

Radon Gas Questionnaire for Students of the College of Science, Mustansiriyah University

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ABSTRACT

Questionnaires were designed containing questions relating to ^{222}Rn , to know the student's awareness of the dangers of ^{222}Rn gas. The questionnaire was distributed randomly to 30 students of the fourth stage of both sexes in the departments of the college of science. The survey shows that the ^{222}Rn awareness of fourth-stage students for all departments of the college of science, Mustansiriyah university is scarce.

KEYWORDS: ^{222}Rn ; Questionnaire; The college of science; Mustansiriyah university.

الخلاصة

تم تصميم استبيان يحتوي على أسئلة تتعلق بغاز الرادون لمعرفة وعي الطلاب بمخاطر غاز الرادون. وزع الاستبيان عشوائياً على 30 طالباً من المرحلة الرابعة من كلا الجنسين في أقسام كلية العلوم. أظهر هذا الاستطلاع أن وعي الرادون لدى طلبة المرحلة الرابعة لكافة أقسام كلية العلوم الجامعة المستنصرية شحيح. وهذا يشير إلى أنه ينبغي بذل جهود من قبل الجهات المعنية لتحسين مستوى الوعي بالرادون عبر الصحافة والإعلام والمحاضرات.

INTRODUCTION

^{222}Rn is a naturally radioactive gas with a half- life about of 3.82 days. It is the immediate radioactive decay series (^{226}Ra , ^{235}U ^{232}Th). Products of radium (in the decay series of uranium (and thorium (The half- life of thoron ^{220}Rn ; is about 56 sec. [1, 2]. It can reach inside the buildings because of the building's materials itself and the water supply pipes [3]. Thus, it can cause a significant indoor health hazard, especially when they build up in enclosed regions [4]

^{222}Rn and its daughter products emit alpha particles that are implicated in the cellular changes leading to lung cancer [5, 6]. The ^{222}Rn concentrations in different air in accordance with locations, material in the houses built, different room in the same house high level in the houses, and rate ventilations rates [7, 8]. ^{222}Rn exhalation rates in the areas, where U-238 deposits and the rocks phosphate are significant, and this is the main source of exposure to U-238. [4, 9]. the motivated by the concern about of possible consequence of long-term exposure to higher concentrations of ^{222}Rn and the lived short-product in the air. Since, it is known that ^{222}Rn of its

radioactive decay series products can cause lung cancer, and thus has become a public health concern [10, 11].

AREA OF THE STUDY

The college of sciences in Mustansiriyah University was established in 1963, as it included two departments, namely the department of mathematics and the department of physics, where the aim of establishing this college was to prepare qualified and specialized human cadres in the fields of physics and mathematics and to supply the country with these two specialties. This study is to keep place with the world development in the eighties, especially in chemistry, and as a result of this success, there was a drive to establish the department of life sciences, which was established in 1983, and in 1987 AD. Two specializations were created, namely meteorology and solar energy. The specialization of meteorology sciences was transformed into a separate department in itself in 1992. Because of the era of accelerated blame, the Internet, and electronic governments, the department of computers was created in the college

of science in 1996, so that the college of sciences includes six departments that complement one another, and to become at the required level to qualify Iraqi cadres in the field of applied sciences physics department Mathematics department of Life sciences department of computer science department of atmospheric sciences chemistry department [8].

RESULT AND DISCUSSION

Questionnaires were designed containing questions relating to ²²²Rn, to know the students' awareness of the dangers of ²²²Rn gas. A questionnaire was prepared as shown in Table 1, The questionnaire was distributed randomly to 30 students of the fourth stage of both sexes in the departments of the college of science.

Table 1. Questionnaire paragraphs for fourth-stage students for all departments of the college of science, Mustansiriyah university.

No.	Questions				
1	do you know what ²²² Rn is	yes	I do not remember	The name of an element	I do not know
2	derives the word ²²² Rn from	The name of a region	the name of a physicist	Liquid	I do not know
3	what is ²²² Rn	gas	solid	Colorless	I do not know
4	What is the color of ²²² Rn	white	black	land	I do not know
5	where does ²²² Rn come from	Air	water	may be	I do not know
6	is ²²² Rn harmful	yes	no	222	I do not know
7	what is the mass number of ²²² Rn	22	122	Vision	I do not know
8	If ²²² Rn is harmful, then its affect on	Brain	Lung	Cancer	I do not know
9	does ²²² Rn cause	Blindness	Paralysis	radium	I do not know
10	²²² Rn is emitted from an element	Uranium	Thorium	The name of an element	I do not know

Figure 1 represents the results of survey conducted. The first question, do you know what ²²²Rn is? The answers were varied for the students of the departments in general. The best answers were for the physics department.

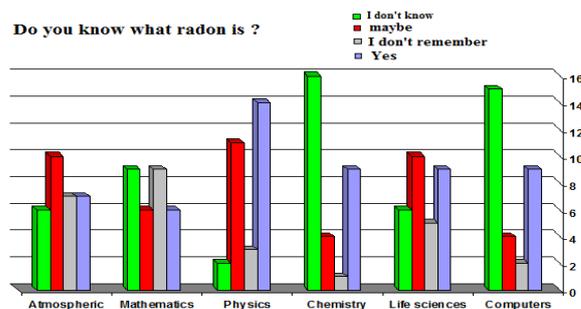


Figure 1. the results of survey conducted. The first question, do you know what ²²²Rn is?

Figure 2 represents the results of survey conducted. The second question derives the word ²²²Rn from? The best answers were for Mathematics department and Computing department receptivity.

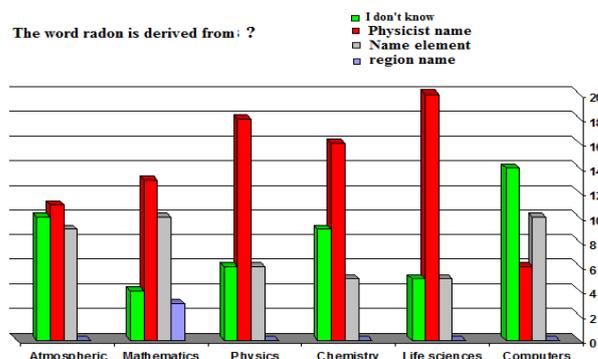


Figure 2. The results of survey conducted. Second question derives the word ²²²Rn from.

The third question on the questionnaire was what is ²²²Rn? The best answers were for the physics department and the worst for the chemistry department, shows in Figure 3.

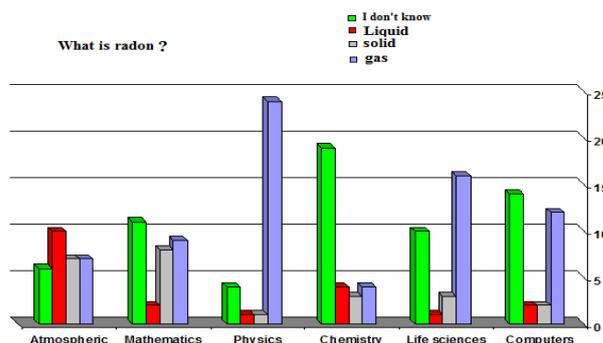


Figure 3. the results of survey conducted. The third question, what is ²²²Rn?

The results of the questionnaire for the fourth question, what is the color of ²²²Rn? Where disappointing, as most students did not know the correct answer or it was wrong department, shows in Figure 4.

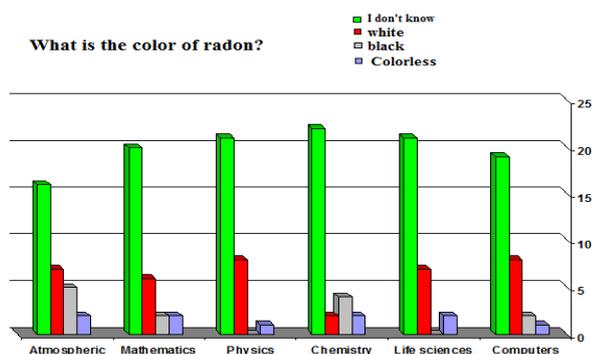


Figure 4. the results of survey conducted. The fourth question, What is the color of ^{222}Rn ?

The answers to the questionnaires regarding the fifth question, where does ^{222}Rn come from? Differed between the scientific departments of the College of Science. However, the best answers were for the Department of Chemistry, perhaps because they knew that most minerals come from department, shows in Figure 5.

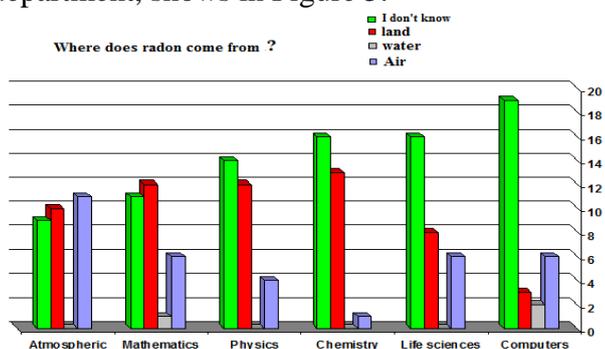


Figure 5. the results of survey conducted. The fifth question, where does ^{222}Rn come from?

The sixth question from the questionnaire was: is ^{222}Rn harmful? The answers were also different between the scientific departments, however, the computer department had the best answer among the other departments, shows in Figure 6.

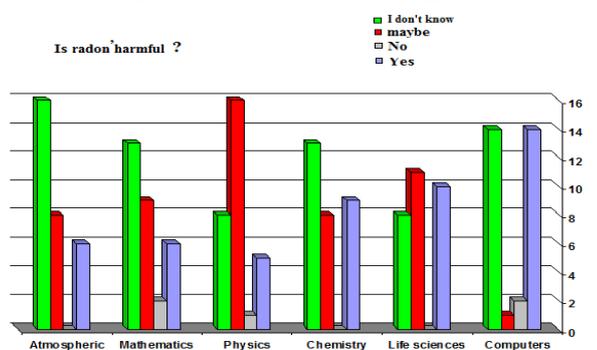


Figure 6. the results of survey conducted. The sixth question, is ^{222}Rn harmful?

The seventh question of the questionnaire was what is the mass number of ^{222}Rn ? The answers were also disappointing, however, department of chemistry and department of Atmospheric Sciences were the best answers, shows in Figure 7.

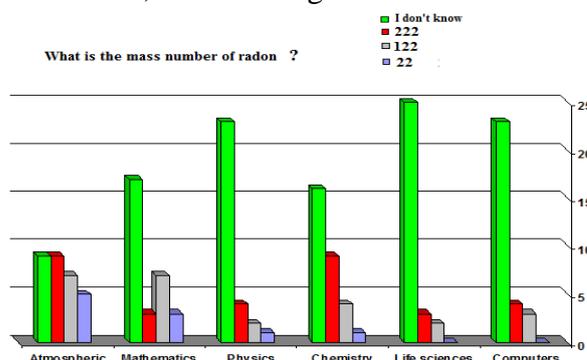


Figure 7. the results of survey conducted. The seventh question, what is the mass number of ^{222}Rn ?

The eighth question of the questionnaire was If ^{222}Rn is harmful, then its affect on? The answers were also different between the scientific departments, however, Life science department and the computer department had the best answers among the other departments, shows in Figure 8.

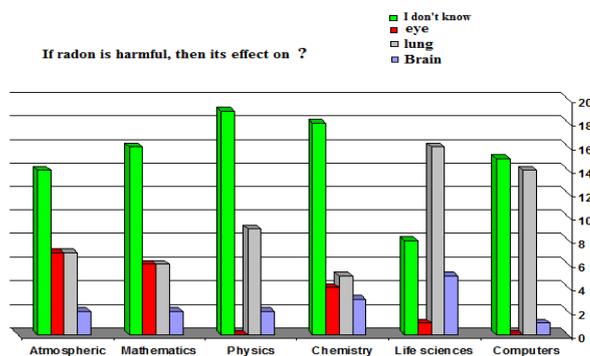


Figure 8. the results of survey conducted. The eighth question, If ^{222}Rn is harmful, then its effect on?

The nine questions from the questionnaire were: does ^{222}Rn cause? The answers were also different between the scientific departments; however, also the computer department had the best answer among the other departments, shows in Figure 9. The tenth and final question from the questionnaire was: ^{222}Rn is emitted from an element. The answers were generally good; however, also the computer department had the best answer among the other departments, shows in Figure 10.

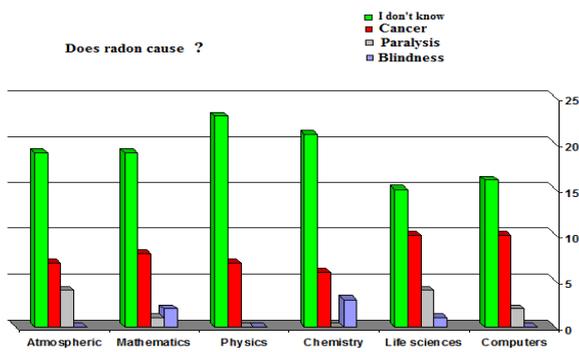


Figure 9. the results of survey conducted. The nine question, does ^{222}Rn cause?

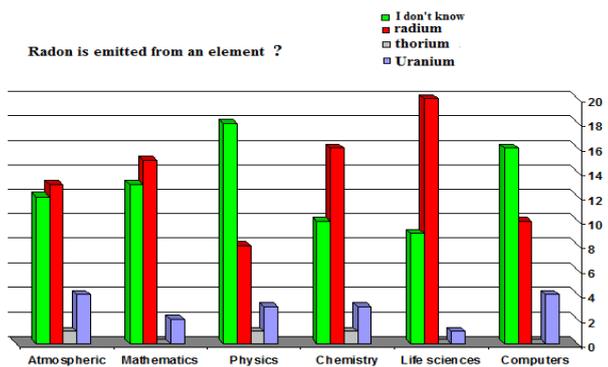


Figure 10. the results of survey conducted. The tenth question, ^{222}Rn is emitted from an element.

CONCLUSIONS

The ^{222}Rn awareness of for fourth-stage students for all departments of the college of science, Mustansiriyah University is scarce. That is mean that efforts by the concern authorities should be made to improve ^{222}Rn consciousness the levels via the lecture's media, and press.

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