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# COPING WITH CRISIS PATHWAYS TOWARDS RESILIENCE



## Selected Proceedings

**The 3rd International Scientific Conference**

Department of Psychology, Catholic University of Croatia

**9 - 11 December 2021**



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# **Coping with Crisis – Pathways towards Resilience**

*Selected Proceedings*

3<sup>rd</sup> International Scientific Conference  
of the Department of Psychology  
of the Catholic University of Croatia  
Zagreb, Croatia  
January, 2023



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## Foreword by the Editor

The 3<sup>rd</sup> International Scientific Conference of the Department of Psychology of the Catholic University of Croatia was held in Zagreb on 9 – 11 December 2021. The conference was marked by special circumstances – it was held during the outburst of the COVID-19 pandemic and in the aftermath of the two earthquakes that had hit Croatia in 2020, one in Zagreb in March with the magnitude of 5.3 Mw and in Petrinja (60 km from Zagreb) in December with the magnitude of 6.4 Mw.

Such extreme traumatic events can overwhelm our thoughts, emotions, and body. The question that we decided to tackle with during this conference is how these extraordinary events affected our mental health and coping skills under the main topic “Coping with Crisis – Pathways towards Resilience”. The conference took place under special circumstances – online and in-person – with adherence to epidemiological guidelines. This was a big challenge for both the organizers and the presenters themselves because the event required special preparations and adaptation. However, the number of registered participants, of which there were over 450, speaks of the quality of the conference and program itself. The program included 166 active participants from Croatia and abroad (Canada, Germany, Italy, Slovenia), with two invited lectures, eleven symposia, fifty-four oral presentations, one round table, six workshops, and forty-two poster presentations.

All authors were invited to submit their full-length manuscripts for this Book of Selected Proceedings. We aimed to cover as many topics and different multidisciplinary and interdisciplinary approaches to mental health as possible through an open call for papers. Eleven papers were submitted and entered the double-blinded peer review process. After a positive review and the editorial process, nine individual scientific papers were ultimately accepted for publication and are presented in this book. The topics of the manuscripts cover stress and trauma psychology from different perspectives, from developmental and school psychology to clinical psychology, and psychology of religion.

I would like to thank all authors for their exceptional work, prompt revisions, and excellent collaboration. Furthermore, I sincerely thank the reviewers for the knowledge and expertise they devoted to this book. Their names are listed at the end in alphabetical order as a thank note, due to the blind review process. A special thank you goes to the members of the Editorial Board who invested their time and effort for this book to be published. Finally, I would like to thank the Catholic University of Croatia for recognizing the importance of this book and for their financial support in publishing.

*Martina Knežević, Editor-in-Chief*





## The Relationship Between Epistemic Emotions and Motivation for Learning Physics During Distance Teaching

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### Abstract

**Background and Aim:** The transfer to distance teaching in the spring of 2020 brought significant changes to the educational system. Those changes raised questions about the relationship between the emotional and motivational aspects of learning and attending classes in a completely altered context. Bearing this in mind, the aim of this study was to examine whether epistemic emotions are mediators in the relationship between students' appraisals of control and value and their motivation for learning physics in the period of distance teaching, in accordance with the control-value theory of achievement emotions.

**Method:** The study was conducted online in May 2020 with eight-grade students from ten elementary schools in the City of Zagreb and Zagreb County. In total, 263 students (147 female) participated in the study and were on

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average aged 14. All questionnaires were adapted to the subject of physics in the context of the distance teaching period. The students estimated the intensity of seven epistemic emotions (surprise, curiosity, enjoyment, confusion, anxiety, frustration, and boredom), appraisals of control and value, and intrinsic and extrinsic motivation for learning.

**Results:** The conducted path analysis showed that the emotions of curiosity and enjoyment were significant mediators between value appraisal and intrinsic motivation for learning. Specifically, the value positively predicted intrinsic motivation for learning physics by predicting higher intensity of curiosity and enjoyment. On the other hand, confusion was a significant mediator between cognitive appraisals of control and value and extrinsic motivation for learning. Control and value appraisals negatively predicted confusion, which in turn positively predicted extrinsic motivation for learning.

**Conclusion:** The results gave us an insight into the relationship between emotional and motivational aspects of learning in the distance-teaching setting and were elaborated in regard to theoretical assumptions of the control-value theory of achievement emotions.

*Keywords:* epistemic emotions, intrinsic and extrinsic motivation for learning, control and value appraisals, distance teaching, physics

### **The Relationship Between Epistemic Emotions and Motivation for Learning Physics During Distance Teaching**

Emotions are an inseparable part of the teaching and learning process, which is confirmed by a large number of recent research (e.g., Han & Gutierrez, 2021; Munnich & Ranney, 2019; Nakamura et al., 2020). Emotions directly related to learning, classroom instruction, and academic achievement are called academic emotions (Pekrun et al., 2002). As is the case with emotions in general, academic emotions are also viewed as multi-component phenomena comprised of situation appraisal, action tendencies, physiological responses, expressive behavior, and subjective experience (Scherer & Moors, 2019). According to the three-dimensional taxonomy of academic emotions (Pekrun, 2006; Pekrun & Perry, 2014), emotions can be divided based on their valence (positive or negative), activation (activating or deactivating), and object focus (activity or outcome). Regarding the object focus, there are four groups of academic emotions: achievement, epistemic, topic, and social emotions (Pekrun & Stephens, 2012). In this research, we were particularly interested in epistemic emotions, which focus on the process of generating knowledge and which occur as a result of the cognitive quality of the task and processing of such information (Pekrun & Stephens, 2012). Furthermore, epistemic emotions result from information appraisals about the alignment or misalignment between the new information and existing beliefs, knowledge structure, or recently processed information (Muis, Chevrier et al., 2018). There are seven epistemic emotions,

which are mostly examined in the context of academic emotions – curiosity and enjoyment as positive activating emotions, confusion, boredom, and frustration as negative activating emotions, and boredom as a negative deactivating epistemic emotion. The last one is surprise, which is defined as a neutral activating epistemic emotion since its valence depends on the learning context (Muis, Sinatra et al., 2018).

### **Control-Value Theory of Achievement Emotions**

The control-value theory of achievement emotions offers an integrative theoretical framework for explaining the antecedents and effects of emotions in the academic context (Pekrun & Perry, 2014). Based on this theory, the main antecedents of all four groups of academic emotions are control and value appraisals. Beside distal antecedents, there are different environmental antecedents of those emotions (e.g., cognitive qualities of tasks, expectations) which affect emotions indirectly via those cognitive appraisals. In this study, we examined the control and value appraisals as predictors of epistemic emotions. The control appraisal refers to the students' perceived controllability over their learning-related actions (e.g., learning) and outcomes (e.g., success or failure), while the value appraisal refers to the perceived importance of those actions and outcomes (Pekrun & Perry, 2014). Based on the theoretical assumptions, it is expected that if the perception of both the control and value appraisals as high, it will predict a higher intensity of enjoyment and curiosity and lower intensity of confusion (Muis, Psaradellis et al., 2015). If both appraisals are low, that will predict boredom. When control appraisal is low and value appraisal high, they will predict anger, frustration, and anxiety. At the end, the theory posits that surprise will not be predicted by either of the cognitive appraisals since it is a neutral epistemic emotion (Di Leo et al., 2019; Muis, Chevrier et al., 2018). There are few research studies testing the theoretical assumptions about the relationship between cognitive appraisals and epistemic emotions, with inconsistent findings. That is, the value appraisal was a positive predictor of curiosity and enjoyment (Muis, Psaradellis et al., 2015), and a negative predictor of confusion, anxiety, frustration, and boredom, while none of the appraisals were predictors of surprise (Muis, Psaradellis et al., 2015). In a replicating study conducted by Di Leo and colleagues (2019), the value positively predicted enjoyment and curiosity, the same as in the previous study. It predicted boredom negatively, while the control appraisal negatively predicted surprise, confusion, frustration, anxiety, and boredom. From this example, we can conclude that the results somewhat overlap mutually and are in line with theoretical assumptions, albeit with some contrasting results.

On the other hand, the control-value theory of achievement emotions (Pekrun, 2006) proposes that academic emotions, so do epistemic emotions, directly affect cognitive and motivational aspects of learning, and indirectly achievement. In this study, we were interested in the motivational aspect, specifically the intrinsic and extrinsic motivation for learning. Intrinsic motivation refers to performing an activity (in this case learning) because of the enjoyment and satisfaction students experience while doing it. In opposition, extrinsic motivation describes situations in which students learn because of some external award or to avoid negative consequences (Guay et al., 2020). Although the control-value theory has clear assumptions concerning the effects of positive activating (positive effects) and negative deactivating emotions (negative effects) on motivational aspects of learning, the assumptions are not straightforward regarding the negative activating emotions. This is to say that there is some evidence that confusion can have beneficial effects on the learning process under certain conditions (e.g., D’Mello et al., 2014). To date and to our best knowledge, there are no studies specifically examining the relationship between epistemic emotions and intrinsic and extrinsic motivation for learning, but there is research on some other motivational aspects of learning. In fact, in a series of studies the participants’ motivation to explore and the actual exploration of the explanation of the wrong, but also of the correct answer to trivia questions, was examined (Vogl et al., 2020; Vogl et al., 2019). The meta-analytic findings from those studies showed that curiosity and confusion positively predicted exploration after a wrong answer, while curiosity additionally positively predicted that behavior after a correct answer. Surprise positively indirectly predicted exploration, via curiosity and confusion, in the situation of a wrong answer, and only via curiosity in the situation of a correct answer. From this short overview, we can see that the effects of surprise, curiosity and confusion on the motivation and the actual exploration of the explanation of the answers are consistent, but there is no empirical evidence for the relationship between other epistemic emotions and intrinsic and extrinsic motivation for learning.

### **Epistemic Emotions in the Context of Distance Teaching**

In the spring of 2020, schools and universities all over the world were unexpectedly and suddenly transferred to virtual classrooms and distance teaching due to the COVID-19 pandemic. Teachers and their students had to get familiarized with completely new surroundings of schooling in several days. This rapid change was stressful for both students (e.g., Ristić Dedić & Jokić, 2021) and their teachers (e.g., Klapproth et al., 2020). The eligible question

was whether the principles of emotional and motivational experiences in a traditional educational context, as discussed above, have the same determinants and effects in the virtual context. There is no research assessing the determinants and effects of epistemic emotions in the COVID-19 pandemic and remote teaching period, but some of the research was conducted in virtual surroundings and while learning with digital technologies (e.g., Han et al., 2021; Liu et al., 2019). Despite a scarce number of those studies, all of which were conducted with college or adult students, we assume that epistemic emotions play an important role in the learning process even in the online learning context.

Furthermore, it is important to note that epistemic emotions, like other academic emotions, are subject-specific and should be assessed in that way (e.g., Goetz et al., 2007). In this research, they were examined related to the context of the subject of physics. Students often have difficulties understanding the material from physics and there is agreement about basic phenomena related to this subject (Brown & Hammer, 2008). That is, many qualitative questions are still too challenging for students even after extensive instruction about those topics and even for students who easily solve quantitative tasks about those topics. Furthermore, wrong answers to those qualitative questions are often grouped into a small number of alternatives, and students are often highly confident in their wrong answers. Moreover, students find physics a difficult subject and perceive their self-efficacy in physics as very low (Jokić et al., 2019). Therefore, we decided to assess epistemic emotions in the context of physics in which students have difficulties understanding the material, which is the typical situation in which epistemic emotions occur (Pekrun & Stephens, 2012).

### **Current Study**

The main aim of this research was to examine the mediating role of epistemic emotions in the relationship between cognitive appraisals and motivation for learning physics during the period of distance teaching. Based on the previous research on epistemic emotions mentioned above and the assumptions of the control-value theory of achievement emotions, we expected that the epistemic emotions, apart from surprise, will mediate the relationship between the cognitive appraisals and intrinsic and extrinsic motivation for learning physics in the context of distance teaching. In particular, we expected that the appraisals of control and value will predict intrinsic and extrinsic motivation for learning physics via positively predicting curiosity and enjoyment, and negatively predicting anxiety, confusion, frustration, and boredom.

## Method

### *Participants*

A convenience sample of 263 eighth-grade students (147 female) from 10 elementary schools in Zagreb and Zagreb County, Croatia, participated in the study. The students were on average 14 years old ( $M = 14.20$ ,  $SD = 0.428$ ) and had very good overall GPAs in physics at the end of the 7th grade ( $M = 3.99$ ,  $SD = 0.965$ ,  $min = 2$ ,  $max = 5$ ). Of all the students who had parental permission to participate in the study, 61.88% completed the questionnaire.

### *Measures*

Epistemic emotions were assessed with The Epistemically-Related Emotion Scales (Pekrun et al., 2016). It measures the intensity of seven distinct epistemic emotions on a 5-point scale (1 = *not at all*, 5 = *very strong*). In this study, the students had to estimate the intensity of their epistemic emotions while studying new material in physics class during the period of distance teaching. Each emotion is examined with three items, that is, surprise (e.g., surprised,  $\alpha = .78$ ), curiosity (e.g., interested,  $\alpha = .92$ ), enjoyment (e.g., happy,  $\alpha = .91$ ), confusion (e.g., puzzled,  $\alpha = .86$ ), frustration (e.g., irritated,  $\alpha = .91$ ), anxiety (e.g., worried,  $\alpha = .91$ ), and boredom (e.g., dull,  $\alpha = .73$ ). Total result is calculated separately for each emotion as an average of all answers on the three items.

Self-efficacy for Learning and Performance Scale from Motivated Strategies for Learning Questionnaire (Pintrich et al., 1991) was used as an operationalization of appraisal of cognitive control. It measures students' beliefs in their ability to successfully accomplish a task and their beliefs about possessing adequate skills to perform that task on a 7-point scale (1 = *not at all true of me*, 7 = *very true of me*). The scale consists of eight items that were adapted to the context of physics during distance teaching (e.g., "I'm confident I can understand the basic concepts taught in the subject of physics."). The total result is calculated as an average score of answers on all items, and Cronbach's  $\alpha$  reliability is good ( $\alpha = .96$ ).

Value appraisal was operationalized with the Croatian version of the Value subscale from Components of Self-regulated Learning (Niemivirta, 1996; Rijavec et al., 2003). It measures students' beliefs about the utility, interest, and importance of learning, which was in this study adapted to the subject of physics during the distance teaching period (e.g., "I think that the things we learn from physics during distance teaching are important"). The scale consists of six items, from which three need to be recoded in order to calculate the total score

as an average of the answers on all items. The students gave their answers on a 5-point scale (1 = *totally disagree*, 5 = *totally agree*), and the scale has good reliability ( $\alpha = .87$ ).

The intrinsic and extrinsic motivation for studying physics during distance teaching was measured with an adapted version of the scales from the Situation Motivation Scale (Guay et al., 2000). Both intrinsic (e.g., "During distance teaching, I study physics because I think it is interesting") and extrinsic (e.g., "During distance teaching, I study physics because I am supposed to do it") motivation are measured with four items on a 7-point scale (1 = *not at all true of me*, 7 = *very true of me*). The total score for each scale is calculated as an average of all answers and both scales showed good reliability (intrinsic motivation:  $\alpha = .94$ , extrinsic motivation:  $\alpha = .80$ ).

### *Procedure*

The relevant Ethical Committee and the Croatian Ministry of Science and Education approved the research. The research was conducted in May 2020 using an online questionnaire, which was posted in the virtual classrooms of class departments that participated in the study. The students and their parents had given written consent for their participation in the study. At the time of the conduction of the study, the students had been attending distance teaching for 9 to 10 weeks.

## **Results**

### *Descriptive Statistics and Correlations*

Based on the descriptive statistics presented in Table 1, we can conclude that the students experience very low (i.e., surprise, confusion, anxiety, frustration) to moderate (i.e., curiosity, enjoyment, boredom) intensity of epistemic emotions during learning about the new material at physics class in the period of distance teaching. They perceive their self-efficacy and value for studying physics as moderately high. Regarding their motivation for studying physics, students reported moderately low levels of intrinsic motivation, and moderately high levels of extrinsic motivation.

After analyzing the correlations (Table 1), we noticed that positive epistemic emotions were positively correlated with both cognitive appraisals, while negative epistemic emotions were correlated negatively. Only surprise was positively correlated with value appraisal, but there was no relationship with cognitive appraisal. All epistemic emotions were significantly correlated with



**Table 1**  
*Descriptive statistics and correlations among all variables (N = 263)*

	1	2	3	4	5	6	7	8	9	10	11
1. surprise	-	.63**	.73**	.02	.10	-.03	-.17**	.02	.35**	.50**	-.08
2. curiosity		-	.80**	-.35**	-.28**	-.42**	-.50**	.29**	.64**	.75**	-.09
3. enjoyment			-	-.27**	-.20**	-.34**	-.41**	.15*	.53**	.69**	-.16*
4. confusion				-	.85**	.81**	.65**	-.38**	-.49**	-.42**	.18**
5. anxiety					-	.85**	.64**	-.34**	-.44**	-.37**	.12
6. frustration						-	.73**	-.38**	-.58**	-.49**	.09
7. boredom							-	-.28**	-.61**	-.53**	.17**
8. self-efficacy								-	.41**	.34**	.16*
9. value									-	.69**	-.08
10. intrinsic m.										-	-.02
11. extrinsic m.											-
<i>M</i>	2.40	2.95	2.62	2.42	2.08	2.24	2.62	5.27	3.48	3.83	5.06
<i>SD</i>	.944	1.013	1.090	1.060	1.146	1.196	0.916	1.442	.881	1.727	1.437
<i>min</i>	1	1	1	1	1	1	1	1	1	1	1
<i>max</i>	5	5	5	5	5	5	5	7	5	7	7

\* $p < .05$ , \*\* $p < .01$ .

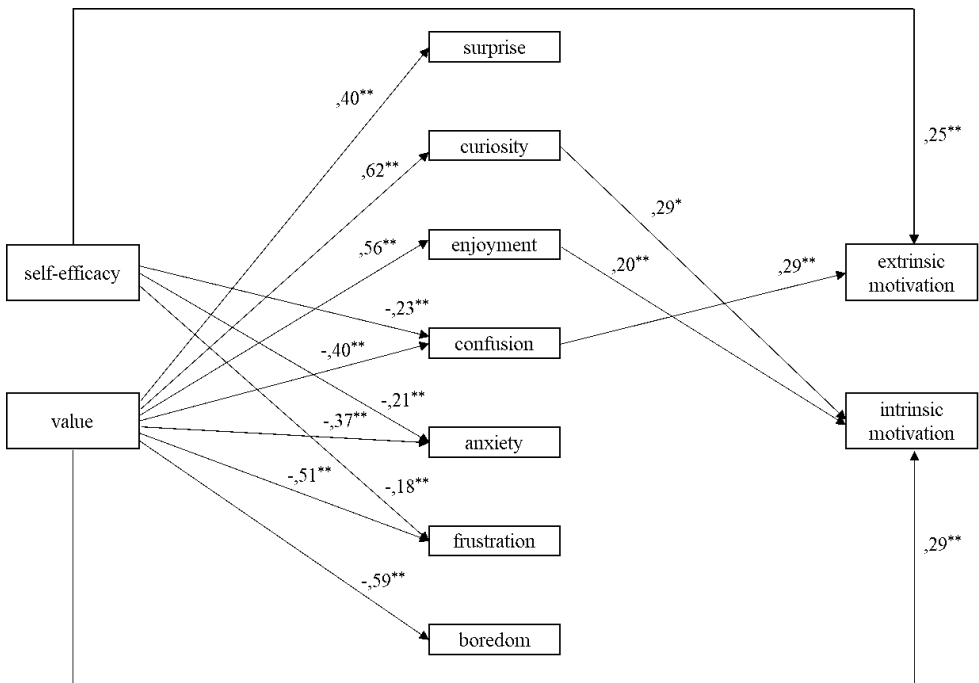
intrinsic motivation. Surprise, curiosity, and enjoyment correlated positively, while negative epistemic emotions correlated negatively with intrinsic value for studying. On the other hand, only enjoyment had a negative correlation with extrinsic motivation, while confusion and boredom were positively correlated. All other correlations were insignificant.

*Path Analysis*

In order to test if the epistemic emotions mediate the relationship between cognitive appraisals and students' motivation for learning physics during distance teaching, we conducted path analysis using Mplus version 8.4.

Concerning direct effects (Figure 1), students' perception of their self-efficacy significantly predicted only three emotions, that is, negatively predicted confusion, anxiety, and frustration. On the other hand, students' perception of the value of the subject of physics significantly predicted all epistemic emotions. Specifically, value appraisal positively predicted surprise, curiosity and

**Figure 1**  
*Tested path model*



Note. Only significant paths were presented. \* $p < .05$ . \*\* $p < .01$ .

enjoyment and negatively predicted confusion, anxiety, frustration and boredom. Besides this, self-efficacy directly positively predicted extrinsic motivation for studying physics during the remote teaching period, while value positively predicted intrinsic motivation.

The analysis of indirect effects showed that only a few of them were significant (Table 2). Confusion was a significant mediator in the relationship between self-efficacy and extrinsic motivation among students, that is, higher

**Table 2**  
*Tested indirect effects*

Path	$\beta$	SE
self-efficacy → intrinsic motivation via		
surprise	-.01	.01
curiosity	.02	.02
enjoyment	-.01	.01
confusion	.01	.02
anxiety	.00	.02
frustration	.01	.02
boredom	.00	.00
self-efficacy → extrinsic motivation via		
surprise	-.00	.01
curiosity	.01	.01
enjoyment	.01	.02
confusion	-.07*	.03
anxiety	-.01	.03
frustration	.05	.03
boredom	-.01	.01
value → intrinsic motivation via		
surprise	.03	.02
curiosity	.18**	.05
enjoyment	.11**	.04
confusion	.02	.03
anxiety	.01	.03
frustration	.02	.04
boredom	.01	.04
value → extrinsic motivation via		
surprise	.01	.04
curiosity	.06	.08
enjoyment	-.12	.07
confusion	-.12*	.05
anxiety	-.02	.05
frustration	.14	.07
boredom	-.10	.06

\* $p < .05$ . \*\* $p < .01$ .

self-efficacy predicts higher extrinsic motivation via predicting the lower intensity of confusion among students while studying new material in physics class during the distance teaching period. Furthermore, confusion was a significant mediator in the relationship between value and extrinsic motivation for studying physics. Value appraisal did not directly predict the extrinsic motivation for studying physics, but it did so indirectly by negatively predicting the intensity of confusion. In terms of positive activating emotions, curiosity and enjoyment were significant mediators in the relationship between value appraisal and intrinsic motivation for studying physics. Specifically, a higher perception of the value of the subject of physics among students predicted higher intrinsic motivation for studying physics via predicting the higher intensity of curiosity and enjoyment.

### **Discussion**

In this study, we wanted to test the assumptions of the control-value theory of achievement emotions (Pekrun & Perry, 2014) regarding the mediating effect of epistemic emotions in the relationship between cognitive appraisals and motivation for learning physics. We were interested in testing those relationships in the context of distance teaching during the first lockdown due to the COVID-19 pandemic in the spring of 2020. The results showed only a few significant mediating effects. Curiosity and enjoyment were significant mediators in the relationship between value appraisal and intrinsic motivation, while confusion was a significant mediator between both cognitive appraisals and extrinsic motivation for learning physics.

Both cognitive appraisals directly predicted epistemic emotions and motivation to learn physics during the distance teaching period. The perception of being able to successfully master the learning material from physics and obtain success in that subject directly predicts the lower intensity of being confused, anxious or frustrated while learning new material in physics class, and indirectly predicts extrinsic motivation, via confusion. Confusion is usually the first emotion the students experience while confronted with the material that is causing them cognitive incongruity because the incoming information is not in line with their existing epistemic beliefs, prior knowledge, or recently processed information (Muis, Chevrier et al., 2018). According to the three-step process of experiencing epistemic emotions (Muis, Chevrier et al., 2018), students compare new information with their prior knowledge. If the novelty of information is perceived as high enough, surprise will occur. The second step includes the appraisal of the complexity, capacity, and value of the new information, which defines whether curiosity or confusion will occur. In the third

step, anxiety, frustration, and boredom will follow confusion if the impasse in learning is not resolved, while feelings of certainty and insight will follow curiosity, and finally enjoyment if the impasse is successfully resolved. Han et al. (2021) tested this model in the online setting of MOOCs and concluded that this model can be used as an initial interpretation of the patterns of epistemic emotions. Bearing this in mind, it is expected that the perception of being self-efficient in some school subjects will lower the intensity of the epistemic emotions usually occurring in a situation where there are challenges in mastering the learning material. On the other hand, it was expected that the students who perceived their self-efficacy high would experience positive epistemic emotions, which was not the case in this study, but also in the earlier studies (Di Leo et al., 2019; Muis, Chevrier et al., 2018). It might be that the perception of value and interestingness of the subject of physics is more important for the experience of positive epistemic emotions, while the perception of being able to successfully fulfill all the requirements for that subject.

Related to that, value predicted all epistemic emotions. Furthermore, curiosity and enjoyment were partial mediators in the relationship between value appraisal and intrinsic motivation to learn physics, while confusion was a full mediator. Curiosity and enjoyment are positive activating emotions, which are proposed to motivate students for learning (Pekrun, 2006). In our study, the enjoyment the students experience while learning new material from physics during a distance teaching period predicted their intrinsic motivation for learning physics. The students are intrinsically motivated for doing some activity, in this case, learning, when they find it interesting and enjoyable (Ryan & Deci, 2000). It is, therefore, not surprising that enjoyment in learning predicts higher intrinsic motivation to learn. Also, a higher intensity of curiosity during learning new material also predicts a higher intrinsic motivation. Epistemic curiosity is an important factor that contributes to student achievement (e.g., von Stumm et al., 2011), and curious students are more likely to be motivated and engaged in learning (Tang & Salmera-Aro, 2021). In our study, epistemic curiosity was defined as a trait and described as feelings of curiosity, interest, and inquisitiveness, that is, more as an interest-type of curiosity in contrast to deprivation-type (Litman, 2008; Litman & Jimerson, 2004). Specifically, an interest-type of curiosity is characterized by enjoyment while seeking new information (Litman, 2008), and is related to a number of positive academic outcomes, such as mastery orientation (Litman, 2008). This is in line with the results of our study.

Interestingly, confusion fully mediated the relationship between value appraisal and extrinsic motivation to learn. Confusion is an epistemic emotion that can have positive or negative effects on the learning process, depending on

certain circumstances and the (un)successful regulation (e.g., D’Mello et al., 2014). In particular, Arguel et al. (2019) claim that the key to successful learning in an interactive digital environment (IDLE) is in seeking optimal confusion and successful regulation of confusion if its intensity is too high, based on the conclusions by D’Mello and Graesser (2014). In our study, confusion positively predicted extrinsic motivation to learn, that is, the students that experienced confusion described it as a lack of understanding of the material (D’Mello & Graesser, 2012), more often learned physics because they perceive that they are supposed to learn it or have no other choice but to study it. The control-value theory of epistemic emotions proposes that negative activating epistemic emotions can have positive or negative effects on achievement, via motivational and cognitive aspects of learning (Pekrun & Perry, 2014). That can also include inducing extrinsic motivation for studying, which is in line with our results.

Another interesting result was that value positively predicted the intensity of surprise, although it was expected that neither of the cognitive appraisals would predict surprise, as it is a neutral epistemic emotion. At the same time, surprise did not mediate the relationship between value and motivation to learn physics. As mentioned above, Muis, Chevrier et al. (2018) claim that surprise is the first emotion that occurs when a student is confronted with new information, in this study, the new learning material in physics class. Confusion or curiosity are emotions that will follow surprise, and it seems that surprise affects motivational and cognitive aspects of learning via other epistemic emotions, which was shown in some earlier research (e.g., Vogl et al., 2019).

Although this research gave us an important insight into the tested relationships, it has some shortcomings. The data were collected online with a convenience sample of students. It should also be emphasized that not all teachers sent invitations to their students in each school which participated in the study, and of all invited students, 62% completed the questionnaire. This raises questions about the potential differences between teachers and students in class departments who did not participate at all, in contrast to those students who participated in the study, specifically in terms of adequate adaptation to drastically changed conditions of teaching. Furthermore, the data related to the distance teaching period were collected in 1 time point, and we were testing mediating effects, which can be biased in cross-sectional studies, in contrast to longitudinally designed studies (e.g., Maxwell et al., 2011). Therefore, Cole & Maxwell (2003) suggest having at least 3 time points of data collection to optimally test mediating effects. Besides this, the convenience sample of participants can also bias the results, as was shown in a recent research with the adult population from Croatia (Ajduković et al., 2021). Furthermore, in this study, we only assessed intrinsic and extrinsic motivation to learn physics dur-

ing the distance teaching period, while there are other important motivational and cognitive aspects of learning, such as learning strategies and engagement in studying, which could be assessed in further research. Also, the assumptions were tested only in the context of physics which is specific in the ways of delivering instructions to students (e.g., Duit et al., 2014; Redish, 1994). In future studies, it would be very important to compare the experienced epistemic emotions in different subjects to test if they are highly subject-specific or if their intensity is similar between subjects.

### Conclusion

The study showed that curiosity and enjoyment, as positive activating epistemic emotions, partially mediated the relationship between value appraisal and intrinsic motivation to learn physics. Besides this, confusion was a partial mediator in the relationship between control appraisal and extrinsic motivation to learn, and a full mediator in the relationship between value appraisal and extrinsic motivation to learn. This study is, to our best knowledge, the only published study assessing epistemic emotions in the distance teaching period during the first lockdown. The results gave us important insight into the emotional and motivational functioning of students in that period. It showed us that most of the assumptions of the control-value theory of achievement emotions (Pekrun, 2006) are also valid in the online context. Emotional experiences are an important and inseparable part of the learning and teaching process, and this study emphasized that even in the online learning setting, which should not be forgotten while working with students, regardless of whether the surrounding is virtual or traditional.

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## Meaning, Religiosity, and Resilience During the COVID-19 Pandemic in Croatia

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### Abstract

**Background and Aim:** The logotherapeutic approach is based on the premise that the discovery of meaning in specific and even very difficult situations in life can help to overcome life's challenges. The aim of this study was to determine whether there will be a synergy (joint action) of resilience and religiosity in terms of the perception of the current life situation as meaningful and in terms of the perception of the meaning of life in general.

**Method:** A total of 509 adult participants ( $N_F = 359$ ,  $N_M = 150$ ) with an average age of 35 participated in an online study that started at the end of the first wave of the COVID-19 pandemic (May 2020). The correlation analysis included responses from the whole sample and, separately, a selected sample. The selected sample included responses from those participants who stated that they were clearly religious or clearly non-religious. In terms of resilience, only the responses of those participants whose score was lower than the 33rd percentile and higher than the 66th percentile were included in the selected sample ( $N = 269$ ). ANOVA included only the responses of the selected sample.

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**Results:** One-way ANOVA was conducted to analyze the differences between the four groups in terms of the perception of situation-specific and life meaning in general. Significant differences between groups were found. The participants who reported low resilience and who were not religious perceived personal experience in a pandemic as the least meaningful, while those whose resilience was high and who perceived themselves as religious perceived it as the most meaningful. A similar pattern was observed regarding the perception of personal meaning in general, with somewhat more pronounced group differences.

**Conclusion:** We can conclude that those who are both psychologically resilient and religious are most inclined to find meaning.

*Keywords:* resilience, religiosity, meaning, COVID-19

### **Meaning, Religiosity, and Resilience During the COVID-19 Pandemic in Croatia**

The COVID-19 pandemic is a challenging life situation with social and economic consequences, but also long-term and significant effects on mental health and well-being, even among people who are not directly exposed to the virus (Holmes et al., 2020; Hotopf et al., 2020; O'Connor et al., 2021). Discovery of meaning in specific and even very difficult life situations can help to overcome life challenges (Frankl, 2021). The meaning of life is a subjective feeling about individuals' importance in the lives of others, engaging in goal-directed pursuits and finding life and personal experiences meaningful (Heintzelman et al., 2020). The perception of meaning is key in protecting and improving mental health and well-being during stressful life circumstances and can be viewed either as a global or situational experience of meaning. The global perception of meaning refers to individuals' basic goals and beliefs about themselves and the world, whereas the situational perception of meaning refers to finding meaning in certain life circumstances or outcomes (Park et al., 2008; Karatas & Tagay, 2021).

It is difficult to connect the new pandemic circumstances to previous experiences. Since they are hard to understand, people are trying to cope with the situation while struggling with its implications and lingering uncertainties (Walsh, 2020). While searching for meaning is sometimes associated with negative outcomes, finding meaning in life can have a protective effect against negative experiences. It predicts less of a negative effect and more preventative activities in terms of health. Meaning-making and recovering from traumatic events involves a struggle to understand what was lost, to build new lives and to prevent future tragedies, so reconstructing meaning may be a central process for healing from trauma (Neimeyer & Sands, 2011).

In times of stress, disaster and crisis, the perception of life as meaningful offers stability (Walsh, 2020), and in COVID-related circumstances the meaning of life has been associated with behaviors that help prevent the spread of coronavirus (Newman et al., 2021). While the perception of meaning of life affects well-being and the various benefits of recognizing meaning in stressful situations, it is important to consider other concepts closely related to meaning that influence well-being (Newman et al., 2021).

According to previous research, meaning of life is positively correlated with resilience (Platsidou and Daniilidou, 2021; Karatas & Tagay, 2021; Mosheni et al., 2019; Du et al., 2017) and religiosity (Shiah et al., 2015; Tiliouine & Belgoumidi, 2009). Resilience is also a resource for coping with life challenges, and religious beliefs may be considered one of the resources of resilience (Schwalm et al., 2021). Considering the aforementioned mutually reinforcing relationship between said constructs, we expect them to have some influence on the perception of meaning and coping with the pandemic.

### **Meaning, Religiosity, and Resilience**

Finding meaning in stressful experiences and crises can act as a protective factor that fosters resilience (Platsidou & Daniilidou, 2021). In general, a decline in resilience and well-being during the COVID-19 pandemic has been noted (Metin et al., 2021). Meaning of life is associated with resilience (Platsidou & Daniilidou, 2021; Karatas & Tagay, 2021), and resilience is often viewed as bouncing back to our pre-crisis state. Resilience may also help to bounce forward to deal with an uncertain future, which involves constructing a new normality and recalibration. This new perspective is needed to face future challenges, rebuild and grow stronger (Walsh, 2002, 2022). The emphasis on our society's interdependence and social support may be key to understanding well-being and resilience in stressful events. Seeking support from family and relatives during the pandemic challenges is important for building community capacity for providing support (Walsh, 2020).

Another source of social and community support may be religious beliefs. Since mental health has been affected by pandemic stress, people may have turned to religion and spirituality to increase their psychological resilience (Batmaz & Meral, 2022). Religiosity is positively related to the presence of meaning, and highly religious people were more prone to participating in preventative actions (such as hand washing, avoiding travel and risk contacts) during the pandemic (Newman et al., 2021). Newman and Graham (2018) linked religious individuals' perception of the lack of control over the events that happen in their life to their belief that God controls their life in some way. This

consequently leads to higher well-being, but in the pandemic circumstances, it may also lead to a lower propensity to take preventative action (Newman et al., 2021). On the other hand, religiosity can act as a motivator for an individual to give priority to moral values above self-interest (Kaur, 2020). Abbott and Franks (2021) find that nonreligious individuals are less likely to engage in adaptive coping strategies and that they have higher levels of dysfunctional coping, which were in turn associated with higher levels of distress.

Religiousness had a mediating effect on the relationship between resilience and fear of COVID-19 (Batmaz & Meral, 2021), and spirituality explains more than 10% in the total variance of life satisfaction (Esteban et al., 2021). Meta-analyses indicate that there is a moderate relationship between religiosity/spirituality and resilience in the healthy population and in the population experiencing stressful events, but compared to spirituality, religiosity is less related to resilience (Schwalm et al., 2021). The mechanisms underlying the connection between religiosity and resilience are unknown, but it is believed that common underlying factors such as optimism, social support, positive emotions, and the search for meaning in life contribute thereto. In addition, some measures of resilience include spiritual components that can mediate the relationship between resilience and religiosity (Schwalm et al., 2021). Since the most plausible explanation is that spirituality influences resilience, resilient people need not be religious, though religious people will probably be more resilient (Schwalm et al., 2021). Schwalm et al. (2021) suggest that future research should investigate the effectiveness of spirituality and religiosity as aspects of resilience interventions. Religiosity may be a pathway for finding meaning and support in situations of distress (Kaye-Kauderer et al., 2021).

Spirituality, religiosity and resilience are cross-connected constructs related to the meaning and purpose of life as sources of motivation and overcoming difficulties (Vieira, 2010; according to Schwalm et al., 2021). The aim of this study was to determine the role of resilience and religiosity in perceiving the current life situation as meaningful and in terms of the perception of the meaning of life in general. The aim was also to determine whether there is a combined effect of religiosity and resilience to meaning-making.

## Method

### *Participants*

The study comprised 509 participants, the age ranging from 18 to 75 years ( $M = 35.04$ ;  $SD = 12.68$ ). A total of 70.5% of the participants were female and

29.5% were male. More than 80% of the participants had a university degree or higher-education degree. Most participants (49.5%) lived in the City of Zagreb, and others came from other counties in the Republic of Croatia.

The analysis included only the responses of those participants who stated that they were clearly religious or clearly non-religious. On the "religiosity" item, 18.2% of participants had unclear or indifferent attitudes, from 6 possible answers (1 – "I am a convinced believer and accept everything my religion teaches me", 2 – "I am religious even though I do not accept everything my faith teaches me", 3 – "I think about it a lot, but I'm not clear whether I believe it or not", 4 – "I'm indifferent to religion", 5 – "I'm not religious, although I have nothing against religion", 6 – "I'm not religious and I am an opponent of religion") 18.2% of the participants opted for answers 3 or 4. Therefore, we decided to select only those participants who stated themselves as religious (1 or 2) or not religious (5 or 6), believing that these two categories most clearly reflect the differences in attitudes toward religiosity. Similarly, the resilience distribution was symmetric (the ratio of skewness to standard error was 1.59) and most answers are grouped around mean values. Therefore, we decided to select only those participants who, according to the percentiles, are the most resilient and those who are the least resilient. In terms of resilience, only the responses of those participants whose score was lower than the 33rd percentile and higher than the 66th percentile were included.

The included participants ( $N = 269$ ) were then divided into four groups: low/high resilience x low/high religiosity.

### *Measures*

Personal experience meaning during the COVID-19 pandemic was measured using the question "Do you think your personal experience during the COVID-19 pandemic has some meaning?". The participants provided answers on a 5-point scale (1 = *strongly disagree*, 5 = *completely agree*).

Meaning of life, in general, was measured using the question "Do you think that your life, in general, has some meaning?". The participants answered using the same scale (1 = *strongly disagree*, 5 = *completely agree*).

Religiosity was measured by asking "What is your current attitude towards religion?". The respondents answered by choosing a category (1 = "I am a convinced believer and accept everything my faith teaches me", 2 = "I am religious even though I am not I accept everything my faith teaches me", 3 = "I think a lot about it, but I'm not clear whether I do believe or not", 4 = "I'm indifferent to religion", 5 = "I'm not religious, although I have nothing against religion", 6 = "I'm not religious and I am an opponent of religion").



Resilience was measured through the Brief Resilience Scale (Smith et al., 2008; Slišković & Burić, 2018). The scale consists of six items (example: “I usually recover quickly after hard times.”), with a response scale of 5 degrees (1 = *strongly disagree*, 5 = *completely agree*). After recoding the inverted particles, the total score was formed as an average. A higher score indicates a higher level of resilience. The scale had good metric characteristics on the Croatian sample (Slišković & Burić, 2018). In the conducted research, one-factor structure and satisfactory scale reliability were confirmed (Cronbach’s  $\alpha = 0.87$ ).

### *Procedure*

The data were collected as part of the research project entitled “Psychological and sociological predictors of well-being during and after the COVID-19 pandemic” conducted by a multidisciplinary research team of the Faculty of Croatian Studies, University of Zagreb, from April 2020 to January 2021. The questionnaires were assembled on the LimeSurvey platform and administered online. Participants were contacted by e-mail and various Facebook groups.

In order to answer the research questions, we formed four groups of participants, based on their answers on religiosity and resilience scales: non-religious/low resilience, non-religious/high resilience, high religiosity/low resilience, and high religiosity/high resilience. As for religiosity, only the participants who chose answers 1 and 2 (53.8%; 1 – “I am a convinced believer and accept everything my faith teaches me”, 2 – “I am religious even though I am not I accept everything my faith teaches me”) were placed in the high religiosity group, and the participants who chose answers 5 and 6 were included in the non-religious group (27.9%; 5 = “I’m not religious, although I have nothing against religion”, 6 = “I’m not religious and I am an opponent of religion”). The participants who opted for answers 3 or 4 (18.3%; 3 = “I think a lot about it, but I’m not clear whether I do believe or not”, 4 = “I’m indifferent to religion.”) were excluded from further analyses. Similarly, the resilience groups were made by including only the responses of those participants whose score was lower than the 33rd percentile ( $M = 2.83$ ) and higher than the 66th percentile ( $M = 3.50$ ). After that we conducted the statistical procedures of descriptive statistics, correlation, one-way ANOVA, and post-hoc tests.

## **Results**

Table 1 shows that the correlation between the perception of the general meaning of life with resilience is low ( $r_{n=509} = .292, p < .01$ ;  $r_{n=269} = .373, p < .01$ ) while the correlation of perception of general meaning and perception of

**Table 1**

*The correlation between resilience, religiosity, perception of general life meaning and perception of personal meaning in the pandemic experience*

	M (SD)	1	2	3	3
1. Psychological resilience	3.14 (.685)	1	.292**	.111*	.057
2. Perception of general life meaning	4.0 (.779)	.373**	1	.406**	-.173**
3. Perception of personal meaning in pandemic experience	3.40 (.961)	.136*	.418**	1	-.150**
4. Attitude towards religion	2.98 (1.622)	.060	-.179**	-.181**	1
M (SD)		3.15 (.868)	4.02 (.806)	3.45 (1.011)	2.96 (1.773)

Note: \* Correlation is significant at the .05 level (2-tailed), \*\*Correlation is significant at the .01 level (2-tailed). The results of the whole sample are shown above the diagonal, and the results of the selected sample below the diagonal

personal meaning in the pandemic experience is moderate ( $r_{n=509} = .406, p < .01$ ;  $r_{n=269} = .418, p < .01$ ) in the whole sample, but also in the selected sample. Also, in both samples attitudes toward religion were lowly associated with perceptions of the general meaning of life ( $r_{n=509} = -.173, p < .01$ ;  $r_{n=269} = -.179, p < .01$ ) and personal meaning in the pandemic experience ( $r_{n=509} = -.150, p < .01$ ;  $r_{n=269} = -.181, p < .01$ ).

Before conducting the one-way ANOVA, we tested the assumptions. According to Shapiro-Wilk test, perceptions of the general meaning of life and personal meaning in the pandemic experience were not distributed normally ( $p > .05$ ), but distributions across all four groups are negatively asymmetric (asymmetrical in the same direction). Distribution variances of perception of personal meaning in pandemic experience ( $F = .569, p > .05$ ) and perception of the general meaning of life ( $F = 1.772, p > .05$ ) are homogeneous. As can be seen in Table 2, the group of participants that perceive themselves as highly religious and highly resilient is the largest ( $N = 96$ ), followed by the highly religious/low resilient group ( $N = 76$ ), non-religious/high resilient group ( $N = 57$ ), and non-religious/low resilient group ( $N = 41$ ). One-way ANOVA was conducted to analyze the differences between the four groups in terms of the perception of situation-specific and life meaning in general. The results show that there is a statistically significant difference between the groups in the perception of the personal meaning of pandemic experience ( $F = 5.423, p < .01$ ) as well as in the perception of the general meaning of life ( $F = 13.785,$

**Table 2**

*One-way ANOVA results of differences in general life meaning and personal meaning of pandemic experience with respect to combinations of levels of religiosity and resilience*

		N	M	SD	ANOVA			Observed power
					F (df1,df2)	p	$\eta_p^2$	
Perception of personal meaning of pandemic experience	non-religious/low resilience	41	3.00	1.072	5.413 (3, 269)	<b>.001*</b>	<b>.058</b>	<b>.934</b>
	non-religious / high resilience	57	3.35	1.026				
	high religiosity/low resilience	76	3.43	.957				
	high religiosity/high resilience	96	3.72	.948				
Perception of general meaning of life	non-religious / low resilience	41	3.56	.896	13.785 (3, 269)	<b>.000*</b>	<b>.135</b>	<b>1.00</b>
	non-religious / high resilience	57	4.00	.866				
	high religiosity/low resilience	76	3.83	.823				
	high religiosity/high resilience	96	4.38	.528				

Note: \* $p < .01$

$p < .01$ ). In other words, participants who reported low resilience and who stated they were not religious perceived personal experience in a pandemic situation as the least meaningful ( $M = 3.00$ ,  $SD = 1.072$ ), while highly religious participants with high resilience perceived it as the most meaningful ( $M = 3.72$ ,  $SD = .948$ ). This was also confirmed by the LSD post-hoc test, which showed significant differences in the perception of personal meaning among almost all groups, and the most pronounced differences were found between high religiosity/high resilience and all other groups ( $p < .01$ ). Significant differences were not found between the non-religious/high resilience group and non-religious/low resilience and high religiosity/low resilience groups, as well as between the high religiosity/high resilience group and the high religiosity//low resilience group. However, belonging to a particular group explains the low percentage of variability of personal meaning in pandemic experience (less than 6%).

More pronounced group differences were found in the perception of life meaning in general. The participants who reported low resilience and perceived themselves as non-religious perceived their life as less meaningful ( $M = 3.56$ ,

$SD = .896$ ). highly religious and highly resilient participants perceived their life as generally meaningful ( $M = 4.38$ ,  $SD = .528$ ), which was confirmed by LSD post-hoc test ( $p < .01$ ). The test showed significant differences in the perception of personal meaning among almost all groups, except between the high religiosity/low resilience group and non-religious/low resilience, as well as the high religiosity/low resilience group. Belonging to a particular group explains 13.5% of the variability of general life meaning. Gender differences were not found in meaning-making.

## Discussion

Generally, the participants of this study rated their meaning of life in general, as well as personal situation/specific meaning from medium to high, regardless of the religiosity/resilience group they belong to. One-way ANOVA was conducted to examine differences between four different groups of participants. The results showed that participants who reported high religiosity and high resilience found their life in general as well as personal pandemic experience as significantly more meaningful when compared to the other three groups. These results are similar to those of Newman et al. (2021), who found a connection between meaning and religiosity, as well as to multiple research that found that the meaning of life is positively correlated with resilience (Platsidou & Daniilidou, 2021; Karatas & Tagay, 2021; Mosheni et al., 2019; Du et al., 2017). While resilience and religiosity (four groups) contribute little to explaining the personal meaning in pandemic experience (5.8%), they explain much more of general life meaning (13.5%). Such a result may reflect the fact that there has been a decline in resilience during the pandemic (Metin et al., 2021).

Research on religiosity and COVID-19 suggests that in situations like the global pandemic, religious individuals use more adaptive coping strategies, and generally show higher well-being (Abbot & Franks, 2021) which could lead to the consequences of finding more global and situation-specific meaning specific meaning. In addition, a study by Newman et al., (2021) found that higher religiosity is positively connected to compliance with COVID-19 health regulations and preventative actions, which could also indicate a lack of stress caused by the pandemic and perceiving the situation as more meaningful.

Paquette and Cheadle (2021) hypothesized that religious individuals will adhere more to COVID-19 health behaviors to protect the community and the common good due to religiousness. On the contrary, they found that individuals lower in religiousness and religious identity showed higher COVID-19 behavior compliance. Paquette and Cheadle (2021) interpreted said findings in the way that religiousness does not have benefits on health behaviors during the pandemic. Therefore the results of different surveys are inconsistent.

Killgore et al. (2020) showed that, amongst other variables, such as socializing, going out, exercising, etc., resilience was higher in individuals who prayed more often. Although some research (Batmaz & Meral, 2022; Schwalm et al, 2021) has found evidence of a positive correlation between resilience and religiosity in COVID-19, our study found a very low correlation between these constructs. On the other hand, there are some differences in perception of meaning regardless of the high/low combinations of religiosity and resilience, indicating that these two variables together play an important part in how people react to and cope with a global pandemic.

The practical implications of the work emphasize the need to strengthen resilience which can have a positive effect on the perception of the meaning of life, and consequently well-being. A review of 44 studies that examined the effects of interventions on resilience found small to moderate efficacies in improving resilience and mental health outcomes (Leppin 2014, Linz 2020). Programs included the application of a variety of therapeutic approaches (e.g., mindfulness, stress management, cognitive-behavioral techniques), strengthening emotional regulation, optimization, and self-efficacy (Kaye-Kauderer et al, 2021).

The current study's limitations include an uneven sample, especially regarding the participants' gender and level of education, as well as the fact that the data was collected online. More specifically, the majority of the sample were women (70.5%) and highly educated individuals (96.2%), although efforts were made to approach potential participants that are underrepresented (i.e., male participants, participants older than 50, participants from other counties in Croatia). Due to the online administration of the questionnaires, it is difficult to understand the psychosocial conditions under which the participants filled them out, which could have affected the results. The major problem, however, is the operationalization of meaning in the pandemic, personal meaning and religiosity by one item measure, while resilience was measured by a validated scale. Future researchers should certainly focus on validated measures of constructs in order to verify the preliminary conclusions of this research. Future research should also examine the underlying mechanisms of the joint action of resilience and religiosity to the perception of meaning, as well as their specific role in finding meaning in life and specific situations, such as the COVID-19 pandemic. Nevertheless, this specific study indicates that resilience and religiosity combined greatly contribute to finding meaning in both a general and situation-specific way.

## Conclusion

In conclusion, significant differences between the four groups were found. The participants who reported low resilience and were not religious perceived

personal experience in a pandemic situation as the least meaningful. Those whose resilience was high and who perceived themselves as religious perceived it as the most meaningful. A similar pattern was observed in the perception of personal meaning in general, with somewhat more pronounced group differences. We can conclude that both psychological resilience plays an important part in finding the meaning of life in general as well as finding personal meaning in specific situations.

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## The Relationship Between Religious Coping and Mental Health – What Do We Know?

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### Abstract

**Background and Aims:** This review will summarize the key findings and implications of religious coping for mental health. Religious coping is a process in which a person tries to understand and cope with difficult events using religious beliefs and behaviors (confession, praying, attending the congregation, etc.). These beliefs and behaviors can be positive or negative. Positive religious coping is often referred to as seeking and nurturing a relationship with God where a person feels safe and finds meaningfulness while coping. Negative religious coping includes insecurity and conflict in the relationship with God and others, where some people can feel abandoned and/or punished by God or their congregation.

**Method:** Many findings show the important role of positive and negative religious coping in mental health and well-being.

**Results:** According to extensive research, positive religious coping is associated with better adjustment in negative situations, higher life satisfaction and well-being, less psychological distress, and fewer feelings of guilt, anxiety, depression, and helplessness. Negative religious coping can be associated with poor physical health, poor well-being, higher extrinsic orientation, PTSD symptoms and a higher level of worry, but positive religious coping can buffer

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the mentioned effects of negative religious coping on anxiety and depression. Research also shows that well-being was positively associated with positive religious coping and negatively with negative religious coping. Less reliance on religious coping and younger age was associated with more depressive symptoms according to research during the COVID-19 pandemic. The research also shows that religious coping has a mediator role in the relationship between religiousness and mental health in presence of stress, yet findings on the moderator role of religious coping are inconsistent.

**Conclusion:** The Catholic Christian Meta-Model of the Person offers an integrated approach to the mental health practice but could also serve as a theoretical framework in explaining the relationship between religious coping and mental health. Implications for further research are discussed.

*Keywords:* religious coping, mental health, well-being, anxiety, COVID-19

### **The Relationship Between Religious Coping and Mental Health – What Do We Know?**

Since mankind exists, coping with demanding events has been an almost inevitable factor in everyday life, especially during the COVID-19 pandemic. Many people struggle and have psychological disorders such as anxiety, trauma and depression when facing stressful life situations (Kar et al., 2020). According to the transactional model by Lazarus and Folkman (1984), stress is a combination of cognitive, emotional and behavioral reactions toward the potentially dangerous event (stressor), and it depends on the interpretation of the stressor (primary appraisal), as well as on the analysis of the available resources (second appraisal). Therefore, coping happens when a person interprets an event as troublesome and tries to handle it. Some models of stress and coping (Gore, 1985; Lazarus and Folkman, 1984; Park, 2005) differentiate between two types of coping: problem-focused and emotional. A person can overcome stress using the former while trying to change a stressful situation itself or emotion-focused coping to change the personal relation to the event. Problem-focused coping involves planning and taking action toward the stressor, while emotion-focused coping can be avoided by facing the problem, but also by using humor and talking about a stressful situation. The meaning-making model of coping (Park & Folkman, 1997) suggests that global beliefs serve as cognitive structures of everyday life events which influence global goals. This model also includes initial causal appraisals as the appraised meaning of events which answers “Why?” when a challenging event happens (Frankl, 1997; Park, 2005).

Religion can also play an important role in coping (Pargament, 1997) and be a part of the appraised meaning of stressors (Park, 2005). According to McIntosh (1995), religion in many cases shapes the core schema and self of a person, but it can also be important in terms of purpose (Baumeister, 1991).

While facing stressful events, people frequently use religiosity while coping, such as praying to God and attending religious rituals (Pargament et al., 1998). Furthermore, many studies found a connection between some religious coping strategies and well-being, as well as with mental health issues like anxiety and depression (Pargament et al., 1992; Gall & Guirguis-Younger, 2013). Religious coping can also serve as a useful tool when facing traumatic experiences (Milas, 2010). Since plenty of empiric studies show the importance of religious coping, in this review of existing literature, we aim to summarize how religious coping is associated with mental health and suggest implications for future research. A review was made based on an analysis of the literature on religious coping topics.

### **Religion and Coping**

Religion can be defined as a system of beliefs, understanding, behavior and ceremony where a community or an individual has a relationship with the transcendental or God which affects a person's value system in everyday life (English & English, 1976, as cited in Ćorić, 2003). There is a common misconception that religiosity means the same as spirituality. However, religiosity is actively living in terms of a religious system, while spirituality does not require activities connected to religion and is more personal, but it does not necessarily exclude religiosity (Brlas, 2014). Religion also can be defined as a "search for significance in ways related to sacred" (Pargament, 1997, p. 32). Therefore, religious coping is "a search for significance in times of stress" (Pargament, 1997, p. 90).

Research findings by Schuster et al. (2001) found that after the 9/11 attacks, the American population 9/11 turned to religion to cope with the traumatic event. Therefore, it is critical to understand the role of religion in times of coping. Religious coping theory by Pargament (1997) includes steps in the process of coping similar to the transactional model of coping with stress (Lazarus & Folkman, 1984): The first step is religious appraisal where a person assesses demanding events as God's will, which continues with the second appraisal in which individual chooses religious coping activities associated with religiosity like praying or reading holy scripts. When coping, religion must be available and embedded in the orienting system of an individual (Pargament, 1997). Furthermore, religion is present from the beginning to the end of a coping process and is multidimensional (Harrison et al., 2001; Pargament et al., 2005). According to Pargament et al. (2000), religious coping includes discovering meaning, garnering control, acquiring control by being close to God, achieving closeness with other people, and transforming life. Religion can have a conversional

role in coping if an individual is maintaining spirituality and purpose in life, but it can also be transformational if a person finds new meaning in their life (Pargament, 1997; Pargament et al., 2005b). Religious coping methods can be positive, active, problem-focused, cognitive-behavioral, negative, passive, and emotion-focused, but also spiritual, where religious affiliation is not necessarily implied (Baldacchino & Draper, 2001; Harrison et al., 2001).

There are three ways in which religion can be a part of searching in problem-solving (Pargament et al., 1988): a deferring approach, a self-directing approach and a collaborative approach. In the deferring approach, a person fully gives up on responsibility to God where the person relies on God's control. On the other hand, the self-directing approach happens when individuals rely only on themselves and their resources without turning to God for help. In the collaborative approach, a person shares control and responsibility with God when problem-solving occurs. Research findings show many different religious coping methods which can be grouped into two categories: positive and negative religious coping (Pargament, 1997; Pargament et al., 1998). Positive religious coping can be viewed as a secure relationship with God, a positive view on life using religiosity and spiritual connection with others, while negative religious coping can be manifested as an insecure relationship and tension with God and other people (Pargament, 1997; Pargament et al., 2004).

### **Outcomes of Positive Religious Coping**

According to the Religion-Health connection theory (Ellison & Levin, 1998), religion can have beneficial outcomes for mental health. Research findings show that positive religious coping is associated with lower levels of psychological distress and higher levels of stress-related growth (Pargament et al., 2000). Ano and Vasconcelles (2005) found a moderate positive relationship between positive religious coping and positive outcomes to stress. The authors also found that religious coping was associated with better psychological adjustment. Research also has shown religion as comfort in times of stress for religious individuals (Van Dyke & Elias, 2007).

A research on the sample of Saint Francis Youth found that well-being is positively associated with positive religious coping (Fusić, 2018). Positive religious coping is also associated with higher levels of self-esteem, life satisfaction, quality of life and less depression, anxiety, and guilt symptoms (Fusić, 2018; Koenig et al., 1998; Oler, 1997; Pargament et al., 1998b).

Some findings also show a connection between positive religious coping and physical health. According to Koenig et al. (1997, 1998), cognitive status is better among individuals who use religious coping strategies. Furthermore,

research has shown that positive religious coping can be associated with better quality of life of cancer patients, but also with higher self-care (Goudarzian, 2019; Tarakeshwar et al., 2006). On the sample of ultra-orthodox Jews with psychotic disorders, findings of the research (Serfaty et al., 2020) showed that women who use positive religious coping strategies have increased treatment expectancy and a better quality of life. Celik et al. (2021) found that diabetics with higher levels of positive religious coping did not take their medication regularly and did not pay attention to their diet and exercise.

### **Outcomes of Negative Religious Coping**

According to Pargament et al. (1998a), negative religious coping is associated with more depressive symptoms compared to positive religious coping. Mohammedzadeh and Najafi (2020) found that individuals who used negative religious coping had higher results of death anxiety, death obsession and death depression compared to individuals who used positive religious coping. Recent research showed that negative religious coping is associated with lower life satisfaction and more depressive, anxiety and PTSD symptoms than positive religious coping (Abu-Raiya, 2020; Francis et al., 2019; Gerber et al., 2011; O'Brien et al., 2018). Research has also indicated that individuals who use more negative religious coping strategies have poorer quality of life and poorer psychological and existential dimensions of quality of life (Lee et al., 2014; Tarakeshwar et al., 2006). Park et al. (2018) found that negative religious coping predicted negatively and consistently predicted well-being indicators 2.5 years later. On the sample of pregnant women, negative religious coping was associated with depressive symptoms in women with a high-risk pregnancy, while there was no association in low-risk pregnant women (Vitorino et al., 2017). A research on the residents of Bosnia and Herzegovina found that religious coping was not significant in the prediction of PTSD (Fadilpašić, 2016).

When it comes to physical outcomes, many research findings show the harmful role of negative religious coping. Negative religious coping can be predictive of higher mortality in the sample of ill individuals (Pargament et al., 2000). On the sample of myeloma patients undergoing autologous stem cell transplantation, negative religious coping predicted worse depression, emotional well-being, worse post-transplant anxiety and transplant-related worry (Sherman et al., 2009).

### **Mediator and Moderator Role of Religious Coping**

The combined religious moderator-deterring model (Pargament, 1997) suggests that religious coping can deter as a moderator when stress occurs and it

can protect a person from harmful outcomes of a stressful event. A research on individuals who had to deal with the stress of kidney transplant surgery showed that religious coping was associated with better adjustment of patients and their close family and friends, while religious affiliation had a moderator role in this relationship where religious coping of Protestants was more successful in promoting adjustment than Catholics (Tix & Frazier, 1998). Recent research findings from the field of work psychology found that positive religious coping has a buffering role in the relationship between work-family conflict and job satisfaction and it also can boost job satisfaction and reduce work-family conflict (Pandey and Singh, 2019).

According to O'Brien et al. (2018), positive religious coping can buffer outcomes of negative religious coping on depression and anxiety. Furthermore, in the research by McCleary-Gaddy and Miller (2019), negative religious coping fully mediated the relationship between prejudice and psychological distress, while positive religious coping did not have a mediator role in the mentioned relationship. Dolcos et al. (2021) found that the mediated role of coping self-efficacy and reappraisal as a segment of structures that produce a protective role of religious coping in times of emotional distress. A research on the sample of Type 2 diabetes patients showed that religious coping and social support mediated the relationship between religiosity and medication adherence, but also religious coping was the mediator between religiosity and health-related quality of life. Wnuk (2021) found that positive religious coping mediated between faith and life satisfaction but also improved life satisfaction of Roman Catholic female students when combined with frequent religious activities. A research also showed that the collaborative religious coping method mediated between religiousness to distress and well-being (Fabricatore, 2000).

Although many research findings found the mediating role of religious coping, studies are not consistent on the moderating role of this construct. Vazquez et al. (2021) found that religious focus and seeking spiritual support as religious coping methods did not moderate the relationship between discrimination and distress on the sample of Black-White biracial Christians. A study by Ross et al. (2009) showed that religious coping methods, such as deferring, self-directing, collaborative and turning to religion moderated the connection between religion and positive and negative adjustment. Ahles et al. (2016) found that negative religious coping moderated stress and depression in highly religious involvement by undergraduates of a Christian university. A research by Fabricatore (2000) showed that collaborative religious coping did not have a moderator role between mental health and a stressor while deferring religious coping moderated the said relationship. On the sample of drought survivors in Botswana, religious coping did not significantly moderate trauma symptoms

and posttraumatic growth (Zeligman et al., 2020), but Nguyen (2018) found the moderator role of positive religious coping between PTSD and posttraumatic growth on the sample of military veterans. Pandey and Singh (2019) also found the moderator role of religious coping in the relationship between work-family conflict and job satisfaction.

### **Religious Coping and COVID-19**

Coping with stress and anxiety has been part of our everyday lives, especially since the COVID-19 pandemic started. Many research findings show how religious coping is associated with mental health during these challenging times. On the sample of Christians and Muslims in the United Arab Emirates, Thomas and Barbato (2020) found a negative relationship between positive religious coping and a history of psychological disorders. Pirutinsky et al. (2020) conducted a research on the sample of American Orthodox Jews during the pandemic, finding a strong correlation between positive religious coping, trust in God, and intrinsic religiosity with a more positive impact and less stress, whereas negative religious coping was inversely associated with said constructs. Furthermore, research findings showed that religious coping can predict death anxiety in older Arab adults (Rababa et al., 2021). The same research found that female participants have higher levels of religious coping and lower levels of death anxiety compared to male participants. Findings of the research on adults with diagnosed chronic illness in the USA showed that physical, psychological and interpersonal loss at higher levels of positive religious coping is positively associated with suffering (Cowden et al., 2021). DeRossett et al. (2020) found that higher levels of negative religious coping are positively associated with higher levels of COVID-19 anxiety, while positive religious coping has a weak negative relationship with COVID-19 anxiety when other variables are controlled. A research on the Arab population (Yıldırım et al., 2021) found a positive relationship between negative religious coping and depression, stress and anxiety, although positive religious coping was negatively associated with stress and depressive symptoms. A Croatian research during COVID-19 found an association between depression and negative religious coping which is explained by a possible belief that the pandemic is punishment by God (Pačić-Turk et al., 2020).

### **Religion and Clinical Practice**

Since religious persons are often hesitant to seek psychological help (Loewenthal and Cinnirella, 1999; Loewenthal et al., 2001), it is crucial to of-

fer them a religious dimension in treatments, since research points to beneficial outcomes of religious psychotherapy on patients, such as increased quality of life and reduced depression and anxiety (Askari et al., 2018; Behdost et al., 2019; Eilami et al., 2019). According to Koenig (2007), it is crucial to find out what religious coping method is used by patients and how religiosity can help overcome mental health struggles. One of the psychological practices that use religiosity to help a person are psychospiritual interventions which include religious questions and practices added to standard counseling, but also combine counseling work of mental health experts with priests who provide spiritual help (Cummings & Pargament, 2010). Spiritually integrated psychotherapy is also an effective treatment for patients, as it provides religious or spiritual resources added to psychotherapeutic interventions where the therapist discusses meaning, identity and relationships with the patient, and promotes positive religious coping methods (Cole & Pargament, 1999). This kind of clinical practice can protect the well-being of patients who undergo declining cancer treatment and help to solve their spiritual struggles (Cole & Pargament, 1999; Cummings & Pargament, 2010). Praying and religious meditation are also powerful ways to decrease anxiety and depressive symptoms, but also to increase enhance physical and mental health (Pargament et al., 2005b). A research on patients with cerebrovascular accidents showed a positive relationship between praying and spiritual health (Ilali et al., 2016), which confirms the important role of praying for the health of a person.

One of the recent holistic theories is the Catholic Christian Meta-Model of a Person which is an integrated framework for mental health practice that includes the psychological perspective of a person, but also the theological and philosophical perspective (Vitz et al., 2019). According to the Meta-Model, a person is described as God's creation and "an individual substance of a rational (intellectual), volitional (free), relational (interpersonal), sensory-perceptual-cognitive (pre-rational knowledge), emotional, and unified (body-soul) nature" (Vitz et al., 2019, p. 5). This Meta-Model also highlights the importance of vocational calling, the uniqueness of a person and a life of virtue. It also explains in-depth the psychological and theological side of an individual.

### **Implications for Future Research**

Since the Catholic Christian Meta-Model offers an integrated approach in describing an individual, it would be convenient to construct an instrument for measuring the hypotheses of the Meta-Model in the context of religious coping research. Furthermore, religious content on social media could also have a role in religious coping. Considering the fact that social media has a role in

faith commitment (Fogenay, 2013), it would be interesting to examine the relationship between the usage of social media for religious purposes and religious coping methods. Future research on religious coping should focus more on the longitudinal method and a combination of qualitative and quantitative methods on different religious affiliations. It would be helpful to research how religious treatment affects the mental health of mentally ill individuals and if it has a role in changing personal religious coping methods.

### Conclusion

Many individuals turn to religion when coping with demanding events in their life in order to find a source of calmness and meaningfulness. Religious coping has an important role in mental health, as it can benefit, but also harm, the well-being of a person, depending on which religious coping method is used. Positive religious coping may enhance life satisfaction, well-being and physical health, while negative religious coping may enhance depressive and anxiety symptoms. In the context of a clinical approach, psychospiritual treatments could serve as valuable help for persons who need an integrated type of help.

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## Parentification of Children of Alcoholics as Emotional Abuse and Relational Family Therapy: A Case Study

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### Abstract

**Background:** Growing up with an alcoholic parent can have a long-lasting effect on children and contribute to a variety of challenging outcomes in adulthood. Alcoholics tend to prioritize alcohol over family, neglect family and other obligations, become verbally and physically abusive and withdraw from loved ones. A central issue in an alcoholic family is also boundary violations that often occur as operational and emotional overburdening of children. This is closely related to the parentification of children, which is a common experience of children of alcoholics. Parentified children take on parental roles to compensate for the absence of a substance-abusing parent. The demands of acting like an adult are usually inadequate to the child's level of development and abilities, and as a result, the child cannot fully be a child. This is a hidden form of emotional abuse in a relationship, which is a particular type of interpersonal trauma. This often reinforces maladaptive behaviours, cognitions, and overall psychosocial functioning of children of alcoholics and is also often difficult to overcome in adulthood.

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**Aim:** The purpose of this paper is to present the consequences of parentification and toxic emotional dynamics when children grow up in an alcoholic system and to explore how adult children of alcoholics can change their experience and function in the process of Relational Family Therapy.

**Method:** The case study method will show the therapeutic process with a client who was an adult child of an alcoholic, focusing on the analysis of processing consequences of parentification with Relational Family Therapy interventions.

**Conclusion:** The presented case study confirms that ACoAs are victims of parental alcoholism and justify the need for psychosocial and therapeutic support even in their adulthood. The legacy of these experiences is difficult feelings that follow them like a shadow in adulthood and are an important element that needs to be addressed in the recovery process.

*Keywords:* family, alcoholism, adult children of alcoholics, parentification, psychotherapy

### **Parentification of Children of Alcoholics as Emotional Alcoholism in the family**

Family, family upbringing and relationships in a child's life from the earliest period are irreplaceable; for healthy development, a child needs their parents, who are their most important and first educators (Gerhard, 2004). Families in which parents struggle with alcoholism do not meet these needs. Addiction has devastating effects on the entire family. Substance abuse by parents has a long-term impact on the entire family system – both on the couple's relationship and the children.

The damage suffered by families due to parental alcoholism can be extreme and direct as well as less obvious, but it is inevitably there (Caan, 2013). Thus, on one end of the continuum, there may be constant quarrels between parents related to alcohol, domestic violence, various risky behaviors, and child abuse, all of which cause emotional suffering that cannot be easily measured. This suffering has lasting effects on the personality development of individual family members and their ability to form trusting relationships. However, the effects of alcoholism in parents may be more indirect, for instance, financial hardship (due to job loss or spending income on alcohol), parental separation, parental death, and foster care placement (Marshal, 2002). Alcoholism negatively affects marital satisfaction and stability. There is more physical and psychological abuse in couple relationships, and divorces are quite common (Rodriguez et al., 2014), which also affects the child. Excessive alcohol use by a parent significantly increases the risk of being abusive to the child in one way or another. The more family members abuse or are addicted to alcohol, the more likely it is that the children will be abused or neglected (Gold & Adamec, 2010). There is also a

significant increase in the risk of a child becoming a problem drinker in adulthood, as evidenced by the results of studies on stressful childhood experiences that are often present in families with alcoholic parents (Caan, 2013). Parental alcoholism also greatly increases the likelihood that offspring will develop some form of mental disorder (McLaughlin et al., 2012). Children of alcoholics often show many behavioral problems, such as delinquency, addictive behavior, and resistance to social norms (Caan, 2013).

Activities and dynamics in families with parental alcoholism are subject to addictive behavior. The whole family climate is subordinated to addiction. In comparison with non-alcoholic families, those with (an) alcoholic parent(s) suffer from a higher level of conflict, aggressiveness, accusations, and opposition, and a lower level of connection and family closeness. Researchers also report lower levels of physical and verbal expression of positive emotions, less emotional support, warmth, and care among family members (Johnson, 2001; Kelley & Schroeder, 2008).

### **Pathological Emotional Dynamics in an Alcoholic Family**

In these difficult circumstances of parental alcoholism, which harms the whole family, a particular emotional dynamic is established in the family which is emotionally abusive and does not provide the child with a healthy developmental environment. When the family as a system struggles with the challenges of addiction, the balance in the system is often shaken and is maintained mainly by dysfunctional patterns marked by parental dysfunction and child adjustment. In such families, rules, roles, and expectations emerge that ensure a state of stability in the family, even if that stability is based on pathological patterns (Carr, 2006).

The parental attitude of addicted parents is usually dysfunctional, inconsistent, and chaotic, so one of the negative characteristics of families with addicted parents is instability, and children never know what to expect from moment to moment. Therefore, they often live in constant tension and fear that the family will fall apart and their lives will become even messier (Geddes, 1993). The rules are volatile, often depending on the whims of the adult authority. Father and mother are not harmonized, they are often even contradictory in their instructions to children. The duality in parents' actions is also reflected in the fact that when they are sober, they are good and kind, but when they are drunk, they are rude and unsympathetic. In such an environment, children constantly feel that they never do anything right, and consequently, they begin to feel that something is very wrong with themselves (Ruben, 2001). Due to emotional tension, children are constantly anxious, they adapt and



react to the behavior of the alcoholic, the family does not enable autonomous development of the individual, their self-image is markedly negative (Crespi & Rueckert, 2006). Children thus try their best to adapt to the current situation and, often to their detriment, do everything to maintain balance in the family and its functioning (Hooper & Wallace, 2010).

Families with alcoholic parents are poorly differentiated, which is a consequence (and cause) of inappropriate boundaries. One of the central themes in an alcoholic family is boundary violation (Kelley et al., 2007). Boundaries are open and covert rules that govern family interactions and are an important factor in a functional family and the well-being of all family members (Gostečnik, 2021). In alcoholic family systems, there is often a significant lack of appropriate boundaries, which is reflected in the fact that parents do not perform their parental role and children cannot be children. Thus, there is no real possibility in the family for one's individuality or uniqueness (Ruben, 2001).

Due to inappropriate boundaries in families with alcoholic parents, children are emotionally overwhelmed and subordinate to the atmosphere in the family. This often means they are overloaded with tasks and roles for which they have not matured emotionally, which significantly affects healthy development (Earley & Cushway, 2002). Children often step into the role of caregiver for other family members (siblings or helpless and incompetent parents), which is called child parentification (Kearney et al., 2000). Parentified children or adolescents take on the roles and responsibilities of dysfunctional parents before they are emotionally or developmentally mature enough to do so (Kelley et al., 2007). By doing so, they try to bring order to the family and compensate for deficits arising from the disruption of basic parental functions caused by the drinking parent (Pasternak & Schier, 2012).

When the roles of parents and children are interchanged, children often sacrifice the fulfilment of their own needs to take care of physical (instrumental parentification, e.g., managing or contributing to household income, preparing meals, and disciplining and taking care of younger siblings) or emotional (emotional parentification, e.g., being a confidant of or a mediator between parents or family members) needs of a parent or sibling (Kelley et al., 2007). This is more than a child can handle, as the requirement to act like an adult is too demanding for their level of development and abilities. Because of this, they cannot fully live their childhood. It is an interpersonal trauma that is a hidden form of emotional abuse in relationships (Pasternak & Schier, 2012). It is mainly reflected in the fact that children have to give up their own needs and believe that their main responsibility is to take care of their mother, father, and siblings.

What is too much for them in terms of their developmental maturity is that they experience that they are responsible for what happens in the family, and they generalize this to other life situations and relationships. They also become hyper-responsible for the well-being and happiness of others, as their sense of worth is often connected with being praised and appreciated by others. In this way, they create the illusion that they are powerful, important, and needed by others. A child who feels responsible for the behavior of alcoholic parents does not have any real power to influence change in parental behavior or family dynamics. They have little or no control over events – not because they are so bad or incompetent, but because they are not up to it, and because only the parents themselves can take care of that. However, they do not yet know this, so they often feel guilty when things do not turn out the way they should. Because of this feeling of responsibility, they are willing to do anything, even suppress themselves. They learn very early on not to have any demands or desires connected with the fulfillment of their emotional needs. These are not as important as the wishes and needs of others. The purpose of the child is to maintain family functioning, to be responsible for what adults should do, and not to lose this image at any cost (Hall & Webster, 2007). This submission to the system ensures survival. Children carry such perceptions of family rules and relationships with them into adolescence and adulthood and build a distorted foundation on which they live and maintain the illusion that all is well (Ruben, 2001).

### **Adult Children of Alcoholics**

The characteristics and nature of growing up in an alcoholic family increase the vulnerability of children of alcoholics to develop certain problems even later in adulthood (Harter, 2000). Adult children of alcoholics (ACoA) are people over the age of 18 who spent all or part of their childhood in a dysfunctional family where the biggest problem was alcohol addiction of one or both parents (Pasternak & Schier, 2012). These adults suffer from the effects of alcoholism in the primary family, which some call the “ACoA syndrome” (Harter, 2000). They often have repressed and unresolved childhood content that co-shapes their functioning in adulthood. This functioning is often emotionally and socially immature (Pasternak & Schier, 2012). All this is the result of growing up with parents who did not provide the child with a safe and healthy developmental environment.

Certainly, not all adult children of alcoholics have the same problems. Growing up in an alcoholic family does not necessarily mean that an individual is bound to have problems, but it is a serious and important risk factor

for developing problems (Hall & Webster, 2007). Compared to adults coming from families where parents have not been addicted to alcohol, ACoA has a higher risk of substance abuse, developing symptoms of depression, antisocial behavior, lower self-esteem, anxiety disorders, and relational problems (Beesley & Stoltenberg, 2002; Harter, 2000). Numerous clinical observations and research confirm that ACoAs are a fairly homogeneous group with some similar characteristics on the continuum of perception and psychosocial functioning as a result of growing up in specific circumstances and dynamics present in the family due to parental alcoholism (Harter, 2000).

On the one hand, ACoAs are trapped in a child's fears and reactions, and on the other hand, as children, they had to become adults too quickly, without going through the natural stages of child development, where optimal development into a healthy adult would be possible (Pasternak & Schier, 2012). Thus, ACoA appears to have two identities: an adult and a child at the same time, as unresolved and traumatic content stemming from children's experiences of growing up with alcoholic parents, shapes their functioning in adulthood (Ruben, 2001).

It is possible to identify quite a few typical characteristics in the personality and psychosocial functioning of ACoA, which are also the result of parentification. In their adulthood, the dynamics of childhood and belief systems extend to life in general, regardless of the situation, dynamics, or actors. They usually build a sense of self and self-worth by caring for others and believe that this is the only quality that makes them worthwhile and important. However, they are constantly afraid that if they fail, they will be abandoned. They find it difficult to relax because they fear being perceived as unproductive and lazy, and not good enough (Hall & Webster, 2007). ACoAs are loyal (interdependent) beyond all reasonable limits. They often become dependent personalities who are afraid of rejection and would do anything to maintain the relationship. The consequence of this loyalty beyond reason is an excessive perception of responsibility that focuses only or primarily on the well-being of the other person if that person is recognized as fragile. Helping others involves being completely preoccupied with organizing, rescuing, or directing the lives of weaker individuals (Ruben, 2001).

ACoAs are afraid of losing control, which is due to the experience of an unpredictable family environment, where it was necessary to deny alcoholism and/or its seriousness and thus create an illusion that everything is good (i.e., under control) (Harter, 2000). Now they fear that something will collapse, reveal itself; that they will be imperfect, and therefore others will reject them. Recognizing that others may not need them and their services and guidance, care, and control makes the ACoAs feel that they are incompetent, inadequate, and have some deficits (Hall & Webster, 2007). When they experience this re-

jection, they feel that they have failed to meet the expectations of others (Ruben, 2001).

ACoAs have relationship problems. These are problems related to attachment, intimacy, and setting appropriate interpersonal boundaries (Harter, 2000). ACoAs fear conflict. Conflicts evoke an echo of a situation from which it was impossible to escape or avoid as a child when they were punished by their parents, which caused embarrassment, self-criticism (I'm not good enough), and a desperate need for approval (Hall & Webster, 2007). ACoAs are too self-critical, and consequently, have poor self-esteem (Harter, 2000).

ACoAs go through life with emotional scars stemming from growing up in a family with parental alcohol addiction. They have more physical problems than people who grew up in non-alcoholic families (Hart et al., 2003), and many ACoAs become alcohol-addicted themselves. They often feel insecure, self-condemning, and afraid of intimacy. They have learned three rules for survival: Don't talk. Don't trust. Don't feel. As they grow older, their problems with trust, relationship dependence, self-control, identity, and expression of feelings continue (Collins, 2007). ACoAs often have difficulty experiencing, expressing, and regulating their emotions, as they have experienced many emotional burdens in a dysfunctional family, and had no real opportunity for the healthy development of emotional regulation. They often repress emotions and refuse to share anything personal or vulnerable (Hall & Webster, 2007). In this way, they could risk guilt and shame because they are not good enough – they would look incompetent, and they are afraid that others would not approve of them. Self-expression is thus very selective, cautious, and premeditated (Ruben, 2001). Based on this, specific ways of experiencing oneself, others and relationships are formed (Sorocco et al., 2015), which usually means complications in everyday functioning.

### **Adult Children of Alcoholics and Psychotherapy**

ACoAs, therefore, face several complications that are in many ways also a reflection of internalized experiences from their childhood. Although they are victims of family systems where alcoholism has been present, they do not have to remain victims. In adulthood, they can embark on the path of recovery and process these painful foundations on which they have built their psychic structure.

Psychotherapy, which enables the in-depth processing of pathological patterns, can also help. Since the majority of complications in ACoA stem from inappropriate relationships resulting from parental alcoholism, interventions aimed at processing complications arising from relational injury make sense.

The model of Relational Family Therapy is aimed at identifying pathological relationships in which the individual becomes entangled, being unable to change them and repeating them. This relational wound often prevents an individual from gaining access to functional responses. Based on past attachment relationships that begin in an individual's primary family, their psychic structure has evolved, which, in the case of pathological relationships or traumatic experiences, may be marked by dysfunction (e.g., low self-esteem, feelings of incompetence, learned helplessness, and many other defense mechanisms or, in Relational Family Therapy, affective psychic constructs), which only strengthens the individual's belief that nothing can be done and changed (Gostečnik, 2017; 2021). These relationships are usually based on the core affect that underlies all relationships and creates the atmosphere to which all relationships are attuned. The client must become aware of this core affect so that they understand what is happening (Gostečnik, 2015). In Relational Family Therapy, we bring to their awareness this core affect that drives relationship dynamics.

Through the prism of the Relational Family Therapy paradigm, we can identify affective psychic constructs in personality characteristics and psychodynamics in ACoA that stem from childhood dynamics and experiences, whose task is to conceal underlying pain (core affect) that is inappropriately regulated. In ACoA, this pain, that is, the core affect, is usually deep sadness and fear of abandonment. Relational Family Therapy first sheds light on the patterns and aspects of these relationships and then, with a new relationship between therapist and client, tries to change these interpersonal relationship patterns, which means finding the core affect first, then changing the basic affect regulation system and finding a way to make affect regulation more functional (Gostečnik, 2017; 2021).

In the following, we will investigate and demonstrate the processing of complex psychodynamics in a client who was ACoA. We will focus on showing the complications arising from past experiences in the family with alcoholism, on dealing with and processing them using the Relational Family Therapy model. We were interested in what happened in the processing of psychological and relational problems ACoA during psychotherapeutic treatment.

## Method

### *Research Strategy: A Case Study*

A case study is a method of qualitative research that provides a comprehensive description of an individual case and allows its analysis, that is, a de-

scription of the characteristics of the case and events and a description of the process of discovering these characteristics (Mesec, 1998). It is a description and analysis of a case to discover variables, structures, patterns, and laws of interactions or assess success or progress (Starman, 2013), giving an intensive description and analysis of one or only a few individuals. A case study is an approach to comprehensive research of phenomena, processes, and procedures through the study of individual cases when we want their holistic and in-depth research. In doing so, we do not focus on discovering universal and generalizable truth or seeking a cause-and-effect relation but emphasize exploration and description (Golden, 2003).

In our case, we used a descriptive informal singular case study focused on the process of the individual participant rather than the group average. We were interested in what happened in the processing of psychological and relational problems ACoA in the treatment according to the model of Relational Family Therapy.

#### *Data Collection Process*

Data for analysis were collected retrospectively. When we decided on the research question (What happened in the processing of ACoA psychological and relational problems in the treatment according to the Relational Family Therapy model?), we reviewed past treatments for which we collected relevant data. We selected one case where it was evident that the client was an ACoA, who experienced emotional abuse in childhood in an alcoholic family and was a parentified child, and in adulthood, she had problems related to these childhood experiences. The sources of data were case notes and audio recordings of treatments, which were obtained with the prior consent of the client while providing treatment following ethical principles. The client was informed and agreed (by signing informed consent) that the collected data can also be used for scientific research, taking into account all ethical aspects of such research (voluntary participation, cancellation of recording, cancellation of consent with the provision of equal further therapeutic treatment, ensuring anonymity, etc.) The treatment included 12 one-hour weekly meetings with the client.

#### *Data Analysis Process*

The case was reviewed intensively and in-depth. We reviewed the therapist's notes of treatments made to monitor the process, and we also analyzed audio recordings of the therapeutic process. We paid attention to patterns, the descriptions of topics that revealed typical personality and psychodynamic characteristics of the ACoA client that led to complications, and interventions

and changes that emerged as a result of the interventions. Based on this, we created a written summary of the entire process, which consists of the findings of the therapeutic case on the processing of the consequences of parentification and emotional abuse in the ACoA's primary family according to the Relational Family Therapy model.

## Results

### *Description of the Client's Condition*

The 38-year-old client receiving psychotherapeutic treatment, which included 12 one-week sessions, was a mother of three children. She began therapy after previously completing couple therapy, which she had attended with her husband. Because she still struggled with a lot of fears, anxieties, and feelings of being trapped in an unresolved past, she decided to continue with individual therapy.

There were many childhood memories of the events with her parents and sister when she felt completely suppressed. She spoke about it with a hint of sadness and anger, but she quickly withdrew into dissociation and rationalization: she understood why it was the way it was and tried to accept it. At the same time, however, there was uneasiness and tension because of the emerging desire to be allowed to feel something that belonged to her, instead of having to always be at the service of others. This is what she was still doing, for instance, there was a tremendous amount of sadness and bitterness when she said that for every, even the most basic thing she indulges in, she seeks an apology, the approval of her husband and others, justification, instead of allowing herself to take care of herself in a relaxed way. According to her words, as a child, she was not "allowed to be a girl, had to wear short hair, was not allowed to wear dresses and or be beautiful". Even in the present, for example, she sought confirmation from her husband if she wanted to buy a dress or something feminine. She was torn between bitterness and anger that she had to be available to others and not do anything for herself, and the fear that she would not be appropriate if she showed anger and took care of herself. This caused anxiety which only deepened.

In her current situation, especially in her relationships with others (e.g., at work, in the extended family, with friends), the client experienced that she was not good or interesting enough, that something was always expected of her and that it was taken for granted that she would do so, but no one asked if she might need anything. On the one hand, this made her angry, but on the other hand,

she had a feeling that her anger made her bad and unfair and that she should be available to others because only then would she be a good person. On the outside, she was hard and rigid, it was important to her to have control (that things were systematically arranged and predictable), so she was often demanding of others (e.g., her children and husband, at work), which led to the feeling that she was uninteresting, exhausting and redundant. The more she worked, the more she tried, the less she felt loved and pleasant to be around. She said: "I am exhausted. It is never enough. I watch others being relaxed with half the effort. I work and take care, but probably not enough. There is something wrong with me."

*Growing up in an Alcoholic Family  
(Parentification and Emotional Abuse)*

The father was an alcoholic in the family, but this was not openly discussed. When he was drunk, he was absent, having retreated in his private world, and the mother supported it "for the sake of peace," but she was chronically dissatisfied. The balance in the system was established by the mother shifting a lot of responsibility to the client, who was older and had to be stronger, while her younger sister was weaker, also due to illness. As a girl, the client had to be responsible, take on adult tasks, as a girl, she could only behave in secret (e.g., put on a dress, dance, and play). She was afforded nothing beautiful from the outside world: all she got were demands. She said:

I was an obedient little girl. I really tried. But it hurt when my sister got everything in pink, while I had to wear nothing special because it supposedly didn't suit me pink. I wanted a school bag that was as beautiful as my sister's. But what I got was just a chance to take her bag out of school because she was physically weaker and sicker. And that seemed right to me.

Only if she was obedient and gave up her desires did she belong; however, it would be risky to give herself a chance and be just a child because then she would not be seen as acceptable and good. She was completely subservient to the family system. Many times she was also a scapegoat or the culprit for things that were not done. The sister was protected because she was fragile, and the father and his drinking too. She learned to be a "trash can," to take responsibility for things she wasn't responsible for because she was only acceptable if she didn't object and get angry because of the injustice. If she ever wanted to stand up for herself and her desires, she was accused of being arrogant and why she thought she was something special. She also felt responsible for the relationship between her parents. She said: "I thought if I hid their marriage certificate, they wouldn't be able to separate."



### *Treatment*

Intertwining emotions of fear, anger, and sadness were mostly felt in the therapeutic process. Anger was emerging, but it was often suppressed with fear; the client perceived it as dangerous because if she got angry, she could lose everything. If she changed, and stood her ground, she feared she would be so different and unacceptable that she would lose friends. However, the anger was quite legitimate, because all her life she stood somewhere on the edge and gave space to others; to her sister, caring for her mother and father, and now she started to feel that she no longer needed it and that she is also entitled to some attention. She consciously felt and understood this, but the fear was too intense: if she were angry, she would be strange, and inappropriate. This deep fear was also based on the feeling that if she gave herself a chance and became more demanding, she could change so much that she would lose even herself and her identity and thus also the feeling that she is still appropriate. She could feel guilty for being demanding. Thus, she maintained the construct that if she demands what belongs to her, this is condemnable, selfish, and unheard of. Based on this, she lived in old patterns, but on the other hand, she was very much overwhelmed and bitter. Therapeutic interventions were thus initially aimed at recognizing and raising awareness of these constructs that allowed her to survive and feel she was worth something, but in reality, they stole her vital life energy and caused anxiety. With the help of a therapist who mirrored these aspects, the client came into contact with deeper pain and realized the usefulness of such thinking and doing. When the therapist told her, "You are a swan, but you think you are an ugly duckling," she felt how strong her distorted and meaningless beliefs were. At the same time, deeper and more painful emotions began to awaken, especially a lot of sadness and longing to give herself a chance. Therapeutic interventions have thus focused on finding the underlying emotional aspects that were behind the constructs, but so far, there has not been enough safe space for the client to confront them. By becoming aware of these core affects and responding appropriately to these emotions, the client was able to begin to regulate this pain differently, not with constructs that gave her false reassurance and exhausted her.

It was only when the therapy addressed sadness (core affect) that this girl could not act differently because she had no choice as a child, that the client allowed herself to feel anger, which allowed her to establish a more appropriate understanding and boundaries. This enabled a new, different and more functional regulation of core affect, which is a fundamental intervention of Relational Family Therapy. She allowed herself to accept that her past behaviour was about survival. When it was suppressed and subjugated, everything could have gone smoothly, but that is no longer necessary. Now she does not have to

worry about anyone anymore, she can relax and live, she does not have to worry about anyone failing because of it. She understood that as a child she took on a lot of responsibilities, where everything was doomed in advance, not because she was so incompetent, but because the child is not able to take care of some things (e.g., she felt that she can diligently make sure that father and mother do not separate). This was also the source of many feelings of incompetence and guilt, which she also faced in her current life. She always had the feeling that doing anything was not enough. However, she now understood that there were things that were not in her power that she could take care of, and that could not mean that she was incompetent and guilty. With this, in her understanding and attitude towards herself, there was also compassion for this girl and softness, which she never received, but now she can afford it.

### *Conclusion of the Therapeutic Process*

While discovering all these dimensions, the client was gradually becoming more feminine and gentle, she slowly learned to accept that others are what they are and may not change, but she can allow herself to begin something new. When she began to look for foundations and values in herself and not outside in others' approval, she became firmer and also understood that it was unfair that she could not feel everything that would be perfectly normal (anger, rage, injustice). She understood that she could not express her needs due to her fear that this would be too stressful for a system that could fall apart. As a child, she had not had that choice, but now she did. She began to feel that she was good and had always been, that there was nothing wrong with her, and that the pain and distress she was taking on were projected into her from somewhere else (i.e., from the relationship between her parents).

## **Discussion**

From the description of the case, we can see that the client, who was ACoA, experienced a lot of pain when she got caught up in complex patterns of self-perception (especially inferiority) and relationships with others (subordination, responsibility, and care). All of these aspects revealed the deeper relational vulnerability that came from the experience of her primary family. This family was a typical example of the dynamics of the alcoholic family system, given the rules that prevailed in it and the ways of communication and relationships. The client did not have safe and loving relationships as a child. Her main role in the family was to keep her balance by taking on the responsibilities of an adult, being an emotional partner to her mother, and at the same time a scapegoat when things went wrong. She was a parentified child, taking on tasks and

roles for which she was not emotionally mature (Earley & Cushway, 2002). She could not be a child in this environment, her developmental needs and desires were subordinated to the needs of the family system. She needed to be available and hardworking, the only way she could belong and feel she was worth something. Replacing parent-child roles often encourages the development of a sense of self-based on the ability to care for others. For some individuals, the development of the concept of self is thus linked to their role in caring for others in both childhood and adulthood (Kelley et al., 2007). The client also developed a sense of hyper-responsibility that is common in ACoA (Hall & Webster, 2007), which she also carried with her into adulthood. From the point of view of Relational Family Therapy, it was a compulsive repetition and new creation of conflict situations and behavioral models in the client's personal and interpersonal behavior, thinking, and feeling. Based on this, the individual interprets current events that remind him of the past in the light of the past (Gostečnik, 2017; 2021).

In the language of Relational Family Therapy, we can say that these feelings of great responsibility, inadequacy, guilt, worthlessness in the client were affective psychic constructs with which she regulated and maintained the feeling that she might be good at caring for others, available to them and not too demanding. In doing so, she primarily regulated the fear of non-belonging, followed by a great deal of sadness and loneliness, which were associated with fundamental neglect and rejection during adolescence. Sadness in this case was a core affect (pain) from which the client fled with strategies that provided her with at least minimal recognition. With constant pressure on herself and hyper-responsibility, she created a sense of being acceptable and useful, otherwise, she would have felt rejected. However, in addition to this self-exhaustion, she also felt anger that could help her set a limit. But anger was also dangerous because she feared that by setting the limit she would risk rejection. When, in the therapeutic process, this anger was associated with grief (affect regulation) and gained legitimacy, it led the client to safely mourn for what belonged to her, but she did not get it - not because she was not good and worthy enough, but because others (parents) were not able to give it. When confronted with reality, she encountered a core affect (in her case, it was sadness) that she was able to accept and begin to regulate in a different, conscious, and thus more functional way. She experienced it as an injustice she is no longer obliged to serve. With this, she was able to afford to give herself and her life a new chance.

## **Conclusion**

The presented case study, as well as many other research results and clinical experiences, confirm that ACoAs are victims of parental alcoholism and jus-

tify the need for psychosocial and therapeutic support even in their adulthood. ACoAs are more sensitive to life stressors and have more adjustment problems (Hall & Webster, 2007). Complications are manifested in the area of their self-perception, daily functionality, relationships with others, and their general psycho-mental health. These complications are the result of many traumatic experiences they had as children with their alcoholic parents. The legacy of these experiences is difficult feelings that follow them like a shadow in adulthood and are an important element that needs to be addressed in the recovery process. As stated by Trtnik (2016), it is important to transform non-functional patterns of their functioning and emotions into more functional ones. In the process of recovery, it is therefore important that they learn to set boundaries anew, take responsibility for themselves and their needs, and at the same time reduce the need to control and solve the problems of others. They must put themselves first, recognize their needs and be able to express them, and thus, instead of a fragile and false self, gradually gain their self-esteem which they lacked in childhood.

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## Stress Due to Experienced Aggression and Teachers' Well-Being: The Role of Social Support

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### Abstract

**Background and Aim:** Although aggression towards teachers is a growing problem, a few studies in Croatia have addressed it. The aim of this study was to examine the frequency of aggression toward teachers and the relationship between the stress teachers feel due to experienced aggression and their perceptions of social support and job satisfaction.

**Method:** The study lasted from March to April 2021 and was conducted online. It included 1227 elementary and secondary school teachers (1013 of whom were women), and participants' ages ranged from 23 to 65 years. Participants self-rated their stress due to experienced aggression, frequency of experienced aggression, job satisfaction, and social support at work and in the family.

**Results:** The results show that 72.5% of teachers have experienced at least one form of aggression by their students during their professional life,

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and 57.3% of them by the students' parents. Verbal aggression is the most common, while electronic aggression by students is the least common. Physical aggression is the least common form of aggression by parents. In addition, high stress due to experienced aggression proved to be a significant predictor of lower teacher job satisfaction. In contrast, higher perceived social support from supervisors and colleagues proved to be a significant predictor of higher teacher job satisfaction. Furthermore, the moderating role of social support from supervisors and colleagues on the relationship between stress from experienced aggression and teachers' job satisfaction was not demonstrated.

**Conclusion:** This study has shown that aggression towards teachers is a major problem in Croatian schools, and although the moderating role of social support has not been proven, it has been shown to contribute greatly to increasing teachers' job satisfaction.

*Keywords:* aggression, job satisfaction, teachers, social support, stress

### **Stress Due to Experienced Aggression and Teachers' Well-Being: The Role of Social Support**

Aggression toward teachers refers to any intentional behavior that is ultimately intended to cause psychological or physical harm to teachers (Bushman & Anderson, 2001), as well as harm to their well-being, reputation, and professional status (Bilić, 2016). In the United States, 80% of teachers are exposed to aggression, according to data from 2013 and 2014 (Espelage et al., 2013; McMahan et al., 2014). In Canada, 80% of teachers studied had experienced aggression at least once in their professional lives (Wilson et al., 2011). Similar findings emerged from a study conducted in Italy (Berlanda et al., 2019), where 84.8% of a sample of 1360 teachers had experienced aggression within 12 months prior to the study.

Aggression against teachers is also a widespread phenomenon in Croatia. According to a survey conducted by the Ministry of Science, Education and Sports, in the school year 2003/2004, teachers noted some form of student aggression in 22.2% of cases, while aggressive parental behavior was observed in 10.3% of cases (Bilić, 2007). Another study shows that 74.3% of teachers in the city of Zagreb experienced student aggression during a school year (Lokmić et al., 2013), and similar results were obtained by Bilić (2016), according to whom 72.8% of teachers experienced at least one form of aggression during their professional life. These results indicate that aggression against teachers is an increasingly common problem in our country as well.

Aggression toward teachers can be expressed by students, parents, relatives of students, supervisors, and colleagues, but most studies show that students are most often aggressive toward them (McMahan et al., 2014). However, parents of students are also increasingly problematic. Aggression toward teachers

includes various behaviors such as disobedience, disrespect, verbal gestures or threats, theft, property damage, physical assault, and social media insults (Espelage et al., 2013).

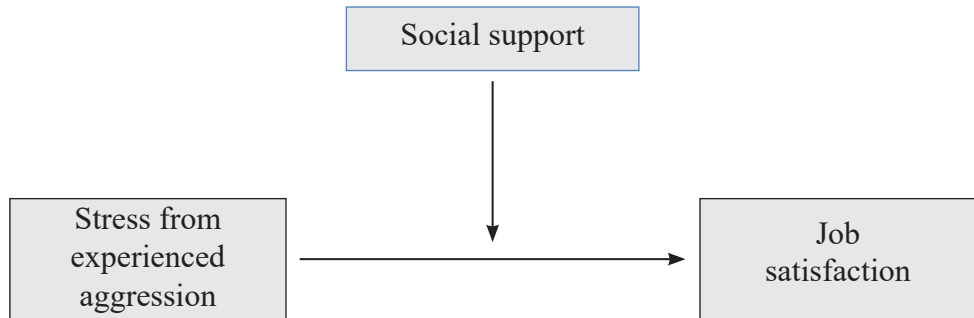
Aggression by students and/or parents can have negative effects on teachers. Ozkilic and Kartal (2012) have shown that teachers who experience aggression at work also have higher levels of stress. This stress associated with aggression at school causes many negative psychological reactions and generally has a negative impact on an individual's well-being (Won & Chang, 2020). According to Diener's hierarchical model of happiness (Diener et al., 2004), in order to get a complete picture of a person's overall subjective well-being, one must also measure the components that are at lower levels. One of these components is satisfaction with certain areas of life, such as job satisfaction.

In addition to the effects of stress on individual well-being, one of the key variables that has been studied in the organizational psychology literature (e.g., Baruch-Feldman et al., 2002; Burke & Greenglass, 1996; Yuh & Choi, 2017) is social support. Social support can be defined as a set of positive effects that, for an individual, stems from close relationships with others, and that helps them cope with crises and stressful situations (Šimunić et al., 2016). Studies (e.g., Fenlason & Beehr, 1994; Beehr, 1995) show that social support at work plays a more important role than social support from family members and loved ones when an individual experiences occupational stress. Therefore, social support at work and in the family should be considered separately, although both are extremely important as they positively influence all aspects of a person's life (Šimunić et al., 2016).

The literature (e.g., Kaniasty & Norris, 1993; Kornblith et al., 2001) has extensively addressed the role of social support in the relationship between stress and individual well-being, i.e., the mechanisms by which social support contributes to well-being under stressful conditions. According to the direct effect mechanism (e.g., Kornblith et al., 2001), greater stress and less social support independently predict lower individual well-being. In addition, studies have shown that there is a positive correlation between social support at work and job satisfaction (Carlson & Perrewé, 1999), i.e., higher levels of social support from colleagues and supervisors contribute to greater job satisfaction (Gottlieb et al., 1996). In addition to this direct mechanism of the effect of social support on individual well-being, there is also a mechanism in the literature referred to as the buffer hypothesis (e.g., Cohen & Wills, 1985; Lakey & Orehek, 2011). According to this hypothesis, social support plays a moderating role in the relationship between stress and job satisfaction, i.e., it helps to reduce the negative effects of stress on an individual's job satisfaction (see Figure 1).

**Figure 1**

*Conceptual Representation of the Moderating Role of Social Support in the Relationship between Perceived Stress From Experienced Aggression and Teachers' Job Satisfaction*



### **Purpose of the Study**

Aggression towards teachers is still a rather neglected and insufficiently studied area in the Republic of Croatia. First of all, it is necessary to find out how often teachers experience aggressive behavior from students and parents in general and, more specifically, what types of aggression they experience. Therefore, the first aim of this study was to investigate the frequency of experienced types of aggression perpetrated on teachers by students and parents. Since the literature has shown (e.g., Dzuka & Dalbert, 2007; Ozdemir, 2012; Won & Chang, 2020) that stress can lead to decreased individual well-being, it is also important to examine the extent to which stress due to experienced aggression in teachers predicts their job satisfaction.

Empirical evidence on the buffering role of social support in the relationship between stress and job satisfaction is conflicting. Some studies have demonstrated the buffering role of social support (Cummins, 1990; Terry et al., 1993), but others have not (e.g., Kaufmann & Beehr, 1986; Mahan et al., 2010). Therefore, it is necessary to further investigate the role of social support in the relationship between stress and job satisfaction. In addition to this contribution of the study, the nature of stress examined in this study also represents an important contribution. To our knowledge, there is no study in the literature that examines the role of social support in the relationship between stress due to experienced aggression in teachers and their job satisfaction.

Based on previous studies (Bilić, 2016; Ljubin Golub et al., 2016) on similar samples, the first hypothesis of this paper is that the frequency with which

teachers experience aggression by students will be between 50 and 70% and by parents between 30 and 50%. At the same time, the most common type of aggression committed by students or parents will be verbal, while the least common will be electronic aggression (*H1*).

Based on the existing study on the relationship between stress and job satisfaction (e.g., Won & Chang, 2020) and on the so-called hypotheses about the direct effect of social support on job satisfaction (e.g., Cohen & Wills, 1985; Kornblith et al., 2001), we pose the second hypothesis of the paper that less perceived stress due to experienced aggression and more pronounced social support from supervisors and colleagues will significantly predict higher job satisfaction among teachers (*H2*).

Finally, based on the model of social support in stressful situations (Cohen & Wills, 1985), we pose the third hypothesis of the paper according to which social support from supervisors and colleagues will have a moderating role between stress due to experienced aggression and job satisfaction. More specifically, we hypothesize that stress due to experienced aggression will be associated with lower job satisfaction, but only among teachers with low levels of social support from supervisors and colleagues (*H3*).

## Method

### *Participants*

A convenient sample of a total of 1771 primary and secondary school teachers from the Republic of Croatia participated in the study. From the total number, 1227 were included in further analysis (1013 women, 214 men), aged from 23 to 65 years. The largest percentage of participants came from the city of Zagreb (16.4%). The largest percentage of teachers who participated in the study were employed in elementary schools (53.9%).

### *Instruments*

#### ***Stress Questionnaire Due to Experienced Aggression***

This questionnaire was used to assess how much stress teachers experience during their professional life due to the aggressive behavior of their students and/or the students' parents. The questionnaire consists of 10 items, and the basis for their construction were items from the Scale of violence directed against teachers (Marčinković, 2018). The items are constructed in such a way that several items describing the same type of aggression in the Scale of violence directed against teachers (Marčinković, 2018) are now combined into one item

in the Stress questionnaire due to experienced aggression. Participants were instructed to rate how much stress they generally experienced in their work life due to aggressive behaviors of students and/or their parents toward them, for example, hitting, spreading rumors, and insulting. Following Dworkin's (1987) recommendations for creating a response scale in a stress questionnaire, participants gave their responses on a scale of 1 (*this did not happen to me*) to 5 (*high stress*). An exploratory factor analysis revealed two factors (stress due to experienced physical aggression and stress due to experienced verbal and relational aggression), but also showed that it was warranted to form a total score for this questionnaire. A one-factor solution explained 38.25% of the variance, with item saturation above .35. The total score was formed by summing the responses to all items included in the scale, with a higher score indicating greater stress from experienced aggression. The reliability coefficient of Cronbach's alpha was .82.

***Scale of Violence Directed Against Teachers (Marčinković, 2018)***

This scale examines whether and how often teachers have experienced inappropriate and aggressive behavior from their students and/or the students' parents in their professional lives. The scale consists of 24 items, and participants provided their responses on a scale of 1 (*never*) to 5 (*more than once a week*). Two subscales were created for data analysis. The first is a subscale for experienced aggression by students and the second for experienced aggression by parents. Results were formed by summing the items for these two subscales separately, with a higher score indicating a higher level of perceived aggression by students/parents.

***Teaching Satisfaction Scale (Ho & Au, 2006)***

This scale consists of five statements and was developed based on Diener's life satisfaction scale. The statements were adapted to make the questionnaire suitable for assessing teachers' job satisfaction. Participants were asked to rate how much they agreed with each statement by selecting a response between 1 (*not at all true of me*) and 7 (*completely true of me*). The total score was the sum of all responses, with a higher score indicating greater satisfaction with the teaching profession (Slavić & Rijavec, 2015). In the sample of this study, exploratory factor analysis confirmed the one-factor structure, which explained 59.50% of the variance. The reliability coefficient of Cronbach's alpha was .91.

***Scale of Social Support at Work and in the Family (Šimunić et al., 2016)***

This scale examines some aspects of instrumental and emotional social support for business and family matters from a supervisor, work colleagues, spouse, and other family members and dependents. It consists of 36 items, that

is, four groups of 9 items that differ only in the source of support. In this study, only the subscales of social support from a supervisor and colleagues were of interest. Participants were asked to indicate their level of agreement with each statement by selecting a response between 1 (*strongly disagree*) and 7 (*strongly agree*). In this study, the scale for support from a supervisor has a reliability of  $\alpha = .87$ , and the scale for support from colleagues  $\alpha = .88$ .

### *Procedure*

This study was approved by the Ethics Working Group of the Department of Psychology of the Catholic University of Croatia. School principals received an email invitation to participate in the study with a request to forward the link to the study to their staff. The survey was prepared using the SoSci Survey application (Leiner, 2016) and made available to users via [www.soscisurvey.de](http://www.soscisurvey.de). Approximately 20 minutes were available to complete the questionnaire. Data collection lasted from March to April 2021.

### *Data Analysis*

To examine the moderating role of social support from supervisors and colleagues in the relationship between perceived stress and job satisfaction, two hierarchical regression analyses were conducted. The order in which the variables were included in the regression analysis followed the guidelines for such a regression analysis (predictor, hypothesized moderator, the product of predictor, and hypothesized moderator). Thus, the F-ratio quotient was used to test the significance of the change in the percentage of variance explained for the criteria. In both analyses, the criterion variable was satisfaction with the teacher's job and the predictor variable was perceived stress due to experienced aggression. In one of these two analyses, the hypothesized moderator variable was social support from the supervisor and in the other analysis, the hypothesized moderator variable was social support from colleagues.

## **Results**

### *Analysis of the Frequency of the Different Types of Aggression Toward Teachers*

First, the frequency of different forms of aggression by students toward teachers was analyzed. The results are presented in Table 1.

## Coping with Crisis – Pathways towards Resilience

**Table 1**

*Frequency of Different Types of Student Aggression Toward Teachers (N=1227)*

		NEVER		AT LEAST ONCE	
		N	%	N	%
Physical aggression	Shooting with different objects	975	79.5	252	20.5
	Hitting with hand, foot...	1117	91	110	9
	Pushing in the hallway, in class...	1011	82.4	216	17.6
	Threat of injury	1074	87.5	153	12.5
	Total	778	63.4	449	36.6
Verbal aggression	Insults and ugly words	864	70.4	363	29.6
	Calling derogatory names	973	79.3	254	20.7
	Speaking vulgar words	872	71.1	355	28.9
	Shouting and raising voice	538	43.8	689	56.2
	Total	471	38.4	756	61.6
Relational aggression and threats	Spreading false rumors	881	71.8	346	28.2
	Threat due to bad grades	949	77.3	278	22.7
	Total	766	62.4	461	37.6
Electronic aggression	Posting photos on social networks	1077	87.8	150	12.2
	Cell phone recording in awkward situations	1061	86.5	166	13.5
	Threats through social networks	1201	97.9	26	2.1
	Calling derogatory names and insults through social networks	1164	94.9	63	5.1
	Total	960	78.2	267	21.8
Total aggression	at least one experienced form of aggression	338	27.5	889	72.5

The results showed that overall 72.5% of teachers have experienced at least one form of student aggression during their professional life. Analysis of the data revealed that 36.6% of teachers have experienced physical aggression by students at least once in their professional lives. Verbal aggression was the most common (61.6%). Relational aggression and threats were experienced by 37.6% of teachers at least once in their professional lives. Finally, electronic aggression was experienced by 21.8% of teachers.

The results of the analysis of the frequency of the different forms of parental aggression against teachers are presented in Table 2.

**Table 2**

*Frequency of Different Types of Parental Aggression Toward Teachers (N=1227)*

		NEVER		AT LEAST ONCE	
		N	%	N	%
Physical aggression	Hitting	1221	99.5	6	.5
	Threat of hitting and beating	1133	92.3	94	7.7
	Total	1130	92.1	97	7.9
Verbal aggression	Insulting and calling derogatory names	1035	84.4	192	15.6
	Shouting and raising voice	690	56.2	537	43.8
	Humiliation	968	78.9	259	21.1
	Total	648	52.8	579	47.2
Relational aggression and threats	Spreading false rumors	934	76.1	293	23.9
	Threat of lawsuit because of their work	913	74.4	314	25.6
	Realization of threat and lawsuit	1146	93.4	81	6.6
	Total	790	64.4	437	35.6
Electronic aggression	Inconveniences through social networks	1138	92.7	89	7.3
	Sending unpleasant messages on cell phones and social networks	1008	82.2	219	17.8
	Total	990	80.7	237	19.3
Total aggression	at least one experienced form of aggression	524	42.7	703	57.3

The results showed that a total of 57.3% of teachers have experienced at least one form of parental aggression during their professional lives. Analysis of the data showed that teachers do not experience physical aggression from parents to a great extent (7.9%). Verbal aggression was also the most common, experienced by 47.2% of teachers. Relational aggression and threats from parents have been experienced by 35.6% of teachers at least once in their professional lives. Finally, parents' electronic aggression was experienced by 19.3% of teachers.

*Perceived Stress Due to Experienced Aggression and Social Support from Supervisors and Colleagues as Predictors of Job Satisfaction in Teachers*

The results of the study of the contribution of perceived stress due to experienced aggression and social support from supervisors and colleagues to the explanation of teachers' job satisfaction are presented in Table 3.



**Table 3**

*Summary of the Results of Testing the Significance of the Contribution of Perceived Stress From Experienced Aggression and Social Support of Supervisors and Colleagues in Explaining Job Satisfaction*

	Job satisfaction		
	$\beta$	$t$	$p$
Perceived stress	-.18	-7.13	< .001
Social support from supervisors	.26	8.90	< .001
Social support from colleagues	.25	8.33	< .001
$R = .53, R^2 = .28, F(3,1224) = 159.14^{**}$			

Note: \*\*  $p < .01$

The results showed that stress from experienced aggression and social support from supervisors and colleagues explained a significant variance of 28% in job satisfaction ( $F(3,1224) = 159.14; p < .001$ ). Stress from experienced aggression was a significant negative predictor of job satisfaction ( $\beta = -.18; p < .001$ ), i.e., more perceived stress from experienced aggression was associated with lower job satisfaction. Social support from supervisors was a significant positive predictor in explaining variance in job satisfaction ( $\beta = .26; p < .001$ ), as did social support from colleagues ( $\beta = .25; p < .001$ ). This means that more perceived social support from supervisors and colleagues was also associated with greater job satisfaction. The results confirmed the second hypothesis of the study.

*Moderating Effect of Social Support from Supervisors and Colleagues on the Relationship Between Stress Due to Experienced Aggression and Job Satisfaction of Teachers*

The results of the moderating effect of social support from a supervisor as well as from colleagues on the relationship between stress from experienced aggression and job satisfaction are shown in Table 4.

As can be seen, the interaction of stress due to experienced aggression and supervisor social support was not a significant predictor of job satisfaction ( $\beta = .00; p > .05$ ), suggesting that social support from the supervisor was not a significant moderator of the relationship between stress due to experienced aggression and job satisfaction. Also, the interaction of stress due to experienced aggression and social support from colleagues was not a significant predictor of job satisfaction ( $\beta = .00; p > .05$ ), i.e., social support from colleagues was not a significant moderator of the relationship between stress due to experienced aggression and job satisfaction.

**Table 4**

*Summary of the Results of Testing the Significance of the Moderating Effect of Social Support of Supervisors and Colleagues on the Relationship Between Stress From Experienced Aggression and Job Satisfaction of Teachers*

Step	Predictor	$\beta$	$t$	$p(t)$	$\Delta R^2$	$F$	$p(F)$
1	Perceived stress	-.31	-11.48	< .001			
2	Social support from supervisors	.38	14.80	< .001	.13	187.19	< .01
3	Perceived stress $\times$ social support from supervisors	.00	0.14	> .05	.01	124.70	> .05
1	Perceived stress	-.31	-11.48	< .001			
2	Social support from colleagues	.38	14.80	< .001	.13	187.19	< .01
3	Perceived stress $\times$ social support from colleagues	.00	0.14	> .05	.01	124.70	> .05

Note:  $p < .01$

Thus, the third hypothesis of this paper, according to which it was expected that social support from supervisors and colleagues plays a moderating role in the relationship between stress due to experienced aggression and job satisfaction, was rejected (H3).

## Discussion

Aggression against teachers is still quite neglected and insufficiently researched, especially in the Republic of Croatia. Therefore, the first aim of this study was to investigate the frequency of experienced types of aggression among teachers inflicted by students and parents separately. The results of this study showed that 72.5% of teachers have experienced at least one form of aggression by their students and 57.3% by the students' parents during their professional lives. Verbal aggression was the most common in both cases. Electronic aggression was the least represented form of aggression by students. These results support the initial hypothesis and are consistent with previous research in Croatia (Bilić, 2016) and in other countries (Gerberich et al., 2011; McMahon et al., 2014; Wilson et al., 2011). Parental physical aggression was the rarest form of aggression towards teachers, partially confirming the first hypothesis of the study. The results are consistent with the findings of a study by Bilić (2016), in which fewer teachers experienced physical aggression and the largest number of teachers experienced students' parents threatening them with beatings.

In this study, it was also examined whether perceived stress due to experienced aggression and social support from supervisors and colleagues predict teachers' job satisfaction. Stress due to experienced aggression was found to be a significant predictor of higher teachers' job satisfaction. In contrast, social support from supervisors and colleagues was found to be a significant and positive predictor of job satisfaction. This fully supported the second hypothesis of the study. The finding that stress due to experienced aggression predicted teachers' job satisfaction was consistent with the research of Won and Chang (2020), who showed that this stress related to experienced aggression at school produces many negative psychological reactions and generally has a negative impact on individual well-being and satisfaction with teachers' work and life. In addition, a positive atmosphere, comforting words from colleagues, support from the supervisor's actions, and a sense that the teacher can be relied upon certainly play a role in individual perceptions of job satisfaction. Chu et al. (2003) also found in their study that social support significantly predicted job satisfaction.

Finally, the moderating role of social support from supervisors and colleagues on the relationship between stress from experienced aggression and job satisfaction among teachers was examined. The results of the moderator analyses showed that social support from supervisors and colleagues did not moderate the relationship between the above constructs. Therefore, the third hypothesis of this study was rejected. Consistent with the findings of this study and contrary to the hypotheses of this paper, some other studies (e.g., Kaufmann & Beehr, 1986; Mahan et al., 2010) have shown that social support did not moderate the relationship between stress and individuals' well-being. For example, Mahan et al. (2010) found that there was no protection against stress no matter how great the perceived social support from colleagues is. In other words, they failed to demonstrate the buffering role of social support. In addition, Kaufmann and Beehr (1986) showed in a sample of nurses that there was no moderating effect of social support on the relationship between job stressors and job satisfaction. In a review of the literature on the effects of social support in the work context, Kahn and Byosiére (1992) concluded that most studies (20 of 22) found evidence of the effects of social support from supervisors and colleagues on individual well-being, while evidence for the buffering role of social support was less consistent. Thus, according to that review, high levels of support from supervisors and colleagues appear to have a positive effect on job satisfaction, regardless of stress levels. It is hypothesized that these results reflect the fact that regardless of stress level, an individual's perception of being supported by a supervisor or colleagues indicates a pleasant work environment, which likely has a positive effect on job satisfaction.

This study has several contributions. The first is a relatively large sample of teachers and the fact that the participants in this study are teachers working in schools throughout the Republic of Croatia. The contribution is also a newly constructed instrument that measures specific stress due to experienced aggression. In addition, the study captured experienced aggression from both students and parents, which is certainly an advantage over other studies (Lokmić et al., 2013). Similarly, this study measured a wide range of different types of aggression, in contrast to previous studies that were often limited to injuries and physical attacks.

It is necessary to mention some limitations of this study. Namely, only schools whose principals expressed interest and “good will” participated in the study. Therefore, there is a possibility that only principals who perceive their school as a positive, collaborative, and professional learning community agreed to participate in the study. In addition, this is a correlational study and it is not possible to draw conclusions about the cause-and-effect relationship between the variables studied. Also, the study was conducted online, which in itself has some limitations. For example, it is not possible to verify that the respondent understood the instructions, and there is uncertainty about whether the respondent is completing the questionnaire honestly and seriously. The final limitation of the study is the time between the aggressive event experienced and its measurement. If aggression were measured immediately after the event itself, rather than after several weeks, months, or years, the results might have been different (e.g., perceived stress might be higher immediately after experiencing aggression). Therefore, future studies should ask teachers about experienced aggression in a time period closer to the measurement itself.

In addition, including other types of social support (from partners, family members...) and assessing additional characteristics of teachers, such as years of work experience, teaching context (generally related to special education), grade level, and school location (urban or rural) would also provide valuable insights needed to develop innovative prevention and intervention programs in schools (Bounds & Jenkins, 2016; Lokmić et al., 2013).

## Conclusion

This study has shown that aggression toward teachers is a significant problem in Croatian schools and even though the moderating role of social support has not been proven, it has been shown that social support greatly contributes to increasing teachers' job satisfaction.

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## The Role of Political Attitudes, Religious Orientations, and Personality in Explaining Students' Moral Foundations

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### Abstract

**Background and Aim:** According to the moral foundations theory (Haidt & Joseph, 2004), there are several moral foundations developed through the process of evolution that explain differences in moral reasoning. The literature so far shows that political attitudes predict moral foundations, but the contribution of personality and religious orientations to moral foundations has been insufficiently studied in Croatian culture. Therefore, this research aims to examine how political attitudes, religious orientations, and personality dimensions contribute to individualizing and binding moral foundations.

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**Method:** The paper analyzes the data of 256 students (104 men, 151 women) in Zagreb who are religious and sometimes participate in religious ceremonies/gatherings. The average age of the students was 22.54 years ( $SD = 8.59$ ). Data were collected in 2019 using the paper-pencil method, and the following instruments were used: MFQ, NEO-FFI, Political Attitudes Questionnaire, Religious Orientations Questionnaire, and Demographic Data Questionnaire.

**Results:** Two hierarchical regression analyses were conducted, with gender included as a predictor in the first step of the analysis, political attitudes in the second, religious orientation in the third, and personality dimensions in the fourth step. Female gender, higher quest orientation, higher intrinsic religious orientation, and higher extraversion predict greater endorsement of the individualizing moral foundations. Also, male gender, higher social conservatism, and higher intrinsic and extrinsic personal religious orientation predict binding moral foundations.

**Conclusion:** The obtained results expand the knowledge of the role of religious orientations and personality in moral reasoning.

*Keywords:* moral foundations, political attitudes, religious orientations, personality

### **The Role of Political Attitudes, Religious Orientations, and Personality in Explaining Students' Moral Foundations**

Values, norms, principles, and psychological mechanisms that make it possible to distinguish between good and bad are the foundations of moral reasoning. Moral reasoning denotes the cognitive processes through which a person draws conclusions on the correctness in moral dilemmas. To connect the evolutionary and anthropological approach to morality, the moral foundations theory was proposed (Haidt & Joseph, 2004), according to which there are several evolutionarily determined moral foundations that explain the differences in moral reasoning. Moral reasoning is intuitive, fast, and based more on emotions than on rational reasoning. Moral foundations represent systems that underlie moral behavior (Graham et al., 2013). These systems have been developed through evolutionary processes, but the environment and culture influence the degree to which a person endorses a moral foundation. According to the original conception of the theory, there are five moral foundations.

Individualizing moral foundations (Care/harm and Fairness/cheating) emphasize the rights and well-being of the individual, while the binding moral foundations (Loyalty/betrayal, Authority/subversion, Sanctity/degradation) emphasize the well-being of the community above the individual. The Care/harm foundation is represented by kindness, tenderness, and caring for others. The Fairness/cheating foundation refers to the ideas of justice, law, and autonomy. Furthermore, the Loyalty/betrayal foundation is based on patriotism and sacri-

face for the group. People who have a high level of loyalty tend to attach more importance to patriotism and heroism (Graham et al., 2009). The Authority/subversion foundation signifies obedience and respect for legitimate authority and respect for tradition. Sanctity/degradation foundation refers to valuing a way of living that is noble, sublime, and less corporeal. The stated moral foundation implies the idea that the body is like a temple that can be desecrated by immoral activities. Iyer et al. (2012) also proposed a sixth moral foundation, Liberty, which implies the importance of individual freedom, as well as opposition to excessive domination and restriction of individual freedoms by the state.

The moral foundations theory has been most researched in the context of the relations between moral foundations and political attitudes. One of the simplest measures of political attitudes is a simple liberal-conservative continuum, on which the individual should be placed. It is possible to distinguish social and economic political attitudes. Social political attitudes refer to issues related to social order and stability, i.e., attitudes towards issues such as abortion or homosexuality, and economic political attitudes refer to one's attitude towards the free market, state-funded health insurance, and social welfare (Weber & Federico, 2012). Research shows that liberals tend to rely more on Care and Fairness foundations, while conservatives place equal emphasis on all five moral foundations but endorse the individualizing moral foundations somewhat less than liberals (Haidt & Hersh, 2001; Graham et al., 2009). Kivikangas et al. (2021) conducted a meta-analysis in order to examine the extent to which the key findings of MFT replicate in different samples. The literature they analyzed included samples collected in different countries (47 in the U.S., 17 in Europe, and 25 in other countries around the world or the international population). They found that moral foundations were generally more strongly correlated with social than economic political orientation. Furthermore, they claim that the association of moral foundations to political orientations varies across countries and political cultures. In the U.S., conservatism is more negatively associated with Care/harm and Fairness/cheating, and more positively with Loyalty/betrayal compared to Europe. The binding foundations are more strongly connected to social and economic conservatism (right-wing orientation) in the U.S. than in Europe. However, the individualizing foundations showed a stronger association with economic conservatism in Europe and a weaker association with social conservatism in Europe compared to the U.S. Association between moral foundations and political attitudes also varies subculturally. According to Davis et al. (2016), the relationship between conservatism and authority is weaker in the Black population than in the White population of the U.S. The Black population is more religious and more liberal.

Di Battista et al. (2018) examined the relationship between moral foundations and religiosity and concluded that the binding foundations are more important to practicing Catholics than to liberals and those who don't participate regularly in religious ceremonies. Also, LaBouff et al. (2007) state that religious individuals place greater emphasis on binding foundations. Bulbulia et al. (2013) examined the relationship between moral foundations and religious orientations. They measured four religious orientations: Quest Orientation, Intrinsic, Extrinsic Personal, and Extrinsic Social Religious Orientation. Quest Orientation includes a willingness to deal with existential issues, a positive outlook on religious doubts, and an openness to change of one's beliefs (Batson & Schoenrade, 1991). Intrinsic Religious Orientation refers to viewing religion as the framework for one's life and striving to live in accordance with religious values because one considers them important (Masters, 2013). Extrinsic Personal Religious Orientation includes seeking refuge, comfort, and security in the faith, while Extrinsic Social Religious Orientation involves practicing religiosity to meet social needs (Gorsuch & McPherson, 1989). The research of Bulbulia et al. (2013) found that there is a positive association between the Fairness foundation and Quest Orientation, Loyalty foundation and Personal and Extrinsic Social Religious Orientation, Sanctity and Intrinsic Orientation, and a negative association between Authority and Quest and Intrinsic Orientation. In the study conducted by Yi & Tsang (2020), binding foundations and Care were in positive correlation with Intrinsic Religious Orientation and in negative correlation with Extrinsic Religious Orientation.

The personality traits of the five-factor model in some studies proved to be significantly related to moral foundations, but the correlations obtained were generally very low. Lewis & Bates (2011) cite Extraversion as a significant positive predictor of binding foundations, Neuroticism as a significant positive predictor of both individualizing and binding foundations, and Agreeableness as a positive predictor of individualizing foundations. A study by Hirsh et al. (2010) found that Care and Fairness were significantly associated with a facet of Agreeableness (Compassion). Authority was significantly associated with another facet of Agreeableness (Politeness). Orderliness, which is a facet of Conscientiousness, was significantly associated with higher endorsement of the Sanctity foundation. Medjedovic & Petrovic (2016) claim that Openness is the best predictor of moral foundations. This trait is positively related to the individualizing foundations and negatively associated with binding foundations (Lewis & Bates, 2011; Međenović & Petrović, 2016).

Cultures differ in terms of social norms (Gelfand et al., 2011). For example, people who live in a culture with stricter social norms are more careful, respectful of regulations, and dutiful. This can implicate differences in moral

reasoning and moral foundations since culture shapes human thinking. Although individuals from different cultures act from the same set of broadly defined moral foundations, there is much room for intercultural variability in distinguishing between good and bad (Kivikangas et al., 2021; Simpson, 2017). There isn't much research in Croatia about moral foundations, and the existing ones do not explore the contribution of different political attitudes, religious orientations, and personality traits to moral foundations. Therefore, this research aimed to examine how political attitudes, religious orientations, and personality traits contribute to the individualizing and binding moral foundations among religious students of two Croatian universities.

## Method

### *Participants*

We analyzed data from 256 participants who identified as religious and who sometimes attend religious ceremonies. Participants were students from the University of Zagreb and the Catholic University of Croatia. The mean age of the participants was 22.54 years ( $SD = 8.59$ ), and 59% of the sample were women. Twenty-three participants, who have taken the questionnaire carelessly, were excluded from the sample. Furthermore, three participants had some missing values on the variables that enter the analyses, so the listwise method of excluding missing variables excluded those three participants. In the end, there are 230 participants whose results are analyzed.

### *Instruments*

The following instruments were used: Moral Foundations Questionnaire (MFQ), NEO Five-Factor Inventory (NEO-FFI), Political Attitudes Questionnaire, Religious Orientations Questionnaire, and Demographic Data Questionnaire.

The Moral Foundations Questionnaire (MFQ; Graham et al., 2009) contains 32 items and 5 subscales that measure five moral foundations: Care/harm, Fairness/cheating, Loyalty/betrayal, Authority/subversion, and Sanctity/degradation. In the first part of the questionnaire, participants assess to what extent they consider certain considerations morally relevant on a scale from 1 (*not at all relevant*) to 6 (*extremely relevant*). An example of an item is "Whether or not someone acted unfairly." In the second part of the questionnaire, participants assess their agreement with a moral statement on a scale from 1 (*strongly disagree*) to 6 (*strongly agree*). An example of an item is "Respect for

authority is something all children need to learn.” In this research, we calculated the results of the participants on two factors: individualizing moral foundations (sum of scores on items that measure Care/harm and Fairness/cheating) and binding moral foundations (sum of scores on items that measure Loyalty/betrayal, Authority/subversion, and Sanctity/degradation). The Cronbach’s alpha coefficients of these scales are .712 (individualizing moral foundations) and .794 (binding moral foundations).

The NEO Five-Factor Inventory (NEO-FFI, Costa & McCrae, 1989) contains 60 items that measure five personality dimensions (Neuroticism, Extraversion, Openness to experience, Agreeableness, and Conscientiousness). Items are rated on a scale from 0 (*I don’t agree at all*) to 4 (*I completely agree*). The total result for a subscale is formed as a sum of the corresponding items. In this study, the Cronbach’s alpha coefficients are: .86 (Neuroticism), .78 (Extraversion), .68 (Openness to experience), .71 (Agreeableness), and .85 (Conscientiousness).

The Political Attitudes Questionnaire consists of three items, taken and adapted from Liu & Latane (1998). Participants assess their political attitudes on a scale from 1 (*extremely liberal / far-left*) to 7 (*extremely conservative / far-right*). The items in the questionnaire read: “Generally, how would you describe your political views?”, “How would you describe your views on social issues?”, and “How would you describe your views on economic issues?”. Participants also received written instructions that explained to which terms social issues and economic issues refer. Conservative attitude on social issues implies a more negative attitude towards euthanasia, homosexual marriage and child adoption, abortion, immigrants, and a more positive attitude towards traditional values, religion, and patriotism. Conservative/right-wing attitude on economic issues implies a more positive attitude toward the free market, and a negative attitude toward state-funded health insurance, state control over the economy, and social welfare). The first item (general political attitudes) was in a very high correlation with the political attitudes on social issues ( $r = .815$ ,  $p < .001$ ). Therefore, only the items measuring social and economic political attitudes will be included in further analyses.

Religious Orientations Questionnaire, taken and adapted from Batson & Shoenrade (1991) and Gorsuch & McPherson (1989), measures four religious orientations – Quest, Intrinsic, Extrinsic Personal, and Extrinsic Social Religious Orientation. It consists of 12 items such as “I am constantly questioning my religious beliefs.” The participants answer on a scale from 1 (*strongly disagree*) to 7 (*completely agree*). The total score for each orientation is formed as a linear combination of the corresponding items. Cronbach’s alpha coefficients of internal consistency for the subscales are .54 (Quest Orientation), .90

(Intrinsic Orientation), .73 (Extrinsic Personal Orientation), and .75 (Extrinsic Social Orientation).

The Demographic Data Questionnaire contained items that examined gender, age, faculty, year of study, and socioeconomic status (SES).

*Procedure*

Data were collected in 2019 using the paper-pencil method. The students were given questionnaires before or after lectures at their faculties. Participants were given oral instructions by the researcher before filling out the questionnaire. They have been informed that the participation is anonymous and voluntary and that the results of the research will be reported only at the group level. The research lasted about 30 minutes. The collected data were analyzed using the SPSS program.

**Data Analysis Strategy**

Firstly, means (M) and standard deviations (SD) were calculated for moral foundations, political attitudes, religious orientations, and personality traits. Also, skewness statistics and the Shapiro-Wilk tests (SW) were calculated to assess the normality of distributions as an assumption for calculating Pearson's correlation coefficients. Finally, the coefficients of variability (CV) were calculated. Descriptive data are shown in Table 1.

**Table 1**  
*Descriptive Data for Measured Variables*

	M	SD	skewness		CV	S-W
			statistic	s.e.		
Individualizing foundations	58.44	6.789	-.583	.160	11.62%	.971**
Binding foundations	76.55	11.476	-.041	.160	14.99%	.991
Soc. conservatism	4.33	1.798	-.148	.160	41.52%	.935**
Ec. conservatism	4.26	1.355	-.080	.160	31.81%	.941**
Quest Orientation	13.05	3.775	-.126	.160	28.93%	.986*
Intrinsic Orientation	12.93	5.105	-.123	.160	39.48%	.959**
Extrinsic Pers. Or.	13.55	4.231	-.170	.160	31.23%	.979**
Extrinsic Soc. Or.	5.92	3.269	1.474	.160	55.22%	.832**
Neuroticism	21.45	8.491	.086	.160	39.59%	.989
Extraversion	28.29	6.452	-.311	.160	22.81%	.990
Openness	26.00	6.180	.020	.160	23.77%	.992
Agreeableness	29.15	5.884	-.396	.160	20.19%	.984**
Conscientiousness	31.95	6.933	-.389	.160	21.70%	.983**

\*  $p < .05$ , \*\*  $p < .01$

**Table 2**  
*Pearson Correlations Between the Examined Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. gender	1	.29**	-.24**	-.21**	-.24**	.01	.01	.07	-.18**	.13	-.01	.17*	.17*	.11
2. individualizing found.	1		.32**	-.10	.03	.21**	.16*	.24**	.07	.02	.20**	.09	.15*	.12
3. binding found.	1			.48**	.30**	-.11	.55**	.34**	.20**	-.11	.13	-.18**	.03	.02
4. Soc. conserv.	1		1		.38**	-.20**	.59**	.16*	.05	-.12	-.02	-.31**	-.04	-.07
5. Ec. conserv.	1		1			-.08	.20**	.07	.14*	-.13*	.13	-.22**	.00	-.04
6. Quest Or.	1		1			1	-.06	.06	.06	.18**	-.04	.23**	-.06	-.04
7. Intrinsic Or.	1		1			1	1	.41**	.11	.00	.05	-.10	.07	-.02
8. Extr. Pers. Or.	1		1			1	1	.28**	.28**	.13*	.08	-.20**	.05	.02
9. Extr. Soc. Or.	1		1			1	1		1	-.01	.11	-.10	.05	-.08
10. Neuroticism	1		1			1	1		1	1	-.39**	-.13*	-.42**	-.28**
11. Extraversion	1		1			1	1		1	1	1	.06	.25**	.13*
12. Openness	1		1			1	1		1	1	1	1	.09	.05
13. Agreeableness	1		1			1	1		1	1	1	1	1	.18**
14. Conscientiousness	1		1			1	1		1	1	1	1	1	1

\* $p < .05$ , \*\* $p < .01$

According to the Shapiro-Wilk test, the distributions of most variables differ significantly from the normal distribution. According to Kim (2013), in medium-sized samples ( $50 > N > 300$ ), deviation from normality will not significantly impair the results if the z-value of the skewness is less than 3.29. This criterion is met by all examined variables except individualizing foundations and Extrinsic Social Religious Orientation. Thus it was considered appropriate to calculate Pearson's correlation coefficients. Pearson's correlation coefficients between the examined variables are shown in Table 2.

## Results

### *Assumptions for the Regression Analysis*

Two hierarchical regression analyses are to be performed. In the first analysis, the criterion variable will be the individualizing foundations, and in the second analysis, the criterion variable will be the binding foundations. In both analyses, gender will be included as a predictor in the first step, political attitudes in the second step, religious orientations in the third step, and personality dimensions in the fourth step.

Before performing the regression analyses, it was examined whether the residuals in the regression analyses were distributed normally. Shapiro-Wilk tests were performed for the two regression analyses. Both tests showed that the residual distributions did not differ significantly from the normal distribution ( $W1 = .989, p > .05$ ;  $W2 = .996, p > .05$ ). Therefore, the assumption of the normality of residuals is met. Homoscedasticity was examined by visual inspection of the scatter plot and we concluded that this assumption was met. Multicollinearity was checked by calculating the VIF and Tolerance indicators and it was determined that they are within the allowed range ( $1 \geq VIF > 10$ ,  $Tolerance > 0.1$ ). The linearity of the relationship of the linear combination of predictors with the criterion was checked by inspection of the scatter plot and it was concluded that this assumption was also met for both regression analyses.

### *Conducting the hierarchical regression analyses*

In the first hierarchical regression analysis, gender is included as a predictor in the first step. Gender was found to explain 8.5% of the variance of the individualizing foundations. Political attitudes did not have a significant additional contribution to the individualizing foundations when gender was controlled. In the third step of the regression analysis, religious orientations explained an additional 10.4% of the variance of criteria. Finally, the personality dimensions



**Table 3**

*Results of the Hierarchical Regression Analysis with Individualizing Foundations as a Criterion*

Predictors	$\beta$	$\Delta R^2$	$R^2$
1 <sup>st</sup> step			
gender	<b>.29**</b>	/	.085**
2 <sup>nd</sup> step			
gender	<b>.31**</b>	.016	.101**
Soc. conservatism	-.08		
Ec. conservatism	.13		
3 <sup>rd</sup> step			
gender	<b>.28**</b>	.104**	.205**
Soc. conservatism	<b>-.19*</b>		
Ec. conservatism	.13		
Quest	<b>.18**</b>		
Intrinsic. Or.	<b>.20*</b>		
Extr. Pers. Or.	<b>.14*</b>		
Extr. Soc. Or.	.04		
4 <sup>th</sup> step			
gender	<b>.26**</b>	.036	.241**
Soc. conservatism	-.15		
Ec. conservatism	.11		
Quest	<b>.18**</b>		
Intrinsic. Or.	<b>.17*</b>		
Extr. Pers. Or.	.13		
Extr. Soc. Or.	.03		
Neuroticism	.04		
Extraversion	<b>.16*</b>		
Openness	.02		
Agreeableness	.05		
Conscientiousness	.08		

Note: \* $p < .05$ , \*\*  $p < .01$

did not have a significant additional contribution to the individualizing foundations when gender, political attitudes, and religious orientations were controlled. The total percentage of explained variance of criteria based on gender, political attitudes, religious orientations, and personality is 24.1. Significant positive predictors of the individualizing moral foundations in the last step are female gender, Quest Orientation, Intrinsic Religious Orientation, and Extraversion.

In the second hierarchical regression analysis, with binding moral foundations as the criterion, gender is included as a predictor in the first step. Gender was found to explain 5.6% of the variance of the criteria. Political attitudes were

**Table 4**

*Results of the Hierarchical Regression Analysis with Binding Foundations as a Criterion*

Predictors	$\beta$	$\Delta R^2$	$R^2$
1 <sup>st</sup> step	gender	-.24**	/
2 <sup>nd</sup> step	gender	-.12*	.208**
	Soc. conservatism	.41**	
	Ec. conservatism	.12	
3 <sup>rd</sup> step	gender	-.18**	.158**
	Soc. conservatism	.15*	
	Ec. conservatism	.10	
	Quest	-.06	
	Intrinsic. Or.	.37**	
	Extr. Pers. Or.	.15**	
	Extr. Soc. Or.	.07	
4 <sup>th</sup> step	gender	-.18**	.009
	Soc. conservatism	.15*	
	Ec. conservatism	.09	
	Quest	-.05	
	Intrinsic. Or.	.37**	
	Extr. Pers. Or.	.15*	
	Extr. Soc. Or.	.06	
	Neuroticism	-.03	
	Extraversion	.06	
	Openness	-.01	
	Agreeableness	-.01	
Conscientiousness	.05		

Note: \* $p < .05$ , \*\*  $p < .01$

included as a predictor in the second step of the analysis and explained an additional 20.8% of the variance of the criteria. Religious orientations explained an additional 15.8% of the variance of the binding foundations. Finally, the personality dimensions did not have a significant additional contribution to the binding foundations when gender, political attitudes, and religious orientations are controlled. The total percentage of explained variance of criteria based on gender, political attitudes, religious orientations, and personality is 43.0. In the last step, significant predictors of the binding moral foundations are male gender, greater Social conservatism, and greater Intrinsic and Extrinsic Personal Religious Orientation.

## Discussion

This research aimed to examine the contribution of political attitudes, religious orientations, and personality dimensions to the individualizing and binding moral foundations. The results of hierarchical regression analyses showed that women place greater emphasis on individualizing foundations. Male students were more prone to endorse binding foundations that promote order and group cohesion. Interestingly, gender is the strongest predictor of the individualizing foundations and remains a significant predictor even after controlling for personality and religious orientations. Therefore, the contribution of gender to these moral foundations is not completely mediated by gender differences in political attitudes, personality dimensions, or religiosity. According to Atari et al. (2020) women rely more on Care, Fairness, and Sanctity in their moral judgments than men, which can be explained by women's higher emotional empathy and disgust sensitivity. Also, according to the evolutionary view of sex differences, women are more likely to endorse those moral foundations that promote care for the offspring and prohibit unrestricted sexual behavior.

Social conservatism has proven to be a significant predictor of the binding moral foundations, as expected from previous research on American or international samples (Haidt & Hersh, 2001; Graham et al., 2009). However, the political views in this study are not significant predictors of the individualizing foundations. It is possible that this finding is partly due to the cultural differences in political ideologies. Namely, in the U.S., conservatives, and liberals have different attitudes on the death penalty, gun control, and government-funded healthcare. All of the above topics might relate to the Care/harm foundation. On the other hand, political divisions in Croatia are based on attitudes toward the Croatian 20<sup>th</sup>-century history and traditional values (Henjak & Čusa, 2019). Thus, political conflicts are somewhat less related to the individualizing foundations and more related to the binding foundations.

Religious orientations significantly contribute to moral foundations above and beyond political attitudes and gender. Quest is a significant predictor of individualizing foundations. Quest orientation implies a tendency to question existing beliefs and an openness to changing them. The inclination to question one's own beliefs makes a person intellectually honest and open. That may explain why the Quest orientation was correlated to the moral foundation of fairness in previous research (Bulbulia et al., 2013). However, it is interesting that the Quest orientation is not significantly related to the binding foundations. We would expect people with this orientation to be more likely to doubt traditional values and therefore less prone to endorse the binding foundations.

As we expected, Intrinsic and Extrinsic personal religious orientation proved to be a significant predictor of the binding foundations. Namely, previous re-

search has shown that more religious people are more inclined to emphasize the binding foundations, especially Sanctity/degradation. Intrinsic religious orientation also predicts the individualizing foundations. Since Intrinsic religious orientation was related to Fairness/cheating foundation in the research of Bulbulia et al. (2013), this relationship was also expected. An intrinsically religious person sincerely believes in the values their religion propagates and strives to live in accordance with them. Therefore, they might be more likely to value care for others and fairness, especially since these values are encouraged in Christianity.

Finally, personality has a relatively small contribution to moral foundations. Of the five personality dimensions, only Extraversion predicts the individualizing foundations after controlling for political attitudes, religious orientations, and gender. This finding is consistent with the results of a study by Lewis & Bates (2011), in which Extraversion correlated with Care/harm and Loyalty/betrayal. Extroverts are more prone to altruism towards family members, strangers, and friends (Oda et al., 2014). For this reason, they may be more inclined to emphasize the Care foundation. Unexpectedly, Openness did not prove to be a significant predictor of the binding foundations above political attitudes and religious orientations.

In general, political attitudes and religious orientations account for a relatively large percentage of the variance of the binding moral foundations. On the other hand, political attitudes, religious orientations, and personality account for a small percentage of the variance of the individualizing foundations. The lack of variability of individualizing foundations might contribute to that since the lack of variability reduces the correlations. Also, given that the individualizing foundations refer to some general moral norms that are most common to people of different political views, other traits like Dark Triad dimensions or empathy might be better predictors of these foundations.

The advantage of this research is that it provides insight into the relationship between religious orientations and moral foundations in the Croatian sample, which has not been examined so far. Some research has examined the relationship between religiosity and moral foundations, but examining different religious orientations provides a deeper insight into how different types of religiosities contribute to differences in moral judgment. Also, the study did not find a connection between the individualizing foundations and political attitudes, contrary to expectations. This finding may be caused by the specifics of the Croatian culture, but more research is needed to confirm this assumption. It is necessary to take into account the fact that the convenience sampling method was used and the analyses were conducted only on a subsample of religious students because only these students filled out the questionnaire

of religious orientations. Therefore, we cannot generalize the findings of this research to all students. Thus, future research should include non-students in order to confirm whether the individualizing foundations are unrelated to political attitudes in Croatia or whether this finding was obtained due to the specifics of our sample.

The results indicate that both socialization and biological factors influence the development of moral reasoning. Political attitudes and religious orientations have a stronger contribution to moral foundations than personality. Since personality has a strong biological basis (Khatibi & Khormaei, 2016), that could lead us to assume that socialization is more important than biology in determining one's morality system. Childhood experiences affect the formation of political preferences, and parents pass down political attitudes to their kids through generations (Jennings et al., 2009). According to Landor et al. (2011), people learn and internalize religious beliefs, attitudes, values, and behaviors through interactions primarily with parents. However, we have to take into account that both political attitudes and religiosity are partly heritable (Hatemi & McDermott, 2012; Button et al., 2011). Therefore, genes inherited from one's parents may also make a person more prone to accept certain political attitudes and religious orientations. Therefore, we can assume that both genes and environment are important for the development of moral reasoning, but the environment may play a more important role in determining the pattern of moral foundations endorsement.

This research was conducted on a relatively small, non-probabilistic sample of religious students. Since this sample differs from the general Croatian population in terms of education, religiosity, and age, the results cannot be generalized to the population. Therefore, future research on moral foundations in Croatia should include participants of different ages and educational backgrounds. Also, Cronbach's alpha coefficient for the Quest Orientation subscale is relatively low, which may lead to an underestimation of the effect sizes of this variable.

The specificity of the sample in this research (religious students) can provide us with an understanding of what shapes religious students' moral reasoning. As we showed, different religious orientations contribute differently to various moral foundations. Religious students are not homogenous in the way they understand their faith. These differences reflect on the way they process moral information, and may also reflect on the way they behave. In general, this research has implications for the development of educational programs that promote awareness of the moral system diversity. These programs can be held at universities, companies, and other institutions that promote acceptance of diversity and political dialogue. Given that morality is an important aspect of human life, this paper seeks to encourage further research in this area. Un-

derstanding the factors that contribute to the endorsement of different moral foundations is the ground for quality social dialogue and peaceful coexistence in the community.

### Conclusion

The aim of this research was to examine how political attitudes, religious orientations, and personality dimensions contribute to individualizing and binding moral foundations. The results of the conducted hierarchical regression analyses showed that the female gender, higher Quest and Intrinsic Religious Orientation, and higher Extraversion significantly contribute to greater endorsement of the individualizing moral foundations. Male gender, more conservative attitude on social issues, and higher Intrinsic and Extrinsic Personal Religious Orientation contribute significantly to greater endorsement of the binding moral foundations.

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## The Mediating Role of Psychological Adjustment in the Relationship Between Parental Acceptance-Rejection and Breakup Distress

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### Abstract

**Background and Aim:** Many studies within the Interpersonal acceptance-rejection theory (IPARTheory) have shown that parental rejection is a predictor of poorer psychological adjustment and various undesirable developmental outcomes, such as depression, behavioral problems, addiction, rejection sensitivity, and loneliness (Rohner, 2016). However, little research has examined whether parental acceptance-rejection contributes to distress after experiencing a romantic relationship dissolution. Therefore, this research aimed to examine the direct and indirect effects of parental acceptance-rejec-

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tion on breakup distress. Based on previous research, we expected that the psychological adjustment would mediate the relationship between parental rejection and breakup distress.

**Method:** The study analyzed data from 152 female participants who experienced a breakup in the last six months. Data were collected through an online questionnaire during the COVID-19 pandemic. The following instruments were applied: Breakup Distress Scale, Personality Assessment Questionnaire, Parental Acceptance-Rejection Questionnaire, and Demographic Data Questionnaire.

**Results:** Pearson's correlation coefficients show that greater breakup distress is associated with poorer psychological adjustment, greater paternal and maternal rejection, the partner's initiation of the breakup, and shorter time elapsed from the breakup. Results of mediation analysis showed that paternal and maternal acceptance-rejection have only an indirect effect on breakup distress through psychological adjustment while controlling for time elapsed from the breakup and the initiator status.

**Conclusion:** Paternal and maternal rejection indirectly, through poorer psychological adjustment, contributes to greater breakup distress. The results indicate the importance of parental acceptance-rejection for the emotional well-being of young women. However, the effect sizes are small, therefore parental acceptance-rejection is not a crucial determinant of coping success after a breakup.

*Keywords:* romantic breakup distress, parental acceptance-rejection, IPAR-Theory, psychological adjustment, emerging adulthood

### **The Mediating Role of Psychological Adjustment in the Relationship Between Parental Acceptance-Rejection and Breakup Distress**

The Interpersonal Acceptance-Rejection Theory (IPARTheory) attempts to predict and explain the main causes, consequences, and correlates of interpersonal acceptance and rejection (Rohner, 1980, 2004). According to the theory, when a close person treats an individual with warmth, care, and love, they express their caring and acceptance of the other person. In contrast, rejection manifests itself in four main ways: coldness, aggression and hostility, indifference and neglect, and undifferentiated rejection. According to the theory, the effects and correlates of interpersonal acceptance-rejection are universal: people from different cultures will perceive these same behaviors as acceptance or rejection (Rohner & Lansford, 2017). People who experience themselves to be rejected by parents in childhood have a tendency to develop a set of seven personality traits that indicate poor psychological adjustment, including aggression and hostility, dependence or defensive independence, impaired self-esteem, impaired self-adequacy, emotional instability, emotional unresponsiveness, and negative worldview (Khaleque & Rohner, 2002).

The consequences of parental rejection in childhood can persist into adulthood and increase the risk of social, physical, and emotional problems. Perceived parental rejection leads to different physical and mental health issues such as depression, delinquency, behavioral disorders, and substance abuse (Rohner & Britner, 2002). If the process of rejection in childhood has greatly compromised the individual's ability to establish secure and confidential relationships with other people (Rohner, 2016), the romantic relationship with an intimate partner may be disrupted in the future.

Although several studies have shown that perceived parental acceptance-rejection is associated with a number of different mental health problems (Glavak Tkalić & Vulić-Prtorić, 2016; Riaz & Soomro, 2021; Ruševljan et al., 2009; Sart et al., 2016), very few studies have examined whether parental rejection in childhood predicts emotional distress after a breakup. One of the most stressful events in emerging adulthood is romantic relationship dissolution. About two-thirds of university students experience a romantic breakup (Field, 2017), which represents the loss of a figure of attachment and can be perceived as a romantic partner's rejection. After a breakup, a person can experience strong unpleasant emotions, symptoms of anxiety and depression, and use maladaptive coping strategies (Field, 2017; Field et al., 2010; Leung et al., 2011). Research conducted by Sarwar et al. (2020) in Pakistan found that paternal rejection and overprotection are related to greater breakup distress in young adults. Maternal rejection wasn't related to breakup distress. That is consistent with research showing that paternal acceptance-rejection sometimes has a stronger impact on children's developmental outcomes than maternal acceptance-rejection (Rohner, 2016). This may depend on the sociocultural context – in patriarchal societies where the father has more power and prestige in a family than the mother, paternal rejection might have stronger effects on children's well-being (Sultana & Khaleque, 2016). However, research conducted in Croatia usually show that both maternal and paternal behaviors predict a child's developmental outcomes (Ruševljan et al., 2009; Glavak Tkalić & Vulić-Prtorić, 2016). Therefore, both paternal and maternal rejection might be related to greater breakup distress in the Croatian sample.

As we mentioned earlier, Khaleque & Rohner (2002) list seven personality traits that indicate poor psychological adjustment. All of those dispositions might make coping with a breakup more difficult. Individuals with low self-esteem might be more prone to question their self-worth after experiencing a breakup. Research has shown that lower self-esteem is related to more stress and worse emotional adjustment after a breakup (Frazier & Cook, 1993). People with impaired self-adequacy might feel less capable to cope with the breakup or establish a new, satisfying relationship. Aggressive and hostile persons may

blame their partner and rely on inadequate coping strategies. Individuals with immature dependence feel the need for constant reassurance from their partners (Rohner & Lansford, 2017). Thus, they may find it more difficult to accept that the romantic relationship has ended and that they won't continue to receive their partner's support and care. Emotionally unstable individuals are generally prone to experiencing more negative emotions (Costa & McCrae, 1980), so they might find coping with relationship breakups more difficult. Emotionally unresponsive people might find it harder to recognize and express their emotions after the breakup. They may suppress them, which may prolong the recovery. Finally, a negative worldview may discourage young people to rely on social support and make them believe that it is impossible to establish a loving, long-lasting relationship. In conclusion, parental rejection may contribute to greater breakup distress indirectly through poorer psychological adjustment. Therefore, the aim of this study is to examine the mediating role of psychological adjustment in the relationship between parental acceptance-rejection and breakup distress in emerging adulthood.

## Method

### *Participants and Procedure*

The study involved 189 participants (152 females and 37 males). Given the relatively low number of male participants in the study, and the fact that research within the IPARTheory usually reports separate analyses for men and women, we decided to report only the results of female respondents.

Participants had to fulfill the following criteria to participate in the research: to have experienced a breakup in the last six months, to be 18–30 years old, and to have never been married. Therefore, further analyses were performed on 152 female participants aged 18 to 30 ( $M = 23.09$ ;  $SD = 2.97$ ). The average time elapsed from the last breakup in our sample was 3.2 months ( $SD = 2.07$ ), and the maximum was 6 months. The average duration of the last relationship was 2 years and 3 months ( $M = 26.91$ ,  $SD = 26.60$ ;  $min = 1$ ,  $max = 178$ ). This study was conducted during the COVID-19 pandemic and 3 to 5 months after the devastating earthquakes in Sisak-Moslavina County. Therefore, the participants estimated the level of stress they experienced as a consequence of these two events on a scale from 1 to 5. On average, participants reported moderate levels of stress on both variables.

The participants were recruited using a snowball sampling method. The online survey questionnaire was posted in a few Facebook groups that include

Croatian students as members. Data were collected from March to June 2021. Completing the questionnaire took 15–20 minutes.

### *Measures*

#### ***Breakup Distress Scale (BDS; Field et al., 2009)***

The Breakup Distress Scale consists of 16 items that assess the distress that an individual experiences after a breakup. A sample item: "I feel lonely a great deal of the time since the breakup." Participants gave answers on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The total score was formed by summing the scores on all items. Results can range from 16 to 80. A higher score indicates greater breakup distress. Cronbach's  $\alpha$  in this study is .959.

#### ***Personality Assessment Questionnaire (PAQ; Khaleque & Rohner, 2002)***

The Personality Assessment Questionnaire (short form) consists of 42 items that measure seven personality dispositions that are associated with the experience of interpersonal acceptance and rejection. These dispositions include hostility and aggression, dependence or defensive independence, impaired self-esteem, impaired self-adequacy, emotional responsiveness, emotional instability, and negative worldview. A sample item: "It's hard for me to show my feelings to others." Participants assess their agreement with the statements on a scale from 1 (*almost never true of me*) to 4 (*almost always true of me*). The total score was formed by summing the scores on all scales. Results can range from 42 to 168. A higher score on the questionnaire indicates poorer psychological adjustment. The internal consistency in this study is  $\alpha = .914$ .

#### ***Parental Acceptance-Rejection Questionnaire (PARQ; Rohner, 2005)***

The Parental Acceptance-Rejection Questionnaire measures adults' remembrances of the degree to which they experienced parental acceptance or rejection when they were 7–12 years old. A short version of the adult questionnaire was used in this research. The questionnaire consists of two parallel forms assessing paternal and maternal acceptance-rejection. Each form consists of a 24-item scale. Participants respond to items on a scale from 1 (*almost never true*) to 4 (*almost always true*). Each 24-item scale consists of four subscales: warmth/acceptance, aggression/hostility, indifference/neglect, and undifferentiated rejection. Example of scale item: "My mother yelled at me when she was angry." The individuals' score on the questionnaire is obtained by summing the results on all subscales after reverse scoring the warmth/acceptance subscale to form a measure of perceived coldness/rejection. Results can range from 24 to 96, with scores greater than 60 suggesting greater perceived rejection. The Cronbach's  $\alpha$  coefficients obtained were .959 for paternal acceptance-rejection and .957 for maternal acceptance-rejection.

## Results

Data analysis was performed using the IBM SPSS Statistics program. Prior to data analysis, Mahalanobis distances were calculated for all regression models based on planned mediation analyses to determine multivariate outliers. Two results were recognized as multivariate outliers ( $\chi^2 < .001$ ) and excluded from further analyses.

### *Descriptive Data and Pearson's Correlation Coefficients*

Table 1 shows the descriptive data and Pearson's correlation coefficients for the measured variables. Pearson's correlation coefficients show that both paternal and maternal acceptance-rejection are associated with psychological adjustment and breakup distress. Yet, with an exception of the correlation between psychological adjustment and breakup distress (27% of the shared variance), all significant correlations are small (3.5% to 11.7% of the shared variance). Our expectations regarding the direction of the correlations are confirmed, but the effect sizes are smaller than we expected. Participants who didn't initiate the breakup experienced greater breakup distress ( $r = .28, p < .01$ ). Shorter time since breakup ( $r = -.27, p < .01$ ) and non-initiator status ( $r = .28, p < .01$ ) relate to greater breakup distress. Both paternal ( $r = .19, p < .05$ ) and maternal rejection ( $r = .27, p < .01$ ) are in a positive correlation with greater breakup

**Table 1**

*Descriptive Data and Pearson's Correlation Coefficients Between the Examined Variables*

	1	2	3	4	5	6	7
1. Time elapsed from the breakup	1	.09	-.02	<b>-.20*</b>	-.09	-.14	-.27**
2. Relationship length		1	-.09	-.10	-.08	-.12	-.13
3. Initiator status			1	-.00	.04	.10	<b>.28**</b>
4. Paternal rejection				1	<b>.33**</b>	<b>.34**</b>	<b>.19*</b>
5. Maternal rejection					1	<b>.34**</b>	<b>.27**</b>
6. Psychological adjustment						1	<b>.52**</b>
7. Breakup distress							1
<i>N</i>	150	150	150	141	148	150	150
<i>Min-max</i>	0–6	1–178	-	24–81	24–77	57–139	17–80
<i>M</i>	3.19	27.20	-	40.76	34.01	91.12	46.12
<i>SD</i>	2.06	26.66	-	15.88	12.21	18.01	17.43

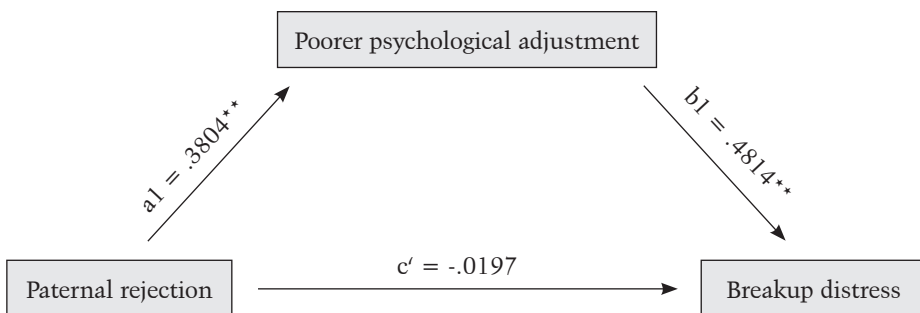
Note: \* $p < .05$ , \*\* $p < .01$ ; initiator status: 1 = me/with partner, 2 = partner

distress. Psychological maladjustment is in moderate positive correlation with breakup distress ( $r = .52, p < .01$ ). Finally, paternal ( $r = .34, p < .01$ ) and maternal rejection ( $r = .34, p < .01$ ) are related to greater psychological maladjustment.

### Conducting Mediation Analyses

Mediation analysis was conducted using The PROCESS macro for SPSS (Hayes, 2013). Firstly, psychological adjustment was expected to mediate the association between paternal acceptance-rejection and breakup distress. In the analysis, we controlled for the time elapsed from the breakup and initiator status, because they were significantly related to the criterion variable. According to the results shown in Figure 1, higher paternal rejection is a significant predictor of poorer psychological adjustment, and poorer psychological adjustment predicts greater breakup distress. The indirect effect of the paternal acceptance-rejection on breakup distress proved to be significant ( $a1b1 = .1831, SDe = .0515, BootCI99 [.0614; .3331]$ ), and the direct contribution of the father's acceptance-rejection to breakup distress was not significant ( $c' = -.0197, SDe = .0807, p > .05$ ). That is, greater paternal rejection indirectly, through poorer psychological adjustment, contributes to greater breakup distress in women in emerging adulthood. The estimated indirect effect size indicates that with an increase of 1 *SD* on the Paternal Acceptance-Rejection Questionnaire, the score on the Breakup Distress Scale increases by .1658 *SD* ( $abcs = .1658, BootSDe = .0466$ ). Paternal rejection, psychological adjustment, the time elapsed from

**Figure 1**  
*Model of Relationships Between Paternal Rejection, Psychological Adjustment, and Breakup Distress*

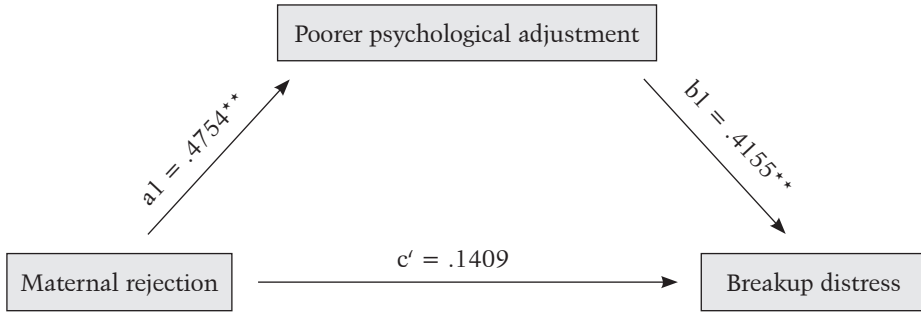


Note: All coefficients are unstandardized regression coefficients. \*\* $p < .01$



**Figure 2**

*Model of Relationships Between Maternal Rejection, Psychological Adjustment, and Breakup Distress*



*Note:* All coefficients are unstandardized regression coefficients. \*\* $p < .01$

the breakup, and the initiator status together explain a significant part of the variance of breakup distress ( $R^2 = 37.88\%$ ,  $F(4, 136) = 20.7313$ ,  $p < .01$ ).

Secondly, we examined whether psychological adjustment is a mediator in the relationship between maternal acceptance-rejection and breakup distress. In the analysis, we controlled for the time elapsed from the breakup and initiator status. As shown in Figure 2, greater maternal rejection is a significant predictor of poorer psychological adjustment, and poorer psychological adjustment significantly contributes to greater breakup distress. The indirect effect of maternal acceptance-rejection on breakup distress was significant ( $a1b1 = .1976$ ,  $SDe = .0568$ ;  $BootCI99 [.0760; .3661]$ ), while the direct effect of maternal acceptance-rejection on breakup distress was not significant ( $c' = .1409$ ,  $SDe = .1010$ ,  $p > .05$ ). Thus, greater maternal rejection indirectly, through poorer psychological adjustment, contributes to greater breakup distress in women in emerging adulthood. With an increase of 1 *SD* on the Maternal Acceptance-Rejection Questionnaire, the score on the Breakup Distress Scale increases by .1386 *SD* ( $abcs = .1386$ ,  $BootSDe = .0379$ ). Maternal rejection, psychological adjustment, the time elapsed from the breakup, and the initiator status together explain a significant amount of the variance of breakup distress ( $R^2 = 36.45\%$ ,  $F(4, 143) = 20.5090$ ,  $p < .01$ ).

## Discussion

The aim of this study was to examine the mediating role of psychological adjustment in the relationship between parental acceptance-rejection and ro-

romantic breakup distress in women in emerging adulthood. The results support the mediating effect of psychological adjustment in the relationship between parental acceptance-rejection and breakup distress. Greater parental rejection indirectly, through poorer psychological adjustment, contributes to greater breakup distress. The direct effect of parental rejection on breakup distress was not significant.

According to previous research (Khaleque & Ali, 2017; Khaleque et al., 2021; Rohner & Khaleque, 2010), paternal and maternal rejection contributes to poorer psychological adjustment. Correlations that we obtained in this research indicate that perceived paternal and maternal acceptance are equally important for the psychological adjustment of women in emerging adulthood. Also, as expected, we confirmed that people with poorer psychological adjustment experience greater breakup distress. According to Khaleque and Rohner (2002), poor psychological adjustment includes aggression and hostility, dependence or defensive independence, impaired self-esteem, impaired self-adequacy, emotional instability, emotional unresponsiveness, and negative worldview. According to some previous research, individuals with low self-esteem had significantly lower well-being (Cross et al., 2021) and show greater distress (Waller & MacDonald, 2010) after experiencing a breakup. It is especially difficult to cope with a breakup for individuals whose self-worth depends on their relationship status (Park et al., 2011). Low self-adequacy refers to negative and unhelpful beliefs about one's own ability to cope with problems. In stressful situations, people with a lower level of self-adequacy will tend to use passive coping strategies, which could increase negative effects on resolving the problem (Rees et al., 2015). A person with low self-adequacy may feel overwhelmed by unpleasant emotions with which they do not feel able to cope after the breakup, which can lead to increased breakup distress. They may also lack confidence in their ability to find a satisfying partner and establish a new romantic relationship. Dependent individuals may experience greater breakup distress due to excessive emotional dependency on a partner during the relationship, which makes it harder for them to accept that the romantic relationship has ended and they can no longer rely on their partner's support. Emotional instability is the person's tendency to experience unpleasant emotions such as sadness, fear, and anger. Therefore, it is understandable that the more emotionally unstable person experiences greater difficulties after a romantic breakup. This personality disposition is to some extent genetically determined (Wray et al., 2007), but parental coldness, aggression, and neglect contribute to greater emotional instability (Rohner, 2004). Previous research suggests that people who recover faster from a breakup have lower neuroticism than people who experience chronic distress after a breakup (Verhallen et al., 2021). The use of maladaptive coping strategies is related to aggression and hostility (Whitman & Gottdiener,

2015). Thus, aggression as a personality disposition can make a person more prone to anger after a breakup and discourage them from using adaptive coping strategies. Emotionally unresponsive people may be less likely to seek the support of others by openly showing their feelings, making it difficult for them to cope with the breakup. After all, if a person perceives the world as an insecure place, they may have a lack of hope in establishing satisfying romantic relationships in the future, which can make grieving more difficult. A negative worldview can make it difficult to find meaning in the breakup crisis and discourage a person from seeking social support in dealing with the breakup.

In conclusion, we can assume that parental rejection in childhood impairs the psychological adjustment of young women, and this effect remains visible in emerging adulthood and contributes to poorer coping with a romantic breakup. Although parental acceptance-rejection contributes to greater breakup distress, it is important to emphasize that the effect size is low. This points to the fact that parental behavior in childhood is not a crucial factor in explaining breakup distress. Relationship characteristics, circumstances of the breakup, and personality may be more important predictors of breakup distress than experiences from the primary family.

#### *Limitations and Future Directions*

This study has several limitations. Although mediation effects were examined in the study, we cannot be sure that the relationship of the examined variables is causal and that the actual directions of influence are limited to those defined by our model. Namely, it is possible that the experience of a breakup alone disrupts the psychological adjustment of the individual and distorts the perception of parental behavior in childhood. It is interesting to note that there was a significant very low correlation between perceived paternal rejection and the time elapsed from the breakup. In other words, the recent experience of the breakup was associated with a higher perception of paternal rejection. It is possible that women subconsciously project the relationship with their partner onto the relationship with their father, and therefore the objectivity of their perception of the relationship with the father is impaired. In contrast, it is possible that when experiencing unpleasant emotions of rejection after a breakup, the remembrance of paternal rejection in childhood becomes more vivid. It is well known that recall is more effective when the emotional state at the time of recalling is similar to the emotional state at the time of coding (Buchanan, 2007).

Conducting longitudinal research which would measure perceived parental rejection and psychological adjustment before experiencing a breakup would provide a clearer picture of the relationship between those variables and

breakup distress. Analyses in this paper were performed only on women and therefore it is recommended to examine gender differences in the relationship between these variables in future research. Also, due to the relatively low correlations between the observed variables, it is recommended to have a larger sample in future research in order to increase the statistical power. The sample size in this study was limited because the criteria for participation (experience of breakup in last 6 months) made it difficult to collect a larger sample. Finally, the research was conducted during the COVID-19 pandemic and 3–6 months after the devastating earthquakes in Sisak-Moslavina County. These stressful events could affect psychological adjustment and further complicate coping.

### Conclusion

The obtained results showed that higher paternal and maternal rejection predict poorer psychological adjustment, and poorer psychological adjustment is a significant predictor of romantic breakup distress. The indirect effect of paternal and maternal acceptance-rejection on breakup distress is significant. Greater paternal and maternal rejection indirectly, through poorer psychological adjustment, contribute to greater breakup distress in women in emerging adulthood. However, the effect sizes are small, so the parental acceptance-rejection is not a crucial determinant of successful coping with a romantic relationship breakup.

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## The Relationship Between Group Cohesion, Work Stress, and Job Satisfaction

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### Abstract

**Background and Aim:** Previous research has shown that higher team cohesion is significantly associated with higher job satisfaction. Group cohesion is also associated with work stress, in a way that employees who perceive higher team cohesion show less work stress. In addition, experiencing less work stress leads to a number of benefits. One of these benefits is higher job satisfaction. These findings suggest that there is a complex relationship between these variables. Regarding that, it was assumed that work stress acts as a mediator in the relationship between group cohesion and job satisfaction. Accordingly, the aim of the research conducted was to investigate the relationship between group cohesion, work stress, and job satisfaction.

**Method:** The research lasted from February to May 2021 and was conducted online. The sample consisted of 336 employees (69.64% female) with different occupations and an age range of 18–69. Participants self-assessed group cohesion, job satisfaction, and work stress.

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**Results:** The results of the mediation analysis showed that group cohesion has a direct and indirect effect on job satisfaction via work stress. More specifically, higher group cohesion was shown to directly predict higher job satisfaction. Similarly, higher group cohesion was shown to predict lower work stress, which in turn predicted higher job satisfaction.

**Conclusion:** The results suggest that improving group cohesion in the workplace can have a significant impact on workers' job satisfaction, both directly and indirectly by reducing their work stress.

*Keywords:* group cohesion, work stress, job satisfaction

### **The Relationship between Group Cohesion, Work Stress, and Job Satisfaction**

Group cohesion is defined and operationalized in numerous ways. This is in part due to the different perspectives from which group cohesion is researched (Casey-Campbell & Martens, 2009). One such perspective is industrial and organizational psychology (Dion 2000; Mullen & Copper 1994). In this perspective, group cohesion can be defined as the tendency of employees to make social connections with the goal of unity and community reinforcement (Casey-Campbell & Martens, 2009). According to Janssen and Huang (2008), this tendency depends on employees being aware of belonging to the team, attributing positive values to the team, and having an emotional attachment to the team. Accordingly, overall group cohesion depends on how strong each of the previously mentioned factors is. In general, employees with stronger group cohesion are more committed to each other, motivated to stay on the team, and proud to be part of the team (Joo et al., 2012).

Research has shown that higher team cohesion is significantly associated with higher job satisfaction (Bartkus et al., 1997; Dobbins & Zaccaro, 1986). According to Steinhardt et al. (2003), a possible explanation for this relationship could be that part of job satisfaction is satisfaction with the group. Thus, when group cohesion increases, a portion of overall job satisfaction, referred to as group satisfaction, also increases.

Previous research has also shown that higher group cohesion is associated with lower work stress (Steinhardt et al., 2003; Turnipseed, 1999). Work stress is defined as a subjective evaluation of the work situation resulting from the imbalance between the work demands and the employee's ability to respond appropriately (Hudek-Knežević et al., 2006). Employees who perceive higher team cohesion show less work stress (Bartkus et al., 1997; Steinhardt et al., 2003), which leads to a number of benefits. One of these benefits is higher job satisfaction (Bateman & Strasser, 1983; Hills & Norvell, 1991; Steinhardt et al., 2003).

Therefore, previous research (Bemana et al., 2013; Bhati et al., 2011; Khamsa et al., 2015) has shown that group cohesion is associated with work stress and

job satisfaction, and that work stress is associated with job satisfaction. These findings suggest that there is a complex relationship between these variables. With this in mind, Steinhardt et al. (2003) developed a conceptual model that work stress acts as a mediator in the relationship between group cohesion and job satisfaction. However, the Steinhardt et al. (2003) model has not stimulated further research. To the best of our knowledge, this is a rare study that examines the Steinhardt et al. (2003) conceptual model, and therefore represents an important contribution to the literature on the complex relationship between group cohesion, work stress, and job satisfaction. Moreover, in this study, we considered group cohesion as a multidimensional construct that encompasses a commitment to the task and interpersonal attraction among workers. Since Steinhardt et al. (2003) defined group cohesion as employees' perceptions of integrated behavior directed toward achieving group goals, the results of this paper will provide us with some important insights into the role of employees' interpersonal attraction in predicting job stress and job satisfaction.

Accordingly, the purpose of the research was to examine the relationship between group cohesion, work stress, and job satisfaction. Following Steinhardt et al.'s (2003) model, we first hypothesize that group cohesion has a significant direct effect on job satisfaction, such that when it is increased, it also predicts an increase in job satisfaction (H1). Following the Steinhardt et al. (2003) model, we hypothesize the second hypothesis that group cohesion has an indirect effect on job satisfaction via work stress (H2). Group cohesion has a significant indirect effect on job satisfaction via work stress, in the way that an increase in group cohesion predicts a significant decrease in work stress, which in turn results in an increase in job satisfaction.

## Method

### *Participants*

The sample consisted of employed adults from the territory of the Republic of Croatia. The sample was convenient and consisted of 336 workers (69.64% women and 30.36% men) aged between 18 and 69 ( $M = 39.76$ ;  $SD = 11.99$ ). The main condition for participation in the research was the existing employment relationship of the participants. The ownership structure of the companies in which the participants work is as follows: public sector ( $n = 138$ ), private sector ( $n = 101$ ), and national sector ( $n = 97$ ). The majority of participants (57.1%) were scientists, researchers, or experts, 10.7% were service providers or traders, 10.4% were administrative employees, and 9.5% were technicians or professionals. In addition, 3.3% practiced simple occupations, 2.1% were

plant and machine operators or industrial manufacturers, .6% worked in the trades, .3% worked in the military, and .3% were farmers, foresters, fishermen, or hunters. On average, participants worked at their current company for about 142 months or eleven years ( $M = 142.12$ ;  $SD = 132.33$ ).

### *Measures*

#### ***Job Satisfaction Scale***

The *Job Satisfaction Scale* (MacDonald & MacIntyre, 1997) is used to assess participants' job satisfaction. The scale consists of ten statements and the participants' task was to mark the extent to which they agreed with each statement. Responses were given on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Some examples of statements include: "I receive recognition for a job well done," "I feel good about working at this company," and "I feel good about my job." MacDonald and MacIntyre (1997) reported the reliability of the scale  $\alpha = .77$ . Considering the fact that the scale was not used in Croatian samples, an exploratory factor analysis was performed. The scale was translated by the authors of this paper. Factor analysis revealed one factor with an eigenvalue greater than one, with saturations ranging from .56 to .86, explaining 56.50% of the variance. The correlation between all statements is positive, moderate, or strong and significant, and the saturation values range from .56 ("My salary wages are good") to .86 ("I feel good about my job."). The Scree Plot criterion also shows the existence of a factor, so we can say that these ten statements together constitute one factor for job satisfaction. The final score on the scale is calculated by combining (adding) the responses to all the statements. The theoretical range can be from 10 to 50. A higher final score indicates higher job satisfaction. The measure of internal consistency was used as a reliability indicator and proved to be satisfactory ( $\alpha = .91$ ).

#### ***Group Cohesion Scale***

The *Group Cohesion Scale* (Dobbins & Zaccaro, 1986) was used to examine participants' group cohesion. The scale measures participants' perceptions of their work-team cohesion and consists of six statements. The participants' task was to rate the extent to which they agreed with each statement on a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*). Some examples of statements in the scale are "The members of this team stick together" or "The members of this team get along well." The internal consistency of the scale has been determined in previous research, which showed that it ranges from  $\alpha = .89$  to  $\alpha = .91$  (Dobbins and Zaccaro, 1986; Kidwell et al., 1997). Considering that this scale was not used in the Croatian sample, an exploratory factor analysis was performed. The scale was translated by the authors of this paper. The factor analysis showed one factor with an eigenvalue greater than

one was identified, explaining 79.56% of the variance. The correlation between all statements is positive, strong, and significant, and saturation ranges from .85 ("We all take responsibility for any loss or poor performance of our team.") to .93 ("The members of this team stick together."). The Scree Plot criterion also indicates the existence of a factor, so we can say that the six statements together constitute a factor for group cohesion. The final score is the sum of the responses to the statements, so a higher score means stronger perceived group cohesion of the work team. In order to measure internal consistency, Cronbach's Alpha was used as an indicator of reliability. It showed that the reliability of the group cohesion scale was satisfactory ( $\alpha = .95$ ).

### ***Perceived Work Stress Scale***

The *Perceived Work Stress Scale* (Mackie et al., 2001) was used to examine participants' work stress. The scale measures how participants perceive stress in their workplace and consists of seven questions. Participants were asked to rate on a five-point Likert scale (1 = *never*; 5 = *very often*) how often they experienced various situations at work in the past month (e.g., "In the past month, how often have you felt that you have too much stress at work?"). The literature shows (Mackie et al., 2001; Yost, 2016) that the internal consistency of a scale ranges from  $\alpha = .71$  to  $\alpha = .88$ . Considering that this scale was not used in the Croatian sample, an exploratory factor analysis was performed. The scale was translated by the authors of this paper. The factor analysis showed one factor with an eigenvalue greater than one was identified, explaining 66.39% of the variance. The correlation between the statements ranges from -.13 to .81, with saturation ranging from .82 ("In the last month, how often have you had to deal with persistent problems at work that never seem to go away?") to .91 ("In the last month, how often have you been upset about something that happened unexpectedly at work?"). The only exception is the statement "In the past month, how often have you felt that things are going the way you want them to at work?" due to inverse coding and saturation of -.29. The Scree Plot criterion also shows that a factor exists, so we can say that seven statements together form a factor for perceived work stress. The final result is obtained by adding the responses to each question (taking into account the inverse coding) so that a higher result means stronger perceived work stress. The measure of internal consistency Cronbach's alpha was used as an indicator of reliability. It showed that the reliability of the perceived work stress scale was satisfactory ( $\alpha = .85$ ).

### ***Procedure***

The survey was created using the SoSci Survey application (Leiner, 2016) and made available to users via [www.soscurvey.de](http://www.soscurvey.de). A convenient sample was

used in the research. Participants were reached by posting a link to the online survey on various social networks (Facebook, Instagram, LinkedIn, etc.). Participants gave their written consent to participate by pressing the “Next” button. The aim of this research, voluntary participation, anonymity, the confidentiality of data, usage of data for research purposes only, and its processing only at the group level were explained in the written consent. The questionnaire took 10–15 minutes to complete.

### *Analysis*

Prior to the analysis performed to test the hypothesis of the paper, a precondition analysis was performed, that is, the intercorrelations between the variables were checked. The results show that there is no multicollinearity, since the tolerance index is above .1 and the value of the inflation factor is below 2.5. The correlations between all variables were also analyzed and it was found that none of them is greater than .70.

To examine the direct effect of group cohesion on job satisfaction and the indirect effect via job stress, we used the PROCESS macro (Hayes, 2013; Hayes et al., 2017). We used 95% bootstrap (N = 5000) confidence intervals (CI) for inferences about the significance of indirect effects. If the derived CI does not contain zero, the indirect effect is statistically significant.

## **Results**

### *Descriptive Data for Researched Variables*

After examining the conditions for using the aforementioned statistical analysis, the descriptive data for the variables used were calculated. The descriptive data for the variables of job satisfaction, work stress, and group cohesion are presented in Table 1.

**Table 1**  
*Means, Standard Deviations, and Descriptive Statistics of Variables (N = 336)*

	<i>M</i>	<i>SD</i>	Real range	Theoretical range	Skewness	Curtosis
Group cohesion	28.39	8.95	6-42	6-42	-.36	-.63
Work stress	22.05	5.16	7-35	7-35	.03	.19
Job satisfaction	36.38	8.72	10-50	10-50	-.53	-.41

The results show that, on average, the participants' work teams are highly cohesive ( $M = 28.39$ ;  $SD = 8.95$ ). We also see that, on average, they are quite satisfied with their work ( $M = 36.38$ ;  $SD = 8.72$ ), but also that they perceived their work stress to be higher than average in the last month ( $M = 22.05$ ;  $SD = 5.16$ ).

*Intercorrelations between Job Satisfaction, Group Cohesion, and Work Stress*

In addition, the intercorrelations between the variables researched were checked and are presented in Table 2.

**Table 2**  
*Intercorrelations Between Variables (N = 366)*

	1.	2.	3.
1. Group cohesion	-	-.29*	.65*
2. Work stress			-.36*
3. Job satisfaction			

Note: \* $p < .01$

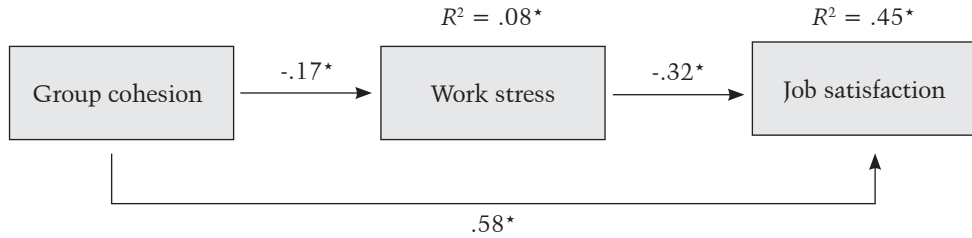
As expected, higher group cohesion of the participants' work team is significantly related to higher job satisfaction of the participants ( $r = .65$ ;  $p < .01$ ), but also to decreased perceptions of work stress ( $r = -.29$ ;  $p < .01$ ). In addition, decreased work stress is also related to higher participant job satisfaction ( $r = -.36$ ;  $p < .01$ ). Considering the fact that all correlations are low to moderate and there is no high correlation between the variables, the conditions for further analysis are met.

*Mediation Analysis*

The next step in the statistical analysis of the data was carried out with the aim of answering the problems of this research. More specifically, it was dedicated to examining the direct and indirect relationship between group cohesion and job satisfaction. First, it was assumed that higher group cohesion directly predicts increased job satisfaction. Second, it was assumed that higher group cohesion indirectly affects increased job satisfaction in a way that significantly predicts decreased work stress which in addition, significantly predicts higher job satisfaction. To investigate this, a mediation analysis was conducted (Figure 1.) and both hypotheses were confirmed.

**Figure 1**

*Mediation Analysis for the Relationship between Group Cohesion, Work Stress, and Job Satisfaction*



*Note:*  $p < .01$ ; Confidence interval for direct effect:  $.50 - .66$ . Confidence interval for indirect effect:  $.02 - .10$

## Discussion

Group cohesion is one of the key organizational characteristics (Casey-Campbell & Martens, 2009) which in turn leads to other important organizational outcomes (Cota et al., 1995; Greer, 2012; Joo et al., 2012). For a long period of time, it was assumed group cohesion has a direct effect on these organizational outcomes, one of which is employee job satisfaction (Bartkus et al., 1997). However, it seems like this relationship is more complex than it was thought in the first place. More specifically, other factors, like work stress, seem to be connected and have an effect on the relationship between group cohesion and job satisfaction (Ahronson & Cameron, 2007; Li et al., 2014; Steinhardt et al., 2003). Accordingly, the purpose of this research was to examine the relationship between group cohesion, work stress, and job satisfaction.

The first hypothesis of this research was confirmed, i.e. the analysis conducted showed that higher group cohesion is a significant predictor of higher job satisfaction. Previous research has also confirmed these findings (Bartkus et al., 1997; Dobbins & Zaccaro, 1986). According to Steinhardt et al. (2003), a possible explanation for this relationship could be that part of job satisfaction is satisfaction with the group. Thus, when group cohesion increases, a portion of overall job satisfaction, referred to as group satisfaction, also increases. If we take a look at other research on this topic, for example, in that of Urien et al. (2017) we can find the same results. They say that higher group cohesion provides good social connection and security among employees, which increases overall job satisfaction. These results and explanations of the relationship are similar to those of Jimmieson et al. (2010) and Wang et al. (2012). They say that a good relationship with colleagues at work acts as a psychological capital

of workers, which is crucial for job satisfaction. The results of this research support this and as the above authors explain, better cohesion within a work team has a direct impact on employee happiness, i.e., job satisfaction.

The second hypothesis of this research was confirmed as well, i.e., the mediation analysis conducted showed that work stress is a significant mediator of the relationship between group cohesion and job satisfaction. First of all, group cohesion is a significant predictor of work stress in the way that when it increases, it predicts a decrease in work stress. Steinhardt et al. (2003) explain this finding by stating that group cohesion is one of the protective factors of work stress, that is, when it is increased and perceived by workers, it protects them and makes them feel better and able to cope with job challenges. Considering that, when group cohesion increases, it is also a protective factor against work stress, and the likelihood that employees will feel stressed at work decreases significantly. This occurs because, as Turnipseed (1999) explains, increased group cohesion in the workplace reduces the pressure that employees feel. These findings are also consistent with those of Guchait et al. (2016), Khamisa et al. (2015), and Lambert and Lambert (2001), who say that one of the most important predictors of work-related stress is problems with team members. Guchait et al. (2016) offer another explanation for these findings. If we consider work stress as the result of a lack of resources to cope with work tasks (Lazarus and Folkman, 1984) and group cohesion as one of the work resources (Guchait et al., 2016), it is clear that an increase in group cohesion predicts and reduces work stress.

Moreover, mediation analysis showed that the aforementioned decrease in perceived work stress significantly predicts employee job satisfaction. Having decreased work stress due to higher group cohesion predicts higher employee job satisfaction. The authors of previous research (Bhatti et al., 2011; Cummins, 1990; Hills and Norvell, 1991; Khalatbari et al., 2013; Khamisa et al., 2015; Reilly et al., 2014, Steinhardt et al., 2003; Yaacob and Long, 2015) came to the same conclusions and found that a decrease in experienced and perceived stress during work significantly affects employee job satisfaction. Yaacob and Long (2015) claim that decreased work stress actually shows that employees have the resources to do their work tasks as expected. When this happens, employees are productive, they meet their expectations, and the result of this is happiness at the workplace and overall job satisfaction. Wang et al. (2012) also explain how experiencing less work stress boosts employees' psychological capital which is crucial for job satisfaction. Other than that, decreased work stress, which is connected with a good relationship with colleagues, results in less workload (Graham et al., 2011), and less workload makes employees happier, which results in higher overall job satisfaction (Khamisa et al., 2017).



The results of this research confirm a model proposed by Steinhardt et al. (2003) that work stress acts as a mediator in a relationship between group cohesion and job satisfaction. Although there is a direct relationship between group cohesion and job satisfaction in the sense that an increase in group cohesion predicts an increase in job satisfaction, there is an indirect relationship as well with work stress as a mediator included. As explained above and as Steinhardt et al. (2003) suggest in their model, group cohesion affects job satisfaction through work stress.

One of the contributions of this research can be from a theoretical point of view. Considering the lack of research testing the Steinhardt et al. (2003) model, the conducted research has significant theoretical value. Even though this is of great value, this research also has a practical use. More specifically, the results can be applied and implemented throughout the field of organizational psychology and work in different companies. The results confirm the importance of group cohesion in the workplace and how it affects other employee outcomes, such as work stress and job satisfaction. Psychologists working in organizations can engage employees in various activities aimed at strengthening group cohesion, which will most likely predict lower work stress and higher job satisfaction. Since the measure of group cohesion in this study consisted of the factors of task and interpersonal attraction among workers, the results of this study also show that interpersonal attraction among workers is an important factor in reducing work stress and increasing their job satisfaction.

Like any other study, this study has some limitations. The first and most important limitation of the study relates to its cross-sectional design, which does not allow conclusions to be drawn about causal relationships between group cohesion, work stress, and job satisfaction. Longitudinal studies are needed to fully elucidate the relationships between these constructs. Second, the study was conducted online, which has several drawbacks. In online studies, it is not possible to verify whether the respondent understood the instructions or whether he or she completed the questionnaire honestly and seriously. Third, the study was conducted with a convenient sample of respondents reached mainly through social media. Therefore, it is possible that the results are biased due to the reasons why some people choose to participate and others do not. Finally, we did not control for some variables that could affect job satisfaction, such as the type of employment contract (temporary or permanent). Indeed, it has been shown (e.g., Bardasi and Francesconi, 2004) that fixed-term employment contracts have negative effects on job satisfaction. This leaves room for future research to address these limitations and make improvements.

## Conclusion

The purpose of this paper was to investigate the relationship between group cohesion, work stress, and job satisfaction. The results showed that group cohesion is a significant predictor of job satisfaction. When group cohesion increases, it is also a significant predictor of increased job satisfaction. The results also show that work stress significantly mediates the above relationship. More specifically, increased group cohesion significantly predicts lower work stress, and in turn, lower work stress significantly predicts higher employee job satisfaction. As we can see, increased group cohesion in the first place leads to other benefits for employees at the workplace. That leads us to the conclusion that investing and caring about employees' relationships and cohesion needs to be a priority in all organizations.

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## Gestational Weight Gain as a Predictor of Postpartum Depression: A Longitudinal Study

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### Abstract

**Background and Aims:** Pregnancy and postpartum are periods of tremendous physiological and psychological changes that represent a time of vulnerability to mental health difficulties, such as peripartum depression (PPD). PPD is a complex and multifaceted disorder with numerous underlying risk factors. With the proportion of overweight and obesity during the childbearing years rapidly increasing, studies turned to examine maternal weight-related characteristics in relation to PPD. Pre-pregnancy body mass index (BMI) and gestational weight gain (GWG) might be associated with PPD, but the findings are limited and inconclusive. This study aimed to examine: 1) whether pre-pregnancy BMI and GWG predict postpartum depression symptoms while controlling for sociodemographic, obstetric, and psychological factors during pregnancy; 2) the proportion of women with GWG according to global recommendations.

**Method:** This prospective study was conducted on 267 pregnant women in the third trimester and again at 6–8 weeks postpartum. Participants ful-

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filled the general data sheet, Edinburgh Postnatal Depression Scale (EPDS), State-Trait Anxiety Inventory (STAI), Rosenberg Self-Esteem Scale (RSES), one item on pregnancy body image satisfaction, and EPDS again in postpartum. Pre-pregnancy BMI and GWG were collected from medical records.

**Results:** Results showed that 64.8% of the sample had weight gain outside the recommended for their pre-pregnancy BMI. Hierarchical regression analysis showed that after controlling for sociodemographic, obstetric, and psychological variables, GWG was a significant predictor of postpartum depression symptoms. Pregnant women with higher weight gain during pregnancy were at higher risk for depression symptoms 6–8 weeks postpartum.

**Conclusion:** The findings suggest that clinicians should closely monitor women with higher GWG and perform frequent mental health screenings. Individualized prevention programs, weight counseling, and prompt support should be offered to women with higher GWG. Early interventions aimed at optimizing GWG could reduce the risk for PPD, and improve maternal overall health and pregnancy outcomes related to both conditions.

*Keywords:* gestational weight gain, postpartum depression, pregnancy, postpartum, risk factors, maternal mental health

### **Gestational Weight Gain as a Predictor of Postpartum Depression: A Longitudinal Study**

Pregnancy and postpartum are periods of tremendous physiological and psychological changes that can represent a time of increased vulnerability to mental health difficulties (Biaggi et al., 2016). Peripartum depression (PPD) is among the most common perinatal mental health issues, with an estimated global prevalence of 17% in recent systematic reviews (Hahn-Holbrook et al., 2018; Wang et al., 2021). Untreated PPD is associated with numerous complications and health risks for both mothers and infants. Studies indicated that infants of mothers suffering from PPD had more negative behaviors and delays in cognitive and language development (Slomian et al., 2019). Also, depressed mothers have more impaired parenting behavior and difficulties interacting and bonding with the infant (Lovejoy et al., 2000; Nakić Radoš et al., 2020). Maternal PPD is associated with PPD in fathers (Ansari et al., 2021) as well. Due to the profound adverse effects on the family system, PPD imposes a significant burden on society as a whole (Bauer et al., 2014).

However, the aetiology of PPD is unclear. It is a complex and multifaceted disorder with numerous underlying risk factors. Most broadly, risk factors for PPD can be divided into biological and psychosocial factors, with only a few studies following an interdisciplinary and integrative approach (Yim et al., 2015). A recent umbrella review highlighted prenatal depression, current or past abuse, high stress, low social support, and prenatal anxiety as some of the common risk factors for PPD (Hutchens & Kearney, 2020). Also, a history of

psychiatric disorders and lower socioeconomic status are associated with PPD (Guintivano et al., 2018).

With the proportion of overweight and obesity in pregnant women rapidly increasing over the past decades (Chen et al., 2018), studies turned to examine the role of maternal body weight characteristics in relation to perinatal mental health. Consequently, some weight-related variables have emerged as possible predictors of PPD (Johar et al., 2020). Pre-pregnancy body mass index (BMI) was most commonly studied in relation to PPD, but the findings are inconclusive. Some studies demonstrated an association between higher pre-pregnancy BMI, overweight or obesity, and PPD (Ertel et al., 2017; Johar et al., 2020; La-Coursiere et al., 2010; Molyneaux et al., 2014), while others did not find such associations (Dayan et al., 2018; Jani et al., 2020; Sundaram et al., 2012).

Another far less explored weight-related factor is gestational weight gain (GWG). A recent study showed that the third-trimester weight gain in pre-pregnancy healthy and overweight women increased the risk of postpartum depression symptoms (Dayan et al., 2018). On the other hand, a study on 80.000 Japanese women found that insufficient GWG elevates the risk for PPD among women with healthy pre-pregnancy BMI (Yamaguchi et al., 2021). Similarly, another study demonstrated the relationship between lower GWG and PPD, but among obese participants (Cline & Decker, 2012). Finally, some studies did not support the association between GWG and PPD (Ertel et al., 2017; Johar et al., 2020).

Studies on Croatian women that examined GWG in general are limited and so far, none investigated the GWG and PPD relationship. One study showed that underweight, overweight, obese women, and those with excessive GWG had an increased risk of maternal, pregnancy, and neonatal complications (Đelmiš et al., 2015). Also, recent findings show that 5.3% of pregnant women were underweight, 65.5% had normal pre-pregnancy BMI, 20.4% were overweight, and 8.8% were obese, with overweight and obese women being the most at-risk for pregnancy complications (Vince et al., 2020). One study pointed out the rates of low (5.6%), adequate (66.3%), and excessive (28.1%) GWG (Šegregur & Šegregur, 2020), however, it did not investigate GWG in more detail, considering maternal pre-pregnancy BMI status.

Even though investigating the relationship between maternal weight-related variables and PPD has great clinical value and potential for early and targeted prevention, this area has thus far received little scientific attention and has remained largely overlooked. Studies on the perinatal population are focused mainly on the impact of maternal weight on neonatal and pregnancy outcomes (Sun et al., 2020) or pre-pregnancy obesity and PPD (LaCoursiere et al., 2010). Also, some that investigated GWG did not report specific rates of GWG for



each pre-pregnancy BMI group. In addition, studies exploring GWG and PPD are especially rare, often limited by small sample sizes and insufficient control of potential confounders (Johar et al., 2020). Also, only a few studies investigating GWG focused on women who were not obese or depressed before pregnancy (Dayan et al., 2018). Moreover, some studies relied on retrospective and cross-sectional designs (e.g. Adkins et al., 2019), which hinders conclusions. All the aforementioned resulted in a substantial discrepancy among studies and equivocal findings. Therefore, it is important to further explore pre-pregnancy BMI, GWG, and PPD which can help educate healthcare providers and form effective programs for women aimed at optimizing their weight gain and mental health during the peripartum period.

Considering the paucity of studies and the ambiguity of their results, this study aimed to explore whether pre-pregnancy BMI and GWG predict postpartum depression symptoms while controlling for sociodemographic and psychological factors during pregnancy. We expected that pre-pregnancy BMI and GWG would predict postpartum depression symptoms. However, due to limited and inconsistent findings, we could not make firm hypotheses on the direction of these associations. An additional goal was to examine the proportion of women gaining weight during pregnancy according to the Institute of Medicine (IOM) (2009) recommendations.

## Method

### *Participants*

In this prospective study, a community sample of pregnant women ( $N = 267$ ) was recruited from a prenatal clinic of the “Sisters of Mercy” University Hospital Centre in Zagreb (Croatia). The average age of the participants was 29.5 ( $SD = 4.4$  years), and the average gestational age at the T1 of the study was 35.5 ( $SD = 3.1$  weeks). The majority were married or cohabiting (98.1%), living in urban areas (85.4%), employed (84.6%), and of average socioeconomic status (73.8%). The majority also planned their pregnancy (64.4%), and more than half (59.6%) were primiparous. Exclusion criteria were history of psychiatric illness, clinical depressiveness during current pregnancy (score over 28 on the Beck Depression Inventory), multiple pregnancies, missing BMI data, the experience of a recent loss within the immediate family, and women whose babies had an Apgar score  $< 7$ . Characteristics of the sample are presented in Table 1 and a full description of the sample recruitment and attrition is provided elsewhere (Nakić Radoš et al., 2013).

**Table 1***Demographic and Obstetric Characteristics of the Sample (N = 267)*

	N (%)
Marital status	
Married or cohabiting	262 (98.1%)
Single	5 (1.9%)
Education	
Graduated from elementary school or less	2 (0.7%)
Graduated from high school	130 (48.7%)
Graduated from college or university	135 (50.6%)
Perceived socioeconomic status	
Below average	24 (9%)
Average	197 (74.1%)
Above average	45 (16.9%)
Working status	
Employed	226 (84.6%)
Unemployed	41 (15.4%)
Living area	
Urban	228 (85.4%)
Rural	39 (14.6%)
Parity	
Primipara	159 (59.6%)
Multipara	108 (40.4%)
	<i>M (SD)</i>
Age (years)	29.5 (4.4)
Gestational age (weeks) at T1	35.5 (3.1)
Gestational age at childbirth	39.3 (1.4)

*Instruments*

Participants completed the following questionnaires: Edinburgh Postnatal Depression Scale, The State-Trait Anxiety Inventory, Rosenberg Self-Esteem Scale, Beck Depression Inventory, and a General Data questionnaire at the first time point during pregnancy (T1), and Edinburgh Postnatal Depression Scale and General Data Questionnaire at the second time point, 6–8 weeks postpartum (T2).

*Edinburgh Postnatal Depression Scale* (EPDS; Cox et al., 1987) is a widely used self-report questionnaire measuring the severity of peripartum depression symptoms over the last week. The questionnaire consists of 10 items rated on

a scale from 0 to 3. The maximum score is 30, with higher scores indicating higher depression symptoms. A recently proposed cut-off is  $\geq 11$  (Levis et al., 2020). The Croatian version of the scale showed good psychometric characteristics with Cronbach's  $\alpha = .86$  (Nakić Radoš et al., 2013). In this study, McDonald's  $\omega$  was .84 during pregnancy and .88 in postpartum.

*The State-Trait Anxiety Inventory* (STAI-S and STAI-T; Spielberger et al., 2000) is a self-report questionnaire that measures anxiety as a state (STAI-S) and a trait (STAI-T), which has been translated and validated for use in Croatia (Spielberger et al., 2000). The subscale anxiety as a state measures anxiety levels present at the time of administration and reflects a transient emotional state, while the subscale anxiety as a trait represents a general and more stable personality characteristic. Each subscale has 20 items, some of which are reversely coded, with higher scores indicating higher anxiety levels. McDonald's  $\omega$  in this study was .94 and .90 for STAI-S and STAI-T, respectively.

*The Rosenberg Self-Esteem Scale* (RSES; Rosenberg, 1965), is a 10-item self-report measure of global self-esteem with 5 items referring to a positive and 5 to a negative evaluation of self. The total score is ranging from 0 to 40 with higher scores indicating higher self-esteem. Cronbach's  $\alpha$  values in a Croatian sample ranged from .81 to .84 (Bezinović, 1998). In this study, McDonald's  $\omega$  coefficient was .82.

*Beck Depression Inventory* (BDI-II; Beck et al., 2008) validated for use in the Croatian language (Beck et al., 2008), measures depression symptoms over 21 questions, with responses ranging from 0 to 3. This instrument was used only during pregnancy to exclude women with high depression scores ( $> 28$ ) to measure new-onset postpartum depression cases. Some have pointed out that BDI-II should be used with caution when measuring PPD as it includes some somatic symptoms that reflect normal changes of the peripartum period (Conradt et al., 2012). In our study, the McDonald's  $\omega$  reliability measure was .80.

*The General Data Questionnaire* comprised of questions regarding sociodemographic (maternal age, marital, educational, employment, and socioeconomic status), obstetric data (gestational age at birth, parity), and a single question "*How satisfied are you with the appearance of your body?*" on a scale from 1 to 5. Higher numbers indicate higher satisfaction with body appearance, which is hereafter referred to as body image satisfaction.

Maternal pre-pregnancy weight, height, and gestational weight gain (GWG) up to delivery were extracted from the medical records. GWG was defined as the difference between maternal weight status on delivery and maternal self-reported pre-conception weight. Pre-pregnancy BMI categories were classified as follows: Underweight (BMI  $< 18.5$ ), Healthy weight (BMI 18.5–24.9), Overweight (BMI 25–29.9) and Obese (BMI  $> 30$ ). GWG categories were classified

as Inadequate, Adequate, and Excessive, according to the IOM recommendations, considering the pre-pregnancy BMI (IOM, 2009).

### *Procedure*

The study was approved by the Croatian Ministry of Science, Education and Sports. Women were recruited at a prenatal clinic of the “Sisters of Mercy” University Hospital Centre while waiting for their regular prenatal care appointment in the third trimester of pregnancy. Participants who had given their signed informed consent were enrolled in the study and subsequently approached at 6-8 weeks postpartum via postal questionnaires.

### *Statistical Analysis*

All psychological and weight-related variables were normally distributed, with a skewness index under 3, and a kurtosis index under 10, which is suitable for parametric analyses according to Kline (2011). Correlation coefficients were analyzed using Pearson’s, Point-biserial, and Spearman’s rank correlation coefficients. We used the *t*-test to examine the differences in the GWG between the healthy-weight and the above healthy-weight pre-pregnancy BMI (combined overweight and obese category). A hierarchical regression analysis was conducted with depression symptoms at 6–8 weeks postpartum as a criterion. We controlled for gestational age at birth and variables that were significantly correlated with the criterion. Reliability measures were calculated with McDonald’s  $\omega$  coefficients using the OMEGA macro for SPSS (Hayes & Coutts, 2020), as it is considered a better measurement of internal consistency reliability compared to Cronbach’s  $\alpha$  (Trizano-Hermosilla & Alvarado, 2016). Analyses were performed in IBM SPSS 21.0 for Windows.

## **Results**

### *Descriptive Data*

Mean depression scores on EPDS were 7 ( $SD = 4.3$ ) in pregnancy and 5.9 ( $SD = 4.6$ ) in postpartum (Table 2). Using the cut-off score  $\geq 11$ , 21.3% of the sample had elevated depression symptoms during pregnancy and 17.2% in the postpartum period. State and trait anxiety scores were moderate to high, and self-esteem and body image satisfaction scores were moderate.

**Table 2**

*Descriptive Data of Psychological Variables (N = 267)*

	M	SD	Range	
			Obtained	Theoretical
PPD symptoms (T1)	7.0	4.3	0-23	0-30
PPD symptoms (T2)	5.9	4.6	0-22	0-30
Anxiety State (T1)	36.6	10.8	20-74	20-80
Anxiety Trait (T1)	36.2	7.9	20-59	20-80
Self-esteem	31.3	5.0	16-40	0-40
Body image satisfaction	3.8	.9	1-5	1-5

*Maternal Weight-Related Variables*

Considering pre-pregnancy BMI categories, 3.7% of the participants were in the underweight, 74.5% in the healthy weight, 16.1% in the overweight, and 5.6% in the obese category. In the total sample, the average GWG was 15.6 (*SD* = 5.0) kilograms, ranging from 3 to 32 kg. According to the IOM recommendations for GWG, 70% of underweight, 36.7% of healthy weight, 26% of overweight, and 6.7% of obese participants had weight gain within the

**Table 3**

*Gestational weight Gain (GWG) Classification by the Institute of Medicine Recommendations for Each Pre-Pregnancy BMI Category (N = 267)*

	Underweight (BMI < 18.5) N (%)	Healthy weight (BMI 18.5-24.9) N (%)	Overweight (BMI 25-29.9) N (%)	Obese (BMI > 30) N (%)	Total
Inadequate GWG	<b>1 (10%)</b>	<b>34 (17.1%)</b>	<b>1 (2.3%)</b>	<b>1 (6.7%)</b>	<b>37 (13.9%)</b>
Adequate GWG	7 (70%)	73 (36.7%)	13 (26%)	1 (6.7%)	94 (35.2%)
Excessive GWG	<b>2 (20%)</b>	<b>92 (46.2%)</b>	<b>29 (67.4%)</b>	<b>13 (86.7%)</b>	<b>136 (50.9%)</b>
Total	10 (3.7)	199 (74.5%)	43 (16.1%)	15 (5.6%)	267 (100%)
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
GWG (kg)	14.8 (2.9)	15.9 (4.8)	15.2 (5.9)	13.2 (4.8)	15.6 (5.0)
	Range	Range	Range	Range	Range
GWG (kg)	10-20	6-32	4-31	3-24	3-32

*Note:* GWG – gestational weight gain. Weight gain outside the recommended for their pre-pregnancy BMI in bold.

**Table 4**  
*Correlation Coefficients between Sociodemographic, Obstetric, and Psychological Variables With Postpartum PPD Symptoms (N = 267)*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Age	-	-.09	-.06	.20**	.21**	.21**	.31**	-.15*	-.11	.19**	.10	.11	-.14*	-.12*	-.20**
2. Gestational age at childbirth		-	-.05	.00	-.01	-.03	-.12*	-.06	-.02	.12	.01	-.07	.22**	-.05	-.02
3. Marital status <sup>1</sup>			-	.07	-.02	.04	-.11	.13*	.12*	-.09	.03	-.08	.01	.10	.04
4. Education <sup>2</sup>				-	.22**	.27**	-.21**	-.01	-.00	.16**	.09	-.19**	-.03	.04	.01
5. Working status <sup>3</sup>					-	.15*	.03	.01	-.08	.06	.06	-.03	-.09	-.09	-.16**
6. Socioeconomic status <sup>4</sup>						-	.04	-.07	-.19**	.20**	.08	-.01	-.02	-.13*	-.05
7. Parity <sup>5</sup>							-	-.07	.04	.09	-.02	.25**	-.12*	-.07	-.14*
8. Anxiety State (T1)								-	.69**	-.38**	-.18**	.05	.02	.57**	.30**
9. Anxiety Trait (T1)									-	-.56**	-.12	.00	.02	.67**	.42**
10. Self-esteem (T1)										-	.03	.04	.09	-.38**	-.32**
11. Body image satisfaction (T1)											-	-.33**	-.32**	-.04	-.11
12. Pre-pregnancy BMI <sup>6</sup>												-	-.13*	-.05	-.10
13. GWG <sup>7</sup>													-	.01	.19**
14. PPD symptoms (T1)														-	.46**
15. PPD symptoms (T2)															-

*Note:* \* $p < .05$ , \*\* $p < .01$ ; <sup>1</sup>Marital status: 1 – married or cohabiting, 2 – single; <sup>2</sup>Education: 1 – elementary school or less, 2 – high school, 3 – college or university; <sup>3</sup>Working status: 1 – partially employed or unemployed, 2 – employed; <sup>4</sup>Socioeconomic status: 1 – below average, 2 – average, 3 – above average; <sup>5</sup>Parity: 1 – primipara, 2 – multipara; <sup>6</sup>BMI – Body Mass Index; <sup>7</sup>GWG – gestational weight gain.

recommended range (Table 3). In total, 13.9% had inadequate and 50.9% had excessive GWG with respect to their pre-pregnancy BMI. However, there was no difference in GWG between the pre-pregnancy healthy weight women ( $M = 15.91$ ,  $SD = 4.82$ ), compared to combined overweight and obese women ( $M = 14.69$ ,  $SD = 5.70$ ),  $t(255) = 1.63$ ,  $p = .104$ .

### *Correlations between Variables*

We analyzed the associations between postpartum depression symptoms and sociodemographic, psychological, and weight-related variables measured during pregnancy (Table 4). Postpartum depression symptoms were associated with younger age, unemployment, and primiparity, although the correlations were low. Almost all psychological variables were significantly correlated with PPD symptoms. PPD symptoms were moderately correlated with higher antenatal depression symptoms and trait anxiety, and in low correlation with lower self-esteem and higher state anxiety. Among weight-related variables, PPD symptoms were significantly associated with higher GWG, but not with pre-pregnancy BMI.

### *Hierarchical Regression Analysis*

In the hierarchical regression analysis, the criterion was postpartum EPDS score (referred to as 'PPD symptoms'). Predictors were pre-pregnancy BMI and GWG, other variables that were significantly associated with PPD symptoms and gestational age at childbirth which should be controlled for (Hutcheon & Bodnar, 2018). Predictors were entered in three steps: sociodemographic and obstetric variables (age, gestational age at childbirth, work status, parity), psychological variables (pregnancy PPD symptoms, state and trait anxiety, self-esteem), and pre-pregnancy BMI and GWG in the final step.

All three models were significant, with predictors measured in pregnancy explaining 31% of postpartum depression symptoms (Table 5). In the first step, significant predictors were lower age and unemployment, accounting for 6.5% of the criterion variance. In the second step, significant predictors were higher depression scores during pregnancy and trait anxiety, accounting for an additional 21.4%. In the final step, GWG and pregnancy PPD symptoms were significant predictors, with higher GWG accounting for an additional 3.1% of the postpartum PPD symptoms variance.

**Table 5**

*Results of Hierarchical Regression Analysis With PPD Symptoms as a Criterion (N = 267)*

Predictors	$\beta$	B	SE (B)	
<i>Step 1 - Sociodemographic and obstetric variables</i>				
(Constant)	–	17.76	8.19	
Maternal age	<b>-.14*</b>	-.15	.07	$R^2 = .065^{**}$ $F(4, 262) = 4.52^{**}$
Gestational age at childbirth	-.04	-.14	.20	
Working status	<b>-.13*</b>	-1.66	.78	
Parity	-.10	-.92	.59	
<i>Step 2 - Psychological variables</i>				
(Constant)	–	8.62	7.53	
Maternal age	-.08	-.09	.06	$\Delta R^2 = .214^{**}$ $R^2 = .279$ $F(8, 258) = 12.47^{**}$
Gestational age at childbirth	-.01	-.04	.18	
Working status	-.10	-1.21	.70	
Parity	-.10	-.89	.53	
PPD symptoms in pregnancy	<b>.31**</b>	.34	.08	
Anxiety State	-.05	-.02	.03	
Anxiety Trait	<b>.18*</b>	.11	.05	
Self-esteem	-.09	-.08	.06	
<i>Step 3 - Weight-related variables</i>				
(Constant)	–	11.62	7.59	
Maternal age	-.06	-.06	.06	$\Delta R^2 = .031^{**}$ $R^2 = .310$ $F(10, 256) = 11.50^{**}$
Gestational age at childbirth	-.05	-.15	.18	
Working status	-.09	-1.09	.69	
Parity	-.07	-.68	.54	
PPD symptoms in pregnancy	<b>.31**</b>	.34	.08	
Anxiety State	-.05	-.02	.03	
Anxiety Trait	.16	.10	.05	
Self-esteem	-.12	-.11	.06	
Pre-pregnancy BMI	-.03	-.04	.07	
Gestational weight gain	<b>.18**</b>	.17	.05	

Note: \* $p < .05$ ; \*\* $p < .01$ .

## Discussion

Considering that PPD is a serious mental health condition associated with a variety of adverse outcomes, the scientific community invested great efforts



to examine PPD and identify potential risk factors that can be easily modified or diminished. Recent studies uncovered maternal weight-related variables as potential PPD risk factors which might broaden our understanding of this heterogeneous disorder. To investigate the relationship between weight-related variables and PPD, and the proportion of GWG according to the current guidelines, we conducted a prospective study that revealed two important findings. First, higher gestational weight gain successfully predicted depression symptoms at 6–8 weeks postpartum after accounting for various confounders. Secondly, the majority of the sample had weight gain outside the recommended for their pre-pregnancy BMI.

With regard to depression symptoms at both time points, the scores were relatively high. The prevalence of elevated symptoms of depression was 21.3% during the third trimester of pregnancy and 17.2% at 6–8 weeks postpartum. Similarly, other studies established a slight downward trajectory of peripartum depression symptoms from pregnancy to postpartum (Wilcox et al., 2021).

We found that only 1/3 of our sample had adequate GWG, and 64.8% had weight gain outside the recommended for their pre-pregnancy BMI. Among those, 13.9% had inadequate, and 50.9% had excessive GWG, according to the current recommendations (IOM, 2009). Such a high proportion of women with GWG outside the recommended is similar to a recent study in Croatia that showed 57.3% of women having GWG below or above the recommended for their pre-pregnancy BMI (Vince et al., 2021). However, in their study, 19.1% had inadequate GWG and 38.2% had excessive GWG, which is not completely in line with our results, probably due to different exclusion and inclusion criteria and sample characteristics. Also, a recent study on over 4.000 women found that 2/3 of the sample had GWG outside the IOM recommendations as well (Rogozinińska et al., 2019). Our findings are similar to the study in Germany that reported excessive GWG in 45.6% of the sample (Johar et al., 2020). A possible explanation for the high excessive GWG proportion might be that pregnancy alleviates the pressure associated with ideal body weight, with Skouteris et al. (2005) describing it as women being “permitted” to be heavier because their shape and size signify a pregnant state. Therefore, pregnancy might be a time when women feel less obligated to conform to societal weight pressures. On the other hand, a study that interviewed mothers up to one year postpartum found that women were, in fact, not fully aware of appropriate GWG or the consequences of excessive GWG (Groth & Kearney, 2009). Moreover, higher pre-pregnancy BMI has consistently been identified as a risk factor for excessive GWG (Garay et al., 2021), and it is known that the number of overweight and obese pregnant women substantially increased worldwide (Chen et al., 2018).

The hierarchical regression revealed that maternal sociodemographic, obstetric, and psychological variables, and GWG predict and account for 31% of depression symptoms at 6–8 weeks postpartum. More importantly, higher GWG was a significant predictor of PPD symptoms, even after controlling for all potential confounders. Our findings are similar to a study that demonstrated that the increase in the third-trimester weight gain increased the chance of PPD (Dayan et al., 2018). Numerous biological and psychosocial mechanisms might explain the association between weight-related variables and PPD (Luppino et al., 2010). For instance, some women perceive pregnancy-related weight gain as disturbing and concerning (Groth & Kearney, 2009), which might act as a psychological burden. A qualitative study pointed out that 44% of women raised concerns about being overweight after pregnancy, but also expressed beliefs that they would weigh about the same as before pregnancy, even with excessive GWG (Groth & Kearney, 2009). Therefore, if such beliefs are not met, it might heighten depressive feelings or add pressure regarding postpartum weight. However, given that the GWG-PPD association was significant even after controlling for sociodemographic and psychological factors, there might be similar biological pathways related to both conditions, such as inflammation processes and the dysregulation of the hypothalamic-pituitary-adrenal axis (Luppino et al., 2010).

There were no significant differences in GWG among healthy-weight and combined overweight and obese women. Also, we did not find a significant correlation between higher pre-pregnancy BMI and postpartum depression scores, which contrasts with the results of a recent systematic review and meta-analysis (Dachew et al., 2021) and other studies linking pre-pregnancy obesity with PPD (Ertel et al., 2017; LaCoursiere et al., 2010). Although our overall sample size was sufficient, especially taking into account the prospective nature of the study, the sample size in some BMI categories was small, which might explain our findings. Nevertheless, some other studies also did not find significant associations after including potential confounders and interaction effects (Jani et al., 2020; Sundaram et al., 2012). For example, one study demonstrated that after including vitamin D deficiency as a mediator, high early-pregnancy BMI was no longer a significant predictor of PPD (Jani et al., 2020). Such findings highlight the complexity of PPD and the underlying mechanisms that contribute to its onset.

Interestingly, even though GWG was related to postpartum PPD symptoms and body image satisfaction, body image satisfaction was not associated with postpartum PPD. Moreover, GWG was not related to PPD symptoms in late pregnancy. However, one prospective study pointed out that body image dissatisfaction was the lowest in late pregnancy and increased during postpartum

(Clark et al., 2009). This might explain our findings that, in fact, body image satisfaction and GWG might be more important for mental health during postpartum when there is additional weight-related societal pressure on women and not during late pregnancy, when women might be more focused on the pregnancy and childbirth itself. On the other hand, one study found that body image dissatisfaction is weakly associated with PPD (Silveira et al., 2015). Another study found that body-image concerns mediate the association between weight gain and PPD, with more evident mediation effects among women with higher pre-pregnancy BMI (Han et al., 2016). Considering that we measured body image satisfaction with only one item, future studies should include more comprehensive questionnaires to grasp a wider range of cognitions, feelings, and evaluation of own body, which is especially changed during the peripartum period. For instance, Body Image in Pregnancy Scale (Watson et al., 2017), might be a good option.

The strength of this study is its prospective design while controlling for an array of sociodemographic, obstetric, and psychological factors related to PPD. Next, we used a continuous pre-pregnancy BMI score instead of categories, as one study pointed to a slight overestimation of the relevance of BMI when examining BMI as categories (Johar et al., 2020). Nevertheless, certain limitations must be taken into consideration. First, to measure new-onset postpartum depression cases, this study excluded participants with a history of psychiatric illness and women with depression symptoms during pregnancy. It might have narrowed the sample and contributed to lower estimates of depression symptoms. This might be important as some studies found that depression symptoms during pregnancy were associated with lower or insufficient GWG (Farias et al., 2021). Moreover, the sample was predominantly of average and high socioeconomic status, and there was an unequal sample distribution across BMI categories, preventing more specific subgroup analyses. Even though this study included a revision of medical records as a more reliable measurement of weight variables, it is known that BMI calculations do not take into account other characteristics such as individual body shape. For example, one study showed that BMI cut-off points are not completely accurate for detecting obesity (Jahanlou & Kouzekanani, 2016). Next, we did not control for eating disorders that might influence both maternal weight variables and postpartum depression (Mazzeo et al., 2006). Other variables, e.g. dieting habits, gestational diabetes, postpartum weight retention, vitamin intake, medically prescribed dieting, or receiving medical GWG advice might be important to examine in this context as well.

Given that obesity levels are continuously rising worldwide, further research in this field is warranted to devise targeted prevention programs. Future stud-

ies should examine trimester-specific weight gain throughout the pregnancy. Special efforts must be made to ensure a better representation of all pre-pregnancy BMI categories. Also, examining a broader range of relevant variables or potential mediators seems essential to clarify the perinatal weight-depression relationship.

### Conclusion

This study added to the emerging body of literature investigating pregnancy weight-related variables and postpartum depression. The results revealed that, besides some sociodemographic and psychological factors, higher weight gain during pregnancy was a significant predictor of postpartum depression symptoms. Additionally, 64.8% of the sample had weight gain outside the recommended for their pre-pregnancy BMI. These findings highlight the urgency for timely prevention programs encouraging healthy dietary habits and weight gain guidance. Moreover, it can help clinicians to better identify women at risk for PPD. Besides the known psychological risk factors, health professionals should pay attention to higher pregnancy weight gain as potentially increasing women's risk for PPD. In fact, considering that weight is regularly measured at prenatal appointments, GWG seems to be a risk factor that is fairly easy to detect and monitor. Furthermore, clinicians should perform frequent screenings for mental health issues and offer nutrition counseling and prompt support to women with high GWG. Not only that individualized prevention programs and early interventions aimed at optimizing GWG could reduce the risk of PPD, but they could also improve maternal overall health and pregnancy outcomes related to both conditions.

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