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# A qualitative study of the spirituality of volunteers registered for human organ donation

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## Abstract

**Background** Exploring the spiritual cognition of human organ donation registration volunteers, aiming to provide new ideas for promoting the development of organ donation through this perspective.

**Methods** This qualitative research was conducted following the conventional content analysis method. 10 registered volunteers for human organ donation were selected from July to December 2023 for face-to-face semi-structured interviews. Snowball sampling was employed to select the participants. In-depth semi-structured interviews were conducted for data gathering. Theoretical saturation was achieved through 10 interviews. Colaizzi phenomenological 7-step analysis method was used to analyze the interview content.

**Results** The spirituality of registered volunteers for human organ donation can be summarized into three themes and seven sub themes: ① Spiritual Understanding (Love & Life Extension, Dedication to society, Death elevates life); ② The Supporting Role of Spirituality (Become a spiritual motivation for a better life, self-transcendence); ③ The Spiritual Emotional Value of Organ Donation (Sense of accomplishment and pride, Sense of complexity and ambivalence).

**Conclusion** The willingness to donate organs is closely related to spirituality. By understanding the spirituality of this group, it is possible to take an important step in promoting the development of organ donation.

**Keywords** Spirituality, Organ donation, Qualitative study

Organ donation is categorized into two types: living organ donation and cadaveric organ donation. Living organ donation refers to the voluntary donation of some physiologically and operationally removable organs by healthy individuals for transplantation to recipients under the condition that the life of the donor is safeguarded [1]. Cadaveric organ donation, also known as donation after

Cardiac Death, is the practice of obtaining organs from a deceased individual for transplantation to a recipient, thereby saving the recipient's life or improving the recipient's health [1]. In recent decades, the technology of organ transplantation has developed relatively rapidly, but due to the lack of the number of donor organs, organ transplantation in countries around the world is still constrained, and according to the World Health Organization, the total number of global organ transplants each year is less than 10% of the overall demand [2]. The waiting list for organ transplantation is much larger than the organs available for transplantation [3, 4]. Although China has been steadily located in the 2nd place in the world in terms of donation volume since 2016, the contradiction between

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organ donation and the imbalance and insufficiency of the development of the transplantation cause and the people's demand for transplantation services also still exists, the data show that China's organ donation rate per one million population was only 4.6 in 2023 [1, 3].

A human organ donation volunteer is a person who voluntarily expresses his or her personal will to donate organs and agrees to donate organs to help others after his or her death. Human organ donation volunteers express their recognition of and support for the concept of organ donation and play a vital role in the organ donation cause. According to the data of China Human Organ Donation Management Center as of January 2024, more than 6.65 million people have registered their intention to donate organs.

Most of the existing research on Chinese citizens' willingness to donate is from the perspectives of traditional Chinese culture, personal background and experience, family values, economic level, media and role modeling effects, the donation and legal system, welfare policies, and ethics, etc [4–6]. The organ donation cause is a cause related to life, and it is necessary to understand views on life or spirituality. But it is rarely seen from the subjective perspective of understanding volunteers' the opinions of human organ donation volunteers regarding spirituality. Spirituality is regarded in philosophical circles as a view of life, a value that clarifies the purpose and meaning of individual life, society and that can influence an individual's attitude, behaviour and physical and mental health [7]. Early definitions of spirituality were mostly put forward by religious people, which gave the illusion that spirituality seemed to be part of religion, but the answer is no, spirituality and religion are both different and related. Religion is a cultural phenomenon that has emerged from the development of human society to a certain historical stage, and is a socialised and objective existence [8]. Religion is a sacred pursuit based on an institutionalised system, whereas spirituality is a personal and autonomous sacred pursuit [9]. Everyone possesses spirituality, but it is not the case that everyone has a religious faith. However, for those influenced by religious beliefs, it is undeniable that these beliefs play a crucial role in shaping spirituality and have a significant impact on one's spiritual experience. In order to better focus this study's attention on the personal, non-institutionalized part of spirituality, religious groups were excluded from this study to avoid conceptual confusion.

The cause of organ donation is an important medical-social endeavour, and research has shown that spirituality is closely related to medical-social work [9]. Spirituality itself involves a personal quest for the meaning of life. Research has confirmed that spirituality or the pursuit of the meaning of life, is an important factor in gaining support for organ donation, and can contribute to the

formation of the will to donate and the establishment of the eventual act of donation, which provides both theoretical and practical support for this study [10, 11].

For a long time in China, people avoided talking about life and death. In recent years, with the gradual popularization of life education, "the viewpoints of 'living toward death' and 'viewing life through death' have been recognized and accepted by some segments of the population, which to a certain extent, improves the status quo of Chinese people avoiding talking about life and death, and indirectly promotes the public's understanding of organ donation and to talk about life and death with a more open mind [12, 13]. In December 2019, a major public health crisis, the COVID-19 epidemic, broke out in China, resulting in severe casualties. Some studies have proved that experiencing a traumatic event affects the public's thinking about the answer and meaning of life [14, 15]. The rise of life education in China and this public health crisis have fostered extensive reflection on spirituality among the Chinese population, creating the never-before-seen conditions for studying the subjective reasons that influence the public's willingness to donate organs.

Accordingly, this paper adopts a qualitative research method, aiming to help medical social workers understand the potential inner feelings and behavioral mechanisms of organ donation volunteers regarding spirituality, and to provide new ideas for promoting the development of the organ donation cause in the future from subjective perspectives such as spirituality.

## Methods

### Study design and setting

The study was approved by the relevant ethics committee. This study employed an interpretive phenomenological approach within the qualitative research paradigm, to delve deeper into organ donors' perceptions and feelings about spirituality. Explore the spiritual sensibilities of organ donation volunteers through semi-structured interviews by face to face. Based on the Consolidated Standards for Reporting Qualitative Research (COREQ) checklist to ensure methodological rigor and integrity in reporting and writing up qualitative research findings [16].

### Sampling and sample size

Even though the total number of organ donation volunteers in China is relatively large, the percentage of the population is still low and the population distribution is scattered. Moreover, the identity of organ donation volunteers is special and secretive, so this study used snowball sampling method to increase the likelihood of increasing access to the desired group in the overall population. Organ donation volunteers were surveyed using

snowball sampling method in July to December 2023. Inclusion criteria: ①complete the voluntary registration of organ donation at the website of local Red Cross or China Human Organ Donation Management Center in each province in the time period of July to December 2023, Volunteer to donate their body parts to medical research or organ transplants as research subjects after death; ② informed consent and voluntary participation ③good language expression ability; Exclusion criteria: ① suffering from mental disorders and other diseases; ② having religious beliefs.

Data saturation was reached after conducting interviews with 10 Organ Donation Volunteers [17]. Because of the logical uncertainty of data saturation, some researchers have argued that data saturation should be verified by appropriate additional sampling after data saturation has been reached or nearly reached [18]. The research team therefore continued to conduct two additional Organ Donation Volunteers to confirm data saturation after it had already been reached. Further data collection after two Organ Donation Volunteers revealed that no new coding had emerged and that the researcher had not developed a deeper understanding of story or theory generation, thus reaffirming that the previous study had reached data saturation.

### Developing interview guidelines

After a comprehensive review of pertinent literature aligned with the research objectives, the research team, comprised of five members, meticulously crafted the interview guide. The research team consisted of a psychiatrist with 30 years of clinical experience and a background in organ donation-related research and a social worker with 8 years of organ donation-related experience, two nursing master's students possessing qualitative research expertise and a nurse studying hospice and spirituality related issues.

Initial development of interview outlines through literature review, expert advice and research team discussion, followed by pre-interviews with two organ donation volunteers. The interview outlines were revised based on feedback from the pre-interviews, and finally the final interview guides were developed through internal discussions within the research team. The final interview outline is as follows: (1) What prompted you to sign the organ donation agreement? (2) What were your feelings/experiences during the process of signing the organ donation agreement? (3) How has your understanding of spirituality the changed during this process? What kind of life do you think is meaningful? (4) When we talk about life, we can't help but think of death, what do you think death means to you? (5) What do you think life means to you?

### Data collection

Detailed information regarding the research objectives, privacy protection, and other pertinent aspects was comprehensively communicated to all participants. The researcher used a face-to-face semi-structured interview method. The time and place of the interviews are fully negotiated and finalized with the participants by phone or email. Before the start of the interview, the research team again introduced the purpose of the study, privacy protection and other details, and informed participants that they could withdraw from the study at any time if they had any concerns. Written informed consent completed and signed by the participant was collected by the researcher after adequate notification and prior to the start of the formal interviews. The preferred location for the interviews was a quiet, comfortable, and safe psychological interview room in Hangzhou with a high degree of privacy, and all participants agreed to this choice of location and traveled on their own, with travel costs covered by the researcher. The researcher asked questions according to the interview outline, avoided leading or suggestive questioning, checked and clarified the researcher's opinions in time, and observed and recorded the participants' expressions and emotions. The interviews were audio-recorded. The duration of interviews ranged from 30 to 45 min. Participants were identified using the anonymization code "P". After each interview, the researchers transcribed the audio recordings into text data and organized them as quickly as they can. The collated data was re-fed back to the participants for validation and feedback.

### Data analysis

Within 24 h of the conclusion of the interview, the interviewer carefully converted the audio files into written text, and then the content of the text is then analyzed by two researchers, during which it is compared with the original text in order to verify the soundness and logic of the results of the study. In the process of analysis, the researcher should avoid mixing his or her own subjective experience and personal theories in order to achieve a suspension [19]. Consistent reflection, immersion, and exploration of data themes are actively pursued to uphold quality control standards. Throughout the process, two researchers used the Colaizzi 7-step analysis method [20, 21] and independently analyzed the data using Nvivo 11.0 qualitative analysis software. The Colaizzi 7-step are as follows: (1) Thoroughly review all interview records; (2) Extract key statements; (3) Code recurring viewpoints; (4) Summarize and synthesize coded viewpoints into themes; (5) Provide a comprehensive description of the refined themes; (6) Identify similar viewpoints and refine thematic concepts; (7) Promptly provide feedback to

**Table 1** Demographic characteristics of participants (N=10)

Number	Gender	Educational level
P1	Male	Middle school
P2	Female	University
P3	Male	University
P4	Female	University
P5	Male	University
P6	Female	University
P7	Female	University
P8	Female	High school
P9	Male	University
P10	Female	University

**Table 2** Overview of the themes and associated sub-themes

Main themes	Sub-themes
Spiritual Understanding	Love & Life Extension Dedication to society Death elevates life
The Supporting Role of Spirituality	Become a spiritual motivation for a better life Self-transcendence
The Spiritual Emotional Value of Organ Donation	Sense of accomplishment and pride Sense of complexity and ambivalence

participants for verification and validation. Upon theme confirmation, cross-check with participants.

The final theme results will be returned to the research team for discussion and consensus on the theme. The collated and validated themes are eventually returned to the participants for checking to ensure that the findings represent the true thoughts and feelings of the participants, distilling the final research themes.

## Results

Fifteen organ donation volunteers were identified as qualified and invited to participate. The demographics of the participants are listed in Table 1. Ultimately, three major themes were identified for this study, as well as seven corresponding sub-themes, as detailed in Table 2.

### Theme 1: spiritual understanding

This topic mainly explores the interrelationship and commonalities between spirituality and organ donation willingness. Divided into three sub themes: Love & Life Extension、Dedication to society、Death elevates life.

**Sub-theme 1: love & life extension** Most respondents spoke of love and life when talking about their understanding of spirituality. They considered it sacred to keep love and life alive.

Organ donation volunteers agree that love is an important part of spirituality, which is one of the reasons why they are more likely to identify with the idea of organ donation.

*“After experiencing COVID19, I truly realized that love can stand against all odds. Life is so small in the face of natural disasters, but love is so great!”(P9).*

The creation of life or the continuation of life, so that the meaning of life can be manifested and continued on a broader level, which brings about a spiritual touch that creates the conditions for individuals to accept and shape the concept of organ donation from the bottom of their hearts. Organ donation volunteers talk about the opportunity to reach the will to donate, said:

*“I remember a doctor a long time ago saying, would you rather be ashes or a seed. The seed would represent the continuation of life.”(P2).*

*“I used to think that life was boring, even painful, and knowing that I had my first child, his little hand was holding one of my thumbs tightly, at that moment, I felt as if my life had come alive, I felt that I was truly alive again.”(P9).*

**Sub-theme 2: dedication to society** China is a socialist country with the people’s national dictatorship, the COVID-19 pandemic made the people aware of the importance and necessity of social solidarity.

Organ donation volunteers’ belief that organ donation is a form of dedication to society that helps individuals realise their self-worth and promotes spiritual development is an important driving factor in the eventual formation of the intention to donate organs. As one organ donation volunteer said:

*“For me, the meaning of life is to give, I guess, that’s what we are taught from a young age, and I do have something to gain from volunteering.”(P7).*

When faced with a common crisis, individuals feel connected and accountable to each other, and this connection strengthens the individual’s sense of belonging and responsibility to society, and further promotes people’s innermost knowledge of assuming social responsibility. This increases understanding and support for the noble act of organ donation.

*“I’m from Wuhan, a lot of doctors and nurses rushed to Wuhan that year, when COVID-19 was still not under control, a lot of doctors and nurses died, I couldn’t help much at that time, I can’t return the favor.”(P3).*

**Sub-theme 3: death elevates life** Organ donation volunteers are more thoughtful about life and death, and believe that life is more valuable because it is limited.

The development of spirituality is accompanied by the search for meaning in life, and the finite nature of life and the infinite nature of the meaning that people can create in life have combined to drive people's thinking about organ donation.

*"Life is precious because it is finite, and it is the finite things that people cherish more and want to do something more meaningful."(P3).*

## **Theme 2 the supporting role of spirituality**

Organ donation is not only an altruistic behavior, but can also be internalized into one's own spiritual ideals through spiritual effects, thereby achieving self-interest.

**Sub-theme 1: become a spiritual motivation for a better life** The desire to donate organs is not only an idea to help others for the donor volunteers themselves, but also helps the donor volunteers to internalize their own spiritual strength through spirituality, and organ donation can be a spiritual motivation for them when they face trials and tribulations, difficulties and frustrations in their lives.

When organ donation volunteers face difficult situations and develop extreme negative emotions, they reconsider their willingness to donate and the existing donation system. Even if the negativity does not improve significantly, this willingness to donate organs still provides them with the minimum motivation to continue living and helps them to curb impulsive behaviours. As one volunteer said:

*"I am a very negative person, my life is meaningless, I want to end my life countless times, but people who commit suicide can't donate their organs, so the will to donate my organs after death is my motivation to live, I guess."(P4).*

When faced with major changes, some people may choose to escape or even impulsively end their lives. This response often stems from a sense of helplessness in the face of pain and loss, and a diminished sense of self-worth. A proportion of organ donation volunteers who have experienced suffering, will redirect their unrealised values towards contributing to society, a shift that may provide them with the opportunity to re-examine life and death in the face of adversity and support them in their search for hope and meaning in the face of adversity. As one organ donation volunteer said:

*"In 2020, my new clothing store went bankrupt, I have nothing, all day is also closed in the house can not go out, at that time I want to die, and then thought that after the death of the world have to leave something, so the online registration of organ*

*donation volunteers, that is the moment, I understand, I am not afraid of death, I'm not afraid of this thing in the netherworld to save my life! But do good, do not ask the future."(P6).*

The desire to donate organs after death can also help people to become more aware of their health and to develop a more proactive attitude towards living a healthy life.

*"In order to donate a qualified organ, I'll eat healthy and exercise."(P1).*

**Sub-theme 2: self-transcendence** Organ donation can help organ donation volunteers revisit and re-establish what they want to pursue in life.

Individuals can learn about organ donation through special events, role models, etc., and the idea of organ donation has a two-way influence on people to re-examine and clarify their values and goals in life, to choose a deeper and more meaningful way of living, and to move from material wealth to inner abundance and caring for others, thus seeking a higher level of mental health and spiritual growth.

*"My mom and dad passed away a few years ago after contracting a new crown and died with tubes all over their bodies. That time made me realize that money can't exchange for life, and I now pay more and more attention to my body and mind instead of my previous preoccupation with making money. The fragility and preciousness of life made me choose organ donation after death, and understand that life is far more material than anything else."(P9).*

*"I respect a medical professor, he died and donated his body, the whole life is dedicated to the cause of medicine, people in this life can not just want to money, but also always want to some spiritual things, right."(P10).*

## **Theme 3 the spiritual emotional value of organ donation**

The emotions derived from spirituality are varied and complex.

**Sub-theme 1: Sense of accomplishment and pride** Signing an organ donation agreement creates a sense of accomplishment and pride through internal and external interactions.

Organ donation is a noble act widely advocated by the community, and when an individual's behavior matches the values of the community, it is more likely to inspire a strong sense of pride.



*"Since I was a child, I've always heard that people have a death, or heavier than mountain, or lighter than a feather. If I can donate my organs after I die, then I'll be considered a great man, and I'm quite proud of that."*(P5).

The signing of the organ donation agreement also reflects the organ donation volunteers' reflection on spiritual values. They believe that the value of life can be continued, deepened and realized through 'I live in others', and through the survival and happiness of others. The realization of this value effectively enhances the sense of self-identity and makes organ donation volunteers feel proud and honoured. As one organ volunteer mentioned:

*"I've kind of lived a mediocre life, not a celebrity, and no one will remember me in the future except my children, and after signing this agreement to donate my organs after death, I feel that I'm a valuable person, and I'm satisfied with my life."*(P8).

**Sub-theme 2: sense of complexity and ambivalence** Organ donation brings with it a sense of self-realization as well as a sense of complexity and ambivalence. Chinese people tend to have a strong sense of family, and organ donation is not only a personal decision, but more like a family decision.

When organ donation volunteers develop the idea of organ donation after death, on the one hand, they form a sense of pride and pride through the realization of their self-worth and social value, on the other hand, the organ donation volunteers may also face the concern and incomprehension from their family members, who do not want to hurt their family members due to their own choices, and due to the emotional pressure brought by family relationships, organ donation volunteers may have feelings of self-blame and guilt that are intertwined with their original sense of pride and honour, ultimately creating a strong sense of complexity and even contradiction. For example, organ donation volunteers expressed such concerns:

*"Undoubtedly in the eyes of others. I'm more of a selfless and noble person because I chose to be an organ donor, but to my parents, my decision to do so may have been selfish and even cruel to them. Is this a realization of what life is all about?"* (P7).

*"I agree with the organ donation thing, but I don't know if my choice like this will make my family feel more painful or difficult after my death in the future? If it makes my family feel more pain and embarrassment, is it the right decision for me to make?"*(P4).

## Discussion

For most Chinese, spirituality is inextricably linked to religious beliefs. However, existing research has shown that under the influence of pragmatism, Chinese people choose the parts they need from various practices and beliefs, making spirituality provide conditions and possibilities for individuals to build private beliefs outside of traditional religious institutions. Due to the significant social and cultural influence on spirituality, it is necessary to first clarify the correlation between Chinese spirituality and intentions to donate organs in the face of significant cross-cultural differences. This study found that, while for non-religious people, spirituality is more like an understanding of the meaning of life. Its belief that spirituality has to do with life and death, love and devotion. That's why they chose to volunteer as Organ Donation Volunteers. This study shows that organ donation volunteers are usually more accepting of death and start thinking about death earlier. Their positive attitude toward death allows them to agree that death can elevate life, which creates conditions for forming a willingness to donate organs. The view that death is a necessary process of life shifts people from obsession with life and death to concern for the meaning of life, which leads to the formation of a human attitude centered on the search for the value of life, Further creates conditions for the formation of a willingness to donate organs. Existentialism emphasizes that a person's life should "allow him or her to experience a life full of meaning and to take responsibility for it,"which rationally explains the view of social contribution as an important way to realize the meaning of life [22]. At the same time, Maslow, a humanistic psychologist, argued that bliss, as a peak experience associated with self-actualization and love, is also one of the ways to achieve meaning in life [22]. Organ donation is a deeply spiritual act. It embodies the continuation of life and the transmission of love and dedication to society, which sustains the spirit and creates a closed loop. By linking organ donation to the concept of spirituality, it is possible to gain a deeper understanding of the significance of this act and to enhance the spiritual realm of the individual while making a valuable contribution to society.

Spiritual social work theory suggests that the possibility of some kind of obstacle or lack of individual spiritual development can be found in the occurrence of all problems of individuals in daily life [23]. Traditional research tends to focus on increasing organ donation rates through motivation for organ donation and existing laws, regulations, ethical systems, Cognition, attitude, and willingness [24–26], but fails to see that organ donation can have a positive impact on the organ donation volunteers themselves through the use of spiritual support. The results of this study show that organ donation is not only an altruistic act, but can also be an act of self-interest in

its own right, and it can be a motivation for organ donation volunteers to find a better life in the face of ‘suffering’, which corresponds to the spiritual principle of ‘helping others to help themselves’. A previous study proved that when people give meaning to the objective event of organ donation, it will turn into a mission and a life-affirming trust [27]. In this study, it was found that when some of the organ donation volunteers were experiencing ‘suffering’ and were in extreme depression, the idea of organ donation was internalized as a spiritual force that supported their lives and helped them to ‘help others to help themselves’. This suggests that healthcare professionals and social workers can promote the development of organ donation volunteers and organ donation by exploring and recognizing the spiritual power of ‘helping others to help themselves’ at the internal level of the individual. At the same time, we suggest that healthcare professionals and social workers provide external support, such as screening the psychological conditions of organ donation volunteers, to provide external psychological support to organ donation volunteers who have difficulty in fulfilling the goal of ‘helping others to help themselves’ to the fullest extent by their own efforts, so as to give more room for the development of individual spirituality. The results of this study show that the willingness to donate organs not only translates into the motivation to pursue goodness in the face of ‘suffering’, but also helps one to re-examine one’s own life pursuits and even to transcend oneself in ‘ordinary days’. This part of spirituality has not been given much attention in previous studies. In order to realise this part of spirituality, it is necessary to satisfy its physiological and safety needs first. According to China’s national conditions and the status quo of organ donation, half of the organ donors come from remote areas with low income, and even some of the donors’ families belong to socially disadvantaged groups [28]. The government can help organ donation volunteers and their families to have ‘ordinary days’ as much as possible by providing reasonable financial compensation and necessary humanitarian assistance in order to create more space for spiritual development.

This study found that some organ donation volunteers experience feelings of pride and gratification during the formation of their willingness to donate. This may relate to spirituality facilitating a deeper dialogue with one’s inner self, thereby enhancing their strong identification with their actions [29]. Conversely, some individuals grapple with intense feelings of complexity and contradiction. This complexity is closely tied to spirituality as a profound connection with others, with friends and family playing a crucial role in an individual’s spiritual growth. Organ donation volunteers often face a powerful paradox when considering the spiritual connections with their loved ones, particularly in the context of traditional

Chinese culture, which places significant emphasis on filial piety (e.g. one’s hair and skin is received by one’s parents) and the dynamics of extended family systems [30]. Research indicates that “family members” greatly influence whether the act of donation is realized [30]. From a spiritual perspective, this study suggests that emotional support should begin as soon as organ donation volunteers identify with the mission of organ donation. Healthcare professionals and social workers should work to establish a spiritual connection regarding organ donation between volunteers and their families, alleviating the feelings of complexity and contradiction that volunteers may experience, while also preparing friends and family for their eventual acceptance of the donation. This connection can be improved through more open communication. Medical social workers can draw on the “Four Ways” of end-of-life care—expressing love, gratitude, apologies, and farewells—to facilitate meaningful emotional exchanges among organ donation volunteers, their families, and friends [31]. This approach can help alleviate the complex emotions faced by volunteers during the donation process and ease the anticipated grief of their loved ones, an aspect that has often received more attention only after the loss [32]. Medical social workers can continue to integrate the life meanings behind these “Four Ways” into community-level life education and organ donation initiatives, promoting volunteerism while actively helping organ donation volunteers navigate the psychological pressures their families impose. This approach fosters a sense of societal care for the volunteers, creating a cycle of love that more effectively advances the cause of organ donation.

### Limitations

Due to the relatively low proportion of organ donation volunteers and their unique identities, snowball sampling is an appropriate method for this specific population. However, we must acknowledge the limitations of this sampling technique. Future studies could benefit from a mixed-methods approach, integrating both qualitative and quantitative research, to enhance the breadth and representativeness of the data and to further explore the relationship between spirituality and organ donation.

This research primarily investigates the personal and non-institutional aspects of spirituality, intentionally excluding individuals with religious beliefs to minimize confounding factors. However, it is crucial to recognize that for many, spirituality is closely tied to religious faith. Subsequent research could delve deeper into the connections among religion, spirituality, and the intentions of organ donation volunteers, enriching this area of study.

Moreover, the sensitive nature of death and organ donation in China may lead volunteers to withhold their views on spirituality and related topics due to concerns

about personal safety and privacy. This could result in reluctance to participate or attrition during the study, as well as potential concealment of responses on certain questions. Future research should focus on addressing these challenges by employing culturally sensitive methods that ensure greater protection for participants. Expanding the sample size and conducting in-depth analyses on specific topics will help to enrich our understanding of the motivations behind organ donation intentions and behaviors.

## Conclusion

Our findings may increase China's attention to and understanding of the spirituality of organ donation volunteers and encourage them to promote the development of the organ donation cause in China through a spiritual perspective. In our study, organ donation behavioural intentions were closely related to spirituality, and by paying attention to existing organ donation volunteers from a spiritual perspective to ensure their well-being and development, we may be able to promote the improved development of the organ donation cause.

## Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12910-025-01173-w>.

Supplementary Material 1

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## Author contributions

Frist author YY-Z: Conceptualization, Methodology, Statistic analysis, Writing - Original Corresponding author QF-M: Resources, Supervision, Project administration LJ-Q: Investigation, Statistic analysis TT-H: Statistic analysis, Investigation, Methodology Resources All authors reviewed, critically commented and approved the final version of the manuscript.

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## Data availability

The datasets generated and/or analysed during the current study are not publicly available but are available from the corresponding author on reasonable request.

## Declarations

### Ethics approval and consent to participate

This study was approved by the ethics committee of The Affiliated Hospital of Hangzhou Normal University (Ethics 2023(E2)-KS -002). We certify that the study was performed in accordance with 1964 declaration of HELSINKI and later amendments. All participants provided written informed consent showing that they have accepted to take part in the study. All methods were carried out in accordance with relevant guidelines and regulations.

### Consent for publication

Not Applicable.

## Competing interests

The authors declare no competing interests.

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