How to guide the underage family members through the labyrinth of the ICU? Development of the “Ariadne”, a psychological assessment and support protocol

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Abstract

Background: Critical illness and hospitalization in the Intensive Care Unit have been linked to adverse psychological effects for patients and their families. Although psychological support for adult family members gained growing research interest, studies regarding psychological support for the underage family members are still sporadic. **Aim:** The aim of this study was to develop a protocol for an innovative psychological assessment and support service (named “Ariadne”) for the underage family members (4 – 17 years old) of critically ill patients. **Method:** The following phases were implemented: a) Defining the needs of service’s users (underage family members and their guardians), b) Identifying potential assessment and intervention methods through semi-structured interviews with field experts and c) Consensus development with mental health professionals. **Results:** Users’ needs assessment phase highlighted the necessity for developing the service. Semi-structured interviews with field experts identified service implementation difficulties, psychological assessment, and intervention practices. The consensus meeting further specified the assessment and intervention practices that guided the development of the protocol. **Limitations:** The study was conducted at a single centre, limiting the generalization of findings. Furthermore, a possible recruitment bias should also be considered. **Conclusion:** This study introduces a novel methodology embedded in a complete protocol aiming to deliver in-vivo and tele-psychological services to children and adolescent family members of critically ill patients. The procedure implemented to develop the protocol, is expected to serve as gold-standard for the development of future psychological assessment and support protocols in under-investigated research areas.

Keywords: *Intensive Care Unit, Psychological Support, Tele-psychological support, Children, Adolescents.*

How to guide the underage family members through the labyrinth of the ICU? Development of the “Ariadne”, a psychological assessment and support protocol

Hospitalization in the Intensive Care Unit (ICU) may be one of the most stressful and traumatic experiences for the patient and their family. During these critical events, underage family members may feel ignored and misunderstand the patient’s medical condition (Fergé et al., 2018). Oftentimes, this results in intense feelings of sadness, anger, and anxiety, accompanied by feelings of abandonment and fear of death among children and adolescents (Craft et al., 1993; Davidson et al., 2007). Children exposed to such critical experiences are also prone to develop psychological difficulties, e.g., adjustment disorder, decreased self-esteem, and an increased risk for other emotional disturbances (Armistead et al., 1995; Compas & Worsham, 1996; Visser et al., 2004). Despite the devastating psychological impact that the ICU hospitalization of an adult patient may have on the underage family members, evidence-based guidance on how to provide support to children and adolescents in an ICU setting is scarce in the literature. This study made a crucial first step towards the development of a protocol that would provide guidance to mental health professionals on how to assess the needs of underage family members of critically ill patients and on how to intervene to provide support. The study describes the detailed procedure based on which the protocol was tailored to the minors’ specific and unique needs.

When it comes to assessing and supporting underage family members, an important issue that needs to be taken into consideration is parents’ attitudes. The perception of parents that minors are in “need of protection” from realities of critical illness in their families fails to appreciate that minors are embedded in the family system and thus are equally affected by illness events in their family system (Kean, 2010). Parents are often uncertain on whether they should allow their children to visit a critically ill relative in the ICU (Clarke, 2000). The reasons of reluctance vary, but usually include (a) the child’s young age, (b) infection risks

and (c) perceptions that the ICU environment might be frightening and thus psychologically harmful for the child (Clarke & Harrison, 2001; Halm & Titler, 1990; Johnson, 1994; Knutsson & Bergbom, 2007; Knutsson et al., 2004; Liu et al., 2013). Indeed, there is evidence that children and young people felt “shocked” or “scared” in cases where they were not prepared on what they were about to experience in the ICU (Kean, 2010). On the contrary though, there is evidence supporting that children can benefit from an ICU visit since their anxiety seems to decrease in the long-term, especially when the truth about treatment and prognosis is disclosed (Harpham, 1997; McCue & Bonn, 2011; Rosenheim & Reicher, 1985; Zabora & Smith, 1991). Furthermore, a visit in the ICU is assumed to help children feel relieved (Knutsson et al., 2008) and involved in the patient’s care (Craft et al., 1993; Knutsson & Bergdom, 2016; Nicholson et al., 1993; Rozdilsky, 2005). The feeling of involvement allows children to develop a realistic meaning, expectations and understanding about the patient’s condition (Johnson, 1994). In fact, parents who allowed visitation of their child to a loved-one in the ICU argued that if the visit was denied, then children would have developed unrealistic fantasies and negative thoughts about the patient’s condition (Knutsson & Bergdom, 2007). The above findings, first, support the importance of considering child’s needs when providing informational and psychological support to families of critically ill patients; and second, suggest that parents should be involved in the development of protocols for the psychological assessment and support of children.

Considering the benefits of an ICU visit and the issues arising when bringing unprepared children in an ICU, it is vital to appropriately assess and prepare the child prior to an ICU visit. In these critical situations, healthcare professionals should intervene and establish clear communication with the child based on their developmental age, emotional maturity, cognitive abilities, and personal experiences before the ICU visit (Laurent et al., 2019). According to Novoa and Ballesteros de Valderrama (2006), a psychologist who is a

member of the ICU multidisciplinary team, should be the specialist who undertakes the role of preparing children before an ICU visit. Bruce and McCue (2018) proposed that the specialist needs to: first, implement a cognitive and developmental assessment; second, develop rapport and assess the child's level of anxiety, comfort, and knowledge of the reasons of visit; and finally, gradually prepare the child for the ICU visit. To the best of our knowledge, following an extensive literature review on the existing guidelines and intervention programmes, the suggested practices remain to be described in detail and to be embedded in an assessment and intervention protocol tailored to the family and children needs to be assessed for its efficacy and effectiveness.

Despite the advances made in the holistic care of patients hospitalized in the ICU and their families and despite the liberalisation of ICU visiting policies, child visits and psychological support in the ICU is still a controversial area, with parents, and oftentimes nurses, acting as gatekeepers (Clarke, 2000). To address the gap in the relevant literature and clinical practice setting, the aim of the current study was to develop a protocol for the psychological assessment and support for the underage family members whose relative is hospitalized in the ICU. The purpose of the protocol was to guide practitioner psychologists working in this field and to help modify ICU visitation policies. This research project was named "Ariadne", who was a Cretan princess in the Greek mythology who helped Theseus to safely go through a labyrinth using a ball of thread. This project wished to guide underage family members to safely go through the ICU "labyrinth".

The study took place at the ICU of the Nicosia General Hospital in Cyprus. It is the only trauma centre in the country thus many families are obliged to come from far away to be with their loved one during a critical illness. Distance is therefore an additional barrier to the reasons previously mentioned that increases the difficulties and reluctance of families to bring children and adolescents to the hospital for receiving psychological assessment and

support and to visit their loved one. Taking these barriers into consideration, we sought to introduce both an in-vivo psychological and a tele-psychological service to bridge the existing gap. The phases implemented for the protocol development and described in detail below were as follows: 1) User Requirements Assessment, 2) Semi-structured interviews with field experts, and 3) Consensus meeting with mental health professionals (psychologists, social workers, and child psychiatrists). The three phases highlight the importance of the involvement of service users, including underage family members and their guardians and field experts, i.e., mental health professionals who work with children and adolescents, to confirm that the protocol takes into consideration the needs of the end users and the best possible psychological assessment and intervention practices. The “Ariadne” project wished to develop a detailed gold-standard protocol which, to our knowledge, is not currently available and is expected to have beneficial effects on the mental health of the underage family members of ICU patients. At the same time, it aimed to set a new standard procedure for developing psychological assessment and support protocols, especially for populations and settings that are under-studied.

Phase 1: User Requirements Assessment

The first phase of the study was a “User Requirements Assessment”. The aim of this phase was to assess the specific needs of the underage family members by evaluating the difficulties they confront and their attitudes towards psychological intervention methods. The assessment was done through both the underage family members and their guardians. Involvement of end users in the development of psychological services is thought to be essential to improve the service’s efficacy, effectiveness, and users’ engagement; therefore, results were used as a reference guide for the development of the protocol.

Methods

Participants

Thirty questionnaires were handed out to guardians and children or adolescents, who were family members of critically ill patients hospitalized in the ICU of the governmental Nicosia General Hospital in Cyprus. Nine questionnaires were completed and returned. Participants included three guardians (females, 38 - 46 years old), all married with two underage children, employed, with at least high-school education; and six children and adolescents (three males and three females, 6 - 16 years old). Five children had their grandparent hospitalized in the ICU for a range of 7 - 15 days and one child had his parent hospitalized for 2 days.

Procedure

Ethical approval for this study was obtained from the Cyprus National Bioethics Committee in February 2015. Participants were recruited from the families' waiting area, located just outside the ICU, during the hospitalization of a critically ill family member. Potential participants were approached by the psychologists of the ICU multidisciplinary team (employed by a non-governmental organization named "Intensive Care Forum"). The recruitment lasted one month, starting in September 2014. All participants received an information letter about the study and written consent was obtained prior to completion of the questionnaires. Participants anonymously returned the completed questionnaires in a box that was conveniently situated outside the ICU door. Data were analysed both quantitatively (using frequencies) and qualitatively.

Questionnaires

Participants completed two brief self-report questionnaires designed based on existing literature. The first questionnaire was addressed to the underage family members of ICU patients and the second to guardians who had a relative treated in the ICU. Both

questionnaires included demographics (e.g., age, gender etc.) whereas the main part included closed-ended questions (i.e., yes or no) or questions using a Likert scale (1 = Not at all, 2 = Slightly, 3 = Moderately, 4 = Very, 5 = Extremely) that focused on participants' needs. Also, a few open-ended questions were included to investigate the impact of the ICU hospitalization, the usefulness and necessity for in-vivo psychological and / or tele-psychological intervention, and children's needs. The completion time for each questionnaire was approximately five minutes.

Results

Guardians' responses

All the guardians reported that the psychological support service would be useful in an ICU setting. More precisely, two parents reported that the service would be useful for patients, adult, and underage family members, while one parent reported that it would be more useful for patients and underage family members. One participant supported the need for *"a 24/7 availability of psychological services in the ICU"*. All participants *"moderately agreed"* that underage family members should be informed about the health status of the patient hospitalized in the ICU. However, all parents reported having *"slight to extreme difficulty"* in informing their children. Parents who had a child in adolescence reported that their child visited the ICU; whereas parents who had younger children, reported that their children did not visit the ICU due to their young age.

All participants reported that a tele-psychological intervention would have been very useful and beneficial for the psychological support of children, they had internet access at home and stated that the preferable hours for the tele-psychological intervention would be in the afternoon (16:00 - 18:00 or 18:00 - 20:00). However, one participant *"was not sure if the idea of tele-psychology service would have been viable"*.

Responses from children/adolescents

From the children / adolescents who participated, three were aware of the purpose of an ICU and five children had already visited a patient in the ICU. Regarding knowledge on the health status of the patient, all children reported that they were informed to a “*small to adequate extend*” by their mothers. Although, half of them reported that they had further queries about the patient’s health and the most common queries were “*when will the patient get better?*” and “*when will the patient be discharged from the hospital?*”.

Regarding disturbances in daily life due to the hospitalization of a family member, four children reported that their daily life was affected in a “*small*” or “*moderate*” degree and two reported that their daily life was affected in a “*great*” degree. Furthermore, three children reported that they encountered difficulties to “*some*” degree due to the hospitalization of their family member and they commented that psychological services would be very useful for them. The rest reported that they did not encounter any difficulties or encountered only a “*few*” difficulties, commenting that psychological services would have been “*a little*” or “*moderately*” useful for them. All children would like to be able to contact a psychologist through tele-services and had internet access at home.

Phase 2: Semi-structured interviews with field experts

The second phase involved semi-structured interviews with field experts. The aim was to explore various assessment and intervention methods for underage family members of critically ill patients hospitalized in the ICU. Consultation with field experts in psychological assessment and intervention for children and adolescents was thought to be a necessary next step to make sure that the best practices based on theory and clinical experience would be considered for inclusion in the “Ariadne” protocol.

Methods

Participants

Local professional boards of practitioner psychologists were contacted to reach field experts for participation, with the aim of convening a heterogeneous group of experts from various child specialty fields. Eight field experts with specialty in Clinical (7) and Educational Psychology (1) participated in one-to-one interviews. Five of them were women and three were qualified with PhDs or PsyDs while the rest acquired an applied MSc or DESS. Field experts had a wide spectrum of theoretical background: Systemic psychotherapy (3), Cognitive behavioural therapy (1), Integrative psychotherapy (1), Psychoanalysis (1) and Humanistic approach (1). All participants received an information letter about the study and written consent was obtained prior to the interview.

Procedure

Semi-structured interviews were conducted to explore the field experts' perceptions regarding assessment and intervention methods that should be included in the protocol. All interviews were recorded (using a digital recorder) for transcribing purposes. Mainly open-ended questions were posed to the interviewees. Transcripts were analysed using thematic analysis. An ongoing verification was undertaken through step-by-step guidelines (as reported in Smith et al., 1999) to ensure rigor, transparency, reliability, and validity. Independent auditing was also conducted through developing an audit trail from reading and re-reading transcripts and noting relevant items in the margin. The subjective interpretation of each researcher gradually proceeded from descriptive to interpretative (Smith et al., 1999). To develop the preliminary coding scheme, the researchers independently coded a subset of transcripts line by line. As themes and concepts accumulated, distinctions were made, and similar concepts were grouped into conceptual categories. These categories were developed further by comparing transcripts. To reach consensus, the researchers then engaged in robust

discussion to identify and agree on relevant themes, supported by rich data both within and across the data set. The findings were also presented to a sample of field experts for confirmation and / or modification. No new themes emerged during the process.

Results

Through the qualitative analysis of the semi-structured interviews, 3 thematic categories emerged: a) Service Implementation difficulties, b) Psychological Assessment and c) Psychological Intervention. Table 1 (Appendix) presents the categories and subcategories that emerged through the thematic analysis.

a) Service Implementation Difficulties

The first emerged category theme was related to the difficulties and obstacles that might arise during the development and implementation of the psychological service and was further divided in 3 sub-categories that are analysed below.

i. ICU Staff

Several field experts expressed their concern regarding the possible defensive stance from the ICU staff, as this is an unexampled service, that will alter the normal working routine of the staff and challenge the traditional mentality. As one of the field experts stated, *“probably one of the difficulties you will encounter will be with the ICU staff... how they will engulf the service and how you will involve them without letting them take over your role”*.

ii. Accepting the Role of the Psychologist

Field experts expressed the following identified concerns regarding the acceptance of the role of the psychologist: Adolescents' reluctance in engaging in psychological sessions, resistance of the guardians as they might perceive the presence of a psychologist as a threat, and difficulty in establishing a therapeutic relationship during the critical time. With regards to the guardians' resistance, field experts suggested that they should also be actively involved

early in the therapeutic process in order to avoid potential defensive attitudes towards the psychological service.

iii. Resistance to tele-psychological service

Almost all field experts expressed their concern with regards to children's understanding of the concept of tele-psychological support and their capacity or ability to participate in tele-sessions, especially for children under the age of nine. Additionally, many suggested that it might be difficult for adolescents to participate a tele-psychological service as they might feel unprotected towards the security and the privacy of their personal data.

b) Psychological Assessment

The second distinct thematic category that emerged was "Psychological Assessment" and has been divided into 2 sub-categories as presented below.

i) Children

During the interview, field experts highlighted the need for individualized assessments adapted to the age and emotional maturity of each child. The proposed battery of assessment tools included: Clinical interview (including history taking and parental interviewing), Drawings, Symbolic play, Puppet theatre, Psychometric Tools (assessing symptoms of anxiety and depression, cognitive abilities, and personality traits), and Projective tests (e.g., Patte Noire & Children's Apperception Test).

ii) Adolescents

Regarding the adolescents, field experts reported that the preferable assessment method would be Clinical Interview (including a thorough history taking) and, if deemed necessary, the use of psychometric tools, e.g., Beck's Anxiety Inventory, Beck's Depression Inventory and some cognitive and Personality traits tests.

c) Psychological Intervention

The third and last theme that emerged from the semi-structured interviews with field experts was the most extensive and it was sub-divided into the 2 categories analysed below.

i) *Types / Methods of Intervention*

In this subcategory, field experts suggested that interventions should be separated into 3 types depending on the “age” and “situation” of each client: a) One-to-one intervention, b) Family intervention or c) Group intervention. Regarding the types of interventions, field experts most frequently proposed the following: a) Crisis intervention, b) Prevention, c) Grief and bereavement counselling, d) Psychoeducation and briefing, e) Death preparation and f) Funeral preparation.

Further thematic analysis revealed that interventions should be separated in 3 categories: a) Interventions for children which could include informing about the patient’s health status and expressing their emotions through various ways i.e. drawing, videos and symbolic play, b) Interventions for adolescents which could include informing about the patient’s health status (with the use of videos and photos) and expressing their emotions (i.e. through illustrated stories), c) Parental counselling concerning any issues or difficulties that might arise with the underage family members due to the hospitalization of their loved one.

An exemplary example from a professional is quoted here: *“For younger children, you will definitely use play therapy. Between the ages of 10 - 14, perhaps it would be best if you could use power point generated stories, which you will design. In this way, the child might identify with the story and express feelings and thoughts through the story hero. I believe that ideally you should apply be a combination of psychodynamic and cognitive-behavioural therapy, addressing the existential problem since this is what usually concerns the children in those situations. Additionally, you could use fairy-tales and drawings”.*

ii) Individualized Interventions

As identified in the literature review, the difference in terms of developmental level highlights the need for adapting different methods and types of psychological intervention (Baum, 2003; Haine, Ayers, Sandler, & Wolchik, 2008), including decisions on the techniques and duration. Through the semi-structured interviews with field experts, it was indicated that each psychological intervention should be tailored on an individualized basis, depending on the: presenting symptomatology, psychological status, temperament, social status and supporting environment of the underage client.

Phase 3: Consensus meeting with mental health professionals

To reach to the development of an avant-garde protocol for the in-vivo psychological and tele-psychological assessment and support service, the last methodological step involved a consensus experts' meeting with mental health professionals, who had long experience in working with underage clients. The purpose of this phase was to discuss, exchange opinions and experiences and propose the best practices for formulating an optimal protocol. More specifically, the objectives were to bring together a group of mental health professionals from various fields, who were not involved in the previous phases of the study; to provide a forum whereby the mental health professionals could discuss about the various topics identified in the previous phases; to reach unanimity for the procedures that would be included in the protocol.

Methods

Participants

Mental health professionals were invited from the Mental Health Services of the Ministry of Health in Cyprus, via their professional board. The final panel consisted of nine accredited mental health professionals from three specialties including: five Psychologists, one Child Psychiatrist and three Social Workers.

Procedures

The meeting took place at Nicosia General Hospital and lasted for 3.5 hours. The meeting hosts and facilitators were two members of the research team. Mental health professionals were welcomed informally on arrival at the venue. Once everyone had convened, the meeting began with all the health professionals introducing themselves and subsequently the chief investigator described the background to the project, the scope, and the purpose of the meeting. Results from the previous phases were presented for discussion and consensus points were identified and categorized accordingly. Mental health professionals were invited to ask questions and request clarifications. The group discussion was audio recorded but was not transcribed. The facilitators made written field notes of pertinent points made by the mental health professionals and recorded the process through which the group negotiated discussion and decisions.

At the end of the consensus meeting, a questionnaire was distributed. The questionnaire was prepared prior to the meeting and included questions on a Likert Scale (1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree), on an Order Scale and an open-ended question at the end. The mental health professionals were requested to indicate the best practices for the specific population and rank the usefulness of various assessment and intervention methods that could form the protocol. More specifically, they were asked to respond to the following themes:

- **Assessment Methods:** Exploring the importance of assessment through psychometric tools and choice of psychometric tools.
- **Child Interventions:** Exploring the importance of informing children about the patient's condition and selecting interventions, regarding both in-vivo and tele-psychological sessions.
- **Adolescent Interventions:** Exploring the importance of informing the adolescents about the patient's condition, preparation for an ICU visit and selecting interventions, regarding both in-vivo and tele-psychological sessions.
- **Parental counselling:** Exploring the importance of parental counselling and types of intervention that would be used for counselling.
- **Supervision for Psychologists:** Exploring the necessity for psychologists' supervision and the appropriate specialties for the provision of the supervision service.
- **Research Development:** Exploring various topics related to the structure of the service, such as bioethics and the groups that will draw up the program.

Once completed, the questionnaires were sent to the researchers via email. Data were analysed using SPSS to quantify frequencies in responses.

Results

Mental health professionals had the opportunity to share opinions and suggest procedures for best practices based on their background and experience. From the consensus meeting, the following themes emerged:

1. The method and psychometric tools to be used for the assessment of children and adolescents.
2. Psychological support sessions for children and adolescents: They highlighted the importance of implementing an individualistic approach of intervention.

3. Structure and depth of medical information provided to children and adolescents about the health status of the patient.
4. The depth of ICU information that should be provided to adolescents.
5. The use and analysis of children's drawings.
6. The printed material to be used for loss and mourning (books and fairy tales).
7. Guidelines for parental counselling on loss and grief management.

Below, there is further analysis on the important findings from the results of the questionnaires completed by the mental health professionals. As presented in Table 2 (Appendix), it is worth noting that with regards to the tele-support service with young children, 66.67% of mental health professionals disagreed that the first session should be done through a tele-service, whereas the rest neither agreed nor disagreed. Similar results were found regarding the first session with adolescents through tele-services (i.e., 33.34% disagreed whereas the rest neither agreed nor disagreed). Mental health professionals agreed that the clinical interview, drawings, and symbolic play should be important part of the assessment for young children whereas for adolescents, clinical interview was considered as the best form of assessment. 60% of mental health professionals reported that psychometric tools should be used for the assessment of adolescents; whereas the rest neither agreed nor disagreed. The rank order for the preferable assessment methods for young children was: 1. Clinical Interview, 2. Drawings, 3. Symbolic Play, 4. Psychometric Tools, 5. E-psychometric Tools, 6. Projective tests. For adolescents, the rank order for the preferable assessment methods was: 1. Clinical Interview, 2. Psychometric Tools, 3. E-psychometric Tools.

Furthermore, mental health professionals agreed that parents should be also assessed for their abilities to handle the minors during the crisis. In addition, all mental health professionals agreed that parental counselling and psychoeducation (Table 3, Appendix) is an important part of the minors' intervention.

With regards to the content of the intervention for young children (Table 4, Appendix), mental health professionals agreed that the child should be given the opportunity to express emotionally. Regarding children's knowledge about the patient's condition and environment, there was a mixture of results. For the display of photographic material of the ICU, 50% of mental health professionals disagreed, 16.67% agreed and the rest neither agreed nor disagreed; For providing information to the children about the patient's condition, 66.67% agreed and the rest neither agreed nor disagreed. Lastly, regarding educating children about medical terms related to the patient's condition, 50% of the mental health professionals disagreed, 16.67% agreed and the rest neither agreed nor disagreed. The rank order for the preferable intervention methods to be used with young children was: 1. Symbolic Play, 2. Fairy Tales, 3. Drawings, 4. Role-Play, 5. Creative activities for emotional expression, 6. Psychoeducation.

With regards to the content of the intervention for adolescents, the rank order regarding providing adolescents' knowledge about the patient's condition and environment was as follows: 1. Provide information about the patient's condition, 2. Discuss the emotional state of the adolescent, 3. Display of photographic material of the ICU, and 4. Teach medical terms related to the patient's condition. The rank order for the preferable intervention methods to be used with adolescents was: 1. Symbolic Play, 2. Group Therapy, 3. Role Play, 4. Psychoeducation, 5. Drawing.

Discussion

The aim of the "Ariadne" project was the development of a protocol addressed to practitioner psychologists regarding minors' assessment, support, and visitation in the ICU, during hospitalization of a critically ill family member. Both in-vivo and tele-psychological services were considered in the protocol, making the provision of services hybrid and flexible. The long-term goal of the study was for the protocol to have a beneficial outcome on

the mental health state of the minors during and post-ICU hospitalization of a loved one. The development of the protocol followed a review of the existing literature and the implementation of three phases with the purpose of investigating the needs of the target population and the opinions of experts in psychological assessment and intervention for the minors. Each phase served as the basis for the design of the next phase. The novel contribution to the literature and to the relevant clinical setting is the provision of a first complete protocol that includes the necessary information for the psychological assessment and support for the underage family members in an ICU setting. A major contribution is also the suggested three-phase procedure that can be applied in building protocols in similar clinical settings.

The three protocol development phases have been very fruitful in providing information to tailor the practices previously suggested by the literature to the needs of underage family members. This was done by taking into consideration the opinion of the minors, i.e., end users, their guardians/parents, and of field experts. Findings from the User Requirements Assessment (first phase) highlighted the necessity for developing this kind of psychological service. The need of minors to be informed about the patient's condition accompanied by the parents' difficulty in informing children, as well as the disturbances and difficulties faced in the daily life due to the critical event, further raise the need for psychological intervention. Both minors and guardians were not reluctant in alternatively receiving tele-psychological services, in cases where in-vivo services could not be provided for practical reasons. Tele-psychological services should be therefore noted as an alternative to in-vivo services to overcome barriers such as long distances to the hospital and infection-related worries.

In addition, semi-structured interviews with field experts (second phase) appear to be a very helpful method to discuss service implementation difficulties, including the attitudes

of the ICU staff towards the psychological service for underage family members, the issues of accepting the role of the psychologist, and resistance to a tele-psychological service by children and their guardians. Field experts emphasized the importance of involving the parents in the psychological service process and confirmed our initial assumption that parents' beliefs should be taken into consideration in the process of developing the protocol. During the interviews with field experts several psychological assessment methods have been discussed in relation to the age, i.e., different methods for children and adolescents. Psychological intervention was discussed in terms of type/methods and individualization of the intervention. Creative and experiential intervention techniques were also discussed. The themes addressed highlighted the importance of tailoring services according to the child's developmental level, presence of clinical symptomatology and supportive network. At the same time, this phase was extremely important in creating a toolkit with a range of psychological assessment and intervention practices that have been utilized by mental health professionals who have a strong theoretical background and long experience in working with children and adolescents.

The consensus meeting with mental health professionals (third phase) and the completion of the questionnaires that were administered further specified the assessment and intervention methods, which formed the protocol. Therefore, the outcome of the "Ariadne" project was the development of a 153-page "*Protocol for Psychological Assessment and Intervention*". The protocol sets high standards of professional psychology practice in guiding in-vivo and tele-psychological support sessions with children and adolescents who have a loved one hospitalised in the ICU. The protocol's content included information about the scope of the document, the protocol design method for psychological assessment and intervention, the role of the psychologist, the code of conduct, assessment methods (different for children and adolescent) including, psychometric tools, clinical interview, history taking

and risk assessment, guidelines and technical information about the preparation and implementation of the in-vivo and the tele-psychological intervention, guidelines on how to contact and inform parents, and guidelines for more technical processes (e.g. file keeping, session notes, data protection, procedure for complaints). In addition, algorithms were created to guide professionals in a step-by-step fashion (see Figure 1, Appendix).

The study comes with a few limitations. First, the study was conducted at a single centre, limiting the generalization of findings. The focus on a single centre was, however, important to develop a tailored to the end users' needs assessment and intervention protocol. Second, a common limitation of qualitative research methods is that the facilitators' views may have influenced the data collection and analysis. To prevent this issue, in the first phase, participants anonymously returned the completed questionnaires in a box that was conveniently situated outside the ICU door. Data analysis for this first phase was conducted by an author who was not involved in the data collection process. In the second phase, the procedure applied to analyze and interpret the data collected through the semi-structure interviews independently by the three researchers, the robust discussion to reach a consensus and, finally, the presentation of results to a sample of field experts for confirmation and/or modification ensured rigor, transparency, reliability, and validity. In the third phase, the method used to analyze data was quantitative; thus, the potential influence of the facilitators' views was reduced. Third, differing opinions may have not been sufficiently investigated due to the small sample size in the User Requirements Assessment phase. This is a common issue in studies carried out in naturalistic clinical settings, and more importantly in an ICU when a critically ill family member is hospitalized. Furthermore, the sample of the User Requirements Assessment phase included only mother-guardians, which may introduce a gender bias. A possible recruitment bias should also be considered as it is plausible that individuals who were already interested in psychological services completed the

questionnaires. Findings can be therefore seen having in mind these possible sample-related biases.

Despite its limitations, this study has major strengths. This is the first study, to our knowledge, that utilized a multi-method exploration of the needs of underage family members of critically ill patients hospitalized in the ICU. It is also the first study that involved field experts with the aim to discuss and reach a consensus with regards to specific psychological assessment and intervention practices. The result of this effort is a novel protocol based on a holistic and systemic approach that could guide psychologists who work in ICU settings to apply the best currently available psychological practices for assessment and support for underage family members and their guardians. Furthermore, the “Ariadne” protocol and the current study can serve as a step-by step prototype based on which future protocols with similar goals and in similar settings may be developed. This is a major contribution in the relevant literature and clinical field.

Considering the clinical implications of this study, we would like to present some of the practices proposed in the protocol that would be useful for psychologists working in ICU settings. First, it is important to employ constructive ways to maintain a type of communication between the child and the critically ill patient, especially for children who do not want or are not able to visit the ICU. In the “Ariadne” protocol we suggest the use of an e-platform. In this platform the child can create and send a drawing to their loved one. The same platform may be also used as a means for tele-communication between the family, including its underage members, and the psychologist (applying both assessment and intervention). Moreover, it is helpful to provide to the child and to their guardians, methods through which the child would be informed about the patient’s condition, about the ICU setting and to possibly be prepared for an ICU visit. To make this possible, the e-platform can be equipped with videos, digital photos, pictures or illustrated stories that can be used for this

purpose. The utilization of tele-psychological services through an electronic platform would help to overcome barriers such as distance between the hospital and the place of living or reluctance of parents to bring children to the hospital. However, it should be noted that the above practices can be also applied in in-vivo sessions. When both in-vivo and tele-psychological sessions with the children are not possible or appropriate, then, the proposed practices may be used in a counselling session with the parents/guardians.

The “Ariadne” project is of great importance in further identifying the needs for psychological assessment and support for underage family members of critically ill patients hospitalized in the ICU. This study helped to develop a protocol following a multi-phase methodology involving service end users and experts in the field. The present results should be considered as hypothesis generating with the aim to further investigate the implementation efficacy and effectiveness of the protocol in addressing the psychological needs of the minors and of the families of ICU patients in future studies. Concluding, the methodology described for the development of the protocol could be considered as the basis for the design of future psychological protocols, in areas that are under-investigated and need prior evaluation and knowledge of experts in the field.

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Appendix

Table 1.

Thematic Analysis Results of semi-structured interviews with field experts.

Theme	Subordinating theme	Description
Service Implementation Difficulties	ICU Staff	<i>"You may encounter difficulties with the ICU staff as this is an innovate action that involves ward preparation. Every new service might cause reactions".</i>
	Accepting the Role of the Psychologist	<i>"In Cyprus, as you know, visiting a Psychologist is considered a taboo. A parent might perceive an intervention from a Psychologist as threatening.... So, there is a possibility that you will face resistance from the families. Thus, perhaps it would be important to have a session with the parents prior to arranging a session with the child, so that the parents can firstly understand and accept your role as a Psychologist."</i>
	Resistance to Telepsychological Service	<i>"Although children begin from an early age to use the internet and electronic devices, I believe that with children under the age of 7 is very difficult to conduct tele-sessions, especially without the presence of an adult."</i>
Psychological Intervention	Types / Methods of intervention	<i>"... the interventions are based on a developmental progress. It requires the application of good clinical practice, primarily based on good knowledge of the developmental level of children, i.e. what can a child sustain, what can cognitively and emotionally feel and understand".</i>
	Individualized Interventions	<i>"...psychotherapeutic interventions must be targeted in a process of crisis intervention... tailored individualized for each person and family"</i>
Psychological Assessment	Children assessment	<i>"The interventions and tools should be adjusted according to the age and emotional maturity of the child. Needless to say that toddlers and children up to the 4th or 5th grade, can express their selves through play and that is the meeting point between the therapist and the child".</i>
	Adolescents' assessment	<i>"I would mainly rely on the clinical interview; however, there are specific tools for assessing anxiety, phobias, or any other symptomatology that might arise due to the patient's condition. These tools could be administered prior and post intervention... I believe that through it (clinical interview) you could can reach the most vibrant and rich information you can have for the assessment phase".</i>

Table 2.

Questionnaire Responses regarding the Assessment Phase.

Questions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
The assessment of children and adolescents should only be done through parents	16.67%	83.33%	0%	0%	0%
The first assessment of adolescents, aged 11-18, is important to be in the presence of their parents	0%	60.00%	20.00%	0%	20.00%
The first assessment and contact with children, aged 4-10, should be done through tele-session	16.67%	50.00%	33.33%	0%	0%
The psychometric tools are considered as very important part of the assessment, for children aged 4-10	0%	0%	80.00%	20.00%	0%
The first assessment and contact with the adolescents, aged 11-18, should be done through tele-session	16.67%	16.67%	66.67%	0%	0%
Children and adolescents should be referred to a Child Psychiatrist when they present symptoms of Depression	0%	0%	60.00%	20.00%	20.00%
The clinical interview with children, aged 4-10, is considered as a very important part of the assessment	0%	0%	0%	50.00%	50.00%
Drawing is considered as a very important part of the assessment, for children aged 4-10	0%	0%	0%	50.00%	50.00%
Symbolic play is considered as a very important part of the assessment for children aged 4-10	0%	0%	0%	50.00%	50.00%
The clinical interview with adolescents, aged 11-18, is considered as a very important part of the assessment	0%	0%	0%	50.00%	50.00%
The psychometric tools are considered as very important part of the assessment, for adolescents aged 11-18	0%	0%	40.00%	60.00%	0%
The first assessment of children, aged 4-10, is important to be done in the presence of their parents	0%	16.67%	16.67%	33.33%	33.33%
The first assessment and contact with the children, aged 4-10, should be in person	0%	0%	20.00%	60.00%	20.00%
The first assessment and contact with the adolescents, aged 11-18, should be in person	0%	16.67%	0%	66.67%	16.67%

In person sessions with children are considered essential prior to tele-sessions	0%	16.67%	0%	50%	33.33%
The assessment of children, aged 4-10, through their teacher is considered essential	0%	16.67%	16.67%	66.67%	0%
Clinical interview with parents is considered as a very important part of the assessment	0%	0%	0%	0%	100%
The assessment of adolescents, aged 11-18, through their teacher is considered essential	0%	50%	16.67%	33.33%	0%
Children and adolescents who experience panic attacks should be referred to a Child Psychiatrist	0%	25.00%	50.00%	0%	25.00%
Children and adolescents who experience severe grief and loss difficulties should be referred to a Child Psychiatrist	0%	40.00%	20.00%	20.00%	20.00%
In person sessions with adolescents are considered essential prior to tele-sessions	0%	33.33%	16.67%	33.33%	16.67%
Aggression must be assessed in children and adolescents as a form of behaviour resulting from the hospitalization of their relative	0%	16.67%	33.33%	50.00%	0%

Table 3.

Questionnaire's Responses regarding Parental Counselling.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Sessions with the parents are important during the intervention with children	0%	0%	0%	50.00%	50.00%
As part of the intervention, support to the parents should be provided	0%	16.67%	0%	33.33%	50.00%
Family therapy should be done as part of the intervention	0%	0%	16.67%	33.33%	50.00%
It is important to assess the mental status of the parents	0%	0%	33.33%	16.67%	50.00%
The first sessions should only be done with the parents	0%	16.67%	33.33%	50.00%	0%
The first sessions should be with children and parents	0%	16.67%	33.33%	50.00%	0%
It is necessary to assess the abilities of the parents in handling their child	0%	0%	0%	83.33%	16.67%
Psychoeducation of adults should be part of the therapeutic intervention	0%	0%	0%	60.00%	40.00%
The intervention plan should be based on each case	0%	0%	20.00%	0%	80.00%

Table 4.

Questionnaire Responses regarding Interventions for Young Children Related to the Patient's Condition and Status.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
In the context of informing children, it is important to display photographic material of the Intensive Care Unit	16.67%	33.33%	33.33%	16.67%	0%
In the context of informing children, it is important to provide information about the patient's condition	0%	0%	33.33%	50.00%	16.67%
In the context of informing children, it is important to teach medical terms related to the patient's condition	16.67%	33.33%	16.67%	0%	16.67%
In the context of informing children, it is important to discuss the child's emotional state with regards to patient's condition	0%	0%	0%	33.33%	66.67%

Figure 1. Protocol Development Diagram.