Bioethics in the context of Christian scholarship: Time for a new discussion?

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Abstract

The discussion on and the value of Christian bioethics is not new. Although religion has a declining influence on healthcare policy in general, there is a general appreciation of Christian bioethics because of its ongoing advocacy of respect for and protection of life. However, ongoing technological and social developments in healthcare pose the question of whether Christian bioethics should engage with these developments. Challenges identified during the pandemic, such as just clinical metrics and the rising need for spiritual care in healthcare, necessitate that Christian bioethics consider its view on these and other matters, like the growing possibility of bioprinting, artificial intelligence (AI), big data decision-making, and robots in healthcare. At the same time, the elderly community is growing steadily. Such a group will put more and additional demands on a healthcare system that is already suffering from poor service delivery.

The point of departure in this article is that bioethics includes ethical challenges in healthcare caused by, for example, new technological developments, the duties and responsibilities of pharmaceutics and governments, and the professional relationships between doctor, nurse and/or therapist, and the patient with his/her family and relatives. This article will identify some of the developments impacting on healthcare, with which Christian bioethics ought to engage. The intention is not to debate these cases, but merely to substantiate the importance of

reflection on them for (Christian) bioethics. Argument-based ethics is used in this article.

The value of Christian bioethics lies in its demonstrable contribution to matters on the quality of life and health, its supplementation of existing perspectives on these matters, and its use of Biblical perspectives to guide discussions on new developments in healthcare.

Opsomming

Die gesprek oor en die waarde van 'n Christelike bioetiek is nie nuut nie. Alhoewel godsdiens 'n vermindere invloed op gesondheidsorgbeleid het, is daar 'n algemene waardering vir die Christelike bioetiek oor diè etiek se volgehoue bevordering van respek vir en beskerming van lewe. Nuwe tegnologiese en sosiale ontwikkelings in gesondheidsorg roep die vraag op of die Christelike biotetiek nie met hierdie nuwe ontwikkelings in gesprek moet tree nie. Uitdagings wat gedurende die COVID-19 pandemie geïdentifiseer is soos verteenwoordigende kliniese statistiek en die groeiende behoefte aan geestelike sorg in gesondheidsorg, noodsaak dat die Christelike bioetiek weer oor hierdie en ander sake moet nadink. Voorbeelde hiervan is die groeiende moontlikhede van biodrukwerk, kunsmatige intelligensie, besluitneming gebaseer op groot data reekse en die gebruik van robotte in gesondheidsorg. Terselfdertyd is daar 'n groter ouerwordende gemeenskap. Hierdie populasiegroep sal meer druk plaas op die gesondheidsorgsisteem wat reeds deur swak dienslewering uitgedaag word.

Die vertrekpunt van hierdie artikel is dat bioetiek uitdagings in gesondheidsorg insluit wat veroorsaak word deur nuwe tegnolgiese ontwikkelings, die pligte en verantwoordelikhede van farmaseutiese maatskappy en die regering, en die professionele verhouding tussen dokters, verpleegsters, en/of terapeute met die pasiënt en sy/haar familie en naasbestaandes. Hierdie artikel identifiseer sekere ontwikkelings wat op die gesondheidsorg impakteer en waarmee die Christelike bioetiek in gesprek behoort te tree. Die bedoeling is nie om hierdie sake te debateer nie, maar eerder die noodsaak vir die Christelike bioetiek om hierop te reflekteer, te benadruk. 'n Argument-gebaseerde etiek word in hierdie artikel gebruik.

Die waarde van 'n Christelike bioetiek lê in die bydrae wat dit kan lewer tot sake soos die kwaliteit van lewe en gesondheid, die beoordeling van bestaande bioetiese perspektiewe en die gebruik van Bybelse perspektiewe om besluite en nuwe ontwikkelings in gesondheidsorg te beoordeel.

Keywords:
Bioethics, Christian scholarship, healthcare, technology.

Sleutelwoorde:
Bioetiek, Chistelike wetenskap, gesondheidsorg, tegnologie.

1. No old wine in new wineskins

The discussion on Christian bioethics is not new. From this debate, at least three major guidelines can be identified.

First, Christian bioethics is based on the view that man/woman is created in the image of God (*imago Deo*), that life is God-given and hence has value and meaning and cannot be arbitrarily terminated, and that man/woman can call for respect, protection, and care of fellow-persons.

Second, technological development has opened new challenges, particularly in bioethics. The stance is that technology should be regarded as an enabler and not as a decision-maker over life. It is accepted that even if something can be done, it is not always ethical to do it.

Third, Christian bioethics used to be protected in South African law. In a secular democratic society, this privilege no longer exists; for example, the Choice on Termination of Pregnancy Act, 92 of 1996 (Republic of South Africa, 1996) legalises abortion on demand up to the twelfth week of pregnancy. Disagreement with the termination of unborn life is based on moral orientation. The same can be said about assistance to end life. Euthanasia is already written into the legislation of countries such as Belgium, Canada, the Netherlands, and New Zealand. There is a growing voice in favour of legal assistance in the self-determination of life. Here too, the Christian view is that life must be protected regardless of its quality – which does not mean that passive euthanasia and palliative care are not supported.

The reality is, however, that religious orientations, such as the Christian faith, are declining in ethical debates. Apart from post-Christianity, another actuality is that faith-based institutions are making limited inputs to the debate on (bio-)ethical challenges. Despite this decline of the Christian voice, the view of Christian bioethics remains in high regard. The general appreciation of Christian bioethics lies in its ongoing advocacy of the respect for, and the protection of, life. A lesser voice does not mean that there is no longer any influence or contribution to the debate.

However, ongoing technological and social developments in healthcare raise the question of whether Christian bioethics should engage with these developments. This suggests that more matters concern bioethics than simply issues around life and death. This article will identify some of these developments impacting on healthcare with which Christian bioethics should engage.

2. Again: Why a new discussion?

Two different but related perspectives will be employed to address this question.

First, bioethics is no longer limited to the well-known perspectives of life, doctor-patient relationships, or bioethical questions around life and death only. Of late, new developments such as bioprinting and manufacturing, decision-making based on (big) data, experimental research, growing vulnerability because of ageing, war, social determinants, the fourth industrial revolution (4IR), and the COVID-19 pandemic to name but a few, have necessitated Christian bioethics' views and guidelines on these matters. To this can be added the growing managerialism in healthcare, the cost and profit margins of healthcare, and the movement towards widening access to healthcare, an example of which is the national health insurance.

Second, (Christian) bioethics since the COVID-19 pandemic is still largely absent. Biller-Andorno and Spitale (2022) comment that when pandemic challenges such as just clinical metrics are addressed, attention should also be given to key moral and societal core values. Another development that should not be ignored is the growing need for spiritual care in primary healthcare, contrary to the popular belief that spiritual aspects of healthcare are no longer needed (Armitage, 2023).

This article will use the above observations to argue why it is time to open the debate again on Christian bioethics.

Before this matter is addressed, a common working definition is provided of what bioethics is.

3. A common working definition

A literature study on the meaning of "bioethics" and "medical ethics" reveals that bioethics refers to ethical matters in the life sciences and biomedicine. Medical ethics deals more with clinical matters. Du Toit (2008:116) comments that the concept of "medical ethics" originated in the 1960s, but takes the position that lately, the term "bioethics" is more commonly used than "medical ethics". As technology emerged and more questions around life and death were raised, "biomedical ethics" came into use. Lately, however, "bioethics" is more generally used. What should be noted is that bioethics is an interdisciplinary field of study. It fits equally well in clinical sciences, research, and applied ethics. Bioethics' focus is wider than matters around health, life, and death as it also includes *institutional factors*, for example hospitals and medical aid, and *socio-political factors* such as government support, legislation, budgets, and more. The central focus nevertheless remains matters around human life. Du Toit identified three stages of human life with ethical challenges unique to each of these stages. These stages are the *beginning of life, existing life,* and *end of life.* Rich (2020:33) provides a more common definition by referring to bioethics as moral issues in healthcare.

This article will use the term bioethics as it includes ethical challenges in healthcare, including new technological developments, the duties and responsibilities of pharmaceutics and government, and the professional relationships between the doctor, nurse, and/or therapist, and the patient with his/her family and relatives. The latter is specifically important due to the increased awareness of mental health problems, specifically dementia, where family and relatives act as surrogate decision-makers.

With this as background, the focus can now turn to what the core of Christian bioethics is.

4. The core of Christian bioethics

Christian bioethics needs no comprehensive introduction. In the introduction to this article values such as the *imago Dei,* the protection of and respect for life and humanity, dignity, and promotion of quality of life were identified as the essence of Christian bioethics. These views are well explained by Du Toit's (2008:116) comment that the core of Christian bioethics is the image of man and woman as created by God. God is the Creator, Owner, and Protector of life. The *imago Dei* calls for unconditional respect and protection of human life. Marriage is regarded as the only institution within which new life should be conceived. Only God has the right to end life. In this context, technological developments should be regarded as a blessing. The essence of Christian-based bioethics is that life is God-given, and that life should be respected and protected as such.

When bioethics is discussed, four principles of bioethics according to Beauchamp and Childress (2013) cannot be ignored, as these principles are regarded as the backbone of any approach to bioethics. They refer to respect for *nonmaleficence, beneficence, autonomy,* and *justice.* These principles embody the view that no harm should be done, the best interest of the patients should be sought, patients have the right to self-determination, and all patients should be treated alike, hence no discrimination. What should be added, is that these principles form the basis of bioethics regardless of any religious or humanistic orientation. The "what" is therefore not the issue, but rather the "why" and the "how." The "what" resonates with the ethos, meaning *why* is something done, hence the reason or motivation. The point of departure for Christian bioethics is God's view of man/woman as revealed in Scripture and as contextualised in the confessions and the creed of the church. This point of departure is different from the humanistic view where the bottom line is, for example, people's happiness, human rights, and value judgments such as quality of life and self-fulfilment. The "how" may also result in opposing views. Consider self-determination as an example. Its application is well illustrated by the 2022 recall of the Roe versus Wade ruling (1973) on abortion. Supporters of abortion base their opinion on, among other things, the woman's right to make her own decisions regarding reproductive life; whereas anti-abortion opinions are based on the sixth commandment, that no person has the right to kill a person. The interpretation of this commandment is extended to unborn life and the orientation that this commandment in principle covers the embryo's right to life (Lategan, 2022).

It can therefore be stated that the threshold standards for Christian bioethics are based on, or are aligned with, the global understanding of bioethics.

The appreciation, interpretation and application of these standards will be influenced by the core values associated with the Christian faith tradition.

What should be guarded against is the limitation of Christian bioethics to matters of life and death only. A commentary from the Christian Medical Fellowship (2023) originates from the teaching of Christ as recorded in the Bible. For doctors, for example, these teachings have meaning for their view of human life, and relationships with patients and colleagues. Their affirmation upholds values such as the family as an institution, sexual behaviour and marriage, work as a vocation, respect for and dignity of the patient, honouring the privacy of the patient, non-discrimination, promoting preventative medicine and public health, being honest with the patient, professional behaviour and promotion of research and ways to serve the patient more effectively.

Another useful reference is that of Rheeder (2014). He refers to beneficence as a contribution to human well-being. The core meaning of beneficence is to do good to other people. Beneficence is a *right* to receive and a *duty* to perform. A Bible-inspired ethic is not about avoiding evil, but rather about pursuing what is good. The parable of the Good Samaritan sets the example of how the injured on the road should be assisted.

These commentaries confirm what Christian bioethics is, its role in healthcare, and the value it can add to matters concerning life.

Since this article promotes the argument that bioethics concerns all aspects of life in healthcare, new developments in healthcare should be identified to open the debate regarding the matters upon which (Christian) bioethics should also focus.

The approach followed in this article is relevant to *argument-based ethics*. This refers to the construction of arguments based on a specific paradigm. The paradigm of this article is situated in Christian scholarship.

5. New developments in healthcare and its relevance for bioethics

The three cases below reflect new developments in healthcare. These cases illustrate emerging ethical challenges in this industry. The intention is not to debate these cases, but to demonstrate the importance for (Christian) bioethics to reflect on them.

5.1 Ageing

For many years the World Health Organization has been predicting that the population of elderly people will double by 2050, which means a growth of just over 20% since 2015 (World Health Organization, 2015). A growing elderly population, due to increased life expectancy, the need for palliative care, growing mental health challenges, and the requirements of affordability and sustainability, is placing more and more strain on the already challenged social and health care services (Lategan, Van Zyl and Kruger, 2022:1). Elderly people's vulnerability extends to dementia and other mental health challenges and end-of-life matters, particularly euthanasia and physician-assisted end-of-life.

Sanchini, Sala and Gastmans (2022:16) identify from the literature six dimensions associated with older adults' vulnerability. These dimensions are *physical; psychological; relational/interpersonal; moral; sociocultural, politics and economy*; and *existential* or *spiritual.* Using these dimensions, they conclude that there are three ways to deal with older adults' vulnerability, namely by *understanding* their vulnerability, *caring* for them, and *intervening* through socio-political and economic measures. Of importance is their distinction between *human* and *situational vulnerability* (2022:16), each with its own bioethical challenges.

Vulnerability should be understood in the wider context of social determinants. It is now widely accepted that social determinants have an impact on health. The focus on social determinants is based on the WHO's (2010:9) view of social determinants as the "conditions in which people are born, grown, work, live, age and the wider set of forces and systems shaping the conditions of daily life". Scott and co-authors' (2017:79) classification of social determinants is useful. They refer to social determinants of health as "distal" or "upstream" factors influencing health. This is separated from biological and behavioural factors, which they refer as "proximal, downstream, or immediate." An intermediate category referred to as "socio-cultural factors" is placed between the upstream and the downstream factors. These classifications underline the complexity of vulnerability associated with elderly communities.

The impact of the increasing ageing and therefore elderly community becomes more complicated when, for example, the role of long-term care in healthy ageing is considered. Pot (2022:13, 21) correctly remarks that other people are performing functions to maximise a person's functional ability for as long as possible. The "other" is now making decisions on behalf of the patient. These healthcare providers and family members have their own

value systems that influence the way in which older people are cared for (Vanlaere, Burggraeve and Lategan, 2019).

Care for the elderly is further problematised by the drive for equitable healthcare that secures quality of life and promotes social justice in South Africa, as evidenced by the previous race-based and now weakening healthcare system. In addition, it should be noted that the healthcare system is further confronted by the needs of a post-pandemic society. Just medicine, a weakening healthcare system and the neglect of healthcare practitioners and workers must still be addressed. Without any doubt, therefore, bioethics should participate in the debate on ageing and elderly care.

5.2 Bioprinting

Additive manufacturing (AM), a technology that has emerged since around 1981, can be defined as *the process of building parts by adding additional material mostly in layers.* SANDVIK (2022) provides a more specific definition: "Additive Manufacturing (AM) is an appropriate name to describe the technologies that build 3D objects by adding layer-upon-layer of material, whether the material is plastic, metal, concrete or human tissue".

Within this technology, 3D printing is a fast-developing technique. Bioprinting is an enabling technology for tissue and organ manufacturing (Datta, Cabrera and Ozbolat, 2023). A user-friendly definition of bioprinting is that it is a 3D printing technology with a material that incorporates viable living cells (Vijayavenkataraman, 2016:1). Bioprinting is regarded as regenerative medicine or tissue engineering.

Although bioprinting is still an emerging technology, ethical challenges and dilemmas may already be projected. Ethical challenges associated with bioprinting are based on using human tissue in the manufacturing process and the implanting of medical devices resulting from additive manufacturing using human tissue or organs. Ethical dilemmas around human rights matters, vulnerability, cost, equal access to medical care, and ownership are some of the dilemmas identified. The core concern is that bioprinting cannot be subjected to the same clinical tests and other possible interventions since a bio-print is custom-made for a specific patient. The basic standards and procedures for clinical interventions may not be applicable. This view raises another ethical question, namely what is the ethical difference between a person requesting assistance to end a life and a person taking the risk of the unknown consequences of a failed implant? Bioethics must be part of this development.

5.3 *Artificial intelligence*

Artificial intelligence (AI) in healthcare is growing in importance. Tekkeşin (2019:8) refers to AI as "the imitation of human cognitive functions by several forms of computer software". A new development within AI is the "Chat Generative Pre-trained Transformer" (ChatGPT). ChatGPT is a chatbot (released in November 2022) using published information and data to generate a response in reaction to a question.

AI is not new to healthcare. Both its advantages and disadvantages are documented. The WHO (2021) recognises the positive contribution AI can make towards public health. However, ethical challenges associated with AI in healthcare must be considered and addressed. The WHO Report identifies six ethical principles that can guide AI in healthcare. These principles are focused on human autonomy, well-being, and safety. These principles confirm that AI (in healthcare) cannot be without ethics. The same sentiment is expressed by Moodley and Rennie (2023), who confirm the positive influence of AI on healthcare, but remark that there are many ethical, legal, and social challenges as well.

To elaborate on the meaning of AI in healthcare: On the positive side, it can be stated that AI is very useful in healthcare as it assists with decision-making and predicts the possible outcome of treatment and therapy. Greenwood's (2021) comment summarises the added value by explaining that previously manual processes are now automated through AI. Big data assists with the understanding of disease and treatment. Gyles (2019:2) highlights the positive contribution of robots in healthcare. This is evidenced by the accurate manipulation of surgical instruments and usage in various surgical procedures. Morgan and co-authors (2022) also confirm the contribution made by robots in surgery, rehabilitation, and mobility. They are confident that robots can be adapted to address emerging healthcare needs, as demonstrated during COVID-19. Johnston (2022:14) refers to the care and companionship that robots can provide to the elderly. Although the author is mindful of ethical challenges posed by robots, "ethics by design" may counter these problems. In the ethics of design, the primary emphasis is on *responsible* design and use.

Another positive contribution from AI to healthcare is *personalised medicine* or *precision medicine*. Personalised medicine refers to medication or healthcare interventions customised for a specific patient. Wilcock (2019), however, prefers "precision medicine" to avoid any confusion with specific therapeutic strategies. Strianese and co-authors (2020:1) say that tools for preventative strategies could assist in predicting morbidity and mortality

and in detecting chronic disease indicators much earlier in the course of a disease. This will have a major effect on the quality of care and quality of life, reducing both time and cost. Vicente, Ballensiefen and Jönsson (2020:3) foresee a positive impact of AI on personalised medicine and how this can lead to new ways of healthcare. Personalised medicine implies using a person's own genes, proteins, and substances in a person's body to prevent, diagnose or treat a disease.

These two advantages of AI in healthcare do not imply that there are no challenges. For example, Secinaro, Calandra and Secinaro (2021:20) raise questions about the ethics of technology and skills. AI may challenge the skills of doctors, as technology will now be influencing decision-making and curing of patients. The autonomy of doctors in decision-making and their skills in using technology excessively in healthcare are changing. The question is whether healthcare practitioners' skills are being updated in line with changing technologies. Suriyan and Ramalingam (2022) rightly claim that in the (current) future, doctors will not be replaced by robots. However, technology can assist in making better decisions (positive) and may start reducing human judgment (negative). The corrective action is not to avoid AI, but to balance decisions with appropriate clinical queries.

What should be clear is not *if* AI will be used in healthcare, but rather *how* AI will be used in healthcare. This is further emphasised by Moodley and Renny's (2022) comments that typical ethical challenges sparked by ChatGPT are privacy matters, consent, quality of care, reliability of information, and inequity.

From these comments, it should be clear that no bioethics can be practised without considering AI and the impact it has on life and healthcare.

6. Discussion

Christian bioethics can never distance itself from a Biblical anthropology, as confirmed in paragraph 4. At the same time, Christian bioethics should be responsive to new developments and needs in healthcare. It should be clear that Christian bioethics will not change the *scientific* results based on evidence-based healthcare; but healthcare can be influenced by religious orientation and practice. The influence and importance of Christian bioethics remain.

The above observations lead to the following question: *How can Christian bioethics advance its values in the discussion of the new technological and*

social developments impacting on healthcare? Three guidelines are provided in response to this question.

First, the Journal, "*New Studies in Christian Ethics*" (Cambridge University Press) identifies two specific roles for Christian ethics. The one role is to engage with the secular moral debate. The second role is to demonstrate the value Christian ethics can add to a debate. Such a position can create a focused perspective for Christian bioethics and the value it has for a broader discussion on bioethics.

Second, Iltis (2022) discusses the role of Christian scholarship in bioethics. From her study, an important perspective can be developed. A valuable observation is that a space for a perspective does not always lie in confirming the differences from other perspectives, but rather in identifying the *common ground* between these perspectives. Where the focus is on what the shared opinions are, a default space is created for an approach such as the Christian religion. A common-ground approach makes various inputs useful as healthcare in general shares the promotion of quality of life and health through relevant curing and caring. Christian bioethics should therefore not be presented as an opposing scientific view, but rather as a complementary or supportive input that widens and deepens the debate on a particular matter. Too often the focus is on the differences only, instead of on how different orientations can contribute to a common course.

Third, a Biblical narrative can inform a discussion that is of interest to all people. The contribution of Christian ethics is well illustrated in the debate on healthcare funding and priority setting as a part of a global discussion and concern. Duckett (2023) uses the parable of the Good Samaritan (Luke 10:25-37) to contribute to the debate. From this parable, he identifies three principles to inform the discussion. These principles are *compassion* as a motivator, *social justice* as a benefit, and *responsible stewardship*. These principles can add value to this debate, where monetary value often leads a discussion without balancing the discussion with narratives on matters broader than financial considerations only. The other advantage of Duckett's approach is that the existence of Christian bioethics is not determined by the approval of other ethical frameworks, but by the contribution that Christian bioethics can make towards a bigger discussion and a wider understanding of a matter.

Based on these comments, the following perspectives can inform the ongoing value of Christian bioethics and its contribution to the discussion on new developments in healthcare:

- Christian bioethics should always confirm that a person is created in the image of God and has the right for his/her life to be protected and cared for (Genesis 1:26-27, Exodus 20:6, Deuteronomy 19:2-19, Job 10:8-12, Psalm 139:13-16). This advocacy is in support of valuing human life and promoting human dignity. It does not depart from a humanistic approach to human rights, but rather from a Biblical orientation towards the meaning and value of life.
- A Christian anthropology cannot be replaced by any technology or machine. After all, robots and technology are the products of human creation. The "ethical behaviour" of robots and technological abilities demand an ethical approach to their "creation". Machines and technology can save lives, but they can also enslave people. An "ethics of design" should therefore respect humans for who they are and not abuse their dignity or vulnerability. Blake (2022:13) correctly proposes that AI designers should be taught ethics for them to design their machines to behave ethically. The algorithms developed for AI should be done in such a manner that robots and technological applications can distinguish between ethical right and wrong.
- The negative impact of social determinants is evidently a clear indication of how people, especially vulnerable groups such as children, the elderly, women, the poor, handicapped, and refugees, are abused in society. Bioethics also has a duty to call for and promote a just society. Justice and fairness are challenged by contextual factors such as politics, environment, economy, and humanity. The Christian tradition is to care for people and their physical world, and to speak out against all actions that challenge the quality of life, dignity, and vulnerability. Social inequalities should be challenged by designing preventative policies and interventions (see Valera and Lòpez Barreda, 2022:4). Although religion has in general very little influence on policies and their implementation, Christian bioethics can take on another role, which is to initiate policies and to participate in their implementation, monitoring, and evaluation. At the same time, patient empowerment can be advanced. Capacitating patients to claim their dignity is no insignificant action.
- Healthcare training is not only about diseases, medicine, and therapies. Medical humanities study the meaning of being human in healthcare. Humanity in healthcare is influenced by culture, society, and the environment. Christian bioethics can promote those perspectives that are characteristic of its focus. This promotion can follow the advice of Bardram (2008:184), who refers to "pervasive healthcare", with the comment that

"Pervasive healthcare is an emerging research field with its own research questions, agenda, approach, and methods".

- Christian bioethics should also put more emphasis on what the right thing to do is, and to be more inclusive. Ethics, according to Stoeklé, Ivasilevitch and Hervé (2021:1619-1620), focuses on the feasibility and desirability of actions to advantage society. Ethics can promote corrective actions in healthcare. These authors advocate "practical ethics" to reflect on healthcare. They continue to say that practical ethics can address the tension between health and economy, individuals and communities and culture, and the world that people are living in.

From these guidelines and comments, the position is taken that in matters around the quality of life and health, a demonstration of the value that Christian bioethics can add will be the preferred and more beneficial approach.

7. Summary

In this article, the position has been taken that Christian bioethics can never distance itself from Biblical anthropology.

This article stems from the view that bioethics includes ethical challenges in healthcare caused by, for example, new technological developments, the duties and responsibilities of pharmaceutics and governments, and the professional relationships between the doctor, nurse, and/or therapist, and the patient and his/her family and relatives. This article has stated that Christian bioethics should therefore engage with more matters than life and death only, as well as any new developments that may influence the quality of life and health. Three new developments impacting on healthcare were used to confirm the role of bioethics in these developments: the ageing community, bioprinting, and artificial intelligence (AI). To present an argument, *argument-based ethics* was used.

It has further been stated that although Christian bioethics will not change the *scientific* results based on evidence-based healthcare, the value of Christian bioethics lies in its demonstrable contribution to matters on the quality of life and health, its supplementation of existing perspectives on these matters by identifying common ground in ethical dilemmas, and by using Biblical perspectives to contribute to these discussions.

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