

## Bioarchaeology and ‘Human-Bioheritage’ in Egypt: Challenges and Future Prospective

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### Abstract.

‘Human-Bioheritage’ refers to the archaeological human remains (bones, dentition, and mummies). Although frequently excavated human- bioheritage, and the wealth of human remains and mummies present in Egypt, the Egyptian youth whether students, researchers, or academic staff face several challenges in studying, investigating and publishing within this area of interest. Consequently, the present study adopted the mixed type questionnaire to collect the data from two groups of respondents; students and researchers as the first group, and the academic staff specialized in bioarchaeology studies. Results revealed that; limited financial support, inappropriate educational system, routine and unqualified individuals working within this sector were the main challenges facing youth. Additionally, suggestions to overcome the challenges, and proposed ideas for future development were discussed.

**Keywords:** (Bioarchaeology, Human-bioheritage, Educational-tourism, Bioheritage-tourism, Conference-tourism).

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## الملخص باللغة العربية.

يشير التراث الحيوي البشري إلى تلك البقايا البشرية التي يتم استخراجها من المواقع الأثرية أثناء أعمال الحفر والتنقيب عن الآثار. فعلى العكس من الصورة الذهنية السائدة لدى البعض عن هذا النوع من التراث بأنه يمكن من خلاله الحصول على بعض المعلومات البيولوجية فقط، إلا أن الواقع مغاير لذلك تماما. فدراسة وتحليل التراث الحيوي البشري تتم عبر المدخل البيوآركيولوجي؛ وهو أحد مداخل البحث في الأنثروبولوجيا البيولوجية، الذي يتم من خلاله الحصول على كم هائل من المعلومات الثقافية، الاجتماعية، الدينية، السياسية، البيئية، البيولوجية وغيرها. **مشكلة الدراسة:** على الرغم من الكم الهائل من التراث الحيوي البشري الموجود في مصر، والاكتشافات الأثرية المستمرة. إلا أن الشباب المهتم بهذا النوع من التراث يواجه تحديات متنوعة من أجل الدراسة والتدريب في هذا المجال. كما أن الإنتاج العلمي للباحثين المصريين المتخصصين في هذا الشأن محدود جدا إذا ما قورن بمقدار ما يتم إنتاجه من دراسات علمية من باحثين غير مصريين على التراث الحيوي البشري المصري. علاوة على ذلك فإنه لا يتم الاستفادة من التراث الحيوي البشري في مصر بمشروعات يمكن من خلالها تحقيق تنمية مستدامة لهذا القطاع وغيره من القطاعات ذات الصلة. **الهدف من الدراسة:** تهدف هذه الدراسة إلى الكشف عن أهم التحديات التي تواجه الدارسين والمتخصصين عند دراسة وإجراء بحث علمي في مجال التراث الحيوي البشري، والآفاق المستقبلية لهذا التخصص في مصر. وقد اعتمدت الدراسة على الاستبيان لجمع البيانات من العينة البحثية وعددهم (١٥٠). **النتائج:** توصلت الدراسة إلى مجموعة من النتائج أهمها أن الدعم المادي المحدود، النظام التعليمي غير الملائم، التعقيدات الروتينية، بالإضافة إلى الأفراد غير المؤهلين الذين يعملون في هذا القطاع ومنهم من يجلس في مواقع المسؤولية، جميعها تعد من أهم التحديات التي تواجه الطلاب، الباحثين والمتخصصين في مجال التراث الحيوي البشري.

(الكلمات المفتاحية: البيوآركيولوجي – التراث الحيوي البشري – السياحة التعليمية –  
سياحة التراث الحيوي البشري – سياحة المؤتمرات)



## Introduction.

Doubtlessly, successful development should begin with the development of human being. Generally, improving skills and reducing challenges representing the main routes for youth development within any sector. Thus, this research paper focused on the challenges facing Egyptian youth both in education and research in bioarchaeology (human-bioheritage) sector, in order to achieve future development.

UNESCO defines heritage as both tangible and intangible (UNESCO, 2018). The former is visible and easily detected, like monuments and archaeological sites. While, the later is categorized into five main categories: oral traditions and expressions; performing arts; social practices, rituals and festive events; knowledge and practices concerning nature and universe; and traditional craftsmanship (UNESCO, 2018).

Although the term ‘heritage’ is frequently used, both in archaeological and anthropological studies. However, there is any previous research used the concept ‘human-bioheritage’ at all. Consequently, this paper is the first one ever to adopt and apply this concept.

Conceptually, human-bioheritage refers to the archaeological human remains extracted during excavations of archaeological sites. This unique type of heritage could be studied and investigated by a specific approach within biological anthropology, namely ‘bio-archaeology’. This approach is a combination of two integrated sciences; archaeology and biological anthropology; it is utilized to study the human-bioheritage within its archaeological context holistically.

The Egyptian law of protecting antiquities number (117) of 1983 that was modified by law (3) of 2010, then modified by law (91) of 2018, states that “human remains are archaeological material”, i.e., these remains are heritage. Additionally, Frerking and colleague (2017) stated that, archaeological human remains constitute an important category of cultural heritage.

On the contrary of what is being thought, heritage in general is not confined only to sets of representations of the past. Where, Waterton and



colleagues (2017) mentioned that, heritage shapes and reshapes man's sense of belonging, sense of place, and cultural identities. In addition, this heritage represents a connection or reconnection with the past that is active and a live in the present.

Moreover, human-bioheritage is not only a biological collection of systemic and / or commingled human skeletal and mummified bodies, as believed by some non-specialists. However, bio-archaeologists investigating this type of heritage identified four different body types; biological, cultural, social, and political bodies. Thus, human-bioheritage is not only a source of biological information, but there are cultural, social, and political sets of information were written on human-bioheritage as well. Consequently, human remains are important category of cultural heritage.

The reconstruction of ancient civilizations is the main object of archaeological studies. However, without studying man- the maker of civilization- the process of reconstruction would be partial and incomplete. Therefore, the role of bio-archaeological investigation is to study the human-bioheritage to get the complete reconstruction, and this is why human-bioheritage is important.

Thanks to the unique environmental conditions prevailed in ancient Egypt, especially the hot dry soil of the Egyptian land, and the burial customs the ancient Egyptians buried their dead far from water sources. Hence, Egypt has a wealth of well-preserved human-bioheritage whether skeletal or naturally mummified remains. Moreover, the ancient Egyptians were the only population succeeded in mummifying the bodies of their deceased artificially, leaving huge numbers of mummies through which bio-archaeologists have the ability to reconstruct various cultural, social, ecological, religious, biological, ... etc. information about the ancient Egyptian civilization.

Until recently, Egyptian archaeologists were only and exclusively interested in studying and investigating non-human archaeological materials (e.g., pottery, manuscripts, coins, artifacts, jewelry and ornaments), with relative lack of interest in archaeological human remains extracted from sites of excavations. Few years ago, nearly a

decade or little more, there was marked shift towards the field of human remains. Where, there was increasing of interest among Egyptian researchers specially archaeologists in studying the bio-archaeology approach to be able handling the excavated human remains in the archaeological missions.

Unfortunately, the Egyptian youth who are interested in the field of human-bioheritage face several challenges that hinder their progress within the field. Although the majority of scientific publications and research on ancient Egyptians were performed by foreign researchers (e.g., Horne, 2002; Wheeler, 2010; Buzon&Smith, 2019), and very limited scientific contribution by the Egyptian scholars (Shaaban, 2005; Abd-Elsalam, 2010; Rashed, 2013). However, there is any study performed to investigate the status of human-bioheritage research and education in Egypt. Thus, this research is the first to study challenges facing the researchers in human-bioheritage sector.

### **Research problem.**

Although the frequently excavated archaeological sites in Egypt – nearly on a weekly basis – and the extraordinary amounts of extracted ‘human-bioheritage’. However, 1) the Egyptian youth face many challenges to learn about the bio-archaeological approach and human-bioheritage; 2) A considerable amount of literature has been published on Egyptian skeletal remains by foreign researchers, meanwhile, there is very limited scientific production by the Egyptian researchers; 3) The unique human-bioheritage of ancient Egyptians doesn’t properly utilized to achieve any type of sustainable development whether for the Egyptian youth and / or the tourism sector as all.

Consequently, the aforementioned three folds would be the focus of this research.

### **Research hypotheses.**

Three main hypotheses would be tested in this study:

- (1) Limited financial support and routine are the main challenges facing scholars and specialists of academic staff.



- (2) Educational system and routine are the main challenges facing students and researchers.
- (3) Unqualified and non-specialized individuals who are responsible for our human-bioheritage are the main cause of misuse and loss of benefit.

### **Aims and objectives.**

#### **Aims.**

The major aim of this study was to investigate the challenges facing the Egyptian youth to learning and carrying out scientific research about human-bioheritage of ancient Egypt. In addition, to discuss how human-bioheritage could be utilized in development.

#### **Objectives.**

- (1) Using questionnaire, data set will be collected from the Egyptian students, researchers and academic staff specialized in bio-archaeology.
- (2) Formulating some applicable ideas regarding human-bioheritage to be utilized in development.

### **Subjects and methodology.**

#### **Literature survey.**

There would be a complete survey at the Egyptian knowledge bank databases and google scholar to collect the relevant literature about the status of human-bioheritage and bio-archaeology research in Egypt.

#### **Data collection and sampling.**

A mixed type questionnaire that involve both open and closed ended questions would be the main data collecting tool in the present study. Moreover, free observation would be utilized as a subsidiary tool.

The study sample would be a systemic random one that consists of (140) individuals divided into two main groups. The first group consists of (135) students, researchers, inspectors studying and / or working in the field of Egyptian archaeology and / or anthropology. The second group consists of (5) academic staff specialized in bio-archaeology. Where, each group would have a different questionnaire.

#### **Data analysis.**

Since questionnaires are of mixed type, thus, the present study adopted both qualitative and quantitative methods of analysis. Where, a spreadsheet package such as MS Excel would be suitable for the quantitative type of analysis.

### **Results and Discussion.**

The literature survey revealed that, there is a complete lack of studies investigating the status of human-bioheritage or bio-archaeology, and the challenges facing the researchers and students in Egypt. Consequently, this study is the first one ever to investigate and discuss this important issue.

As previously mentioned, the first group of the study sample represented by (135) individual. All of them responded to the first questionnaire that consists of (6) structured questions designed to measure specific criteria such as; to what extent they know archaeology, having any courses related to bio-archaeology in the university, sources of their information, challenges they face in this area, suggestions for solutions and future vision.

Astonishingly, results revealed that, the great majority (85%) of the respondents do not have any knowledge about bio-archaeology (figure, 1). Also, (87%) of the studied sample did not have any course related to bio-archaeology at the university, and the remaining (13%) had a little knowledge about bio-archaeology through few general courses (figure, 2). Consequently, there is variety of sources through which the researchers gained their knowledge about bio-archaeology.

Indeed, it is not a matter of surprising to have such percentages (87%) and (85%) who did not get any bio-archaeology course and did not have any knowledge about bio-archaeology, respectively. Where, there is a great defect and shortage in the number of academic departments introducing specific bio-archaeology courses in the Egyptian universities. Only within Cairo University, the department of anthropology introducing bio-archaeology courses for postgraduate students.



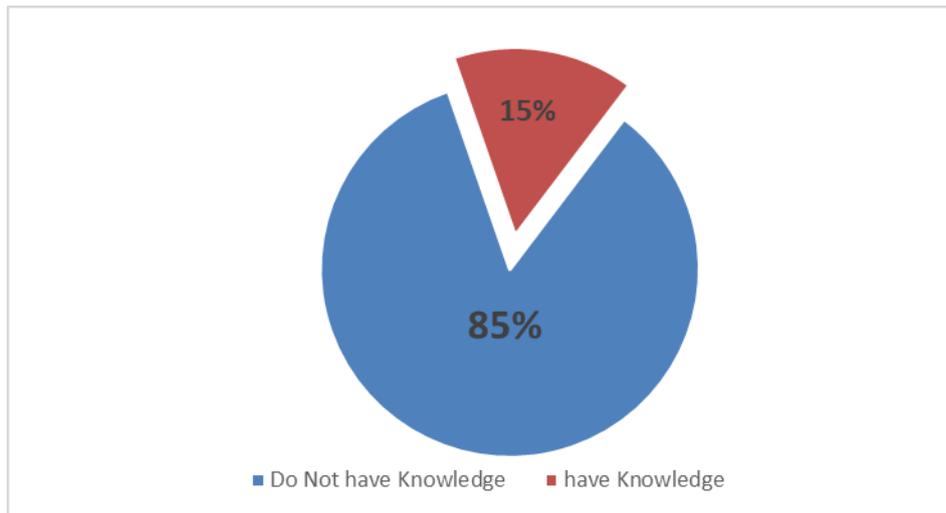


Figure (1) Percentage of individuals knowing bio-archaeology

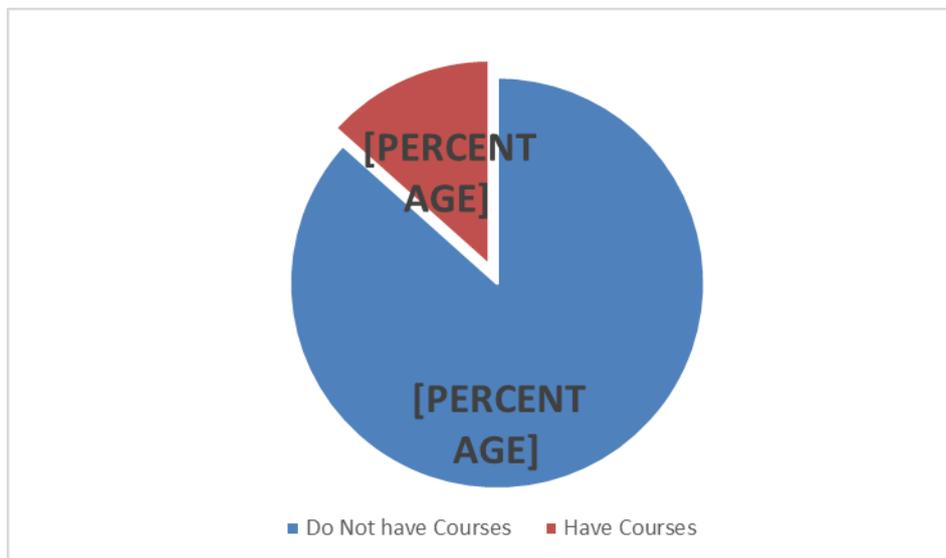


Figure (2) Percentage of individuals had bio-archaeology courses

According to the sources of information that the students relayed on to gain knowledge about human-bioheritage, it is found that internet sources like; electronic books and journals, social media, blogs and youtube videos were the most frequently used information sources with percentages 41%, 41%, 35% and 29% respectively. While, only 30% and 28% of the respondents depended on the ministry of Antiquities and university respectively (figure, 3). Actually, the relative lack of specific

academic programs inside the Egyptian universities, and the complete lack of academic experts within the ministry of Antiquities, pushed the researchers to find other alternatives for acquiring bio-archaeology knowledge and training, and then they choose the internet sources as the most appropriate alternative.

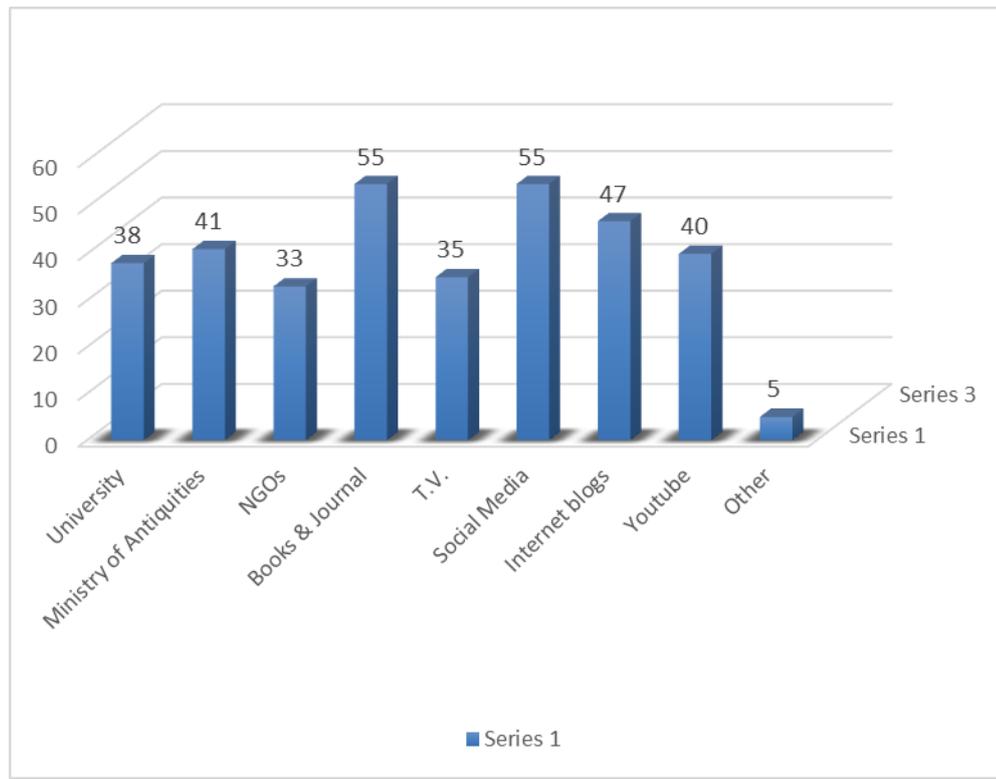


Figure (3) Sources of information

Two major themes encompassing challenges facing researchers and students were emerged from this study and can be summarized as follow:

- 1) Rules and routine of the ministry of Antiquities, reflected by:
  - Low financial support during field excavations.



- Lack of bio-archaeology field schools organized by the ministry that focused on handling and treatment of human-bioheritage.
  - Lack of effective training courses that provide both theoretical and practical experience.
  - Absence of academic experts in the archaeological sites during excavations.
  - Difficulty to find a chance for training with the foreign missions working in Egypt.
  - Absence of cooperation with the ministry of higher education.
  - Poor storage of both skeletal and mummified remains whether in storerooms or museums.
  - Foreign missions dominated the fieldwork and excavations in Egypt, especially in the field of bio-archaeology.
  - The field of bio-archaeology became confined to limited, not well-qualified individuals, which means that it is directed on personal basis but not on institutional one.
- 2) Educational system.
- Absence of bio-archaeology as a compulsory course for undergraduate archaeology students all over the Egyptian universities.
  - Lack of awareness among school and university students about the importance of human-bioheritage.
  - There is any academic department in the Egyptian universities specialized in Egyptian bio-archaeology and human-bioheritage studies.
  - Very limited number of academic staffs specialized in bio-archaeology. Consequently, some academic departments invite non-specialized and unqualified individuals to teach some concepts about bio-archaeology.

On the other hand, the second group of study sample consists of (5) academic staff specialized in bio-archaeology, all of them responded to the second questionnaire that consists of (5) questions structured to measure; the number of research papers published within the last ten years, sources of information, major challenges, proposed solutions and finally the future perspectives oh human-bioheritage in Egypt.

Surprisingly, the results revealed that, 40% of the respondents did not publish any research paper, 20% published three papers, 20% published nine papers and 20% published 13 papers, within the last ten years (figure, 4). This marked shortage in publications was mainly due to limited financial support and inappropriate laboratories used for the investigation of human-bioheritage.

According to the sources through which they gained their information, results revealed that, all of them depends upon books and scientific publications, 80% uses social media and blogs, 60% utilizes youtube and only 20% communicates personally with bio-archaeologists all over the world to increase and advance their knowledge (figure, 5).

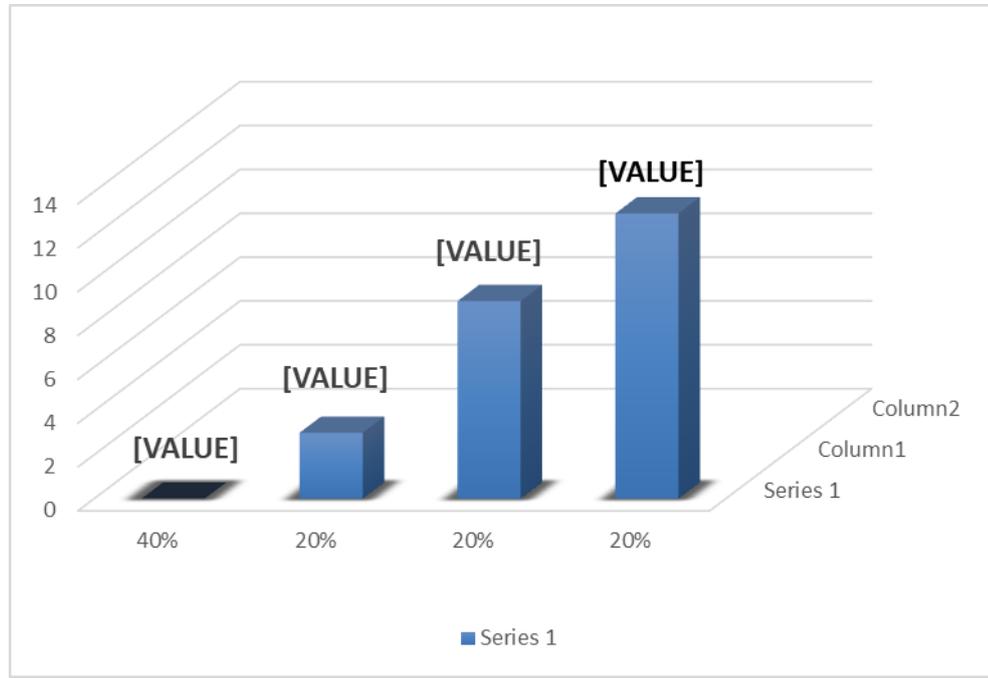


Figure (4) Number of Publications



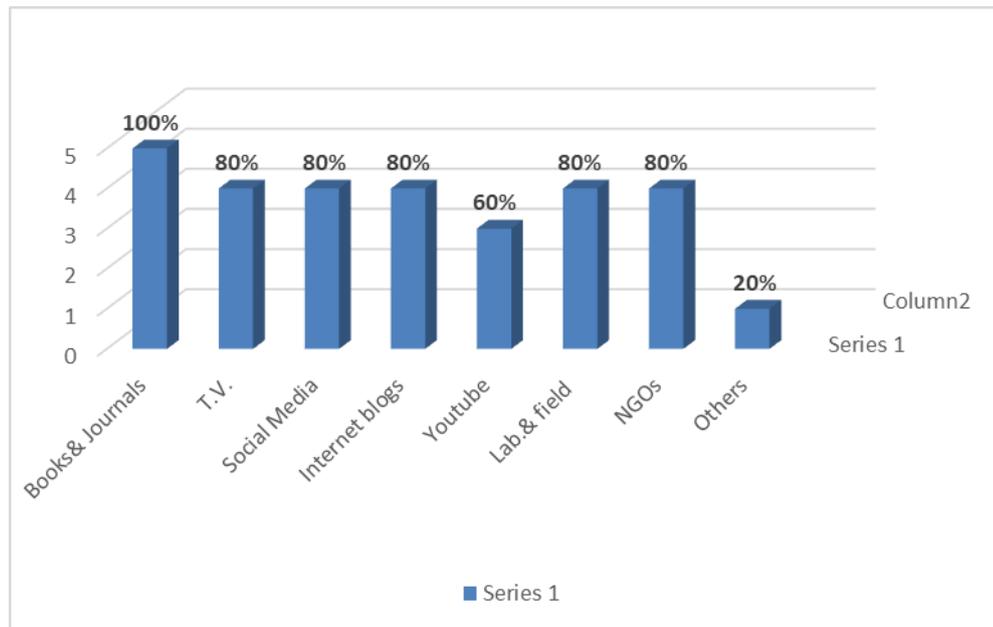


Figure (5) Sources of information

Also, this group of bio-archaeologists facing several challenges that could be summarized as follow:

- Very limited financial support.
- Absence of any academic program of bio-archaeology in the Egyptian universities.
- Higher officials and workers of the ministry of Antiquities did not pay attention to human-bioheritage and bio-archaeology.
- Absence of any Egyptian journal in bio-archaeology.
- Rules of admission prohibits the enrollment of archaeologists to the departments of biological anthropology to study bio-archaeology.
- Absence of cooperation between ministry of higher education and that of Antiquities to manage issues related to bio-archaeology.
- Although there are huge amounts of excavated human remains, only few samples were available for scientific investigations, due to the hardly

obtained permissions from the Permanent Committee of Antiquities. Where, the structure of that committee does not involve any academic bio-archaeologist who have the ability to take the right decisions related to human-bioheritage.

- Until the academic year 2014-2015, there was not any bio-archaeology course introduced to the undergraduate students in the Egyptian universities.

Generally, both studied groups showed some common challenges facing the sector of human-bioheritage. Firstly, there is no clear vision about the reality and future prospects of human-bioheritage in Egypt. Secondly, the huge number of medical terminologies and concepts acts as a main barrier for a large number of archaeologists. Finally, lack of awareness for the great majority of Egyptians about the nature and importance of such type of heritage.

Additionally, both groups of respondents suggested some applicable ideas in order to overcome the previously mentioned challenges. These suggestions are:

- Availability of appropriate financial support needed for publishing, laboratory work and excavations.
- Construction of advanced laboratories for bio-archaeological research.
- Developing a new higher diploma in bio-archaeology, and introducing bio-archaeology as a compulsory course for undergraduates.
- There must be field based education and training instead of class based. Where, bio-archaeology cannot be based only on theoretical education without practice.
- Establishing protocols with the corresponding foreign universities for exchange of experiences and transfer of new technologies utilized within the field of bio-archaeology.



- The structure of the Permanent Committee of Antiquities must involve at least one academic biological anthropologist specialized in bio-archaeology in order to deal appropriately with issues related to human-bioheritage.
- Skeletal materials preserved in storerooms of the ministry of Antiquities and faculties of archaeology, should be available for Egyptian researchers to perform bio-archaeological investigations, without routine complexities.
- There should be an active cooperation between ministry of Antiquities and that of higher education, for continuous training of archaeologists working in the field.
- Production of Arabic content – books and manuals – in bio-archaeology and human-bioheritage.

The future vision of the field of human-bioheritage and bio-archaeological studies witnessed great variation among the respondents. Where, number of respondents predicted no future for such type of scientific approaches in Egypt. While, a set of respondents declared inability to predict a clear vision. Concurrently, the last group of respondents predicted a brilliant future for such type of studies.

It is not reasonable, that Egypt the richest country ever in the amount and uniqueness of human-bioheritage lacks the potential and qualified individuals in this field. Consequently, it is not a matter of choice to well develop the bio-archaeology approach to have the ability to preserve study and utilize human-bioheritage.

#### **Suggestions for future development.**

Armelagos (2003: 34) stated, “We are enriched when essential insights drawn from the past provide a prologue to the future”. In addition, “it is the time to unlock the potential of heritage to provide a better life and livelihood to communities in Africa ..... heritage is about now, about what is happening today. Youth must see the opportunities in

heritage,” said Ndoro (2019). This underscores the important role played by bio-heritage in community development in the present and future, which must be led by youth.

Therefore, in addition to the previously mentioned suggestions to overcome the contemporary challenges facing youth in the sector of bio-heritage, the present study proposes some thoughts that will bring about future development of human-bioheritage research, education, and the sector as whole. These could be summarized as follow:

- Developing a new type of tourism, namely ‘bio-heritage tourism’ that would utilize the mummies and unique human remains of ancient Egyptians, in special departments within the Egyptian museums that would open a new trend for the Egyptian tourism.
- Constructing or specifying a new museum dedicated to displaying human-bioheritage only.
- Activation of ‘Conference tourism’ that would concentrate its themes on human-bioheritage of ancient Egyptians. Where, the conference program should involve scientific events like workshops and round table discussions that would be held within the museums hosting the human-bioheritage to be discussed. Where, the cost of these events would be prepaid as a part of the total conference fees, and then this part could be directed to the development of the museums and the whole human-bioheritage sector.
- Applying ‘Educational tourism’ through cooperation between ministries of Antiquities and higher education. This could be achieved by organizing field school in bio-archaeology for both foreign and native students and researchers, through which they would have field training and analysis of human skeletal and mummified remains. Moreover, the



program of the field school should involve visiting the human-bioheritage hosted in museums.

- Supporting joint research with the foreign institutions. Simply, Egypt have the raw material (human-bioheritage) and the foreign partner would have both technology and financial support. Consequently, there would be mutual benefits for the two sides.

The previously stated suggestions would participate in the development of the youth and the institutions whether by financial support of the extra income and / or the new technologies imported from the foreign partners.

### **Conclusion.**

Several challenges facing the Egyptian youth interested in human-bioheritage sector. Enough financial support, changing mentality of officials working in this sector and adjusting routine would lead to overcoming these challenges. Moreover, adopting creative thoughts that utilizing bio-heritage could make a sustainable development for the whole sector.

Real development is that based mainly on capacity building, i.e., improving skills and qualifications of the individuals. Thus, in order to overcome challenge and achieve sustainable development in the human-bioheritage sector, youth must be a part of this process, but not apart from it.

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