain of sports rehabilitation were in the last place, with a value of (3.19) and a medium level for each.

1. Analyzing the sub-competencies for scientific abilities and skills

(Table 4) shows the values and levels for the mean scores of the sub-competencies for scientific abilities and skills. By reviewing the mean values for the competence as a whole, it was (3.24). This value was medium according

Table 3. The level of having the scientific and practical competencies, and communication and evaluation skills among the graduates of sports rehabilitation (n=81).

Number	Competencies	Mean	SD	Level	Order
1	Scientific skills and competencies	3.24	0.96	Medium	1
2	Practical skills and competencies	3.21	0.92	Medium	3
3	Personal and communication skills	3.19	0.94	Medium	2
4	The ability to analyze and evaluate in the domain of sports rehabilitation	3.19	0.97	Medium	4
5	The total score of competencies and skills and using them among the graduates of the Sports Rehabilitation Department	3.21	0.90	Medium	

Classification of mean values (1.00 – 2.33 low; 2.34-3.67 medium; 3.68-5.00 high)

Table 4. The means for the sub-competencies for scientific abilities and skills among the graduates of sports rehabilitation ordered in a descending way (n=81).

Number	The sub-competencies for scientific abilities and skills	Mean	SD	Level	Order
2	Scientific knowledge can be applied to the evaluation and rehabilitation of injured athletes	3.31	1.23	Medium	1
4	I think that my scientific abilities and skills qualify me to work in the domain of physical rehabilitation	3.26	1.12	Medium	2
6	I can distinguish between documented information and my personal opinion, such as the information published on social media platforms	3.25	1.02	Medium	3
5	I have a good knowledge of the devices and tools used in the domain of rehabilitation	3.22	1.12	Medium	4
1	I have a good knowledge of the concepts and theories in the domain of sports rehabilitation	3.21	1.21	Medium	5
3	I can keep up with the latest scientific developments in the domain of physical rehabilitation and update my knowledge about that	3.20	1.00	Medium	6
	The total degree for the competency of scientific abilities and skills	3.24	0.96	Medium	

Classification of mean values (1.00 – 2.33 low; 2.34 – 3.67 medium; 3.68 – 5.00 high)

Table 5. The means for the sub-competencies for practical abilities and skills among the graduates of sports rehabilitation ordered in a descending way (n=81).

Number	The sub-competencies for scientific abilities and skills	Mean	SD	Level	Order
3	I have the ability to plan and coordinate training and rehabilitation programs for athletes	3.27	1.14	Medium	1
5	I can use therapeutic massage to alleviate the severity of some sport and non-sports injuries	3.23	1.03	Medium	2
6	I am good at using the devices and tools used in the domain of rehabilitation	3.20	1.20	Medium	3
1	I can provide the necessary instructions to injured athletes to achieve their goals within the domain of sports rehabilitation.	3.15	1.04	Medium	4
2	I can distribute rehabilitation loads in accordance with the phase of injury	3.14	1.27	Medium	5
4	I have the ability to deal effectively with emergency situations and make the right decisions in the domain of rehabilitation.	3.12	1.19	Medium	6
	The total degree for the competency of practical abilities and skills	3.19	0.94	Medium	

Classification of mean values (1.00 – 2.33 low; 2.34 – 3.67 medium; 3.68 – 5.00 high)

to the used classification scale. Also, we can see that item (2) stating "Scientific knowledge can be applied to the evaluation and rehabilitation of injured athletes" had the highest mean with (3.31) which is medium, whereas item (3) stating "I can keep up with the latest scientific developments in the domain of physical rehabilitation and update my knowledge about that" had the lowest mean with (3.20) which is medium.

2. Analyzing the sub-competencies for practical abilities and skills:

(Table 5) shows the values and levels for the mean scores of the sub-competencies for practical abilities and skills. By reviewing the mean values for the competence as a whole, it was (3.19). This value was medium according to the used classification scale. Also, we can see that item (3) stating "I have the ability to plan and coordinate training and rehabilitation programs for athletes" had the highest mean with (3.27) which is medium, whereas item (4) stating "I have the ability to deal effectively with emergency situations and make the right decisions in the domain of rehabilitation" had the lowest mean with (3.12) which is medium.

3. Analyzing the sub-competencies for communication and personal skills:

(Table 6) shows the values and levels for the mean scores of the sub-competencies for communication and personal skills. By reviewing the mean values for the competence as a whole, it was (3.21). This value was medium

according to the used classification scale. Also, we can see that item (1) stating "I have the ability to communicate with various concerned individuals, such as athletes, coaches, and doctors in the domain of sports rehabilitation" had the highest mean with (3.36) which is medium, whereas item (3) stating "I have the ability to communicate with cases of difficult sensory and motor disabilities" had the lowest mean with (3.09) which is medium. The mean values of the other sub-competencies were included between these highest and lowest means.

4. Analyzing the sub-competencies for the ability to analyze and evaluate:

(Table 7) shows the values and levels for the mean scores of the sub-competencies for the ability to analyze and evaluate. By reviewing the mean values for the competence as a whole, it was (3.19). This value was medium according to the used classification scale. Also, we can see that item (6) stating "I have the ability to instruct athletes accurately and appropriately concerning health and physical fitness within the domain of sports rehabilitation" had the highest mean with (3.28) which is medium, whereas item (4) stating "I can analyze the results of assessments, provide the detailed reports about the athletes' condition and make the necessary recommendations to improve their performance in sports rehabilitation" had the lowest mean with (3.10) which is medium. The mean values of the other sub-competencies were included between these highest and lowest means.

The researcher attributed those results, which revealed that the level of having

Table 6. The means for the sub-competencies for communication and personal skills among the graduates of sports rehabilitation ordered in a descending way (n=81).

Number	The sub-competencies for communication and personal skills	Mean	SD	Level	Order
1	I have the ability to communicate with various concerned individuals, such as athletes, coaches, and doctors in the domain of sports rehabilitation.	3.36	1.12	Medium	1
4	I have the skills of effective listening to patients and clients	3.23	0.98	Medium	2
6	I am confident in my ability to perform my job duties as a specialist in sports rehabilitation	3.20	1.12	Medium	3
2	I can work as part of a team and exchange knowledge and experiences with my colleagues	3.19	1.17	Medium	4
5	I can communicate effectively with people from different cultures	3.19	1.10	Medium	5
3	I have the ability to communicate with cases of difficult sensory and motor disabilities	3.09	1.11	Medium	6
	The total degree for the competency of communication and personal skills	3.21	0.92	Medium	

Classification of mean values (1.00 – 2.33 low; 2.34 – 3.67 medium; 3.68 – 5.00 high)

Table 7. The means for the sub-competencies for the ability to analyze and evaluate among the graduates of sports rehabilitation ordered in a descending way (n=81).

Number	The sub-competencies for the ability to analyze and evaluate	Mean	SD	Level	Order
6	I have the ability to instruct athletes accurately and appropriately concerning health and physical fitness within the domain of sports rehabilitation	3.28	1.11	Medium	1
5	I have the ability to monitor appropriately and accurately the progress of athletes and evaluate the effectiveness of the programs and rehabilitative measures that they receive	3.27	1.15	Medium	2
3	I have the ability to assess the risks related to sports rehabilitation and take the necessary safety and prevention measures accurately and effectively	3.19	1.04	Medium	3
2	I have the ability to analyze the problems that patients face during the period of rehabilitation	3.15	1.18	Medium	4
1	I can, accurately, analyze and evaluate the physical and rehabilitation capabilities of injured people	3.14	1.13	Medium	5
4	I can analyze the results of assessments, provide the detailed reports about the athletes' condition and make the necessary recommendations to improve their performance in sports rehabilitation	3.10	1.12	Medium	6
	The total degree for the ability to analyze and evaluate	3.19	0.97	Medium	

Classification of mean values (1.00-2.33 low; 2.34-3.67 medium; 3.68-5.00 high)

Table 8. The results of t-test for the mean differences in scientific and practical competencies, evaluation and communication skills among the graduates of sports rehabilitation according to gender (n=81).

Competencies	Gender	Number	Mean	SD	t-value	Sig. level	Differences significance
Scientific skills and abilities	Male	42	3.32	1.05	0.764	0.447	Insignificant
	Female	39	3.16	0.85			
Practical skills and abilities	Male	42	3.25	1.04	0.600	0.550	Insignificant
	Female	39	3.12	0.83			
Communication and personal skills	Male	42	3.26	1.01	0.508	0.613	Insignificant
	Female	39	3.15	0.82			
Ability to analyze and evaluate in the domain of sports rehabilitation	Male	42	3.32	0.95	1.279	0.205	Insignificant
	Female	39	3.04	0.99			
The total score for scientific and practical competencies, communication and evaluation skills	Male	42	3.29	0.98	0.830	0.409	Insignificant
	Female	39	3.12	0.82			

scientific and practical competencies, communication skills, evaluation and ability to work among graduates of sports rehabilitation was medium to the good preparation that the graduates of sports rehabilitation received during their academic study at university, through which they acquired the necessary competencies within their domain of specialty. However, they didn't have the chance to practice those competencies in work environment. These findings agree with (Kurunsaari and Salminen, 2021) and (Fennelly et al., 2022). Also, the researcher suggested that the instrument's domains developed specifically for this study could include a higher measurement for the scientific and practical competencies, communication skills, evaluation and ability to work. For example, the assessment criteria could require that the graduates should be able to analyze complex data or develop rehabilitation plans and design long-term rehabilitation programs or innovative programs. Therefore, in this case, obtaining a medium degree according to the criteria of the study instrument means that the graduates have a good level of competencies, but they need more development. This finding agrees with (Dalton, et al., 2011).

The second question: Are there statistically significant differences in having the scientific and practical competencies, communication skills, evaluation and ability to work according to the variable of gender?

In order to answer this question, t-test for independent samples was used, as illustrated in (Table 8).

Table (8) shows the results of t-test for the significance of differences in the mean scores for the scientific and practical competencies, evaluation and communication skills and the ability to work among the graduates of sports rehabilitation according to the variable of gender. By reviewing the values for the level of significance for the differences between two categories, it was (0.447) for the competence of scientific capabilities and skills, (0.550) for the competence of practical capabilities and skills, and (0.613) for the competence of communication and personal skills. The significance level was (0.205) for the ability to analyze and evaluate in the domain of sports rehabilitation. As for the value of significance of differences between the mean score for the total degree of practical and scientific competencies, skills of communication and evaluation and the ability to work, it was (0.409). When comparing all those values with (0.05), we found that all the values were more than (0.05), which revealed the insignificance of the mean differences in the competencies between males and females. The researcher attributed that to the case that all the male and female graduates have equal opportunities of education and training, where they received the same courses in the academic syllabus. Also,

Table 9. The means for the scientific and practical competencies, evaluation and communication skills among the graduates of sports rehabilitation according to academic estimate (n=81).

Competency	Academic estimate	Number	Mean	SD
Scientific skills and competencies	Pass	18	2.05	0.34
	Good	16	2.70	0.42
	Very good	25	3.37	0.31
	Excellent	22	4.48	0.33
Practical skills and competencies	Pass	18	2.02	0.42
	Good	16	2.77	0.44
	Very good	25	3.23	0.38
	Excellent	22	4.39	0.33
Communication and personal skills	Pass	18	2.08	0.45
	Good	16	2.78	0.41
	Very good	25	3.27	0.41
	Excellent	22	4.36	0.33
Ability to analyze and evaluate in the domain of sports rehabilitation	Pass	18	1.93	0.42
	Good	16	2.82	0.39
	Very good	25	3.24	0.40
	Excellent	22	4.42	0.32
The total score for scientific and practical competencies, communication and evaluation skills	Pass	18	2.02	0.22
	Good	16	2.77	0.27
	Very good	25	3.28	0.29
	Excellent	22	4.41	0.20

Table 10. The results of one-way variance analysis for the differences between the means in scientific capabilities and skills, practical capabilities and skills, and the skills of communication and evaluation among the graduates of sports rehabilitation according to academic estimate (n=81).

Competency	Source of variance	Total square	Degree of freedom	Mean square	f-value	Sig. level	Differences significance
Scientific skills and abilities	Academic estimate	64.429	3	21.476	180.053	.000	Significant
	Error	9.184	77	.119			
	Total	73.614	80				
Practical skills and competencies	Academic estimate	59.434	3	19.811	130.637	.000	Significant
	Error	11.677	77	.152			
	Total	71.111	80				
Communication and personal skills	Academic estimate	55.169	3	18.390	116.659	.000	Significant
	Error	12.138	77	.158			
	Total	67.307	80				
Ability to analyze and evaluate in the domain of sports rehabilitation	Academic estimate	64.082	3	21.361	146.913	.000	Significant
	Error	11.196	77	.145			
	Total	75.278	80				
The total score for scientific and practical competencies, communication and evaluation skills	Academic estimate	60.617	3	20.206	332.411	.000	Significant
	Error	4.680	77	.061			
	Total	65.298	80				

the courses that were held during their academic study were coordinated by the management of the academic department, and are available for males and females. Indeed, this ensures that they have the same level of the required knowledge in sports rehabilitation. This finding agrees with (Smith, et al., 2023) and (Albarri, 2020).

The third question: Are there statistically significant differences at (0.05) in having the scientific and practical competencies, communication skills, evaluation and ability to work according to the variable of academic estimate?

(Table 9) shows the mean values for the scientific capabilities and skills, practical capabilities and skills, and the skills of communication and evaluation according to the variable of academic estimate. By reviewing these means between the categories of academic estimates, we can see that there are differences in these values. In order to identify the importance of these differences between the means, one-way variance analysis was calculated, where table (10) shows the significance of differences statistically.

(Table 10) shows the results of one-way variance analysis for the differences

between the means in scientific capabilities and skills, practical capabilities and skills, and the skills of communication and evaluation among the graduates of sports rehabilitation according to academic estimate (n=81). By reviewing the significance of the differences of these means between the categories of academic estimates, we can see that they are (0.000) for scientific capabilities and skills, (0.000) for practical capabilities and skills, (0.000) for communication and personal skills, and (0.000) for the ability to analyze and evaluate. As for the value of the significance of the differences between the total mean score of scientific and practical competencies and evaluation and communication skills, it was (0.000). When comparing all these values with (0.05), we can see that all of them are less than (0.05), which indicates the significance of the differences in the competencies between the categories of academic estimate.

(Table 11) shows the results of least significant difference (LSD) to determine the academic estimates that differ statistically in scientific and practical competencies and evaluation and communication skills among the graduates of sports rehabilitation. The results revealed that the differences were evident in each competence, in addition to the total score, where the differences were

Table 11. The results of least significant difference (LSD) to determine the academic estimates that differ statistically in scientific and practical competencies and evaluation and communication skills among the graduates of sports rehabilitation (n=81).

Competence	Mean	Academic estimate	Good	Very good	Excellent
Scientific skills and abilities	2.05	Pass	*	*	*
	2.70	Good		*	*
	3.37	Very good			*
	4.48	Excellent			
Practical skills and abilities	2.02	Pass	*	*	*
	2.77	Good		*	*
	3.23	Very good			*
	4.39	Excellent			
Communication and personal skills	2.08	Pass	*	*	*
	2.78	Good		*	*
	3.27	Very good			*
	4.36	Excellent			
Ability to analyze and evaluate in the domain of sports rehabilitation	1.93	Pass	*	*	*
	2.82	Good		*	*
	3.24	Very good			*
	4.42	Excellent			
The total score for scientific and practical competencies, communication and evaluation skills	2.02	Pass	*	*	*
	2.77	Good		*	*
	3.28	Very good			*
	4.41	Excellent			

* Statistically significant at (0.05)

evident between each two academic estimates. In general, the differences in academic estimate were in favor of the higher estimate; for example, between the good and pass, differences were in favor of good, between good and very good, the differences were in favor of very good, and between very good and excellent, differences were in favor of excellent. The researcher suggested that this result is logical, since the higher academic estimate indicates a higher level of knowledge competence. In this vein, when students pursue academic courses more frequently and acquire more information, they will have a higher academic estimate. This finding agrees with (Yeh, P. C. et al., 2020).

Also, the researcher suggested that the students' motivation to acquire the knowledge related to their specialty is higher when those students are more interested in their specialty and have higher academic estimate. This finding agrees with (Al-Husseini, 2022).

Recommendations

The study recommended the necessity of coping with the modern developments by the principals of the department of sports rehabilitation, updating the academic plan to be more focused on the courses related to health sciences, such anatomy, and physiology, in addition to encouraging students to participate in the projects of scientific research within the domain of their specialty, given that the university assigns several scholarships supported by the ministry of higher education.

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