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Guest Editors

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development of research-guided practice
in community-based arts in health

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The UNESCO Observatory refereed e-journal is based within the Graduate School of Education at The University of Melbourne, Australia. The journal promotes multi-disciplinary research in the Arts and Education and arose out of a recognised need for knowledge sharing in the field. The publication of diverse arts and cultural experiences within a multi-disciplinary context informs the development of future initiatives in this expanding field. There are many instances where the arts work successfully in collaboration with formerly non-traditional partners such as the sciences and health care, and this peer-reviewed journal aims to publish examples of excellence.

Valuable contributions from international researchers are providing evidence of the impact of the arts on individuals, groups and organisations across all sectors of society. The UNESCO Observatory refereed e-journal is a clearing house of research which can be used to support advocacy processes; to improve practice; influence policy making, and benefit the integration of the arts in formal and non-formal educational systems across communities, regions and countries.

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International perspectives on the development of research-guided practice in community-based arts in health

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THEME

Health has become a recurrent topic in discussion of the role of the arts in society, fuelled by a growing body of research into links between culture and flourishing. In community arts in particular there has been a widespread development of projects addressing health issues. This is a distinct area of activity operating mainly outside of acute healthcare settings and is characterised by the use of participatory arts to promote health. There are indications that this work is developing in response to health needs of communities in differing cultures and healthcare systems around the world, but so far there is little mutual knowledge or connection of the work at an international level.

This issue aims to draw together well-researched case studies of community-based arts in health projects from different parts of the globe. Each case study should explain the motivation for the work undertaken and its sensitivity to context and cultural diversity, the partnership structures and ethos developed in its delivery, and the research methodologies used. Submissions are particularly invited that reflect multidisciplinary knowledge of the application of arts development to health and flourishing communities from the perspectives of applied arts, public health, anthropology, social geography, education and other disciplines.

Live music as a bridge between paediatric hospitals and outside communities: A proposed research framework and a review of the literature.

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ABSTRACT

The paper presents a theoretical framework to contextualize the research on music in paediatric healthcare settings within the different layers of the wider community surrounding the patient, the family and the hospital. The literature on children's and carers' psycho-social reactions to hospitalization is discussed in relation to music based interventions in paediatric hospitals. The proposed framework combines an adapted version of (i) Lazarus's transactional stress theory, (ii) systems theory as applied to the family-unit and (iii) Bronfenbrenner's social ecology theory adapted to contextualize the event of the child's hospitalization within the family, the closer community and the wider society. The proposed framework enables us to understand how live music acts as a cultural bridge between the hospital and the wider community surrounding the hospital. By bringing the 'outside' culture into the hospital, music breaks the traditional idea of the hospital as an isolated environment and promotes the welcoming, the support, and the wellbeing of the patients and their carers. Implications of the framework for research and practice are discussed.

KEYWORDS

music and health; music in hospitals; stress and coping theory; social ecology; music and wellbeing.

In the last twenty years the use of music in healthcare settings has blossomed (Clift et al. 2009; Cox et al. 2010; Rollins, Brandman, & Graham-Pole 2009) together with increasing research documenting the positive effects of music based interventions (MacDonald, Kreutz, & Mitchell 2012). Specifically, in paediatric settings, live music sessions have been effective in reducing the perception of pain and stress (Caprilli, Anastasi, Grotto, Abeti, & Messeri 2007) and anxiety (Longhi & Pickett 2008) associated with hospitalization and to promote cooperation between the family members (Shoemark & Dearn 2008).

Each music or art based intervention is often described in the literature as a unique event where the conditions of the participants are difficult, if not impossible, to replicate due to the unique profile of each patient/participant: their different medical conditions, different ages, different ethnicity and socio economic status. The recent debate (Raw, Lewis, Russell, & Macnaughton 2012) in the arts and health movement surrounding the need for evidence based research is polarized between those who advocate a biomedical model based on quantitative research (Dileo & Bradt 2009) and those who are in favour of a qualitative approach (Edwards 2005; White 2009) better suited to represent the individual differences of the participants. Indeed, the concept of 'individual differences' is prominent in the medical literature on children's reactions to illness:

'To understand how individuals attempt to maintain health, cope with stress, and respond to illness, attention needs to be paid to their own conceptions of these relevant constructs' (Turk & Kerns, 1985: 1).

An understanding of children's conceptualization of illness might cast a different light on the planning of a music session and could target some of the children's fears and anxieties arising from their developmental conception of illness. Burbach and Peterson (1986) suggested that such knowledge could also be useful if adapted to educational experiences involving illness prevention and early intervention.

The aim of this paper is to contextualize research on music and paediatric hospitalization within a theoretical framework to explain children's individual reaction to illness and hospitalization and their consequent coping strategies, as well as the reactions and interactions of the child/patient with their family and with the members of their wider community surrounding the hospital. An understanding of

children's reactions to illness and hospitalization is part of the context for any music or art based program and can inform practice as well as the research.

CHILDREN'S REACTION TO ILLNESS AND HOSPITALIZATION

The psychological implications of children's hospitalizations are discussed in the light of two major themes, each of which features prominently in the nursing and health psychology literature (Cooper, Smaje, & Arber 1999; Petrillo & Sanger 1980; Thompson 1985; Turk & Kerns 1985):

1. Children's conceptualization and perception of illness;
2. Children's psychological reactions to hospitalization and models of their coping strategies;

An understanding of children's behaviour in relation to each theme helps to contextualise better the perception of children's reactions to hospitalization and illness, including their responses to a musical intervention designed to ameliorate any negative effects from the former. Additionally, it is proposed that an understanding of children's contextualized behaviour assists in evaluating the impact that children's reactions might have in planning and enacting such intervention.

CHILDREN'S CONCEPTUALIZATION OF ILLNESS IN RELATION TO THEIR DEVELOPMENTAL STAGES

Since the 1940s, much research has been undertaken to understand better the emotional effect of hospitalization, surgery and chronic illness on children (Bibace & Walsh 1981; Blos 1978; Vernon, Foley, Sipowicz, & Schulman 1965). While lacking a systematic approach, these studies have begun to establish a relationship between children's conception of illness, health and treatment, and also the level of their cognitive development (Nagy 1951, 1953; Schwartz 1972). In this respect, Bibace and Walsh (1981) plotted the development of children's concepts of illness in line with the stages outlined in Piaget's theory of cognitive development. In their seminal studies (1979, 1980, 1981) they conducted a series of interviews involving 160 children aged between 3 and 13, in which they sought to elicit data on children's understanding of the common cold. The children were divided along the lines of Piagetian developmental stages (prelogical, concrete logical and formal operational) and the analysis of the interviews showed that each developmental stage corresponded with a different conceptualization of illness, with the maturity of the child being the most important variable.

Bibace and Walsh's developmental stages in relation to the conceptualization of illness have been criticised for not taking into account the impact of past experiences, culture and social environment (Cooper et al. 1999; Nelson 1986). Among such critics, Donaldson (1978) argues that children build up a model of the world by formulating hypotheses that helps them to anticipate future events on the basis of their past experience. In this case, the child's experience is considered to be directly influenced

by the expectations that they bring to a given situation. In line with Donaldson, Turk (1985) suggested that how an individual behaves is a direct result of their definition of the situation and this largely depends on their prior experiences. Despite these criticisms, Bibace and Walsh's stages have been widely used as a working framework in a large number of studies on the perception of illness in children and young people (Banks 1990; Crisp, Ungerer, & Goodnow 1996; McQuaid, Howard, Kopel, Rosenblum, & Bibace 2002).

In everyday hospital practice, the importance of providing developmentally appropriate information about events and procedures has been accompanied by the perceived need to equip children with a positive experience about hospitalization in order to minimize the negative effects of such experience. This approach is currently adopted by the majority of pre-hospitalization programmes, including the *Child Life Program*, a standard programme employed by a growing number of American paediatric hospitals (American Academy of Pediatrics - Committee on Hospital Care 2000). The *Child Life Program's* primary focus is to render the hospital experience less intimidating through the use of developmentally appropriate play. These approaches often take the form of 'medical play', involving exploration of medical equipment to allow the child to familiarize themselves with situations perceived as threatening. The underlying theoretical framework for such interventions derives from 'self-regulation' theory (Johnson, Fieler, Jones, Wlasowicz, & Mitchell 1997; Leventhal & Johnson 1983) and information processing theory based on the idea that the provision of information to an individual who is about to undergo a stressful procedure will develop a cognitive schema similar to the real-life event. As such, the individual will be 'coached' about the experience that is about to happen, increasing their understanding, predictability and confidence about the forthcoming experience which ultimately will lead to better coping outcomes (Johnson et al. 1997). The cooperation elicited in the child by following age appropriate explanations about medical procedures has also been evaluated as an effective means of reducing the length of hospitalization (Wolfer, Gaynard, Goldberg, Laidley, & Thompson 1988).

The psycho-educational preparation for hospitalization has also been studied in relation to the impact on the child and their families after the child's discharge from hospital. Vernon and Thomson (1993) indicate that younger children (6 years old or less) benefited less from psycho-educational preparation than older children (7 years old or more). A possible explanation is that the selected cognitive interventions had not been planned on the needs and abilities of this particular age group, and that there might be alternative tools to carry out such interventions rather than dramatic presentations through play or verbal descriptions of medical procedures (Melnyk 2000). Indeed, a non-verbal intervention such as music therapy has been found to be more effective in helping school-age children to verbalize their hospital experience than medical play therapy (Froehlich 1984), indicating the possibility of alternative approaches to psycho-educational preparation to hospitalization. Vernon and Thompson (1993) pointed out that the frequency and length of the cognitive intervention preparation were crucial variables in determining the efficacy of an intervention, considering that regular interventions would be more beneficial in reducing post-hospital distressed behaviour.

The way that children perceive their illness seems to be at least as important as the illness itself. As Rennick and her colleagues point out, the way that children respond

to hospitalization 'may be affected less by the location of their hospital stay and more by their perception of the illness experience' (Rennick et al., 2002: 141). A number of studies on children's hospitalization in intensive care units supports this view (Board 2005; Melnyk 2000; Rennick, Johnston, Dougherty, Platt, & Ritchie 2002; Youngblut & Shiao 1993). For example, there is evidence that invasive procedures (such as injections) are often perceived as worse than the disease itself. A recurrent comment in the literature about children's hospitalization is that, for a child, fantasy can be worse than reality (Hockenberry & Bologna-Vaughan 1985; Menke 1981). Common reported examples include preschool children for whom illness is often perceived as a punishment for something that they have done wrong (Melnyk 2000) or their fears that medical treatment might result in permanent body mutilations (ibid). Because 'animism' is a cognitive characteristic of preschool children and toddlers, children in this developmental stage also tend to attribute human characteristics to inanimate objects (such as monitors), the outcome being a generalized and uncontrolled fear about the hospital environment (Melnyk 2000).

In this context, targeted preoperative interventions for children and their families seems to be effective in reducing the negative effects associated with hospitalization, as they enhance coping strategies in both groups (Youngblut & Shiao 1993; Melnyk 2000), although there is an ongoing need to develop differentiated intervention for different clinical populations. As Melnyk (2000) emphasises, the majority of children in most 'prior intervention studies' are undergoing minor surgeries and the number of participants are often small. There are important variables that still need to be explored, such as different kind of hospitalization (critical care, repeated hospitalizations, chronic illness, difficult surgeries), together with the design of specific programmes to improve outcomes for the parents.

In the following sections I introduce three theories: (i) stress and coping; (ii) systems theory and (iii) social ecology, to provide a framework for explaining and predicting the complex interactions of the various stakeholders in hospitals involved in music based programs.

CHILDREN'S PSYCHOLOGICAL REACTION TO HOSPITALIZATION: LAZARUS' THEORY OF STRESS AND COPING.

Hospital care and treatment by invasive procedures produces significant psychological effects in children (Cooper et al. 1999). The way that children and their families handle the experience of illness and hospitalization are seen to depend on two set of factors: personal and situational (Lambert 1984; LaMontagne 1987; Melnyk 2000). The former includes the child's age, emotional and psychological development, personality type and previous hospital experience; the latter focus on the social context surrounding the child, the support received by parents, the parents' emotional state in coping with their child's hospitalization and the family network that surrounds them.

According to the psychosocial literature on paediatric hospitalization (Thompson 1985) the child reacts to hospitalization at three different levels: immediate, post-hospital and long-term. At an immediate level, reactions include crying, resistance

to treatment and emotionally charged behaviour (Thompson 1985: 21) – interpreted in other literature as a child’s attempt to cope with an unfamiliar situation (Shaw & Routh 1982) – and, therefore, as a normal adaptive response that will subside once hospitalization will cease. Post hospital responses include ‘increased aggression, withdrawal, passivity, hyperactivity and decreased attention span, self-esteem, and self-confidence’ (Rennick et al. 2004: 359) and are associated with the age of the child, the degree of illness, the length of hospitalization and the exposure to a higher numbers of invasive procedures (Rennick et al. 2002). Finally, long-term responses include similar behavioural changes as post-hospital symptoms, as well as post-traumatic stress, persisting after the discharge from hospital. The effects can last from months and sometimes years after the discharge and they are mainly dependent on the severity of the illness and the number of invasive procedures undergone (Rennick et al. 2004).

The child patient’s developmental conceptualization of illness associated with the actual hospitalization influences greatly the psychological reactions and will have different effects according to the age of the child. There is growing evidence that the subjective experience of illness - rather than its severity - is one of the main factors determining psychological outcomes (Cooper et al. 1999; Kazak et al. 2006; Ryan-Wenger 1990) and, therefore, the child’s coping strategies become crucial variables in understanding the effects of stress on physical and mental health and general well-being. Lazarus’ theories of stress and coping (1991; 2000) are believed to offer a valid framework to evaluate children’s responses to a stressful situation such as hospitalization and have been adopted by music therapists to explain the context of music interventions (Edwards & Kennelly 2011; Robb 2003).

Lazarus’ transactional stress theory (1991) is based on the definition of stress as being the product of a particular relationship between the person and the environment that is perceived by the person as threatening for their well-being. Transactional in this context means that there is an on-going relationship between a changing situation and an individual. It implies that a stressor is not independently stressful as such, but that the person who experiences the stressor appraises it as being either ‘challenging, threatening, or harmful’ (Lazarus, 1991: 56). These cognitive *appraisals* are a crucial component in the transactional stress theory.

According to Lazarus and Folkamn (1984), stressors result from the interaction of personal variables (‘Life events’) and environmental variables (‘Resources’). This interaction leads the subject to appraise a given situation, evaluating whether it is a potentially threatening one. Lazarus distinguishes between (i) primary appraisal and (ii) secondary appraisal. The term *primary appraisal* refers to a person’s evaluation of the severity of the stressor (e.g. illness or hospitalization). As a result, a stressor can be classified as a *challenge*, or as a *threat*, and/or harm/loss (Lazarus 1991). The perception of challenge or threat will be followed by coping attempts. *Primary* appraisals are mainly related to environmental information (that is, the demands of the situation or of the person, or the aversive stimuli). *Secondary appraisals* refer to a person’s estimate of their own resources to cope with the stressor and mainly focussed on personal resources and information about the availability of social support.

Lazarus’ theory highlights the subjective perception of stress and the individual’s response to it. The result of the cognitive appraisal determines the choice of

appropriate *coping strategies*. This holistic view suggests that coping is the dynamic product of different variables undergoing constant changes. An applied model of stress/health relationship (Figure I), proposes that a musical intervention in a hospital is part of a coping system which can influence the perception of social support and consequently impact on the coping mechanisms, through the links between music and emotion (Juslin & Sloboda 2009).

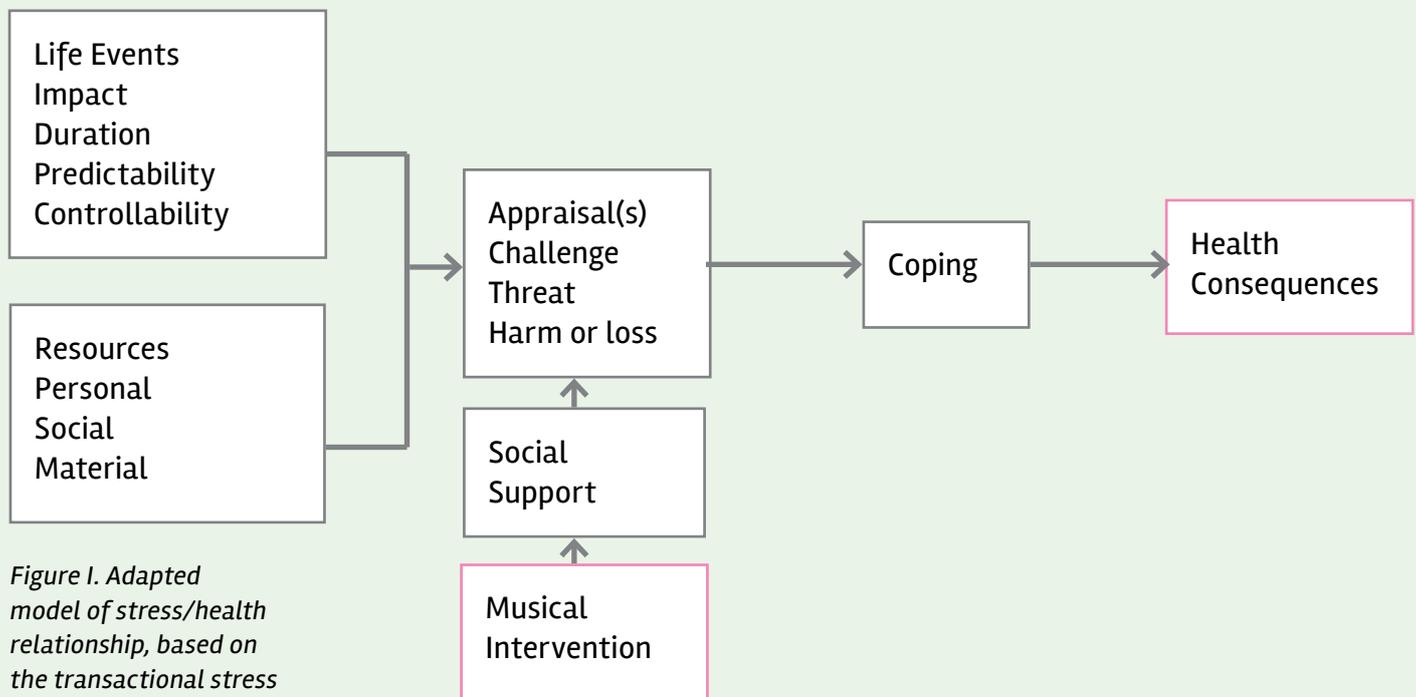


Figure I. Adapted model of stress/health relationship, based on the transactional stress theory by Lazarus (1991)

One of the main aims of music in hospitals is to create a sense of continuity with the child's life outside the hospital, through the use of a child-focused repertoire, and in so doing, minimizing the fear of hospitalization and reducing the threat caused by the hospital as an hostile environment (Preti & Welch 2011). As the psychosocial literature on paediatric hospitalization suggests (Thompson 1985), the subjective experience of illness, rather than its severity, is what is likely to determine a child's psychological reaction to hospitalization. Music brings into the hospital the child's familiar repertoire that belongs to positive associations created outside the hospitals, involving friends and family. The space created in the music sessions might impact on the social support perceived by the child/patients (Edwards & Kennelly 2011), providing a more positive experience of the hospital for the child and their family. While Lazarus's theory sets up the framework for contextualising a child's perception of illness, it does not focus on the critical social network for most children: the family.

SYSTEMS THEORY AND THE DYNAMIC OF HOSPITALIZATION: THE ROLE OF THE FAMILY

From what has been outlined so far it appears that children's perception of illness is characterised by a complex system of personal and environmental interactions that become predictors of coping strategies that can significantly impact on health

behaviours. The relationship between child and parents become central to the process of illness and hospitalization. The variables that are likely to influence this process are part of an interaction that is constantly evolving, affecting both the relationship between the child and the parents, as well as the family as a unit. These changes are likely to impact on the child's choice of coping strategies, which are ultimately predictive of health outcomes (Ryan-Wenger 1990; Lazarus 2000).

The literature suggests that one of the main factors determining a child's reactions to illness is the way that the family responds to their illness (Anthony & Koupernik 1973; Darbyshire 1994; Petrillo & Sanger 1980; Thompson 1985; Turk & Kerns 1985). Melnyk (2000), for example, reports that the emotional state of the parents and the quality of parental support are among the variables that most influence children's adaptation to hospitalization. Research indicates a significant correlation between children's coping styles and a mother's ability to parent effectively during hospitalization (Jacobson et al. 1990). Moreover, it has been suggested that anxious mothers tend to have highly distressed children during and after hospitalization, as anxiety is seen to inhibit parenting styles and mothers are 'less likely to fulfil their protective, nurturing, and decision-making roles' (Melnyk, 2000: 6). Among the factors that are likely to influence parents' coping strategies in dealing with their children's hospitalization is the support received from the family network, together with the culture the family belongs to (Roberts & Wallander 1992).

Family has been defined as a 'system' in so far as the events that affect one family member tends to exert an influence on other family members as well (Roberts & Wallander 1992). The way each member will cope with a threatening situation is likely to impact on the other family members' reactions and coping strategies. A systems approach to human development considers the way that relationships within the family and between the family and social environment influence individual development and family functioning. Systems theory is based on principles that apply to all kinds of systems, including business and industry, community organizations schools and families. These principles are helpful in understanding how families function and how families and communities interact (Minuchin 1988).

In everyday practice, the importance of the family for hospitalized children has been officially recognized and coded by the American Academy of Pediatrics (2003). In a policy statement entitled '*Organizational principles to Guide and define the Child Health Care System and/or Improve the Health of All Children*' (2003: 691) they provide a definition of what a 'Family-centered care' approach is:

'Family-centered care is an approach to health care that shapes health care policies, programmes, facility design, and day-to-day interactions among patients, families, physicians, and other health care professionals. Health care professionals who practice family-centered care recognize the vital role that families play in ensuring the health and well-being of children and family members of all ages. These practitioners acknowledge that emotional, social and developmental support are integral components of health care. They respect each child and family's innate strengths and view the health care experience as an opportunity to build on these strengths and support families in their caregiving and decision making roles. Family-centered approaches lead to better health outcomes and wiser allocation of resources as well as greater patient and family satisfaction. Family-centered care... is based on the understanding that the family is

the child's primary source of strength and support and that the child's and family's perspectives and information are important in clinical decision making.'

The family-centered approach is based on family systems theory which helps to contextualise the child within a systemic framework of interactions. Arguably, effective music interventions need to take account of these structures and to understand each family's system and how this interacts with other systems and socio-cultural influences.

SOCIAL ECOLOGY THEORY APPLIED TO HOSPITALIZATION

Social ecology theory (Bronfenbrenner 1979) provides a helpful framework to contextualize the hospitalization experience - in which the stress-coping theory is a central component - in so far as it describes how different populations can be perceived as fitting into a physical, cultural, and social environment. Social ecology theory conceives the organization of the environment into dynamic systems which are integrated and that interact. Applied in paediatric psychology, this theory helps to identify the interactions related to children's illnesses, the individual child and systems that are seen as 'internal' (parent, siblings, extended family) and those that are 'external' to the family (such as school, neighbourhood, parent workplace, health care setting). In an adapted model of social ecology (Barakat, Kunin-Baston, & Kazak 2003) the ill child is conceived as being at the centre of a series of concentric circles (Figure II). The child's circle is nested within a larger circle that includes members of the family (parents and siblings) and the illness (type, course, prognosis, chronicity).

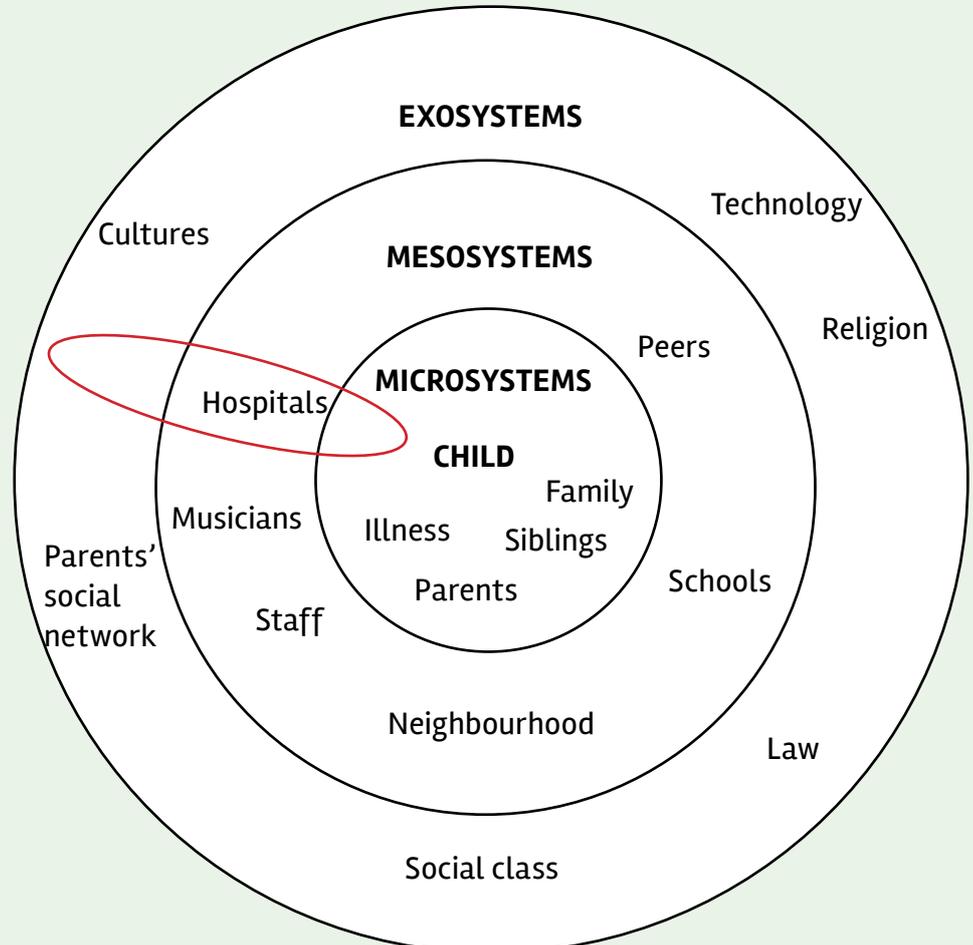


Figure II. Adapted model of Social Ecology Theory (Barakat, 2003)

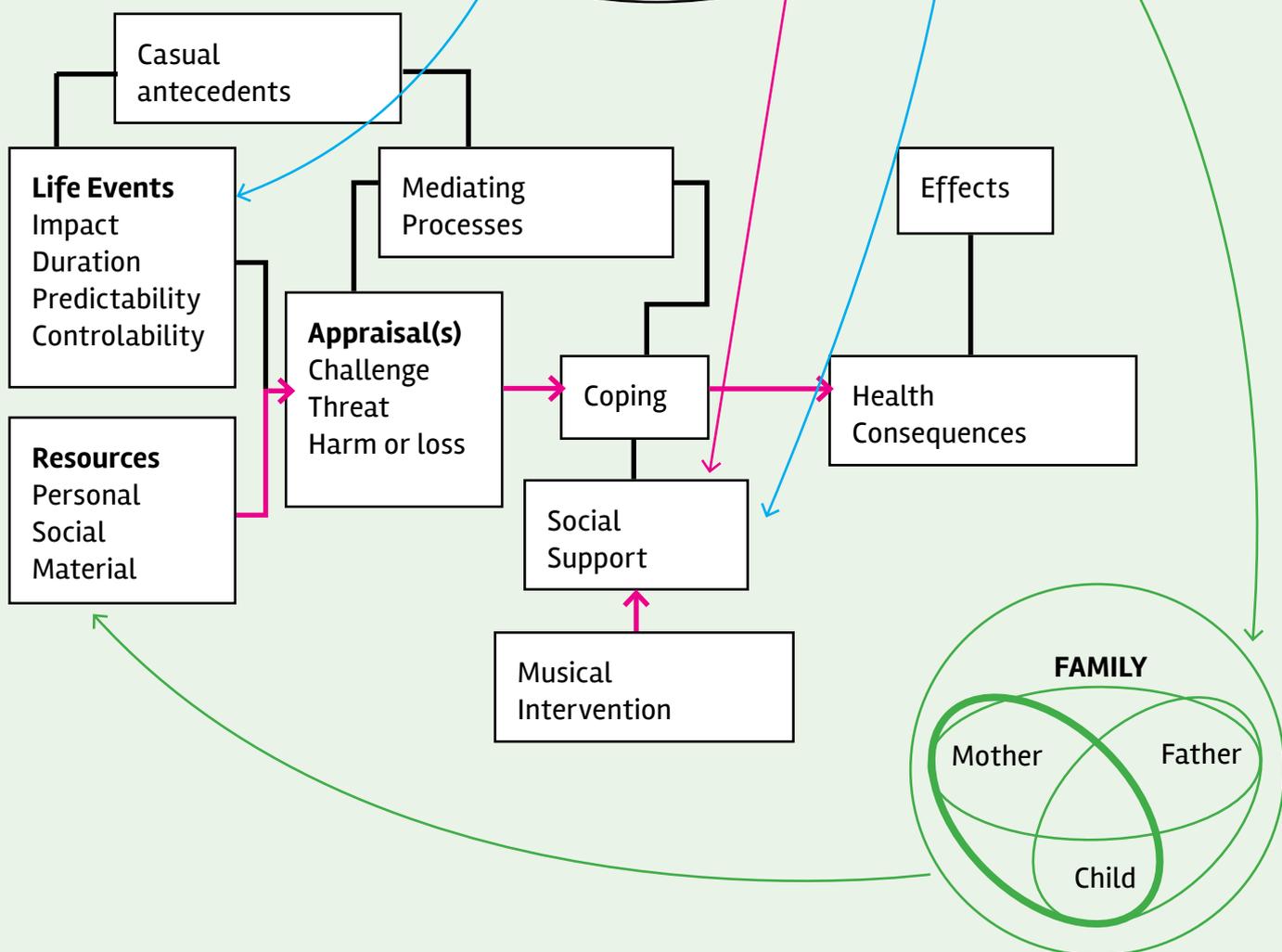
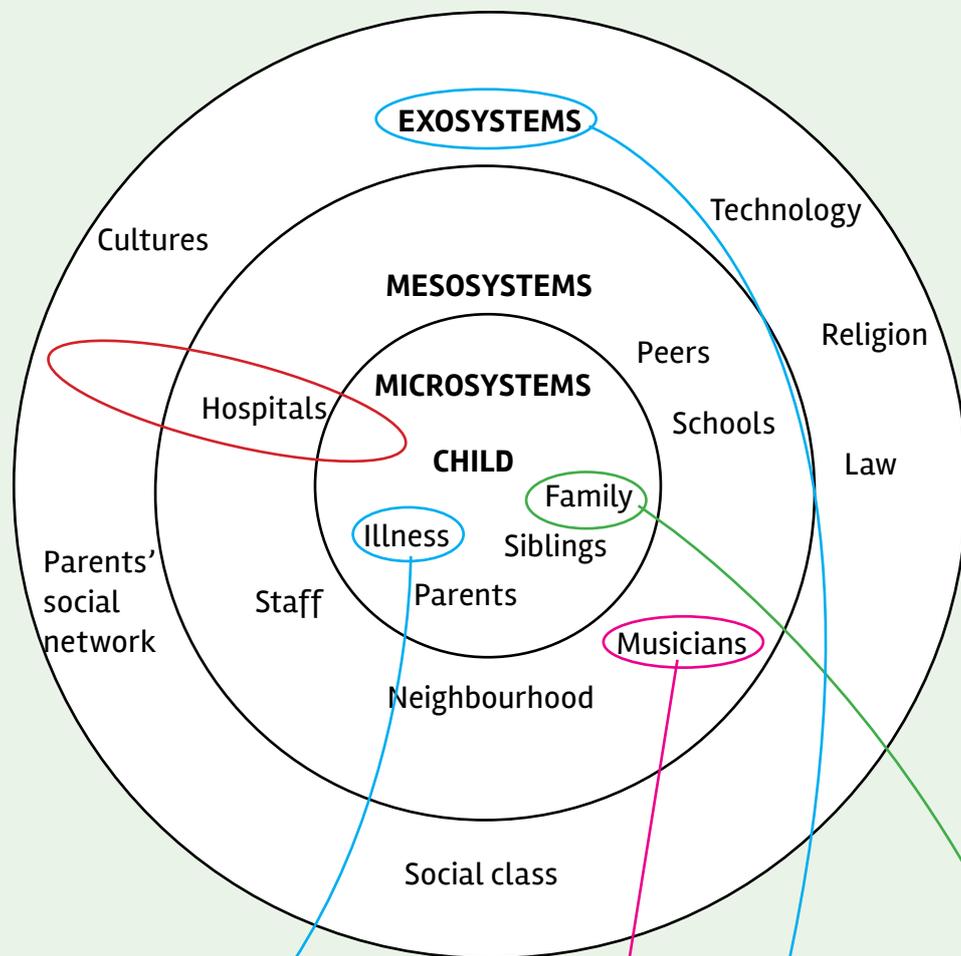
The family is central to the social context of the child for many reasons, including the fact that most children cannot consent for medical care independently. There are three different levels: the microsystem, made up of family members, fits into a functional world called the mesosystem, made up of work, neighbourhood, and organizations such as schools and hospitals. Both systems fit into a social order made up of public services and a legal framework that defines the exosystem. These various systems influence one another. Both the characteristics of the social network and wider cultures are part of the hypothesised exosystem, the external system that embraces the interaction between child and family, and, at a different level, the local hospital context which is seen to be where the microsystem (child and family) and the exosystem (societal and cultural expectations) meet the hypothesised mesosystem in a particular locality (see Figure II).

The social ecology model helps to contextualize a 'music in hospital' intervention and its participants, as they belong to a culture that is likely to determine, among other reactions, (i) the specificity of a socio-cultural reaction to illness, and (ii) the style of the musical intervention, the musical repertoire, and the emotional and physical reaction of all participants to the hospital environment. According to social ecology theory, the family as a unit belongs to a socio-cultural context that is bound to shape children's emotional reaction to illness. Such context will also shape their response to music and, in particular, to a certain repertoire of music that will be more or less effective according to the degree of familiarity and sense of identity for both the family and the child. Therefore, the first line of effectiveness of a musical intervention relies on the selection of the repertoire, as the expression of the socio-cultural identity of the child and their family (Preti & Welch 2011), as represented by the social ecology circle (mesosystems) in Figure II. If the selection of music is successful, the family will be more likely to encourage the child to join in the session and sustain the musical interaction. Otherwise the family will tend to follow the child's initial response to the sonic stimulus of the musicians and consequently will be unable to sustain and promote the child's involvement adequately.

A UNIFIED THEORETICAL PERSPECTIVE

As reviewed above, the process of experiencing trauma in relation to illness and hospitalization requires a series of adjustments that are physical, psychological and social (Melnyk, 2000; Rennick et al., 2002). The person, either a child or an adult, may have to find new coping strategies in their approach to personal and interpersonal aspects of living. The process of adjustment has been reported to involve a possible cause of threat from abandonment, loss of self-esteem and a reduced ability to cope with daily stress (Lee 1970; Thomson 1985; LaMontagne 1987).

A unified theoretical framework to contextualize music-based interventions in hospitals (Figure III) embraces social ecology theory which stresses the interdependency of different level of interactions between the children, their families and hospital staff. Such interactions occur within the context of the hospital, which can also be seen as a system itself that interfaces with the wider society. The framework also highlights a multidimensional system of interactions in which participants react according to (i) the challenges presented by the situation (ii) the perceived reactions of each participant involved in the hospitalization.



The connection between the social ecology and Lazarus' theory suggests that in order to be effective, the music needs to belong to the socio-cultural context of the family and the child. The familiarity of the music will facilitate their involvement in the session and will increase the effectiveness of the intervention (Schubert 2007, 2010). The use of familiar music might ultimately manipulate children's perception of the hospital as a stressful environment because the repertoire will echo events experienced in less threatening locations such as school, home or playground. The musical intervention is considered to be part of the social support offered to children/patients and their families to help them cope with hospitalization in a positive way. Music is a privileged channel of communication between carers and infants, consistent across different cultures (Trehub 2003).

In this context, hospital staff belong to a socio-cultural context where the selection of music is important in order to appeal to their socio-cultural identity. Hospital staff are part of the support system grouped in the mesosystem that includes the closest circle of individuals surrounding the child and the family. Their reaction to music and their endorsement of the musical activity are important predictors for the acceptance of the musical activity in hospitals (Prete & Welch 2012a).

In light of the data from previous studies of music interventions in paediatric settings (Prete & Welch 2004, 2011, 2012, 2013) music appears to be a potentially powerful tool to help the child and their family to refocus their attention on something external to the illness and to reconnect with another world outside the hospital that is likely to have positive associations. Music, through the familiarity of the repertoire, draws on the connections that the child has with the mesosystem, a system of interrelationships between the child and different settings (e.g. school, neighbours, friends). Such connections are ultimately shaped by the external context that surrounds the child: the exosystem (e.g. the kind of society that they live in, including social class, culture and religion, its values and the kinds of medical care it values and provides).

The provision of music in hospitals is likely to help the child and their families to refocus their attention on something external to the illness and, through a familiarity with the repertoire, might turn the perception of the hospital environment into a more familiar and less threatening space. Consequently, the music intervention is likely to constitute for the child and their family a psychosocial space where they interact without the mediation of anxiety and stress elicited by the child's illness (Robb 2000).

Music programs in healthcare settings are sustained financially and politically by a hospital policy that supports music intervention as part of a wider process of hospitalization that seeks to promote a sense of well-being within the hospital. At the centre of this process there is the hospitalized child and consequently their carers. The 'music in hospital's projects appear not only to be limited to the child, but to be extended to the staff and the hospital as a whole. According to systems theory, the relational aspects that connect the family to the child are central to the process of hospitalization (Turk & Kerns 1985). Moreover, the child's behaviour cannot be understood in isolation from other parts of the system (*wholeness*). These parts embrace the relationship between family members and the social environment in which they live and are also interdependent of each other in determining a child's coping strategies.

Systems theory (Minuchin 1988), in addition, stresses the idea of 'subsystems' in which members of the system influence each other in a circular reaction (*integrity of subsystems; circularity of influence*). Such characteristics can be seen to be central in the interaction between social ecology and transactional stress theory in so far as: (i) social ecology provides a contextual explanation of different interactions that will evolve according to the changes that will take place in one of the systems and that will consequently affect the others (exo, meso, micro); meanwhile (ii) the transactional stress theory works on the basis of the changes that occur in the social ecology theory and combine them in a temporal sequence to determine the origin of the process of appraisal and coping strategies, predictors of health outcomes. In this context, the musical intervention can be regarded as a 'subsystem' in which individuals or groups of musicians perform in hospital settings by interacting with children, their families, and medical staff.

CONCLUSION

In this paper a unified theoretical framework has been proposed to better understand the role of music programs in paediatric healthcare settings. The child patient is seen as part of a complex, contextual set of systems where music should come as a way of culturally enriching the hospital environment, and empowering the child as a member of a community that spreads across the hospital, family and community environments. The framework is based on the three theories of social-cultural systems, and is proposed as a basis for helping to understand the circumstances under which a child receives and engages with music, and for planning music in healthcare setting programs.

According to the psychosocial literature on paediatric hospitalization, children's reactions to hospitalization are determined by their conceptualization and perception of both illness and treatment. Such conceptualization is connected with the level of their cognitive development and their individual coping strategies, as the subjective experience of illness - rather than its severity - appears to be one of the main factors that are likely to determine the psychological reaction of the child. Also, the appraisal of a stressful condition, such as being ill and hospitalized, depends on the individual's assessment of the environment (in this case, the hospital) that is consequently perceived by the child as more or less threatening (Lazarus 1991, 2000). Furthermore, the child's reaction to the illness is characterised by a complex system of personal and environmental interactions that become predictors of coping strategies that can significantly impact on health behaviours. The reaction of the family to their child's illness and hospitalization is a powerful predictor of how the child will elaborate their coping strategies. In this context, music programs in hospitals might constitute for the child and their family a space where they interact without the mediation of anxiety and stress elicited by the child's illness.

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