



Stages of Human Creation According to the Qur'an and Modern Embryology: A Review of Literature Review

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Abstract:

Human creation is one of the fundamental themes discussed in the Qur'an and remains relevant to scientific developments, particularly in the field of embryology. The Qur'an describes the stages of human development through several phases, including nutfah (a drop of fluid), 'alaqah (a clinging substance), mudghah (a lump of flesh), the formation of bones, and the covering of bones with flesh before becoming a complete human being. These descriptions have attracted the attention of scholars and researchers due to their conceptual similarities with findings in modern embryology. This study aims to analyze the stages of human creation as described in the Qur'an and examine their relevance to contemporary embryological knowledge. The research employs a qualitative approach using a literature review method. Data were collected from primary sources, including the Qur'an and relevant tafsir literature, as well as secondary sources such as scientific journals, books, and previous studies on embryology and Islamic perspectives on human creation. The data were analyzed descriptively through thematic interpretation and comparison with modern embryological concepts. The findings indicate that the stages of human creation mentioned in the Qur'an correspond conceptually with several phases identified in modern embryology. Furthermore, the study highlights the harmonious relationship between Islamic revelation and scientific knowledge, demonstrating that both can complement each other in understanding the origin and development of human life. This research contributes to strengthening interdisciplinary discourse between religion and science while enriching perspectives on human creation.

Keywords: Human Creation; Qur'an; Embryology; Science and Religion.

Abstrak:

Penciptaan manusia merupakan salah satu tema fundamental yang dibahas dalam Al-Qur'an dan tetap relevan dengan perkembangan ilmu pengetahuan, khususnya dalam bidang embriologi. Al-Qur'an menjelaskan tahapan perkembangan manusia melalui beberapa fase, yaitu nutfah (setetes cairan), 'alaqah (sesuatu yang melekat), mudghah (segumpal daging), pembentukan tulang, hingga penyempurnaan bentuk manusia. Deskripsi tersebut menarik perhatian para ilmuwan dan peneliti karena memiliki kesamaan konseptual dengan temuan dalam embriologi modern. Penelitian ini bertujuan untuk menganalisis tahapan penciptaan manusia menurut Al-Qur'an serta mengkaji relevansinya dengan pengetahuan embriologi modern. Penelitian menggunakan pendekatan kualitatif dengan metode studi literatur (library research). Data diperoleh dari sumber primer berupa Al-Qur'an dan kitab-kitab tafsir yang relevan, serta sumber sekunder berupa buku, artikel ilmiah,

dan hasil penelitian terdahulu yang membahas embriologi dan penciptaan manusia dalam perspektif Islam. Data dianalisis secara deskriptif melalui pendekatan tafsir tematik dan perbandingan dengan konsep embriologi modern. Hasil kajian menunjukkan bahwa tahapan penciptaan manusia yang dijelaskan dalam Al-Qur'an memiliki kesesuaian konseptual dengan beberapa fase perkembangan embrio yang dijelaskan dalam embriologi modern. Selain itu, kajian ini menunjukkan adanya hubungan yang harmonis antara wahyu dan sains dalam menjelaskan asal-usul serta perkembangan kehidupan manusia. Penelitian ini diharapkan dapat memperkaya kajian interdisipliner antara agama dan sains serta meningkatkan pemahaman mengenai kebesaran Allah SWT melalui proses penciptaan manusia.

Kata Kunci: Penciptaan Manusia, Al-Qur'an, Embriologi, Sains dan Agama.

INTRODUCTION

Human creation has been one of the most fundamental topics discussed in both religion and science. Questions concerning the origin, development, and nature of human beings have attracted the attention of scholars from various disciplines throughout history. In Islam, the Qur'an provides comprehensive explanations regarding human creation, while modern science seeks to understand the biological mechanisms underlying human development through empirical investigation. The Qur'an presents human creation as a manifestation of Allah's wisdom and power, encouraging human beings to reflect upon their origins and existence. Consequently, the study of human creation has become an important field of inquiry that bridges religious teachings and scientific knowledge (Kiptiyah, 2007).

The Qur'an contains numerous verses describing human creation and development. Human beings are portrayed as a special creation of Allah, originating from earthly substances and subsequently developing through gradual stages within the womb. Several Qur'anic verses, particularly Surah Al-Mu'minun (23:12–14), Surah Al-Hajj (22:5), and Surah As-Sajdah (32:7–9), explain the progression from *nutfah* (a drop of fluid), *'alaqah* (a clinging substance), and *mudghah* (a chewed-like lump) to the formation of bones, flesh, and a complete human being. These descriptions demonstrate that human development is presented as a systematic and sequential process rather than an instantaneous event (Farihah, 2023; Cheema & Mazhar, 2023).

The interpretation of these developmental stages has been an important subject of Islamic scholarship. Classical and contemporary Muslim scholars have attempted to understand the meanings and implications of Qur'anic descriptions of embryonic development through various exegetical approaches. Comparative studies of Qur'anic interpretation indicate that although scholars may differ in their methodological perspectives, they generally agree that the Qur'an describes human creation as a gradual process occurring through distinct developmental stages. Such interpretations have contributed significantly to contemporary discussions regarding the relationship between Islamic teachings and scientific understanding of human origins (Ihyaudin et al., 2025).

Advances in modern biology and embryology have provided increasingly detailed knowledge regarding human development before birth. Contemporary embryology explains that human life begins with fertilization, followed by zygote formation, cellular division, implantation, embryonic differentiation, organogenesis, and fetal growth. Technological developments such as microscopy and medical imaging have enabled scientists to observe these processes with unprecedented accuracy. As scientific understanding of embryonic development has expanded,

scholars have become increasingly interested in examining the relationship between embryological discoveries and Qur'anic descriptions of human creation (Ali Mohammad, 2020).

The relationship between the Qur'an and embryology has attracted considerable scholarly attention at both national and international levels. Several studies have argued that the developmental stages described in the Qur'an correspond conceptually to stages recognized in modern embryology. Discussions concerning *nutfah*, *'alaqah*, and *mudghah* have frequently been linked to scientific explanations of fertilization, implantation, and embryonic formation. Furthermore, studies have noted that descriptions of prenatal development appear in Islamic sources centuries before the emergence of embryology as a modern scientific discipline, thereby encouraging interdisciplinary dialogue between religious studies and biological sciences (Saadat, 2009; Ali Mohammad, 2020).

In recent years, scholars have increasingly emphasized the integration of Qur'anic teachings and scientific knowledge. Rather than viewing religion and science as opposing domains, many researchers argue that both can contribute to a more comprehensive understanding of human creation. Studies examining the integration of embryology and Islamic teachings demonstrate that Qur'anic concepts of human development can be analyzed through contemporary biological perspectives while maintaining their theological significance. This integrative approach highlights the complementary relationship between revelation and scientific inquiry in explaining human existence (Aulia Putri et al., 2026; Laila Sari Masyhur et al., 2025).

The growing interest in scientific interpretations of the Qur'an has also contributed to discussions concerning the scientific dimensions of human creation. Several scholars argue that Qur'anic descriptions of embryological development illustrate a remarkable harmony between revelation and scientific discovery. These studies suggest that the stages of human development described in the Qur'an are consistent with contemporary scientific observations and therefore provide valuable insights for understanding the relationship between faith and science. Such findings have encouraged further exploration of Qur'anic perspectives on human creation within interdisciplinary academic contexts (Zekkour et al., 2024).

In addition to the Qur'an, the Hadith literature provides important explanations regarding human creation and embryonic development. The integration of Qur'anic and Prophetic teachings offers a broader framework for understanding the formation of human life and its developmental stages. Contemporary studies have emphasized that combining insights from the Qur'an, Hadith, and modern embryology contributes to a more comprehensive understanding of human creation and strengthens the relevance of Islamic teachings to modern scientific developments (Anisyah Nurkhotimah et al., 2026).

Previous studies have examined human creation from various perspectives, including Qur'anic exegesis, embryological analysis, scientific interpretation, comparative studies, and interdisciplinary integration. Research has discussed the creation of humans from clay, water, and reproductive fluids, as well as the correspondence between Qur'anic descriptions and modern embryological concepts. Collectively, these studies demonstrate that the Qur'an provides a rich

framework for understanding human origins while simultaneously encouraging scientific investigation of natural phenomena (Djurniyah & Andriani, 2024).

Although previous studies have made significant contributions to understanding human creation from religious and scientific perspectives, most have focused on specific Qur'anic verses, individual embryological stages, comparative interpretations, or particular scientific findings. Moreover, existing studies often discuss Qur'anic, Hadith, tafsir, and embryological perspectives separately. Comprehensive reviews that systematically synthesize findings from these diverse fields into a unified understanding of human creation remain limited. Therefore, there is a need for a literature review that integrates findings from Qur'anic studies, Hadith studies, embryology, and interdisciplinary scholarship to provide a more holistic understanding of human development.

Accordingly, this study aims to analyze and synthesize previous literature concerning the stages of human creation according to the Qur'an and modern embryology. Through a literature review approach, this study seeks to identify major themes, evaluate the relationship between Qur'anic descriptions and contemporary embryological knowledge, and contribute to interdisciplinary discussions regarding the interaction between religion and science.

RESEARCH METHOD

This study employed a qualitative approach using a literature review method. The literature review was conducted to analyze and synthesize previous studies concerning the stages of human creation according to the Qur'an and modern embryology. This method was selected because it enables researchers to systematically examine, compare, and integrate findings from various scholarly sources related to the research topic.

The data used in this study consisted of secondary data obtained from scientific journal articles, books, conference proceedings, and other relevant academic publications discussing human creation in the Qur'an, embryological development, Qur'anic exegesis, and the relationship between religion and science. The literature was collected from academic databases such as Google Scholar and other scholarly sources relevant to the objectives of the study.

Data collection was conducted through documentation techniques by identifying, selecting, and reviewing relevant literature. The selection of literature was based on the following criteria: (1) discussing human creation from Qur'anic and/or scientific perspectives; (2) containing information related to embryological development; (3) published in scholarly journals, books, or academic proceedings; and (4) contributing to the understanding of the relationship between Islamic teachings and modern scientific knowledge.

The collected data were analyzed using descriptive qualitative analysis. The analysis process consisted of four stages: literature collection, data reduction, data organization, and data interpretation. Relevant information obtained from the selected literature was categorized into several themes, including the concept of human creation in the Qur'an, stages of embryological

development described in Islamic sources, modern embryological perspectives, and the relationship between Qur'anic descriptions and contemporary scientific findings. The findings from various sources were then compared, interpreted, and synthesized to provide a comprehensive understanding of the stages of human creation according to the Qur'an and modern embryology.

RESULTS AND DISCUSSION

Table 1. Results of the Analysis of Articles on the Stages of Human Creation According to the Qur'an and Modern Embryology: A Literature Review

No	Authors & Years	Article Title	Method	Main Findings
1.	Ihyaudin & Andi Rosa (2025) et.all	Human Creation in the Qur'an and Embryology: A Scientific Interpretation	Literature Review, Comparative Qualitative Study	The stages of human creation described in Surah Al-Mu'minun verses 12–14
2.	Anisyah Nurkhotimah, Falenza Nadia Faradhita & Alihan Satra (2026)	Human Creation from the Perspective of the Qur'an and Hadith and Its Relevance to Modern Science	Descriptive Qualitative Literature Review	The Qur'an and Hadith explanations of nutfah, 'alaqah, and mudghah correspond to findings in modern embryology.
3.	Aulia Putri, Dani Ikhwan, Irsyaddin Nasution, Ridho Ardyansah & Umar Mukhtar Siregar (2026)	Human Embryonic Development from the Perspective of the Qur'an and Modern Embryology: An Analysis of Interpretation and Scientific Integration	Library Research, Descriptive Qualitative Approach	There is a conceptual correspondence between modern embryological stages and Qur'anic terms such as nutfah, 'alaqah, and mudghah.
4.	Laila Sari Masyhur, Albir Hanif Ibrahim, Fajar Firmansyah Nasution, Khairaturahmi Rahmadhani (2025)	Human Creation from the Perspective of the Qur'an and Science	Literature Review Demonstrates an intertextual relationship between	Qur'anic explanations and scientific findings concerning human development.
5.	Djurniyah, Rahmah Andriani (2024)	Embryology in the Qur'an: A Study of the Process of Human Creation	Literature Review	Explains the process of human creation from clay, nutfah, and the formation of organs based on the perspectives of the Qur'an and science.
6.	Kiptiyah (2020)	Embryology from the Perspective of the Qur'an	Literature Review	Discusses the meanings of nutfah, 'alaqah, and mudghah

No	Authors & Years	Article Title	Method	Main Findings
				and their relevance to human embryonic development.
7.	Afkarina& Kurniawan (2022)	The Process of Human Creation According to Science and the Qur'an	Literature Review	The stages of human creation described in the Qur'an are consistent with modern scientific explanations.
8.	Aina & Mawaddah (2023)	The Role of Biology in Islam from the Perspective of the Qur'an	Literature Study	Biology contributes to understanding Allah's creation and strengthens the relationship between science and Islam.
9.	Asyiah (2023)	Evidence of Human Creation and Evolutionary Theory in the Perspective of the Qur'an	Literature Review	The Qur'anic account of human creation differs fundamentally from Darwinian evolutionary theory.
10.	Fitriani et al. (2021)	Human Creation from the Perspective of the Qur'an and Its Contextualization with Scientific Knowledge Qualitative	Literature Study	Human reproductive and embryological processes demonstrate harmony between Qur'anic teachings and modern science.
11.	Gusti,& Arsyad et.al (2023)	Human Anatomy Formed from a Clinging Substance ('Alaqah) in Relation to Qur'anic Verses and Biological Science	Literature Review	The concept of 'alaqah is closely related to biological and anatomical processes in embryonic development.
12.	Mustikasari & Badrun (2021)	The Urgency of Scientific Interpretation of the Qur'an	Literature Review	Scientific interpretation helps reveal the scientific miracles (i'jaz 'ilmi) of the Qur'an.
13.	Rosidah (2022)	Human Embryology from the Perspective of the Qur'an	Scientific Tafsir Study	Surah Al-Mu'minun (23:12–14) systematically explains embryonic development.
14.	Santosa (2020)	The Existence of Homo Neanderthalensis and Homo Sapiens in the Perspective of Science and the Qur'an	Literature Review	Scientific findings concerning early humans can be discussed alongside Qur'anic perspectives on human origins.

No	Authors & Years	Article Title	Method	Main Findings
15.	Subagiya&Alim (2018)	Internalization of Educational Human Creation Values in the Qur'an in Biology Science Education	Research	Qur'anic values regarding human creation can be integrated into biology education

Based on the review of six articles discussing the stages of human creation according to the Qur'an and modern embryology, it was found that all articles demonstrate a close relationship between the Qur'anic description of human creation and the findings of modern embryological science. The analyzed articles employed literature review methods and qualitative approaches to examine the correspondence between Qur'anic verses, Hadith, and contemporary scientific knowledge in the field of embryology.

The analysis revealed that the concept of human creation in the Qur'an is generally described through several stages, namely creation from the essence of clay, *nutfah* (a drop of semen), *'alaqah* (a clinging substance), *mudghah* (a chewed-like lump), the formation of bones, the covering of bones with flesh, and finally the development of a complete fetus. These stages are primarily discussed in Surah Al-Mu'minun verses 12–14 and constitute the main focus of most of the reviewed articles. The authors concluded that the sequence of embryonic development described in the Qur'an corresponds to the stages recognized in modern embryology. In addition to describing the stages of embryonic development, the Qur'an presents human creation as a gradual and purposeful process that reflects Allah's wisdom and power. The stages of *nutfah*, *'alaqah*, and *mudghah* are not isolated events but interconnected phases of development that ultimately result in the formation of a complete human being. Rosidah (2022) explains that these stages correspond to a systematic developmental sequence, while Fitriani et al. (2021) emphasize that the Qur'anic description of human creation remains relevant to contemporary discussions on reproductive health and biological sciences. These findings indicate that the Qur'an provides not only theological guidance but also insights that can be examined through scientific perspectives.

The article by Ihyaudin et al. (2025) explains that the stages of human creation described in the Qur'an are consistent with embryonic development based on modern embryological studies. The study emphasizes that the Qur'anic description of human development provides an account that aligns with current scientific findings. This indicates that the Qur'an serves not only as spiritual guidance but also contains information that can be explored through scientific inquiry.

Similarly, Nurkhotimah et al. (2026) examined human creation from the perspectives of the Qur'an and Hadith and its relevance to modern science. Their findings show that terms such as

nutfah, 'alaqah, and mudghah correspond to biological stages of human embryonic development. This study demonstrates that the knowledge contained in the Qur'an and Hadith can be better understood through modern embryological science, thereby creating an integration between religious and scientific knowledge.

Comparable findings were reported by Putri et al. (2026), who emphasized the importance of integrating Qur'anic interpretation with modern embryology. Their study found a conceptual correspondence between the terminology used in the Qur'an and the stages of embryonic development recognized in contemporary medical science. This integration illustrates how Islamic studies and scientific knowledge can complement one another in providing a more comprehensive understanding of human origins.

Furthermore, the article on human creation from the perspective of the Qur'an and science highlights that advances in modern scientific knowledge have strengthened the understanding of Qur'anic verses related to human creation. Various embryological studies have demonstrated similarities between the biological processes of embryonic development and the stages described in the Qur'an more than fourteen centuries ago.

The article focusing on embryology in the Qur'an explains that human creation occurs through gradual and systematic stages. This study emphasizes that embryonic development does not occur instantaneously but progresses through sequential phases consistent with the descriptions found in the Qur'an. Such understanding reflects the complexity of human creation and demonstrates the greatness of Allah as the Creator.

Meanwhile, Kiptiyah's study on embryology from the Qur'anic perspective provides a more detailed explanation of the terms nutfah, 'alaqah, and mudghah. The findings indicate that these terms can be associated with specific phases of embryonic development recognized in modern embryology. Consequently, this study further strengthens the view that there is a harmonious relationship between divine revelation and scientific knowledge.

In addition to the six core articles analyzed above, the literature review was extended to fifteen further national and international journal articles, published between 2018 and 2025, that examine the stages of human creation from Qur'anic, tafsir, educational, and biological perspectives. These additional sources further reinforce the conceptual correspondence between Qur'anic descriptions of human development and modern scientific knowledge, while also

broadening the discussion into related themes such as Islamic science education and the position of the Qur'an in relation to theories of human origin.

Kiptiyah (2018) explains that the Qur'anic terms *nutfah*, *'alaqah*, and *mudghah* refer to a continuous sequence of embryonic transformation rather than separate and unrelated events, and that this sequence is compatible with the stages identified in modern descriptive embryology. A similar conclusion is drawn by Afkarina and Kurniawan (2022), who compare Qur'anic descriptions of human creation with contemporary scientific accounts and find that the order of developmental stages mentioned in the Qur'an parallels the chronological stages of fertilization, implantation, and organogenesis described by embryologists. Latansa (2022) further enriches this discussion through a study of Tantawi Jawhari's *Tafsir Al-Jawahir*, showing that classical *mufasssirun* had already attempted to connect Qur'anic verses on human creation with the natural sciences of their time, thereby laying an early foundation for the contemporary integration of *tafsir 'ilmi* and embryology.

Beyond exegetical analysis, several studies highlight the pedagogical implications of integrating Qur'anic teachings on human creation with biology education. Subagiya, Hafidhuddin, and Alim (2018) argue that the values contained in Qur'anic verses on human creation can be internalized into the teaching of evolution and embryology in Islamic biology education, particularly through emphasizing the concept of *ruh* (spirit) and divine involvement in human formation. This finding suggests that the relationship between the Qur'an and embryology is not only of theological or scientific interest but also carries pedagogical value for science education within an Islamic framework.

Several articles also examine the position of the Qur'an in relation to theories of human origin and evolution. Sholichah (2019) compares the Western theory of human evolution with Qur'anic explanations of human creation and concludes that, although both discuss the origin of human life, the Qur'an emphasizes a purposeful and divinely guided process rather than an undirected natural mechanism. Asyiah (2023) similarly examines the contrast between Darwinian evolutionary theory and the Qur'anic account of human creation, noting that classical Muslim and Greek thinkers had engaged with ideas about the development of living beings centuries before Darwin, yet the Qur'an situates human creation within a framework of divine will. Related studies by Santosa (2020) and Santosa, Ferry, and Witro (2020) explore the position of *Homo neanderthalensis* and *Homo sapiens*, as well as student perceptions of human origins, within Islamic and scientific perspectives, finding that integrating scientific findings on human evolution with Qur'anic teaching can strengthen students' understanding of human origins without contradicting religious belief.

Other studies adopt a more interpretive and comparative approach. Acim (2023) analyzes Buya Hamka's interpretation of the verses on human creation in Surah Al-Mu'minun and finds that Hamka integrates rational and scientific explanations within a classical exegetical framework, reflecting an effort to harmonize Islamic scholarship with modern knowledge. Rasyad, Wiradhana, and Aqsa (2023) provide a broader thematic discussion of the process of human creation across multiple Qur'anic verses, concluding that the stages described move systematically from inorganic matter to a fully formed human being. Rosa, Jahroh, Fazriah, Sari, and Nuralifah (2025) conducted a tafsir 'ilmi study of Surah Al-Mu'minun verses 12–14 and similarly found that the sequence of nutfah, 'alaqah, and mudghah corresponds with the stages recognized in modern embryological research, reinforcing the conclusions drawn by Ihyaudin et al. (2025) and Putri et al. (2026) discussed earlier. Gusti, Ikmal, and Arsyad (2023) focus specifically on the formation of the human body from a clot of blood ('alaqah) and relate this description to anatomical and biological processes, providing further empirical grounding for the Qur'anic terminology used to describe early human development.

Finally, several studies examine the broader methodological debates surrounding scientific interpretation (tafsir 'ilmi) of the Qur'an. Mustikasari and Badrun (2021) review the thought of Zaghlul Raghīb Muhammad al-Najjar, emphasizing the urgency of scientific interpretation in demonstrating the scientific miracles (i'jaz 'ilmi) of the Qur'an while cautioning that such interpretation must remain consistent with classical exegetical principles. In a related study, Rahman and Setiawan (2025) examine al-Najjar's interpretation of Surah Al-Ahqaf verse 15, illustrating how contemporary scientific exegesis continues to be applied to verses beyond those directly describing embryology, including verses related to human gestation more broadly. Taken together, these methodological studies indicate that while tafsir 'ilmi approaches have substantially enriched the discourse on human creation, scholars remain attentive to the need for balance between scientific validation and the theological integrity of Qur'anic interpretation.

Overall, the inclusion of these fifteen additional studies broadens the scope of the present literature review beyond the six core articles, encompassing perspectives from tafsir 'ilmi, Islamic biology education, comparative studies of evolution, and methodological reflections on scientific exegesis. Collectively, they reinforce the central finding of this study: that the stages of human creation described in the Qur'an, from nutfah to 'alaqah, mudghah, and the formation of bones and flesh, exhibit a consistent and well-documented correspondence with the developmental stages identified in modern embryology, while also demonstrating that this correspondence has been

examined productively across diverse disciplinary, methodological, and pedagogical contexts within both national and international scholarship.

CONCLUSION

The review of six articles indicates that the stages of human creation described in the Qur'an show a strong correspondence with the stages of embryonic development recognized in modern embryology. Terms such as *nutfah*, *'alaqah*, and *mudghah* can be associated with specific phases of human embryonic growth identified by contemporary science. The findings also highlight the importance of integrating religious knowledge and scientific understanding to provide a more comprehensive explanation of human creation. Therefore, the study concludes that the Qur'anic description of human creation is compatible with modern embryological discoveries and serves as an important example of the harmony between revelation and science.

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