

# A systematic review and meta-synthesis of the qualitative literature exploring the experiences and quality of life of survivors of a cardiac arrest

European Journal of Cardiovascular Nursing  
2017, Vol. 16(6) 475–483

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DOI: 10.1177/1474515117705486

journals.sagepub.com/home/cnu



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## Abstract

**Background:** Survival following cardiac arrest and subsequent cardiopulmonary resuscitation (CPR) is increasing worldwide, mainly due to greater awareness of the symptoms of cardiac events and an increased attention to CPR training. Although patient outcomes remain unpredictable and quantitative studies suggest that the overall quality of life (QOL) is acceptable, it is valuable to synthesise qualitative studies exploring these phenomena in depth, providing a deeper knowledge of survivors' experiences and QOL.

**Aims:** To critically appraise and synthesise the qualitative literature on survivors' experiences of a cardiac arrest and CPR with the aim of identifying common themes that can inform clinical pathways and thereby improve survivor outcomes and QOL.

**Methods:** A systematic review and meta-synthesis of the qualitative literature, using Thomas and Harden's framework, and confined to peer-reviewed papers published from 2000 to 2015, which were identified through database searches of EBSCO, OVID and ProQuest.

**Results:** The search produced 204 papers, and of these, seven relevant papers were identified for review. Data extraction included setting, participants, research design, data collection, analysis and themes. Five qualitative themes were identified and were the subject of this meta-synthesis: multitude of contrasting feelings; disruption in the continuum of time; new reality and psychological challenges; changed body with new limitations; and confrontation with death.

**Conclusion:** This review provides insights into the experiences of survivors' QOL after CPR. Increased knowledge can improve person-centred care in the immediate and forthcoming care after the event, both in terms of planning for discharge and in the future care of people who survive a cardiac arrest.

## Keywords

Cardiac arrest, cardiopulmonary resuscitation, systematic review, meta-synthesis, quality of life, patient experience

Date received: 29 November 2016; revised: 28 March 2017; accepted: 28 March 2017

## Introduction

Cardiac arrest (CA) is a leading cause of death worldwide and the survival rate remains low, even 55 years after the introduction of cardiopulmonary resuscitation (CPR), and currently there are no medical interventions or prognostic indicators that can predict outcomes.<sup>1,2</sup> Although the survival rate after a CA is low, research indicates an increase in numbers and longer lifespans for survivors.<sup>3–5</sup> These positive trends signal a need to explore CA survivors' experiences; not only in terms of survival, but also in terms of quality of life (QOL) as a measure of successful resuscitation. The clinical pathways that are used to guide

evidenced-based healthcare following CA focus primarily on control of biological factors in order to minimise injury, thereby improving the likelihood of a satisfactory neurological outcome.<sup>6–8</sup> Although these are important factors

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**Table 1.** Search terms and limiters.

	String 1 – population	String 2 – experience	String 3 – outcome or themes	String 4	Limiters
Boolean operator	And	And	And	And	Publication 2000–2015
Or	patient*	cardiac arrest	'quality of life'	'qualitative research'	peer-reviewed journal
Or	client*	heart stop	QOL	phenomenology	English language
Or	surviv*	CPR	experience	ethnography	adults +19
Or		cardiopulmonary resuscitation		'grounded theory'	major heading Quality of life
Or		'sudden cardiac death'		narrative*	not 'myocardial infarction'
Or				'thematic analyz*'	

for recovery after CA, there is a paucity of guidance supporting the survivor's psychological recovery.

The concept of QOL is challenging to define; Kuyken<sup>9</sup> defined it as "individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns." The opinion on QOL is personal, and what an observer might consider a dismal level of QOL might be considered to be acceptable by the individual.

A substantial amount of quantitative research has been published investigating the QOL of survivors, frequently using standardised questionnaires.<sup>10–14</sup> These questionnaires, although validated, provide a limited opportunity for survivors to express their views.

This systematic review and meta-synthesis aims to critically appraise and synthesise the qualitative literature on survivors' experiences of a CA in order to identify common themes that can inform clinical pathways and thereby improve survivors' QOL.

## Methods

### Study design

A synthesis of the qualitative literature can produce new insights that would not be visible with individual studies alone,<sup>15,16</sup> thus supporting decision-making, as it can enable a more comprehensive understanding and clarification of phenomena.<sup>15</sup> This review will evaluate and interpret findings in published qualitative studies focusing on the experiences and QOL of survivors of CA. The thematic synthesis as described by Bondas and Hall<sup>17</sup> and Thomas and Harden<sup>16</sup> has been used in the identification of relevant literature for inclusion, critical appraisal, data extraction, analysis and synthesis of findings.

### Data collection

A systematic search for relevant qualitative literature published between 2000 and 2015 was undertaken between March and December 2015 in the electronic databases EBSCO, OVID and ProQuest. Table 1 displays the keywords, MeSH terms and limiters used.

### Criteria for inclusion and exclusion

In order to be included, papers had to, as a quality assurance, be peer reviewed, published in the English language between January 2000 and June 2015, use a qualitative research design and explore QOL and experiences reported from adult survivors of CA.

Exclusion criteria included: papers not written in English; quantitative methodology papers; or qualitative papers that explored healthcare professionals', significant others', children's or teenagers' experiences of the event. Papers exclusively exploring survivors of CA with an implantable cardioverter-defibrillator (ICD) were excluded, as these papers focused on the experience of living with an ICD and not how surviving a CA influences QOL.

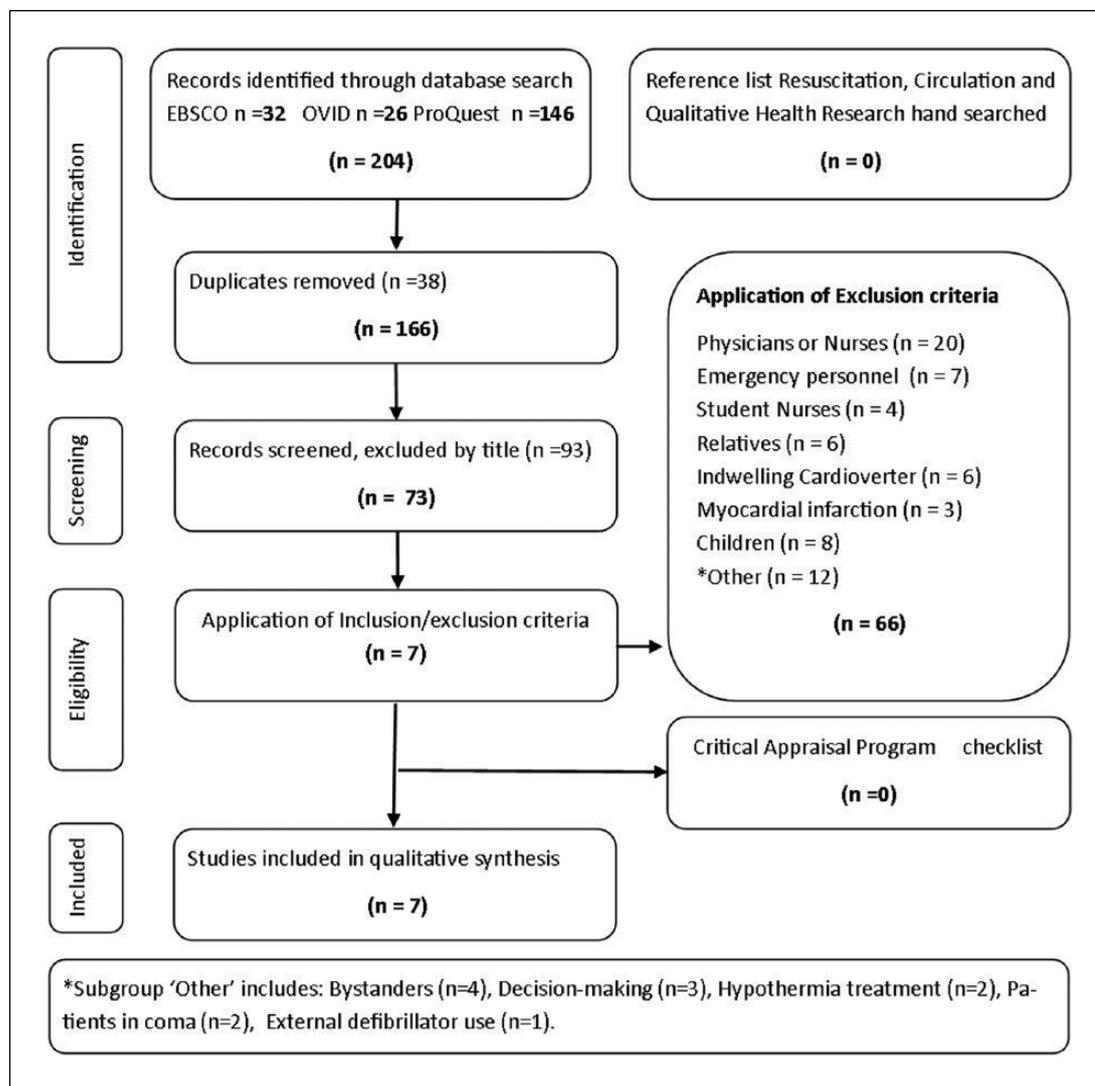
The search found 204 papers from the three databases searched; illustrated in Figure 1 is the exclusion process.

### Quality appraisal

The Critical Appraisal Skills Programme (CASP, <http://www.casp-uk.net/>) was used in order to appraise the seven papers that were included in the analysis, consisting of 10 questions relating to rigour and relevance. Based on methodology and rigour, none of the selected papers were excluded. The papers used appropriate methods for sampling, recruitment, sample size, data collection, extraction, analysis and presentation of findings. The included papers used purposeful sampling, but none included any information about comorbidities or other factors that could potentially influence the survivors' views of their QOL. Only survivors with good cognitive and physiological outcomes were included. The studies were conducted in countries with access to high-quality medical care and predominately western culture.

### Meta-synthesis

A thematic synthesis was used to explore relationships, connections and dissimilarities between the studies, developing an enriched understanding.<sup>15,16</sup> Thomas and



**Figure 1.** Flowchart describing the search and exclusion process following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) model.<sup>36</sup>

Harden's<sup>16</sup> approach was used in a three-stage process: firstly, free line coding in the texts, highlighting the survivors' quotes and naming them; secondly, identifying the descriptive themes by grouping the quotes and adding themes until all quotes were included, using a tree structure; and thirdly, the emergence and identification of descriptive analytical headings from tree structures – these were named and the findings were synthesised under these headings. Consensus was achieved through ongoing discussions among the authors in order to ensure that the themes were supported by the original data.

### Rigour

Rigour was achieved firstly through quality appraisal of the selected papers using the standardised Critical Appraisal Skills Programme (CASP) checklist. Secondly, Sandelowski's (1986) criteria for the credibility and

applicability of the content were checked for representativeness, triangulation across data sources and congruence of findings, adherence to the research question<sup>18</sup> and independent review by the researchers. These findings were individually and then collectively discussed. The results were documented in an audit trail and final decisions were made through discussions and reconciliation of any differences and divergences among the authors.

### Results

Seven papers met the criteria for inclusion. An outline of the aims, populations, times between CA and interview, methods, limitations and conclusions/themes is presented in Table 2.

Derived from the final stage of Thomas and Harden's<sup>16</sup> approach were five themes: multitude of contrasting feelings; disruption in the continuum of time; new reality and

**Table 2.** Summary of included qualitative papers with themes and conclusions as stated on the experiences and quality of life of adult survivors of cardiopulmonary resuscitation.

Study, year, location	Aim	Participants	Time between CA and interview	Method	Limitations	Themes and conclusion
<b>Phenomenology</b> Forslund et al., 2013, Sweden	To elucidate meanings of people's lived experience of surviving an out-of-hospital CA	n = 11 9 male Age 49–73 years	1 month	Purposive sampling Semi-structured interview	Small number of mostly male survivors Excluded survivors younger than 25 and older than 75 years of age	Two themes: <ul style="list-style-type: none"> <li>• Returning to life</li> <li>• Revaluing life</li> </ul> Five subthemes: <ul style="list-style-type: none"> <li>• Waking up and missing the whole picture</li> <li>• Realising it was not time to die</li> <li>• Wondering why and seeking explanations</li> <li>• Feeling ambiguous in relations</li> <li>• Wondering whether life will be the same</li> </ul> These survivors reported memory loss and searching for a reason why they experienced a CA and had gone from being 'heart-healthy' to having a lifelong illness. They all reported the experience of passing from life to death and back to life again, which led to a reevaluation of what is important in life
Keitildottir et al., 2013, Iceland	Describe survivors' experiences following CA to gain knowledge on the effect of this experience on the needs and concerns of survivors	n = 7 7 male Age 50–54 years	9–24 months	Purposive sampling Two semi-structured interviews	Small number of male survivors, similar in terms of age	Five themes: <ul style="list-style-type: none"> <li>• Feelings of insecurity and the need for support</li> <li>• Striving to regain former life</li> <li>• Emotional challenges</li> <li>• Responding to symptoms</li> <li>• A new view on life</li> </ul> The findings illustrate complex effects of the CA on the survivors' lives. Support after hospital discharge was reported as needing to be better organised in a more structured fashion. The need for security and support was reported as fundamental and needed to be addressed with continuity and vigilance in health care.
Palacios-Ceña et al., 2011, Spain	To investigate experiences of Spanish survivors who were successfully resuscitated following CA	n = 9 5 male Age range not stated	Not stated	Purposive sampling Unstructured interviews	Small number of survivors	Four themes: <ul style="list-style-type: none"> <li>• Facing fear</li> <li>• The search for meaning</li> <li>• Feeling death up close and personal</li> <li>• Loneliness and estrangement</li> </ul> The creation of interdisciplinary support groups and the implementation of follow-up programmes are suggested as fundamental, and that nurses should incorporate lifestyle changes for survivors of a CA in order to provide suitable care following hospital discharge. Survivors' experiences can inform the development of these nursing programmes and follow-up services
Bremer et al., 2009, Sweden	To describe survivors' experiences of surviving an out-of-hospital CA	n = 9 8 male Age 44–70 years	6 months to 15 years	Purposive sampling Semi-structured interview	Small number of mostly men, long time between CA and interview	Seven themes: <ul style="list-style-type: none"> <li>• Sudden and elusive threat</li> <li>• Awakening in perplexity</li> <li>• The memory gap: a loss of coherence and searching for coherence</li> <li>• Distressing and joyful understanding</li> <li>• Existential insecurity exposed by feelings of vulnerability</li> <li>• Well-being through coherence and meaning in life</li> </ul> CA was reported as a life-changing event of great importance for survivors' QOL. The meaning of life varied from being reported as a meaningful life to one largely described without any meaning

(Continued)

Table 2. (Continued)

Study, year, location	Aim	Participants	Time between CA and interview	Method	Limitations	Themes and conclusion
<b>Interpretive description</b> Jren and Galdas, 2015, Canada	Explore how masculinities shape the experiences of survival of a CA	n = 7 7 male Age 29–81 years	<24 months	Purposive sampling Semi-structured interview	Small number of survivors	Three themes: <ul style="list-style-type: none"> <li>• Support and self-reliance</li> <li>• Dealing with emotional (in)vulnerability</li> <li>• No longer a 'He-man'</li> </ul> Masculinity was reported to play a role in men's experiences of recovery and adaptation following CA. Hegemonic masculinity partly explained men's experiences, notably their reluctance to seek professional support and reactions to changes in lifestyle. The findings suggest that nurses would benefit from taking into consideration the potential influence of male gender identities on men's recovery after CA
Forslund et al., 2013, Sweden	To describe risk factors, lifestyle choices and experiences among survivors of an out-of-hospital CA	n = 13 10 male Age 43–75 years	CA between 1989 and 2007	Purposive sampling Semi-structured interview	Small number of mostly male survivors. Excluded survivors over the age of 75 years	Three themes: <ul style="list-style-type: none"> <li>• Significance of lifestyle</li> <li>• Modifying the lifestyle to the new life situation</li> <li>• A changed view on life</li> </ul> Seven subthemes: <ul style="list-style-type: none"> <li>• Finding joy and strength in meaningful relationships</li> <li>• Feeling well and doing things of their choice</li> <li>• Finding a reason as to why it happened and making lifestyle changes</li> <li>• Making your own assessment of a risk behaviour</li> <li>• Feeling grateful for a second chance at life</li> <li>• Finding motivation for lifestyle changes and wishing to influence family members to adopt lifestyle changes</li> <li>• Challenging one's fears and adopting a positive outlook on life</li> </ul> A supporting family, feeling happy and having fun were emphasised by survivors. Although survivors were well informed about cardiovascular risk factors, some decided to ignore this knowledge and choose a 'good life', in which risk factor treatment played a minor part. To incorporate a healthy lifestyle linked to meaningful and joyful things in life would improve participation in risk factor treatment
Lau et al., 2010, USA	To understand CA survivors' issues arising immediately post-CA and the survivors' definitions of death	n = 9 7 male Age range not stated	Not stated	Purposive sampling Semi-structured phone interview	Small number of subjects, similar in terms of race, age and education	No themes reported Immediately post-CA, survivors reported believing that medical professionals made errors in giving a poor prognosis early in the course of recovery. While some survivors reported feeling they had experienced 'death', others felt the term 'death' was an inappropriate term to describe their experience. This study elucidated the attitudes and experiences of CA survivors

CA: cardiac arrest; QOL: quality of life.

psychological challenges; changed body with new limitations; and confrontation with death.

### Multitude of contrasting feelings

*“If you talk to many CA survivors, you will hear this almost universally. CA survivors go through terrible emotional ups and downs. That is, you are very happy you survived, but at some other period, you might be in deep melancholy.”*<sup>19</sup>

Surviving a CA creates a whirlpool of emotions, ranging from fear, vulnerability and loneliness to gratitude and joy.<sup>20,21</sup> Commonly reported were feelings of loss, a search for meaning and a need to find answers as to why it happened to them and why they survived. Impatience and irritability were common in the beginning when survivors had to adjust to their new situation; they wanted life to be as normal, find a reason and determine their possible contribution to the CA, regardless of the real causes.<sup>20,21</sup> Thoughts of being a terrible person who deserved this were occasionally verbalised, creating feelings of separation and loneliness.<sup>20,21</sup>

Survivors expressed fear of an unknown future with the possibility of another CA that could again alter their future, or one they would not survive.<sup>19,21,22</sup> While in hospital, survivors felt safer; after discharge, there were feelings of loneliness and estrangement.<sup>22</sup> Partnerships with the health care professionals who treated them ended, followed by a new team of professionals, creating a feeling of neglect and non-importance from their health institutions.<sup>22</sup>

Survivors described living with anxiety, finding it difficult to adapt to their new situations and to see their lives as opportunities.<sup>19,22</sup> Some male survivors reported insecurity about the impact that the CA could have on their ability to undertake their perceived roles in the future.<sup>22,23</sup> It challenged their sense of independence, and they found it difficult to ask for support during their recovery, as they did not want to be seen as ‘weak’.<sup>23</sup>

The vulnerability of surviving a CA is shown in emotional ups and downs, from sheer joy over survival to melancholy over a failing body.<sup>19,20,24</sup> Survivors described not realising the effect the CA would have on their psychological stability, often being close to tears.<sup>19</sup> Laughing and having fun were described as important; cynicism and humour were often used to face emotional challenges, protecting them from being vulnerable or emotional.<sup>21,25</sup>

### Disruption in the continuum of time

*“I am sort of putting my life together again, something I need to live with, I have to face it ... I force myself; otherwise ... I would be all day sitting at home in fear, prisoner to my condition, and I can’t allow it. I am making an effort. Maybe, in the future I will have to hunker down, but so long as I am in decent shape, I tell myself: ‘Go, move on’ ...”*<sup>22</sup>

The realisation that the supposed natural course of life was changed by this event was frightening.<sup>20,21,25</sup> After the event, waking up from unconsciousness and returning to a new reality were frightening. Memory loss created confusion that was difficult to express.<sup>20,24</sup> For some, linking the past with the present was important; there was a need to know what had happened during the time when they had no memory. Stories told by others about the CA and what had happened during the memory gap provided new insights.<sup>20,21,23,25</sup>

Realisation of this threat to life exposed their own mortality,<sup>20</sup> highlighting the finiteness of life, and existential questions emerged.<sup>21,23</sup> There was a desire to be among people; they believed it was important to be active and in a position to re-join daily life.<sup>21,23,24</sup>

### New reality and psychological challenges

*“I can’t help but ask: why did this happen to me? Should I have taken better care of myself? What is the meaning of it? It is hard for me to think that there is no cause, nothing to pin this traumatic experience to.”*<sup>22</sup>

Survivors described redefining their attitude to life, often involving an evaluation of habits and priorities to reduce stress and live a healthier life.<sup>21,25</sup> Realising that the CPR in fact meant that they were brought back from death, they saw things that they had taken for granted in a new light.<sup>20,25</sup> Many survivors focused on having people around; relationships with their significant others were important and provided happiness and strength.<sup>20,23,25</sup>

Survivors expressed disbelief, guilt and surprise that a CA does not always have obvious warning signs, experiencing self-accusations over missed opportunities to discover the heart failure that changed their life.<sup>19</sup> Fatigue and anxiety decreased with time, and feelings of strength and life returned, resembling normality. They wanted to be able to do the things that they had enjoyed before the CA and to return to ‘normal’.<sup>21,24</sup>

### Changed body with new limitations

*“I don’t have the strength now either, not a whole day, I have to rest quite a lot. You have to try to get back to normal, get the strength to get everyday life to work out first.”*<sup>25</sup>

Survivors found that their body did not function as usual; being unable to do their everyday activities was a new experience.<sup>20,21,25</sup> They had to unite with an unfamiliar body, which was seen as vulnerable and restricted.<sup>25</sup> This changed body created insecurity and anxiety regarding its function and abilities for the future.<sup>20,21</sup> Repeatedly measuring blood pressure in order to ensure that they were within ‘safe’ limits reveals the insecurity that survivors felt towards their body.<sup>23,25</sup> Survivors described experiencing cognitive problems such as reduced reading ability and memory.<sup>19–21</sup> For many, it was a new experience to go from

being a 'healthy' person to relying on medications; their body was no longer independent, instead requiring medication in order to function.<sup>25</sup>

Following a CA, survivors wanted to 'take care of their body', change lifestyles, exercise, lose weight and eat according to the rules, although some felt that this was a choice, striking a balance between feeling well, enjoying life and following the guidelines for a healthier lifestyle.<sup>21,25</sup>

### Confrontation with death

*"This is death we are talking about here, do you realise what I am talking about? And I get an appointment as if this was something inconsequential like diabetes."*<sup>22</sup>

This confrontation with death was prominent in the survivors' stories; confrontation with the finiteness of life made them realise how fortunate their survival was.<sup>20</sup> Feeling that they had experienced their own mortality,<sup>20,22</sup> this near-death experience made them into a different person; only a person who had experienced the same would understand.<sup>22</sup> Death was experienced as something real, and some survivors actively prepared for their death and funeral.<sup>22</sup>

Survivors commented on coincidences that made their survival possible, sensing that they had been lucky and expressing gratitude towards those who came forwards to help.<sup>20,24</sup> Some saw their survival as a miracle, in that people were around who knew how to perform CPR and that the emergency services were close by, which contributed to their survival.<sup>20,21,24</sup> In their discourse, there was an underlying feeling of gratitude – an obligation to continue to live.<sup>20,21</sup>

For many, the experience of 'death' in itself was not frightening, describing it as peaceful and serene.<sup>20,25</sup> This was somewhat in contrast to the fear and anxiety experienced after the CA. The confrontation with death may be very challenging and confusing for the CA survivor, creating a feeling of insecurity. Continuous engagement with health care personnel is vital in order to support the survivor and enable their acceptance of their situation.<sup>22</sup>

### Discussion

There are few papers exploring interventions focused on improving QOL for survivors of CA; hence, the effectiveness of these programmes is not well known,<sup>26,27</sup> and to date, there are no international guidelines for the psychological care of CA survivors.<sup>26,27</sup> The synthesis of these qualitative papers offers an insight into the complexity of surviving a CA and highlights both the psychological and physical changes influencing survivors' perceptions of their QOL. Surviving a CA is a major event for all involved. What the survivor saw as a predictable future changes to the unknown, and their bodies come to be unfamiliar

entities that can no longer be trusted, or are not what they used to be.

In the continuum of time, a CA is a watershed moment; life before is equated with their current situation and the altered future. The memory gap after the CA impacted on the survivors' experiences, where the survivors lost track of time and wake up to a new and different reality in which they have little input into what is happening. Health professionals have an important role of providing information to survivors in order to help mend the timeline and fill in the memory gap.<sup>20,22</sup> Often, survivors' physical and psychological abilities changed, and adaptation to the new reality was challenging; irritability and disappointment were commonly reported before adjusting to the new reality.<sup>22,23</sup> There is a need for health care providers to support survivors and their loved ones in their quest to adapt to their new reality. Survivors often felt abandoned by the health care team after discharge and before a relationship had formed with the rehabilitation team.<sup>25</sup> A multidisciplinary approach to the transition between hospital wards and home is needed in order to create and implement pathways for these patients in the health care system involving all active partners, improving the survivors' rehabilitation and QOL.<sup>26–28</sup>

For the health care personnel caring for a CA survivor, this multitude of feelings needs to be taken into account. The survivor returning to an altered reality and realising what has happened to them needs both psychological and physical support, as the anxiety and depression some people experience following a CA may be as limiting as any physical ailment.

Existential questions were commonly reported after such an ordeal. Questions as to why this happened to them and how they were able to receive the care needed for survival influenced survivors' QOL. Often, thoughts of the reasons for their CA were highlighted. Lifestyles and habits were scrutinised in order to search for reasons, and many reported changing their lifestyle, although not all found changing their lifestyle to be easy, and some prioritised their enjoyment of life more than the effort it took to live by the recommended health advice after a CA.<sup>24</sup> Support for psychological health was often missing, and research has confirmed that anxiety, depression and post-traumatic stress disorder are common ailments after a CA.<sup>29,30</sup> Currently, there are limited programmes that support survivors' psychological needs during their time in hospital, and further research is needed in order to investigate the psychological needs of survivors so as to provide a tailored care plan.<sup>28,31,32</sup>

The physical changes following a CA can also be debilitating; therefore, medical, practical (such as walking aids or home modifications) and moral support in order to improve physical abilities are implemented and programmes developed so as to coordinate care.<sup>26,27</sup>

To survive a CA is a close encounter with death, and the realisation of the finiteness of life seems to have a strong

impact on survivors' recovery and QOL. Their post-CA experience take them into an existential space, but this is juxtaposed with a desire for practicality in sorting out loose ends in their lives. Cognitive and psychological factors are important components of a CA survivor's QOL.<sup>33,34</sup> The increased possibility of cognitive impairment and early death for CA survivors needs to be taken into account, and multidisciplinary programmes need to be developed in order to support this group of survivors and help them adjust to their new reality.<sup>35</sup> Although research indicates a need for increased psychological support after a CA in order to improve survivors' QOL,<sup>34</sup> there is as yet no clear clinical pathway from hospital care to community care that specifically targets the psychological issues that occur after surviving a CA. The feasibility of an assigned 'mentor' nurse who could give the survivor a personal connection and continuity through the hospital, rehabilitation and home transfer could be considered, providing better communication between care teams.<sup>26</sup>

## Limitations

To find and retrieve qualitative research is challenging,<sup>16</sup> and although a comprehensive systematic search was conducted, there is no certainty that all of the relevant papers have been retrieved. The limit of only using manuscripts in the English language might narrow these findings. This review of the qualitative literature did not find any published research reporting CA survivors' experiences following a less favourable neurological outcome. While this may be due to a reluctance of these survivors to participate in research, their experience would be valuable in order to further develop appropriate and relevant clinical pathways, taking into account all levels of physical and psychological outcomes. The included papers were from countries with access to high-quality technological care. Further research is needed on survivors from different cultural backgrounds and differences in hospital technology in order to provide optimal and equitable post-CA care for all survivors.

## Conclusion

The experience of surviving a CA is undoubtedly a watershed moment for the individual. This meta-synthesis explores survivors' experiences of a CA as a tumultuous and life-changing event. Fear, anxiety, loss of memory and difficulty adjusting to a new reality, both in relationships with other people, as well as in the relationship with their own body, are part of their experiences. This was juxtaposed with gratitude and often a new appreciation of living – a re-evaluation of what is important in life, where family and friends are central to the survivor. In the current clinical pathways, the main focus is on clinical outcomes, and the psychological support that is needed in order to improve QOL is not well incorporated. There is a need to

develop more holistic clinical pathways, focusing on both physiological and psychological function, promoting an improved QOL for survivors of CA.

## Implications for practice

- Healthcare providers play an important part in survivors' recovery and rehabilitation. Often after discharge from hospital the survivors feel an increased anxiety that can be eased with consultation and follow-up.
- In order for healthcare providers to provide person centred care culturally adjusted and applied rehabilitation of patients following cardiac arrest can improve patient centred care and survivors' satisfaction of quality of life.

## Conflict of interest

The authors declare that there is no conflict of interest.

## Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

## References

1. Kazaure HS, Roman SA and Sosa JA. Epidemiology and outcomes of in-hospital cardiopulmonary resuscitation in the United States, 2000–2009. *Resuscitation* 2013; 84: 1255–1260.
2. Wallin E, Larsson I-M, Rubertsson S, et al. Cardiac arrest and hypothermia treatment—function and life satisfaction among survivors in the first 6 months. *Resuscitation* 2014; 85: 538–543.
3. Fothergill RT, Watson LR, Chamberlain D, et al. Increases in survival from out-of-hospital cardiac arrest: A five year study. *Resuscitation* 2013; 84: 1089–1092.
4. Chan PS, McNally B, Tang F, et al. Recent trends in survival from out-of-hospital cardiac arrest in the United States. *Circulation* 2014; 130: 1876–1882.
5. Wong MKY, Morrison LJ, Qiu F, et al. Trends in short- and long-term survival among out-of-hospital cardiac arrest patients alive at hospital arrival. *Circulation* 2014; 130: 1883–1890.
6. Herzog E, Shapiro J, Aziz EF, et al. Pathway for the management of survivors of out-of-hospital cardiac arrest. *Crit Pathw Cardiol* 2010; 9: 49–54.
7. Nolan J P, Neumar RW, Adrie C, et al. Post-cardiac arrest syndrome: Epidemiology, pathophysiology, treatment, and prognostication. A Scientific Statement from the International Liaison Committee on Resuscitation; the American Heart Association Emergency Cardiovascular Care Committee; the Council on Cardiovascular Surgery and Anesthesia; the Council on Cardiopulmonary, Perioperative, and Critical Care; the Council on Clinical Cardiology; the Council on Stroke. *Resuscitation* 2008; 79: 350–379.

8. Neumar RW, Nolan JP, Adrie C, et al. Post-cardiac arrest syndrome epidemiology, pathophysiology, treatment, and prognostication: A consensus statement from the International Liaison Committee on Resuscitation. *Circulation* 2008; 118: 2452–2483.
9. Kuyken W. The World Health Organization quality of life assessment (WHOQOL): Position paper from the World Health Organization. *Soc Sci Med* 1995; 41: 1403–1409.
10. Bro-Jeppesen J, Kjaergaard J, Horsted TI, et al. The impact of therapeutic hypothermia on neurological function and quality of life after cardiac arrest. *Resuscitation* 2009; 80: 171–176.
11. Deasy C, Bray J, Smith K, et al. Functional outcomes and quality of life of young adults who survive out-of-hospital cardiac arrest. *Emerg Med J* 2013; 30: 532–537.
12. Harve H, Tiainen M, Poutiainen E, et al. The functional status and perceived quality of life in long-term survivors of out-of-hospital cardiac arrest. *Acta Anaest Scand* 2007; 51: 206–209.
13. Torgersen J, Strand K, Bjelland TW, et al. Cognitive dysfunction and health related quality of life after a cardiac arrest and therapeutic hypothermia. *Acta Anaest Scand* 2010; 54: 721–728.
14. Wachelder EM, Moulart VRMP, van Heugten C, et al. Life after survival: Long term daily functioning and quality of life after an out-of-hospital cardiac arrest. *Resuscitation* 2009; 80: 517–522.
15. Korhonen A, Hakulinen-Viitanen T, Jylhä V, et al. Meta-synthesis and evidence based health care – A method for systematic review. *Scand J Caring Sci* 2013; 27: 1027–1034.
16. Thomas J and Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Method* 2008; 8: 45.
17. Bondas T and Hall EOC. Challenges in approaching meta synthesis research. *Qual Health Res* 2007; 17: 113–121.
18. Sandelowski M. The problem of rigour in qualitative research. *Adv Nurs Sci* 1986; 8: 27–37.
19. Lau B, Kirkpatrick JN, Merchant RM, et al. Experiences of sudden cardiac arrest survivors regarding prognostication and advance care planning. *Resuscitation* 2010; 81: 982–986.
20. Bremer A, Dahlberg K and Sandman L. To survive out-of-hospital cardiac arrest: A search for meaning and coherence. *Qual Health Res* 2009; 19: 323–338.
21. Ketilsdottir A, Albertsdottir HR, Akadottir SH, et al. The experience of sudden cardiac arrest: Becoming reawakened to life. *Euro J Card Nurs* 2014; 13: 429–435.
22. Palacios-Ceña D, Losa-Iglesias ME, Salvadores-Fuentes P, et al. Sudden cardiac death: The perspectives of Spanish survivors. *Nurs Health Scien* 2011; 13: 149–155.
23. Uren A and Galdas P. The experiences of male sudden cardiac arrest survivors and their partners: A gender analysis. *J Adv Nurs* 2015; 71: 349–358.
24. Forslund A, Lundblad D, Jansson JH, et al. Risk factors among people surviving out-of-hospital cardiac arrest and their thoughts about what lifestyle means to them: A mixed methods study. *BMC Cardio Disord* 2013; 13: 62.
25. Forslund A-S, Zingmark K, Jansson J-H, et al. Meanings of people's lived experiences of surviving an out-of-hospital cardiac arrest, 1 month after the event. *J Card Nurs* 2014; 29: 464–471.
26. IOM (Institute of Medicine). In-hospital cardiac arrest and post-arrest care. In: Graham R, McCoy MA and Schultz AM (eds.) *Strategies to Improve Cardiac Arrest Survival: A Time to Act*. Washington, DC, USA: The National Academic Press, 2015.
27. Moulart VRMP, Verbunt JA, van Heugten CM, et al. Activity and life after survival of a cardiac arrest (ALASCA) and the effectiveness of an early intervention service: Design of a randomised controlled trial. *BMC Card Dis* 2007; 7: 26.
28. Moulart VRMP, Verbunt JA, Bakx WGM, et al. 'Stand still ..., and move on', a new early intervention service for cardiac arrest survivors and their caregivers: Rationale and description of the intervention. *Clin Rehabil* 2011; 25: 867–879.
29. Wilder Schaaf KP, Artman LK, Peberdy MA, et al. Anxiety, depression and PTSD following cardiac arrest: A systematic review of the literature. *Resuscitation* 2013; 84: 873–877.
30. Green CR, Botha JA and Tiruvoipati R. Cognitive function, quality of life and mental health in survivors of out-of-hospital cardiac arrest: A review. *Anaesth Intensive Care* 2015; 43: 568–576.
31. Moulart VRM, Goossens M, Heijnders ILC, et al. Early neurologically focused follow-up after cardiac arrest is cost-effective: A trial-based economic evaluation. *Resuscitation* 2016; 106: 30–36.
32. Ski C, Worrall-Carter L, Cameron J, et al. Depression screening and referral in cardiac wards: A 12-month patient trajectory. *Eur J Cardiovasc Nurs* 2017; 16: 157–166.
33. Ørbo M, Aslaksen PM, Larsby K, et al. Alterations in cognitive outcome between 3 and 12 months in survivors of out-of-hospital cardiac arrest. *Resuscitation* 2016; 105: 92–99.
34. Haydon G, van der Riet P and Maguire J. Survivors' quality of life after cardiopulmonary resuscitation: An integrative review of the literature. *Scand J Caring Sci* 2017; 31: 6–26.
35. Cronberg T and Lilja G. Cognitive decline after cardiac arrest – It is more to the picture than hypoxic brain injury. *Resuscitation* 2015; 91: A3–A4.
36. Moher D, Liberati A, Tetzlaff J, et al.; The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Med* 2009; 6: e1000097.