

## Understanding the impact of 'wish-granting' interventions on the health and wellbeing of children with life-threatening health conditions and their families: A systematic review

Item Type	Journal article
Authors	Heath, Gemma;Screti, Cassandra;Pattison, Helen;Knibb, Rebecca
Citation	Heath, G., Screti, C., Pattison, H. & Knibb, R. (2021) Understanding the impact of 'wish-granting' interventions on the health and wellbeing of children with life-threatening health conditions and their families: A systematic review, Journal of Child Health Care, 26(3), pp.479-497. doi:10.1177/13674935211016712
DOI	<a href="https://doi.org/10.1177/13674935211016712">10.1177/13674935211016712</a>
Publisher	SAGE
Journal	Journal of Child Health Care
Download date	2026-03-16 18:51:23
License	<a href="https://creativecommons.org/licenses/by-nc-nd/4.0/">https://creativecommons.org/licenses/by-nc-nd/4.0/</a>
Link to Item	<a href="http://hdl.handle.net/2436/624024">http://hdl.handle.net/2436/624024</a>

**Title**

Understanding the impact of 'wish-granting' interventions on the health and wellbeing of children with life-threatening health conditions and their families: A systematic review

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**Keywords**

Child Health; Psychology, Positive; Quality of Life; Systematic Review

**Word count**

4942 words

## **Abstract**

This review aimed to explore how wish-granting interventions impact on the health and wellbeing of children with life-threatening health conditions and their families, using any study design. Six electronic databases (Medline; PsycINFO; CINAHL; Embase; AMED; HMIC) were systematically searched to identify eligible research articles. Studies were critically appraised using a Mixed Methods Appraisal Tool. Findings were synthesised narratively. Ten papers were included, reporting studies conducted across five countries, published from 2007-2019. Study designs were diverse (four quantitative; two qualitative; four mixed method). Results indicated improvements to physical and mental health, quality of life, social wellbeing, resilience and coping for wish children, parents and siblings. In conclusion, wish-granting interventions can positively impact health and therefore, should not be discouraged; however, more research is needed to define and quantify the impact of wish-fulfillment and to understand how it can be maximized.

## **Background**

More than 49,000 children and young people in the UK alone live with a serious, life-threatening or life-limiting illness (Fraser et al. 2012). This figure continues to rise annually. Life-limiting conditions in children and young people can be defined as conditions for which there is no cure, or for which curative treatment may be feasible but can fail, and from which children or young people will, at some point, die prematurely (Together for Short Lives, 2017). While some children with serious illness will die young, others will live for many years, albeit with restrictions and almost inevitably dependent on intensive treatment regimens to prolong life.

Despite increasing survival rates for children with serious illness, physical symptoms of living with a life-threatening condition (e.g. pain, fatigue), burden of managing these conditions (e.g. worry, daily hassles, family conflict), restrictions to participation in everyday activities (e.g. lost days from school, fewer contacts with peers, difficulties in accessing activities), and feelings of difference to healthy peers, can lead to significantly poorer quality of life (Barthel et al. 2018; Lambert and Keogh, 2015; Moreira et al. 2013). Parenting a child with additional healthcare needs also significantly impacts on parental stress and family functioning (Lewandowski et al. 2010), commonly implying a substantial economic load for families (Groenewald et al. 2014).

There is a need for interventions to support families of children living with life-threatening health conditions (Siden and Steele, 2015). Positive psychological approaches strive to do more than reduce distress, they seek to promote positive emotions and personal growth, aiming to build strengths and resources that enable individuals to thrive (Joseph and Linley, 2005). Evidence suggests that positive psychology interventions are considered feasible and acceptable by patients (Ghosh and Deb, 2017) and can enhance psychological well-being as well as reduce negative symptoms (Bolier et al. 2013; Sin and Lyubomirsky, 2009). Emerging research further demonstrates associations between enhancing subjective well-being (including happiness, hope and optimism) and improved physical health outcomes (Diener and Chan, 2011; Schiavon et al. 2017). In the paediatric context, this comprises programmes aimed at cultivating positive emotions, behaviors and cognitions. Examples include 'clown doctor' interventions (Costa-Fernandes and Arriaga, 2010; Dionigi et al. 2014), play and music therapy (Hendon and Bohon, 2007) and hope-based therapy (Venning et al. 2008).

One form of positive psychological intervention delivered to children with life-threatening health conditions is wish-granting. Often carried out by charitable organisations (e.g. Make-A-Wish; Rays of Sunshine; Dreams Come True; Starlight; When You Wish Upon a Star), wish-granting seeks to improve the lives of children with life-threatening medical conditions and their families by fulfilling a wish of their choice. Examples include meeting a celebrity, going on a special holiday or shopping spree, being a train driver for a day. In doing so, wishes aim to enhance children's subjective well-being and psychological resources for coping with their condition (Chaves et al. 2016b). It is suggested that improving these domains could also impact on increased engagement with treatment and thus improve clinical outcomes (Chaves et al. 2016b). For parents, wish-granting is anticipated to provide respite from dealing with their child's situation thus briefly alleviating their experience of emotional pain (Chaves et al. 2016a). While these benefits to child and family health have been reported in individual research studies, to date there has been no attempt to systematically review the evidence for such benefits.

## **Aim**

To explore how wish-granting interventions impact on the health and wellbeing of children with life-threatening health conditions and their families, using any study design.

## Methods

### *Protocol and registration*

A review protocol was developed following PRISMA-P guidelines. It was registered with Prospero international prospective register of systematic reviews related to healthcare and social sciences (registration number: XXXXX) and can be accessed on the Prospero website (<https://www.crd.york.ac.uk/prospero>).

### *Eligibility criteria*

Studies had to report findings of research exploring the effect of wish-granting interventions on children and young people (from birth to 18 years) with a clinically diagnosed, life-threatening health condition and/or on parents/guardians or other close family members. "Wish-granting" was defined as an act that provided sick children and their families with a desired event or item. Studies had to report outcomes relating to the child or families' physical wellbeing (e.g. mobility, sleep, pain, medication adherence) or psychosocial wellbeing (e.g. mood, stress levels, feelings of isolation). Outcomes also included measures of Quality of Life. Interventions could be delivered in any setting, worldwide. No health conditions were excluded. No restrictions were placed on the type of study, thus qualitative, quantitative and mixed methodologies were included, as were studies with no or any comparison groups. No restrictions were placed on date of publication; however, only studies published in English were included.

### *Information sources and systematic search*

Six electronic data-bases (Medline; PsycINFO; CINAHL; Embase; AMED; HMIC) were searched from 1980 until September 2019. Reference lists and forward citations of included studies and relevant literature reviews were hand-searched, and publication lists of key authors checked. Grey literature were identified by searching Google Scholar, ProQuest Dissertations and Theses database, and Conference Proceedings Citation Indices for Science, and for Social Science and Humanities, available through Web of Science.

A comprehensive search strategy was developed and adapted for use with each electronic database. It included a combination of free-text terms, index headings and Boolean operators (OR and AND) to combine synonyms and key concepts including: population (children with life-threatening health conditions and their families), intervention (wish-granting) and outcome (impact on physical wellbeing; psychosocial wellbeing; quality of life; health). Authors of included studies were contacted to identify additional studies. Figure 1 presents the final search strategy.

[Insert figure 1. here – presented as supplementary file]

### *Study selection*

Full references (including abstracts) of all articles returned by the searches were retrieved and saved using reference management software (EndNote X8 Clarivate™). Following removal of duplicate studies, titles and abstracts were screened for relevance by the review team. Papers that clearly did not meet the inclusion criteria were excluded. Full text copies of all other studies were

independently assessed against the inclusion criteria by two reviewers. Uncertainties were resolved through discussion with a third reviewer.

#### *Data extraction and management*

Information were extracted from each included article using a specially designed data extraction form by one researcher and reviewed by another (Jahan et al. 2016). Data were extracted in accordance with the context and methodology of the study and the review aim. This included information on country and setting, research aim, study design, participant details, intervention, comparator (where relevant), data collection and analysis methods, outcomes and all reported findings. As we were expecting to deal with high heterogeneity, a descriptive narrative review was planned (Popay et al. 2006).

#### *Data synthesis*

The narrative synthesis approach was selected for its ability to bring together broad knowledge from a variety of methodologies (Jahan et al, 2016). In synthesising study findings, guidelines set out by Popay et al. (2006) were followed. These included (i) developing a preliminary synthesis (ii) exploration of relationships within and between studies and (iii) assessment of the robustness of the synthesis. Preliminary synthesis consisted of extracting and reporting descriptive characteristics of included studies in a table and producing a textual summary of findings for each study. Findings across studies were then compared and categorised into broad, descriptive themes (e.g. wish experience; positive/negative impact on wish-child, families, others; evaluation of wish-making organisations). These initial categories were then interrogated and refined to specify the impact of wishes on different aspects of health and well-being (e.g. physical, mental, social) for children and their families. Explanations for how and why wishes produced these specific effects were also discussed and developed in accordance with the data (e.g. distraction, respite, re-conceptualisation of self). Only those themes which answered the review question were included in the final synthesis. The robustness of synthesis findings was assessed both in terms of the quality of individual studies (see Quality assessment) and the strength of evidence for each outcome, across the data set as a whole.

#### *Quality assessment*

Study quality was evaluated using a Mixed Methods Appraisal Tool (MMAT) (Pluye et al. 2009). MMAT appraises and describes methodological quality using three domains: mixed, qualitative and quantitative (subdivided into three sub-domains: randomized controlled, nonrandomized and descriptive). Two researchers independently assessed included studies for quality. Discrepancies were resolved through discussion with a third reviewer.

## **Findings**

### *Searches*

Articles were retrieved for assessment against the inclusion criteria (N=1012), with 10 included in the review (Figure 2). Studies were conducted across five countries (Canada, USA, Israel, Spain, Netherlands), published between 2007 and 2019. Participants included children, parents, health professionals and volunteers. Study designs comprised four quantitative studies (wait-list controlled

trials, retrospective chart review), two qualitative studies (ethnography and interviews, drawing analysis) and four mixed method studies (surveys, interviews, focus groups, nominal group technique). Sample sizes ranged from N=66-124 participants in randomized controlled trials, N=235-711 in questionnaire studies, N=8-55 in qualitative studies and N=992 in the case-controlled retrospective chart review. (Table 1)

[Insert figure 2. here]

[Insert table 1. here]

### *Quality Appraisal*

All studies were assessed as having a clear research question with appropriate data collection processes. Qualitative studies generally scored well, although one (Ewing, 2007) was unclear on how findings derived from the data. This was because data constituted drawings, not all of which were presented in the article. One randomized trial scored highly (Shoshani et al. 2015), the other two (Chaves et al. 2016b; Chaves et al. 2016a) did not adequately describe randomization or blinding processes. Mixed method studies scored highly on methodological quality, although three (Darlington et al. 2013; Galinsky, 2014; Make-A-Wish USA (MAWUSA), 2011) did not address inconsistencies between qualitative and quantitative data (Table 1).

### *Synthesis of findings*

#### **Wish experience**

Wish interventions afforded positive, joyful experiences for children with life-threatening illnesses and their families (Darlington et al. 2013; Galinsky, 2014). “To go” wishes were most frequently requested (Patel et al. 2019), with holidays and trips to Disney world/land most popular (Ewing, 2007; Schilling and Sarigiani, 2014). Other wish types included “To have” (e.g. a computer), “To meet” (e.g. a celebrity), “To be” (e.g. a fireman). Wishes were described as ‘extraordinary’ (Deschenes, 2009), ‘more than expected’ (Schilling and Sarigiani, 2014), once in a lifetime experience. Wishes were also constructed as a sign of hope (Deschenes, 2009; Shoshani et al. 2015). Hope associated with the child’s eligibility to receive a wish; hope for positive wish-related outcomes (e.g. positive experiences); hope for improved illness-related outcomes (e.g. positive effects on a child’s health/condition); and hope for a brighter future.

Wishes were found to generate special and lasting memories; an experience families would never forget (Deschenes, 2009; Galinsky, 2014; MAWUSA, 2011; Schilling and Sarigiani, 2014). Memories were protected and evoked through use of photographs and mementos (Schilling and Sarigiani, 2014). Most parents and many siblings participated in wishes, meaning that benefits extended beyond wish children to other family members (Chaves et al. 2016a; Darlington et al. 2013; Deschenes, 2009; MAWUSA, 2011; Schilling and Sarigiani, 2014), as well as wish charity volunteers (MAWUSA, 2011).

Receiving wishes within the context of a child’s illness also led to conflicted emotions for some families, serving as a reminder of the child’s health status (Ewing, 2007; Darlington et al. 2013). Other negative factors included timing of the wish, barriers in accessibility (e.g. for wheel chairs), too much to do in the time (rushed wishes), difficulties with travel, and family dynamics (Schilling and

Sarigiani, 2014). For some, wishes were experienced as emotionally and physically draining. Nevertheless, wish fulfillment was, in all studies described as a positive experience, with several benefits identified for families. These included improvements to physical health, mental health, quality of life, social wellbeing, coping and resilience.

### **Impact on wish children**

#### *Physical health*

Benefits of receiving a wish included improvements to physical health, including a reduction in unplanned hospitalisations (Patel et al. 2019). These post-wish changes were reported by wish children (Chaves et al. 2016b; Ewing, 2007; Shoshani et al. 2015) and their parents (Chaves et al. 2016b; Darlington et al. 2013; MAWUSA, 2011; Schilling and Sarigiani, 2014). Both waiting list-controlled trials found improvements in physical health for the intervention group compared with the control group, from baseline to time two (Chaves et al. 2016b; Shoshani et al. 2015). Statistically significant improvements to physical health included reduced nausea in wish children compared with non-wish children (Chaves et al. 2016b), increased energy levels post-wish (Darlington et al. 2013; MAWUSA, 2011), improved physical strength (MAWUSA, 2011; Schilling and Sarigiani, 2014) and improved functional skills (Chaves et al. 2016b; Schilling and Sarigiani, 2014). Seventy five percent of parents in one study described improvements in their child's health condition and physical mobility (MAWUSA, 2011). Patel et al. (2019) reported fewer unplanned hospital admissions and emergency department visits for children who had received a wish compared with matched controls.

#### *Mental health and emotional well-being*

Wish group children were generally found to have improved mental health and emotional well-being; displaying more positive emotions and fewer symptoms of depression, sadness, anxiety and fear than non-wish children. This was reported from the wish child perspective (Chaves et al. 2016b; Ewing, 2007; Shoshani et al. 2015) and their parents (Darlington et al. 2013; MAWUSA, 2011; Schilling and Sarigiani, 2014). In the two controlled trials, intervention group children exhibited a significant reduction in general distress, depression, and anxiety at time two compared with the control group (Shoshani et al. 2015), as well as showing higher positive emotion scores (Chaves et al. 2016b). An increased sense of joy, happiness, hope and optimism in wish children was reported in a further three studies (MAWUSA, 2011; Schilling and Sarigiani, 2014; Shoshani et al. 2015). Explanations for this finding could be that wish fulfillment eased the burden of living with a life limiting condition (Shoshani et al. 2015) or because it enabled children to temporarily not feel ill during their wish (Darlington et al. 2013). Providing an opportunity for respite or distraction from the illness, clinical care and treatment, even if only for a short period of time, was described by parents as contributing to their child's improved mental health and emotional wellbeing (Galinsky, 2014; MAWUSA, 2011; Schilling and Sarigiani, 2014).

#### *Quality of life*

Improvements to child quality of life were reported by wish group children (Chaves et al. 2016b; Ewing, 2007; Shoshani et al. 2015) and parents (Darlington et al. 2013; MAWUSA, 2011; Schilling and Sarigiani, 2014), with children reporting increased satisfaction with life after the wish, where no

increases were seen in waiting list comparators (Chaves et al. 2016b; Shoshani et al. 2015). From a parent perspective, wishes facilitated feelings of normalcy for their children, both in terms of an opportunity to experience “normal-life” activities and be part of a “normal” family (MAWUSA, 2011; Schilling and Sarigiani, 2014). Wishes were also reported to provide something to look forward to (Schilling and Sarigiani, 2014; MAWUSA, 2011), enabling a shift in focus away from illness and treatment, toward wish anticipation. Finally, wishes were perceived to create positive, happy memories for families (Deschenes, 2009; Schilling and Sarigiani, 2014; Galinsky, 2014; MAWUSA, 2011).

#### *Social well-being*

Improved social wellbeing as indicated by increased scores on scales of gratitude, love, communication and benefit finding were reported by children receiving wishes and their parents, where no increases were seen in waiting list controls (Chaves et al. 2016b). Improvements in wish child social skills were also reported. Parents in one study (Schilling and Sarigiani, 2014) reported that wishes contributed to improved child communication with family and friends; better communication about the illness and enhanced concern for others (less egocentricity). Wish children in the MAW USA (2011) study were reported to show increased desires to ‘give-back’ or help others or someone else’s family by taking up volunteering activities.

#### *Resilience and coping*

Parents reported wish children to demonstrate improvements in coping and resilience (Darlington et al. 2013; Galinsky, 2014; MAWUSA, 2011; Schilling and Sarigiani, 2014). This included increases in child self-esteem and confidence (MAWUSA, 2011; Schilling and Sarigiani, 2014) as well as boosting morale (Galinsky, 2014). Such changes are suggested to indicate improved resilience and coping in children, including an increased ability to cope with their illness and an increased sense of empowerment (MAWUSA, 2011).

#### *Health choices and actions*

In one study (MAWUSA, 2011), between 79 and 89% of parents agreed that improvements in children’s health choices, attitudes and actions accompanied or followed a wish experience. Specifically, these parents supported that wishes increased their child’s willingness to work toward improved health outcomes; willingness and effort to improve physical strength; and an increased willingness to comply with, and actual compliance with, treatment regimen. Such changes could have been a factor in the reduction of unplanned hospital visits for wish children reported by Patel et al. (2018).

### **Impact on wish-child’s parents/guardians**

#### *Mental health and emotional wellbeing*

Of the four studies reporting parent’s views of how their child’s wish experience impacted their own health, three described improvements to parental mental health and emotional wellbeing (Chaves et al. 2016a; Darlington et al. 2013; MAWUSA, 2011). In a controlled trial, Chaves (2016a) reported higher positive emotion scores for wish intervention parents compared with control group parents, as well as increased positive emotion between time one and time two, where control group parents

did not. MAW USA (2011) further reported 98% of parents in their sample agreed that wish fulfilment had generated a sense of hope in them as parents, an improved outlook and positive forward thinking, and generally enhanced their own mental health, including decreased feelings of anxiety and fear. Improved emotional wellbeing was perceived to have resulted from a feeling of respite from the illness and experience of things being better, if only for a short period of time; a distraction from the medical environment and its demands; a change in environment; and confirmation that their child was experiencing “life” beyond illness and treatment.

### *Quality of life*

Parents also reported improvements to their own quality of life, revealing that wishes created important, positive memories for parents (Darlington et al. 2013; Galinsky, 2014) which supported a process of recovery and healing throughout their child’s illness, or following their child’s passing (MAWUSA, 2011). Wishes were further considered to provide an opportunity to experience life as much more than their child’s illness; an opportunity for a “normal life” experience and a positive wish experience with minimal family effort (MAWUSA, 2011).

### *Social well-being*

Parents of children who received a wish were found to show benefits in social wellbeing. Chaves et al. (2016a) reported benefits to parents separately, finding Mothers to have more benefits than Fathers as a result of their child’s wish-granting experience. Mothers showed increased benefit finding scores between time one and time two, where control group Mothers did not; increased beliefs in benevolence in the world between time one and time two, where control group Mothers did not; increased personal strengths (gratitude and love) in comparison with the control group, and increased personal strengths (gratitude and love) between time one and time two where the control group did not. Fathers of wish group children showed higher levels of calm and well-being and increased beliefs in benevolence in the world in comparison with the control group and increased beliefs in benevolence in the world between time point one and time point two, where control group Fathers did not. MAW USA (2011) also described post-wish parents (reported as one unit) as having increased social wellbeing, demonstrated through an increased desire to give back to others, an increased sense of compassion toward others; a reinforced sense of trust in others; an increased desire to volunteer and an increased sense of social acceptance. In addition, parents in this study described a feeling of an extended network of support through the wish-granting charity; and a sense of decreased isolation, in part through the opportunity to experience life alongside others coping with a life-threatening condition.

### *Resilience and coping*

Two studies identified the role of wishes in helping parents cope with bereavement (Darlington et al. 2013; MAWUSA, 2011). Of the parents included in the MAW USA study, 83% percent acknowledged that the experience assisted them with the grieving process, in grieving over the illness and/or the possible loss of the child. Ninety-three percent of parents also attested to an increased sense of empowerment following their child’s wish when much seemed out of control, and an improved ability to cope with their child’s illness and situation.

### **Impact on other family members**

Three studies reported benefits to wish child siblings (Deschenes, 2009; MAWUSA, 2011; Schilling and Sarigiani, 2014). For Schilling and Sarigiani (2014) these included that wishes provided siblings with positive memories, greater sharing with the wish child, and greater assurance about their sibling's illness. In one study (MAWUSA, 2011), 92% of parents affirmed a reduction in fear and anxiety among the wish child's siblings. Wishes were also seen by parents as providing something to look forward to; to boost family spirits, keeping them going through tough times, as well as a sense that the wish experience strengthened the family, gave them an increased ability to cope with the illness and/or situation and an opportunity to celebrate the end of a child's treatment. Volunteers further endorsed statements regarding benefits for family members, suggesting that the wish experience provided stress relief and support to the family, and strengthened the family unit during difficult times. Volunteers also suggested that wishes provided opportunities for siblings to connect with parents and to celebrate the uniqueness of the wish child.

## **Discussion**

This systematic review examined the impact of wish-granting interventions on child and family health and wellbeing, from an international perspective. A narrative synthesis of evidence from ten studies revealed that this kind of intervention has a positive influence on several indicators of child and family health, including improvements in physical health, mental health and emotional wellbeing, quality of life, social wellbeing, resilience and coping. Effects were reported to extend beyond wish children to include parents and siblings. While it is difficult to quantify the impact from such a small number of studies with diverse study designs, it is clear that this kind of positive intervention is affording benefits to children and families of children with life-limiting conditions, not least providing positive, memorable experiences.

A key finding is that wish fulfillment has a positive effect on aspects of the wish child's wellbeing, including improvements to physical and mental health, quality of life, communication and social wellbeing and better coping with their medical condition. Such effects are important given strong evidence that living with a serious illness significantly increases the risk of poor mental health, with children who have a life-threatening condition experiencing higher levels of anxiety and depression compared with healthy peers (Ferro and Boyle, 2015; Nazari et al. 2017; Pinguart and Shen, 2011). Moreover, it has been shown that the frequency, intensity, and course of physical symptoms are affected by psychosocial factors; thus mental health problems can also exacerbate physical illness, leading to worse health outcomes and increased treatment costs (Thompson et al. 2011).

Given the potential benefits afforded by wish fulfillment, questions are raised regarding the mechanism by which wish-granting interventions have their effects. By offering a child the possibility of experiencing a different way of being from the one in which they currently find themselves (a child with a life-threatening health condition), Ewing (2007) proposes that wish fulfillment gives the wish child opportunities to re-conceptualize their ability to live and cope with a life-threatening illness. Interventions rooted in positive psychology, which focus on enhancing subjective wellbeing (happiness, hope and optimism) for children with potentially limited capabilities, can thus support adaptive coping responses and positive adjustment to challenges arising from their condition, enabling them to participate more fully in everyday activities (Chaves et al. 2016b; Shoshani et al. 2015). Because children with life-threatening conditions often live with multiple hospitalisations, technical procedures, and separation from family, the effects of wish fulfillment could also be

attributed to helping children recognise alternative ways of being, cultivating hope for the future. Increasing motivation to comply with treatment may be a contributing factor in the reduction in unplanned hospitalisations for children receiving wishes as observed by Patel et al. (2019).

The finding that wish-granting for children with serious medical conditions has a positive impact on parents, particularly with regards improved mental health, is also an important one. Research tells us that parenting a child diagnosed with a life-threatening illness has a serious negative effect on several dimensions of parental wellbeing (Hatzmann et al. 2008). A recent review described parenting in this context as “a relentless roller coaster of highs and lows in which they contemplated their child's survival along with their own, and ruminated over their child's possible death” (Bally et al. 2018: 95). The parenting experience is therefore characterised by feelings of uncertainty, fear, loss and grief, anxiety, lack of control, isolation and other intense emotions (Bally et al. 2018). Woodgate and colleagues (2015) have referred to the extra efforts required of parenting a child with complex care needs as ‘intense parenting’, a phenomenon that leads to physical and mental exhaustion for parents, isolation and loss of adult friendships due to their child's condition (Goodwin et al. 2017). By providing distraction and respite from the illness, as well as something to look forward to and happy memories, fulfilling a child's wish appears to afford significant benefits to the well-being of parents themselves, which may also contribute to improved coping with their child's condition and improved family functioning and resilience (Black and Lobo, 2008).

The results further indicate that the effects of wish-granting interventions extend to wish children's siblings. This is important because the psychosocial impact of having a sibling with a physical chronic health condition has been well documented. Several reviews have identified that siblings of children with physical chronic disease are more likely to experience depression and anxiety and report less quality peer activities than siblings of otherwise healthy children (Barlow and Ellard, 2006; Vermaes et al. 2012). Siblings of children with life-threatening or severe chronic health conditions are therefore suggested to be at greatest risk for impaired health-related quality of life (Limbers and Skipper, 2014; Vermaes et al. 2012). Thus, interventions which target the psychological health of siblings of children with life-threatening conditions should be encouraged and explored.

### *Strengths and Limitations*

This is the first review to systematically collate and synthesise research exploring how wish-granting interventions impact on child and family health. Findings suggest that wish fulfilment can lead to improvements in child health and well-being, with benefits extending to other family members. However, the review does have limitations. First, it is limited by the small number of studies eligible for inclusion, with only three having robust, controlled study designs (Chaves et al. 2016b; Chaves et al. 2016a; Shoshani et al. 2015). Second, three full text articles were inaccessible to the review team, meaning an incomplete retrieval of potentially eligible studies. Limiting the review to studies reported in English also led to one potentially eligible study being excluded. Finally, bringing together all available research on the topic led to a diverse range of study designs being included. This led to challenges in integrating qualitative and quantitative data, making it impossible to achieve the depth of synthesis that could have been achieved with homogenous data.

### *Implications for practice*

Findings of this review hold implications for wish recipients and charities within the wish-granting sector. First, while wishes were experienced as positive overall, there are areas in which wish-granting organisations could work on to improve. These include the timing of wishes, rushed wishes, difficulties with travel and support for those who experience wishes as emotionally and physically exhausting. Second, wish-granting interventions are clearly shown to have effects which are far reaching, not least extending to other family members; the impact of wishes on parents and siblings is particularly striking. Family participation in wishes should therefore be encouraged and supported where possible. Finally, increasing the evidence-base related to the impact of wish-granting interventions on health and wellbeing is important not only from the perspective of improving health outcomes and reducing healthcare costs, but it can also be used to support fund-raising and income generation. Wish-granting organisations are therefore encouraged to participate in research and develop their own research priorities.

### *Future research*

Further research using robust, waiting list-controlled designs is needed to support existing evidence, although this may be difficult given the health status of some children with life-threatening conditions and potentially unethical given the indication of benefit afforded by wishes. Only two studies (Darlington et al. 2013; MAWUSA, 2011) collected data on how wishes impacted parental bereavement. This is an area worthy of further research given the prevalence and complexity of psychological difficulties associated with losing a child (Bogensperger and Lueger-Schuster, 2014). Future research could also make better use of longitudinal designs following families throughout the wish making and granting process, with longer-term follow-up on wish receivers to understand the impact more fully. Further research is needed to understand any differences between the impact achieved by wish type and by health condition. None of the included studies shed light on such potential differences. The lack of any kind of theory in the included studies also means that understanding of the mechanism by which wish-granting interventions have their effects is also limited. Developing our understanding of how and why interventions work is crucial to maximising their effects for future recipients.

### *Conclusion*

Through the creation of positive, joyful experiences, wish-granting interventions appear to benefit children with life-threatening conditions and their families by generating improvements in physical health and emotional wellbeing, quality of life, social wellbeing, coping and resilience. These findings suggest that interventions which promote subjective well-being can positively impact physical and mental health and therefore, should not be discouraged. However, more research is needed to further define and quantify the impact of wish fulfillment and understand how it can be maximized.

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