



# SURVIVING A LIFE-THREATENING EVENT: THE FIRST COMPREHENSIVE FRAMEWORK EXPLAINING COPING WITH LIFE THREATS AS A WHOLE

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**Abstract:** *This paper is the first to propose a comprehensive framework explaining the overall process of coping with life-threatening events. It encompasses: different types of such stressors (e.g. life-threatening illness/accident/assault, etc.), stressor appraisals (including challenge appraisal which is rarely considered in such studies), coping (using an instrument specially adapted for such context), as well as the interplay between these variables and its effect on mental health (measured through depression and life satisfaction).*

*The community sample (N=153) completed: Coping Orientation of Problem Experience (COPE) with modified instruction (to recall a life-threatening event actually experienced), indicating also event's nature and its appraisal; Severity Measure for Depression, Satisfaction with Life Scale, and socio-demographic survey.*

*The data obtained suggested that the type of the life-threatening event is not related to differences in appraisal, coping, nor mental health outcome. It was also found that appraisals have a key role and special attention should be paid to challenge appraisal. The data suggested also that COPE with modified instruction is reliable instrument that captures the specifics of the life-threatening context. A four-factor structure was extracted: Problem-focused, Active emotional, Avoidant emotional copings, and Turning to religion, with the first and third factors being predictors of depression and life satisfaction, while second and fourth being related to depression or life satisfaction depending on the rest of the copings used.*

*The framework proposed outlines the key elements in the process of coping with life threats and provides guidelines on how this data can be useful from theoretical and practical perspectives.*

**Keywords:** life-threatening event; stressor appraisal; coping; depression; life satisfaction.

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## INTRODUCTION

Facing a life-threatening situation is a crucial episode in a person's life. The importance of the topic is evidenced by the multitude of studies conducted in different contexts and samples (e.g. Davis & McDonald, 2004; Hyun & Bae, 2017, etc.). However, there is still no general conceptual framework to describe the process of coping with a life-threatening stressor as a whole. Typically research has focused on a single life-threatening stressor (e.g. a sample of survivors of natural disaster - McCanlies et al., 2018; a sample of cancer patients - Poręba-Chabros et al., 2022; etc.), studying either stressor appraisal (e.g. Spaccarelli, 1995) or coping (e.g. Carver & Scheier, 1994), rarely both<sup>1</sup>. Furthermore, the research conducted to date has relied on coping instruments, the factor structure of which has rested on studies of daily stress. Empirical data is available suggesting that coping categories derived from research on everyday or laboratory induced stress cannot be adequately applied to the coping with a life-threatening event actually experienced (Hyun & Bae, 2017; Dimitrova & Hancheva, 2021). To the best of the author's knowledge, no research has yet been conducted, simultaneously examining different types of life-threatening situations, considering also stressor appraisal and coping (specific to the life-threatening context), as well as how the interaction between these three components influences mental health outcomes.

This paper aims to fill this gap and to propose a conceptual framework encompassing the components mentioned above. Such a framework will not only enrich the theoretical knowledge, but the practice as well by providing mental health care professionals with empirically based suggestions as to which factors in the process of coping with such stressors are common to most life-threatening situations, and are therefore of a key importance to the overall process. Firstly, however, it is important that each of the constructs considered in this framework to be discussed in detail.

## LIFE-THREATENING SITUATIONS

A "life-threatening situation" is a broad and complex construct. According to the definitions of Cambridge (n.d.) and Oxford (n.d.) dictionaries, it should be understood as something "that is likely to cause death".

Through numerous studies and gathered statistical data, it has been determined which are the most common threats to people's life worldwide, namely – 55% of the mortality every year is due to a number of life-threatening diseases (WHO, 2020); Natural hazards and disasters affect millions of people, in 2022 alone, 185 million individuals were affected by and 30,704 people died due to natural disasters (UNOCHA, 2023); Violent conflicts are another of the leading life-threatening events - in May 2022 the number of people forced to flee conflict, violence, human rights violations and persecution has surpassed 100 million (UN, n. d.); 1,35 million people lose their lives in road accidents every year and between 20 and 50 million people suffer non-fatal injuries resulting from accidents (CDCP, 2023); Physical and sexual assaults (WHO, 2021; UN, 2019) as well as child abuse (WHO, 2022) are also established as one of the leading life-threats a person can face.

Despite their heterogeneous nature, all these events share a fundamental similarity – they all place the person in a situation of real threat to their physical survival. Not coincidentally, these events also underlie the main psychometric tools for assessing traumatic experience and PTSD symptomatology (e.g. Foa et al., 2013). However, for the purposes of this paper, it is important to specify that the construct "life-threatening situation" here refers to the respondent's perception of what happened, and not to the objective medical condition or factual circumstances. Individual perception of the stressor (i.e. stressor appraisal) has been found to be a key factor in understanding coping. However, when studying life-threatening events, this key factor is often omitted, probably due to the fact that the phrase "life-threatening" disease/accident/etc. contains connotation of what the appraisal should be, namely – a "threat"...to one's life.

Although life-threatening situations pose a threat for the physical survival, it is still limiting and unreasonable to assume that the cognitive appraisal of any person faced with such a situation would be a "threat". Therefore the stressor appraisal shall be included in research designs when studying the process of coping with life-threatening events. However, the scientific literature typically focuses on the copings used, with almost no research examining the stressor appraisal in the life-threatening context. In order to better understand this matter a more detailed discussion of stressor appraisal and coping is needed.

<sup>1</sup> With the exception of some studies of life-threatening illnesses – e. g. heart failure – Alhurani et al., 2018; lung cancer – Poręba-Chabros et al., 2022; etc.

## STRESSOR APPRAISAL AND COPING

Richard Lazarus is one of the researchers with the most significant contribution to the conceptualization and measurement of psychological stress. He emphasized the cognitive aspects in the coping process, i.e. the importance of the evaluation that the individual has made of the stimulus. This assumption underlies the transactional model, according to which coping consists of three processes: primary appraisal (perceiving the stressor), secondary appraisal (considering possible reactions and solutions), and coping (the act itself, the realization of the chosen solution). These three processes are mutually influencing each other and not following a linear sequence. Thus, coping should be perceived not as a single act, but as a process of interaction between the individual and the situation (Lazarus & Folkman, 1984). In other words, according to the transactional model, coping process cannot be fully understood without considering the appraisal of the stressor, because it is not the event itself but the appraisal of it that leads to the copings used.

Based on that, two distinct stress-related appraisal and response patterns were identified, namely “threat” (when the individual evaluates the situation as highly demanding, matching it with the subjective evaluation of one’s own resource) and “challenge” (when the individual evaluates the stressor as somewhat exceeding own resources, but still possible to handle) (Tomaka et al., 1997). In this regard, before examining the copings in a life-threatening context, it is necessary to examine how the individual has appraised the situation – as a “threat” or as a “challenge”.

## STRESSOR APPRAISAL AND COPING IN LIFE-THREATENING SITUATIONS

*Research covering both aspects (stressor appraisal and coping) in life-threatening context* is almost lacking. There has been few studies on appraisal and coping with life-threatening diseases (e. g. heart failure – Alhurani et al., 2018; lung cancer - Poręba-Chabros et al., 2022; HIV patients – Meade et al., 2010; Covid-19 – Ali et al., 2022) and they all have concluded that there was a strong correlation between the cognitive appraisal of illness and the process of coping and adapting to it (Poręba-Chabros et al., 2022). Specifically, threat appraisal resulted in poor health outcomes, psychological distress, and lower quality of life. In contrast, challenge appraisal has been associated with positive effects on health (Alhurani et al., 2018; Meade et al., 2010). As far as copings, task-oriented strategies were as-

sociated with lower levels of helplessness and depression, while emotion-oriented – with the helplessness-hopelessness approach and anxiety (Poręba-Chabros et al., 2022). However, it is not known to what extent these results could be generalised to other types of life-threatening situations.

A research on other type of life-threatening event – traffic accidents, reported that perceived threat is more important in the diagnosis and prediction of PTSD onset than physical injury severity, while coping was not significantly related to the PTSD symptoms (Hyun & Bae, 2017). However, this study has not considered the challenge appraisal in its design.

*Research covering either stressor appraisal or coping in life-threatening context* is more commonly found. For example, research on victims of child sexual abuse focused on the impact of cognitive appraisals (threat, harm, or loss) associated with the abuse (Spaccarelli, 1995). This study, however, didn’t include the challenge appraisal in its design. Still, there is numerous empirical data indicating that when dealing with highly demanding stressor (such as surviving a terrorist attack or other traumatic experience), challenge appraisal can be defined as the potential for positive personal growth (Lazarus & Folkman, 1984; Davis & McDonald, 2004; Triplett et al., 2012). The growth process can be promoted as the person facing the stressor is given support to perceive the increased sense of meaning the situation might bring and look for one’s own purpose in life. Therefore one’s personal experience of emotional pain may be a key factor in this process (Davis & McDonald, 2004; Triplett et al., 2012). These conclusions should motivate the inclusion of challenge appraisal in future research, even when the life-threatening event is characterized by a high degree of violence and trauma.

As far as research on coping in life-threatening context, a study on women with cancer found that acceptance as a coping strategy was a predictor of lower distress (Carver & Scheier, 1994). Other study, a meta-analysis, reported that engagement coping was associated with better physical and mental health in individuals facing significant stressors (traumatic events, illness, etc.). The less desirable effects of this coping category were rumination and self-blame, which were associated with worsened emotional, mental, and physical health. Disengagement coping, on the other hand, correlated with anxiety, depression, and destructive behavior, although these negative effects were significantly less pronounced with a stressor beyond the individual’s control. The conclusions made by the authors were that active attempts to solve

the problem and change the circumstances are useful for stressors that are manageable and controllable by the individual. This coping, however, is potentially harmful in situations that are beyond the individual's control (Carver & Connor-Smith, 2010). However, the assessment whether a certain situation is within or beyond individual's control is not purely objective, it contains subjective aspects, related to individual's perception, i.e. the stressor appraisal. Therefore it would be beneficial for future research to study also the appraisal which leads to the specific copings in the life-threatening situation.

**Research on the specifics of the coping in a life-threatening context** – Another limitation in the scientific literature is that the studies conducted so far are based on the coping categorization made for coping with everyday stressors. It has been reported that the latter can not be adequately applied to life-threatening context. For example, a study of traffic injury victims has shown that the effect of problem-focused coping in overcoming a traumatic situation may be minimal. Since this results didn't correspond with the hypothesis of the traditional stress coping model, the authors suggested that the effectiveness and the role of problem-focused coping in a traumatic situation should be reinterpreted (Hyun & Bae, 2017). Additional study focused on coping specifics when one's own life is threatened is needed. The only research, as far as the author's knowledge, which has partially filled this gap, is the one conducted by Dimitrova and Hancheva (2021).

Dimitrova and Hancheva (2021) used Coping Orientation of Problem Experience, COPE (Carver et al., 1989) – a multidimensional coping inventory, allowing the measurement of both dispositional and situational coping. Dispositional coping factor structure of COPE contains three main factors: Problem-focused coping, Emotion-focused coping, and Less useful coping. As far as the situational coping, Carver and his colleagues (Carver et al., 1989) asked the participants to recall their most stressful event of the past 2 months and fill the questionnaire thinking about that specific event. This way four main factors were extracted: active coping, planning, and suppression of competing activities formed one factor; seeking social support (both scales) and focus on emotion formed another; acceptance, restraint coping, and positive reinterpretation formed a third; denial, disengagements (both scales), and turning to

religion (with a positive loading) formed the fourth factor (Carver et al., 1989, p. 277-278).

Dimitrova and Hancheva (2021) followed a similar procedure, asking the participants to fill the questionnaire, *recalling* a life-threatening situation *actually experienced*. Three factors were extracted, which the authors named:

- *Problem-focused coping* (Active coping, Planning, Suppression of competing activities, Restraint coping, Positive reinterpretation);
- *Active emotional coping* (Seeking of instrumental social support, Seeking of emotional social support, Focus on and venting of emotions) and
- *Avoidant emotional coping* (Acceptance, Denial, Behavioral disengagement, Mental disengagement, Turning to religion).

Studying the relations between coping in life-threatening situation on the one hand, and personality and empathy, on the other, Dimitrova and Hancheva (2021) concluded that the less adaptive strategies<sup>2</sup> in life-threatening situations (i.e. Avoidant emotional coping) were related to personality and emotional determinants perceived as less desirable (e.g. negative affect and disinhibition). In contrast, the more adaptive strategies (i.e. Problem-focused coping) were related to characteristics perceived as more desirable (e.g. emotional stability and cognitive empathy). As far as the Active-emotional coping, considering the mixed results (positive correlations with some of the less desirable characteristics and negative correlations with others of them), this coping category could be perceived as a bridge between the Problem-focused and the Avoidant emotional coping in life-threatening context.

Dimitrova and Hancheva (2021) suggested that the factor structure of the modified version of COPE was close to the original, and was a better fit for the statistical data. However, there were items (items 52, 12 and 26) not falling into their theoretically assumed scales. Considering the possibility that it might be sample specific, the authors decided to keep those items in their theoretically assumed scales, but still emphasized that this was a pilot study and future research was needed in order to enrich the knowledge on coping specifics in a real life-threatening situation – a matter closely related to mental health.

<sup>2</sup> The distinction between “adaptive” and “less adaptive coping” shall be seen as tentative, considering the applicability of given strategy to particular context and the rigidity with which it's used in different situations (Dimitrova & Hancheva, 2021).



## MENTAL HEALTH IN SURVIVORS OF A LIFE-THREATENING EVENT

Mental health is a broad term. According to the World Health Organization (2022) it is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. Regarding mental health and its relations to coping, Kalisch and Kampa (2021) argued that the primary mechanism for maintaining mental health in contexts of stressor exposure was individual appraisal of difficult situations in a way that produces adaptive stress reactions (p. 135).

For the purposes of this paper, mental health will be studied through the constructs of depression and life satisfaction, as both have repeatedly been found to be closely related to coping in a life-threatening context. For example, depressive symptoms were reported as negatively related to quality of life in a sample of disaster survivors (Park & Bae, 2022) and to life satisfaction and well-being in a Covid-19 sample (Golińska et al., 2021). A study conducted after Hurricane Katrina among police officers showed that social support, gratitude and resilience were associated with fewer symptoms of depression and higher satisfaction with life (McCanlies et al., 2018). Life satisfaction is another variable related to mental health and survival of a life-threatening event, but unlike depression, it's bound to healthy coping. For example, findings of a research conducted with children living in a war region confirmed the key role of life satisfaction in mitigating traumatic reactions (Veronese et al., 2019). Another study of life satisfaction and trauma showed that people who categorized themselves as having been able to make sense of the traumatic experience, reported a higher level of meaning in life and greater life satisfaction (Triplett et al., 2012). Continuing this line of research, a study among people living with HIV emphasized the significant influence that satisfaction with life had on the level of posttraumatic growth (Rzeszutek et al., 2019). All these data confirm the importance of depression and life satisfaction constructs when examining the coping process with life-threatening stressors.

As the presented literature overview points out, in order to draw a comprehensive framework

regarding the process of coping with life-threatening events, it's needed not to neglect the stressor appraisal as a key element (including the challenge appraisal). Also, the study of copings in such contexts should rely on an instrument, adapted specifically for these needs. The variety of life-threatening situations should be considered as well and how the interaction between stressor type, appraisal and coping in life-threatening situation affects adaptation and mental health (e.g. levels of depression and life satisfaction) in people facing a life-threatening stressor. No study has done that yet. A wide-ranging research is needed to propose a conceptual framework describing this overall process.

## PURPOSES OF THE STUDY

The present study aims to address the limitations indicated above and will direct its efforts towards formulating a comprehensive framework describing the process of coping with life-threatening events as a whole, by:

- 1) Exploring *heterogeneous life-threatening situations*;
- 2) Paying particular attention to the *stressor appraisal* as a variable in this process;
- 3) Continuing the study, started by Dimitrova and Hancheva (2021), of the *coping specifics in a life-threatening context*;
- 4) Examining the interrelatedness of these three components, conclusions will be drawn regarding *their impact on mental health, measured through depression and life satisfaction levels*.

## HYPOTHESES

Hypothesis 1<sup>3</sup>:

There won't be differences between stressor types in regards to copings, depression nor life satisfaction levels.

Hypothesis 2<sup>4</sup>:

Stressor appraisal will be related to copings in life-threatening context:

2.1. People appraising the stressor as a "challenge" will be more likely to use Problem-focused

<sup>3</sup> Based on the transactional model of coping

<sup>4</sup> Based on the transactional model and on the reported results for the beneficial effect of challenge appraisal on health (e.g. Meade et al., 2010), suggesting that it is linked to more usage of "adaptive" copings in a life-threatening context and to less usage of "less adaptive" ones (respectively Problem-focused and Avoidant emotional copings, according to Dimitrova and Hancheva's categorization (2021)).

coping than people appraising the situation as a “threat”.

2.2. People appraising the stressor as a “challenge” will be less likely to use Avoidant emotional coping than people appraising the situation as a “threat”.

Hypothesis 3<sup>5</sup>:

Coping in life-threatening context requires different approach than coping with everyday stressors, which will reflect in the factor structure of the coping instrument used, confirming the results, obtained by Dimitrova and Hancheva (2021).

Hypothesis 4<sup>6</sup>:

Stressor appraisal and coping will be predictors of depression and life satisfaction:

4.1. Stressor appraisal alone will be predictor of depression and life satisfaction levels.

4.2. Problem-focused and Avoidant emotional copings each will be predictor of depression and life satisfaction levels.

4.3. The influence of Active emotional coping on depression and life satisfaction will depend on the rest of the copings used.

## PROCEDURE

Participants were informed about the aims and duration of the study. Given the need to recall a situation in which own's life was at immediate risk, respondents were given the opportunity to terminate their participation at any time, and were also provided with channels for psychological, emotional and medical support in case the recall of this experience provoked emotionally intense reactions. Participants signed an informed consent to participate in the study.

The study received appropriate ethical review and clearance, thus meeting all ethical standards. It was approved by the Ethics Committee of the educational institution under which its conducted (№ 95-T-5/01.02.2022).

Data was collected through an online survey using Google Forms as a platform. Statistical packages

PSPP (version 1.4.1) and JASP (version 0.16.1.0.) were used to process the data.

## METHODS

– COPE – Coping Orientation of Problem Experience (Carver et al., 1989) – 53 items, 4-point Likert scale. The Bulgarian version translated by Hancheva (2013) was used. For the purposes of the study, COPE was applied with the modified instruction suggested by Dimitrova and Hancheva (2021), asking the participants to fill the questionnaire, *recalling* a life-threatening situation *actually experienced*. In case a subject has never experienced such, they could omit this questionnaire and continue to the next, since this paper is part of a larger study. Participants in the larger study who haven't been in a life-threatening situation are of course excluded from this paper.

– “Challenge” / “Threat” stressor appraisal – one self-report question with dichotomous answer option. After filling COPE, participants were asked to indicate how they have appraised the life-threatening event at the time it was happening. They could choose between: “Challenge” (“I was confident, hopeful and ready”) and “Threat” (“I was worried, scared and anxious”). The appraisal selection and description is based on the work of Carver & Scheier (1994) and Tomaka et al. (1997).

– Stressor type – Participants were asked to indicate the nature of the life-threatening event they were thinking about while filling COPE. The stressor categories and their descriptions were given as choice options as follows: Life-threatening illness (heart attack, etc.), Physical assault (attacked with a weapon, severe injuries from a fight, held at gunpoint, etc.), Sexual assault (rape, attempted rape, forced sexual act with a weapon, etc.), Military combat or lived in a war zone, Childhood abuse (severe beating, sexual acts with someone 5 years older than you, etc.), Accident (serious injury from a car; at work; a house fire, etc.), Natural disaster (severe hurricane, flood, earthquake, etc.) or Other trauma (if a respondent has chosen this option, they were asked to describe briefly). The categorization

<sup>5</sup> Based on Hyun & Bae (2017) and Dimitrova & Hancheva (2021).

<sup>6</sup> Based on the transactional model and on:

4.1. Reported data that appraisal is a key component for mental health in such context (e.g. Alhurani et al., 2018);

4.2. Reported data that copings influence mental health when facing life threats and trauma (e.g. Poreba-Chabros et al., 2022; Carver & Connor-Smith's, 2010);

4.3. The assumption that Active emotional coping could be a bridge between the other two coping categories (discussed above, when analyzing Dimitrova and Hancheva's (2021) work).

of stressor types and their description is based on the work of Foa et al. (2013).

– PHQ-9 – Severity Measure for Depression—Adult (adapted from the PHQ-9) (Kroenke et al., 2001) – 9 items, 4-point Likert scale. Bulgarian version downloaded from <https://www.phqscreeners.com/>

– SWL-3 – Abbreviated Three-Item Versions of the Satisfaction with Life Scale (Kjell & Diener, 2021) – assesses satisfaction with life as a whole (not domain specific). Bulgarian version downloaded from <https://eddiener.com/scales/7>

– Socio-demographic survey

## RESPONDENTS

A total of 248 respondents (general population) filled anonymously the instruments listed above. All respondents who have ever been or currently are part of the Ministry of Interior or the Ministry of Defense

were excluded from the analysis since working in these organizations is usually related to some kind of trainings in coping with life-threatening stressors. The final sample (N=153) is described in Table 1.

## RESULTS

Before analyzing the relationships between the studied variables, the psychometric properties of the instruments shall be tested.

### Reliability analyses

As presented in Table 2, the instruments used had good or very good reliability. Cronbach's  $\alpha$  ranged from 0.6 to 0.9 and values around 0.6 were considered acceptable given the small number of items constituting the COPE scales. Because of the small difference between the values in the second and third columns it was decided not to change the theoretically set structure. However, the scale *Restraint coping*

**Table 1.** Sociodemographic characteristics of the sample

Sex	Male – 24 (15.7%)	Female – 129 (84.3%)
Age	18-28 – 34 (22.2%) 40-50 – 54 (35.3%)	29-39 – 59 (38.6%) 51-60 – 5 (3.3%) Above 60 – 1 (0.7%)
Education	Primary education – 4 (2.6%) Higher education – 119 (77.8%)	Secondary education – 30 (19.6%)
Marital status	Married / Cohabitation – 85 (55.6%) Divorced – 17 (11.1%)	Not married / No cohabitation – 50 (32.7%) Widower – 1 (0.7%)

**Table 2.** Reliability analysis – Cronbach's  $\alpha$

Instruments and scales		Cronbach's $\alpha$	Cronbach's $\alpha$ if item deleted
COPE <sup>7</sup>	Active coping	0.685	
	Planning	0.803	
	Suppression of competing activities	0.655	0.685 if item 3 is deleted
	Restraint coping	0.428	0.478 if item 1 is deleted
	Seeking social support-instrumental	0.856	
	Seeking social support-emotional	0.902	
	Positive reinterpretation and growth	0.817	0.859 if item 8 deleted
	Acceptance	0.634	0.677 if item 52 deleted
	Turning to religion	0.935	
	Focus on and venting of emotions	0.788	0.804 if item 50 deleted
	Denial	0.685	0.702 if item 42 deleted
	Behavioral disengagement	0.787	
	Mental disengagement	0.571	
	COPE Inventory_total	0.707	
	PHQ-9 (Severity Measure for Depression)	0.853	
	SWL-3 (Satisfaction With Life Scale-3)	0.766	

<sup>7</sup> All COPE related statistics presented till the end of this paper refer to COPE with the modified instruction.

needed additional attention. This led to the further testing of the factor structure of COPE when applied to a life-threatening situation actually experienced.

**COPE INVENTORY – HYPOTHESIS 3**

An exploratory factor analysis was conducted (Estimation method: Maximum likelihood; Parallel analysis based on PC; highlight 0.2; Promax rotation, KMO = 0.758, Bartlett’s test  $p < 0.001$ ). Four factors were extracted, the percentage of explained variance after rotation was as follows: Factor I – 11.7%, Factor II – 11.5%, Factor III – 8.5%, Factor IV – 6.5%. Total variance explained was 38.2% (Table 3).

Considering the split of two of the theoretically set strategies, a further EFA was conducted, specifying the extraction of three factors, according to the original structure (Estimation method: Maximum likelihood; Manual set of 3 factors; highlight 0.2; Promax rotation, KMO = 0.758, Bartlett’s test

$p < 0.001$ ). The percentage of explained variance after rotation was as follows: Factor I – 12.7%, Factor II – 11.8%, Factor III – 6.9%. Total variance explained 31.4% (Table 4).

Given the consistent splitting of the two scales – Acceptance and Restraint coping (both in the current sample, and in the Dimitrova and Hancheva’s one (2021), i.e. the result is not sample specific), an item analysis was performed. It was concluded that items 13 and 52 are in clear contrast to Denial as a strategy, and items 1 and 47 are closely related to implementing a premeditated approach, without taking any hasty or potentially aggravating the life-threatening situation steps. In contrast, items 20, 27, 12 and 26 describe behaviors that could increase levels of risk for survival, since they suggest one should get used to the idea of losing own’s life and wait for the situation to change by itself, which might not be precisely adaptive when there is an immediate danger.

**Table 3.** EFA – Parallel analysis

I	II	III	IV
Active coping Planning Suppression of competing activities Positive reinterpretation and growth <i>Acceptance</i> (only items 13 and 52) <i>Restraint coping</i> (only items 1 and 47)	Seeking social support-instrumental Seeking social support-emotional Focus on and venting of emotions	Behavioral disengagement Mental disengagement <sup>8</sup> Denial <i>Acceptance</i> (only items 20 and 27) <i>Restraint coping</i> (only items 12 and 26)	Turning to religion

**Table 4.** EFA – Manual, 3 factors

I	II	III
Active coping Planning Suppression of competing activities Positive reinterpretation and growth <i>Acceptance</i> (only items 13 and 52) Item 13: I accepted that this has happened and that it couldn’t be changed. Item 52: I accepted the reality of the fact that it happened.  <i>Restraint coping</i> (only items 1 and 47) Item 1 – I made sure not to make matter worse by acting too soon. Item 47 – I restrained myself from doing anything too quickly.	Seeking social support-instrumental Seeking social support-emotional Focus on and venting of emotions	Behavioral disengagement Mental disengagement Denial Turning to religion <i>Acceptance</i> (only items 20 and 27) Item 20: I learned to live with it. Item 27: I got used to the idea that it happened.  <i>Restraint coping</i> (only items 12 and 26) Item 12: I held off doing anything about it until the situation permitted. Item 26: I forced myself to wait for the right time to do something.

<sup>8</sup> Item 25 (I drank alcohol or took drugs, in order to think about it less) was originally proposed as an aspect of Mental disengagement, but it never loaded well on that factor. The item was retained separately, for exploratory purposes (Carver et al., 1989, p. 271). In the current study the item loaded well (0.3) on both Mental disengagement scale and Factor III.



Considering the arguments presented above, as well as the total variance explained by each of the factor solutions, it was decided to use the four-factor solution. The obtained data partially confirms hypothesis 3.

Based on the empirical data in this paper, as well as the reported one by other authors (e.g. Dubow & Rubinlicht, 2011; Dimitrova & Hancheva, 2021) factors extracted here were named as follows and their reliability calculated as presented in Table 5.

### Stressor types – Hypothesis 1

In order to examine hypothesis 1 a Kruskal-Wallis tests were performed.

Respondents who reported experiencing a natural disaster were excluded from the analysis due to limited group size (N=2). Respondents who indicated “Other” without specifying the nature of the event (N=86) also remained outside the scope of this analysis, since the specifics of the stressor were of interest here. The results obtained for the other three groups showed that there were no statistically significant differences between persons who have experienced a life-threatening illness (N=28), physical assault (N=12) or accident (N=25) in terms of coping choices, neither levels of depression nor life satisfaction. These findings confirm hypothesis 1.

### Stressor appraisals – Hypothesis 2

In order to examine hypothesis 2, T-tests were performed.

It was found that people perceiving the stressor as a “challenge” (M=61.07; SD=9.07) are more likely to use Problem-focused coping than people appraising the situation as a “threat” (M=55.43; SD=10.01), ( $t(151) = 3.19, p=0.002, \text{Cohen's } d=0.577$ ). This finding confirms hypothesis 2.1. There were no statistically significant differences between appraising the stressor as a “challenge” or as a “threat” regarding the other coping categories. These findings reject hypothesis 2.2.

### Stressor appraisal & Copings – Hypothesis 4

In order to examine hypothesis 4, regression analyses are required. Before that, however, further tests are needed on the interrelationships between the variables potentially involved in the regression analyses in question.

Binary logistic regression was performed to further study stressor appraisal and to determine whether any of the sociodemographics or the stressor type were related to it. No statistically significant results were found.

As far as the relation between stressor appraisal and depression and life satisfaction it has been found that people who perceived the stressor as a “threat” showed higher depression than people who appraised the situation as a “challenge” (Challenge (M=13.88); Threat (M=17.08):  $U=1631.0, p=0.004, \text{Rank-Biserial Correlation } (r) = 0.30$ )<sup>9</sup>. People who assessed the event as a “challenge” showed higher life satisfaction than people who appraised it as a “threat” (Challenge (M=15.76; SD=2.96); Threat (M=13.97; SD=3.62):  $t(151) = 2.85, p=0.005, \text{Cohen's } d=0.517$ ).

It was studied also whether there was a difference in sociodemographics as far as copings, depression and life satisfaction. No statistically significant results were obtained regarding gender and education. Age was related only to Turning to religion – people between 18 and 28 years old were less likely to resort to this coping compared to people aged 40 and above ( $F(2,150)=3.09, p=0.041, \eta=0.2, M_{18-28}=6.74, M_{29-39}=7.69, M_{40 \text{ and above}}=8.67$ , Tukey Post hoc test). There was no difference between respondents of 29-39 years old compared to 18-28 and to 40 and above. Marital status was related only to depression and life satisfaction level, with married being less depressed and more satisfied with their lives (Depression: Married/Cohabitation (M=15.06; SD=5.38), Not married/Not in cohabitation (M=17.63; SD=6.06):  $t(151) = 2.78, p=0.006, \text{Cohen's } d=0.452$ ; Satisfaction with life: Married/

**Table 5.** COPE – Factor solution – Names and Reliability analysis (Cronbach's  $\alpha$ )

	Factor name	Cronbach's $\alpha$
I	Problem-focused coping	0.873
II	Active emotional coping	0.910
III	Avoidant emotional coping	0.813
IV	Turning to religion	0.935

<sup>9</sup> Because of violations of assumption checks for normality and equality of variances a Mann-Whitney U test was conducted instead of T-test.

Cohabitation (M=15.15; SD=3.17), Not married/Not in cohabitation (M=13.60; SD=3.81):  $t(151) = 2.75$ ,  $p=0.007$ , Cohen's  $d=0.447$ ).

In order to further explore the relations between coping with life-threatening situation, depression and life satisfaction, correlation analyses were conducted.

The data confirmed that life satisfaction and depression are negatively correlated. As far as copings, it was found that Problem-focused coping has statistically significant correlation with only one of the other 3 categories, namely the Active emotional coping (positive correlation). The latter correlates positively also with Turning to religion. Interestingly, Turning to religion has a statistically significant positive correlation with Avoidant emotional coping as well (Tabl. 6).

Other interesting findings is that while Problem-focused and Avoidant categories were statistically correlated to depression and life satisfaction, Active emotional coping and Turning to religion didn't reach statistically significant correlations with depression nor life satisfaction. This might suggest that those two coping categories per se are unrelated to the outcome of coping and adaptation. In order to gain more clarity on the issue facet correlational analysis was performed (Tabl. 7).

As presented in Table 7, it was found that only the strategies falling into Problem focused and Avoidant emotional copings were correlated with depression and life satisfaction. This once again

suggests that as far as Active emotional coping and Turning to religion it might be of most importance how are they combined with the rest of the copings during the process of dealing with a life-threatening stressor. This assumption will be further studied through the regression analyses.

Single and multiple (method: Enter) linear regression analyses were conducted to examine whether stressor appraisal and coping strategies in life-threatening context could statistically significantly predict depression and life satisfaction levels. The data indicated that stressor appraisal was predictor of both depression ( $F(1,151)=9.76$ ,  $p=0.002$ , adjusted  $R^2=0.06$ ,  $R=0.246$ ) and life satisfaction ( $F(1,151)=8.13$ ,  $p=0.005$ , adjusted  $R^2=0.05$ ,  $R=0.226$ ) which confirms hypothesis 4.1. So were Problem-focused coping (Depression: ( $F(1,151)=6.71$ ,  $p=0.011$ , adjusted  $R^2=0.04$ ,  $R=0.206$ ; Life satisfaction: ( $F(1,151)=11.34$ ,  $p<0.001$ , adjusted  $R^2=0.64$ ,  $R=0.264$ ) and Avoidant emotional coping (Depression: ( $F(1,151)=18.76$ ,  $p<0.001$ , adjusted  $R^2=0.105$ ,  $R=0.332$ ); Life satisfaction: ( $F(1,151)=4.92$ ,  $p=0.03$ , adjusted  $R^2=0.025$ ,  $R=0.178$ ), which confirms hypothesis 4.2. Active emotional coping and Turning to religion were not predictors of depression nor life satisfaction in the single linear regression. However, Turning to religion combined with Avoidant emotional coping, accounting for stressor appraisal, marital status and age, was predictor of depression ( $F(6,146)=6.88$ ,  $p<0.001$ , adjusted  $R^2=0.19$ ,  $R=0.469$ ). Turning to re-

**Table 6.** Correlational analysis: Coping (factor level), Depression, Life satisfaction

	<b>Problem-focused coping</b>	<b>Active emotional coping</b>	<b>Avoidant emotional coping</b>	<b>Turning to religion</b>	<b>PHQ9_Total</b>
Problem-focused coping	—				
Active emotional coping	0.299 ***	—			
Avoidant emotional coping	-0.130	0.084	—		
Turning to religion	0.071	0.221 **	0.197*	—	
PHQ9_Total	-0.206*	-0.046	0.332***	-0.057	—
SWL3_Total	0.264 ***	-0.045	-0.178*	0.066	-0.499 ***

\*  $p<0,05$ , \*\*  $p<0,01$ , \*\*\*  $p<0,001$

**Table 7.** Correlational analysis: Coping (facet level), Depression, Satisfaction with life

	<b>Active coping</b>	<b>Planning</b>	<b>Positive reinterpretation and growth</b>	<b>Denial</b>	<b>Behavioral disengagement</b>	<b>Mental disengagement</b>
PHQ9_Total	-0.264***	-0.105	-0.268***	0.251**	0.283***	0.321***
SWL3_Total	0.238**	0.169*	0.315***	-0.106	-0.224**	-0.199*

\*  $p<0,05$ , \*\*  $p<0,01$ , \*\*\*  $p<0,001$

Note: Only statistically significant results were reported in Table 7.

ligion and Active emotional coping, combined with Problem-focused coping, accounting for stressor appraisal, marital status and age, were predictors of life satisfaction ( $F(7,145)=3.92$ ,  $p<0.001$ , adjusted  $R^2=0.12$ ,  $R=0.399$ ). These data partially confirm hypothesis 4.3.

## DISCUSSION

This paper took the first step towards formulating a comprehensive framework to explain the process of coping with a life-threatening stressor as a whole. Going through the hypothesis built here, the following findings require special attention:

**Hypothesis 1** was confirmed. There was no difference between people facing life-threatening illness, accident, or physical assault in terms of their coping choices or levels of depression and life satisfaction. This is consistent with the transactional model – it is not the type of life-threatening stressor or itself that influences the coping process and the mental health outcome. Thus, the attention should be directed to the stressor appraisal.

**Hypothesis 2** was partially confirmed. The confirmation of hypothesis 2.1. emphasizes the importance of challenge appraisal due to its connection to Problem-focused coping. Therefore, as suggested earlier, challenge appraisal shall be included in research designs when studying coping with life-threatening events. These findings, as well as the ones previously discussed regarding stressor interpretation and the possibility of personal growth, point to the need for mental health professionals to consider stressor appraisal as a first step in the counseling<sup>10</sup> process. Focusing their efforts on building a challenge appraisal rather than training in effective copings a person with threat appraisal, might support therapy results because if the newly learned healthy copings are not internalized through a new interpretation, it is very likely after the end of the psychological work for them to simply “fade out” and for the person to return to the unhealthy copings. Stressor appraisal reinterpretation and trainings in healthy coping must go hand-in-hand for long-term results. This assumption is a direction for future research.

As far as hypothesis 2.2., it was rejected. There was no difference between the appraisals made and the usage of the remaining three coping categories

– Active emotional coping, Avoidant emotional coping and Turning to religion. It could be assumed that these copings are determined by temperamental and personality specifics to a greater extent (as affective and religious aspects are concerned) than by the stressor appraisal when facing a life threat. This is a direction for future research, which would benefit from relying on a coping inventory specifically adapted for the life-threatening context.

**Hypothesis 3** was confirmed, although partially since the data in this paper didn't fully replicate the factor structure reported by Dimitrova and Hancheva (2021). This could be due to the fact that they've considered some of the data in their study as sample specific. In any case, the present work builds on theirs, contributing to a more precise measurement of coping with a life-threatening stressor. COPE with modified instruction is a reliable instrument that captures the specifics of the life-threatening context. The factor solution presented in this paper explains the obtained data statistically and logically better. Of particular interest in the current sample is the extraction of Turning to religion as an independent factor. This suggests that religious values have their own specific place in the Bulgarian socio-cultural context when it comes to the struggle for survival and preservation of life. This is especially true for people between the ages of 18 and 28, who are less likely to turn to religion as a source of support and hope than those over 40 years old. This empirical data can be useful for therapists since it provides additional information about what approach would be beneficial considering clients' age.

**Hypothesis 4** was confirmed. Stressor appraisal (4.1.) is predictor of depression and life satisfaction of individuals faced with a life threat. It was also found that threat appraisal was related to higher depression while challenge appraisal was associated to higher life satisfaction. This is consistent with the data from other studies discussed above (e.g. Alhurani et al., 2018). Analyzing the appraisals, none of the sociodemographic characteristics studied in this paper, nor the stressor types were related to it. It could be assumed that stressor appraisal was influenced by variables beyond the scope of this paper. As it has been suggested by some authors (e.g., Kilby et al., 2018), there is a potentially complex interplay between personality and appraisals. Big five, emotional intelligence (Kilby

<sup>10</sup> The words “counseling” and “therapy”; “client” and “patient” are used interchangeably because the focus is not on differentiating psychological approaches into clinical/non-clinical, short-/long-term, etc., but on commenting the possibly effective approaches when working with people faced with a life-threatening event in general.

et al., 2018), optimism and locus of control (Peacock & Wong, 1996) were all reported as related to stressor appraisal. However, these relations shall be further researched with focus on the life-threatening context, in order for the conclusions drawn to be applicable to this context.

As far as copings, it was found that Problem-focused and Avoidant emotional copings are also predictors of depression and life satisfaction (confirming hypothesis 4.2.) which is in compliance with the data from other studies mentioned above (e.g. Poręba-Chabros et al., 2022). Special attention shall be paid to the other two coping categories. It was found that neither Turning to religion nor Active emotional coping alone are predictors of levels of depression and life satisfaction in survivors of a life-threatening event. Their role for the mental health outcome is related to the rest of the copings, namely, if used along with Avoidant emotional coping, Turning to religion is predictor of depression, while if combined with Active emotional and Problem-focused copings, Turning to religion is predictor of life satisfaction. These data partially confirms hypothesis 4.3., showing that the influence of Active emotional coping depends on the rest of the copings used but only regarding life satisfaction and not depression. In a counseling setting this means that clients relying mainly on those two coping categories (Turning to religion and Active emotional coping) should be allowed to freely use them and express these affective and religious needs, while at the same time be encouraged to combine them with strategies from the Problem-focused category in order to cope with the stressor as effectively and healthily as possible. The main task of the counseling process should be the reduction of Avoidant emotional coping and the promotion of Problem-focused coping, of course always considering the stressor appraisal as well.

Healthcare providers should assist patients to learn and use healthier appraisals and copings, since they both are predictors of depression and life satisfaction. This could be best done by integrative therapeutic approach. For example, by reinterpreting the life-threatening situation and emphasizing the opportunities it provides (e.g., for personal growth and development – Logotherapy could be a key approach here), the lessons it teaches (e.g. through Existential paradigm), the skills it forms and the personal resources the individual possesses to cope effectively (if necessary, they could be trained, e.g., through CBT techniques) – these all are promising paths for psychological counseling and support for people facing a life-threatening event.

## CONCLUSION

Coping with a life-threatening stressor is specific in nature event and should be studied as such. This paper is the first to provide a framework, explaining the overall process not limiting itself to one *type of life-threatening situation*, and at the same time simultaneously studying also *appraisal* (including challenge appraisal which is rarely considered in such studies but it turns out to be of a key importance); *coping* (contributing to its more precise measurement, thus providing a new coping categorization that better explains the process in life-threatening context), and *mental health* (focusing on the empirical evidence on which to base therapeutic practices, namely: reinterpreting threat appraisal into challenge; trainings in Problem-focused and reduction of Avoidant coping, while adequately using Active emotional coping and Turning to religion as a bridge).

Basing the analysis on the theory of the transactional model and paying particular attention to the specifics of the context, this paper outlined the key elements in the coping process with life-threatening events as a whole, providing also guidelines on how these data can be useful from theoretical and practical perspectives.

## LIMITATIONS AND SUGGESTIONS FOR FUTURE STUDIES

This paper is the first to propose a framework describing the overall process of coping with a life-threatening stressor, so any conclusion presented here should be thoroughly tested in future.

As far as the limitations, sample size and its distribution are to be considered. Also, confirmatory factor analysis is needed in order to further test COPE factor structure when assessing coping with life-threatening events. Furthermore, testing on different stages of the coping process might be beneficial in order to study how the variables change during the process. Another limitation is the time lag between the coping process and the participation in this study – for some of the respondents the coping might still be ongoing, for others it may have ended decades ago, which might impact the results, given the retrospective nature of the study. It would be informative as well to test whether prior experience in life-threatening situations is related to stressor appraisal. It could be hypothesized that successful coping in such situations in the past favors perceiving the stressor as a challenge rather than a threat. Personality and temperamental characteristics could



also play a role, not only in regards to stressor appraisal but to Active emotional, Avoidant emotional copings and Turning to religion as well. Once the variables affecting them are identified, they, along with the variables studied in this paper, can be included in a mediation analysis, through which even more detailed information will be obtained, thus enriching the framework proposed in this paper.

The author is currently working on addressing some of the stated limitations.

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