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TABLE OF CONTENTS



4

Urfan Mustafali, Deniz Koşucu, Dilan Bürüce,
Gizem Seval Tosun, Atacan Demiralp, Gamze
Dabanoğlu, Raif Adali, Mustafa Kemal
Tunusluoğlu, Anna Zajenkowska

EXPLORING PREDICTIVE ROLE OF SELF-
ESTEEM, COPING BEHAVIOR, AND EARLY
MALADAPTIVE SCHEMA IN ACADEMIC
PROCRASTINATION

11

Saba Shahid, Mitch Brown, Donald
F. Sacco, Elena V. Stepanova

RELIGIOUS, MORAL AND
POLITICAL INFLUENCES ON
ABORTION SUPPORT: ROLE
OF FINANCIAL, EMOTIONAL
AND PARTNER JUSTIFICATIONS

EXPLORING PREDICTIVE ROLE OF SELF-ESTEEM, COPING BEHAVIOR, AND EARLY MALADAPTIVE SCHEMA IN ACADEMIC PROCRASTINATION

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ABSTRACT

Procrastination, defined as the habitual and unnecessary delay of important tasks, appears in various contexts, including academia. It is particularly evident among students who tend to defer academic responsibilities such as exam preparation and homework completion. This study examines the predictive roles of self-esteem, emotion-focused coping, and maladaptive schemas in academic procrastination. We hypothesized that self-esteem would predict lower levels of academic procrastination and, most importantly, explored whether higher levels of emotion-focused coping and insufficient self-control schemas predict academic procrastination beyond the impact of self-esteem. An online survey was conducted with 137 (85 female, 52 male) students pursuing undergraduate, master's, and doctoral education in Poland. Only self-esteem and insufficient self-control schema emerged as significant predictors of academic procrastination while emotion-focused coping was not significant. Results can inform the design of intervention programs aimed at improving students' academic performance by addressing the emotional (self-esteem) and cognitive (self-control schema) aspects of procrastination rather than behavioral (coping).

KEYWORDS

academic procrastination, maladaptive schemas, self-esteem, emotion-focused coping

INTRODUCTION

Procrastination entails postponement of tasks, duties, and responsibilities (Tuckman & Sexton, 1989). It reflects a breakdown in self-regulation, characterized by difficulty in overseeing, managing, and aligning actions with desired standards for controlling impulses, emotions, task completion, and cognitive processes (Balkis & Duru, 2016; Wolters, 2003; Zhang et al., 2019). Despite awareness of the importance of these tasks and their deadlines, individuals succumb to delaying action therefore it is considered an academic failure (Kim & Seo, 2015; Steel, 2007). Procrastination manifests in academia, where it is characterized by students' tendency to postpone completing academic tasks like studying for exams or doing homework. (González-Brignardello et al., 2023). Symptoms of academic procrastination include poor sleep, high levels of stress, delayed work due to lack of time, improper completion of homework, confusion, self-blame, feelings of guilt and inadequacy, low self-esteem, anxiety, and depression (Custer, 2018).

FACTORS EXPLAINING ACADEMIC PROCRASTINATION

Procrastination is also viewed as a means of self-protection for individuals with fragile self-esteem (Burka & Yuen, 1983; Tice, 1991). When faced with challenging situations or tasks, individuals assess their ability to handle tasks based on self-esteem, which is influenced by past successes or failures (Lazarus & Folkman, 1984). If individuals perceive themselves as incapable of completing tasks, it leads to behavioral outcomes such as task avoidance, which manifests as procrastination (Lazarus & Folkman, 1984). Steel (2007) supported claims of appraisal-anxiety theory by demonstrating a correlation between low self-esteem and procrastination. Therefore, when self-esteem levels are low, students may struggle to initiate and persist in tasks, leading to procrastination (Alegre, 2013; Arias-Chávez et al., 2020).

Such tasks could be aversive situations, which require a certain coping behavior as a response (Wechsler, 1995). Coping responses, encompassing behavioral efforts, dynamically adapt to address specific external and/or internal demands perceived as overwhelming or surpassing one's resources (Lazarus & Folkman, 1984). Procrastination can be understood as an emotion-focused coping behavior, wherein individuals seek to avoid negative emotions associated with long-term tasks (Pychyl & Sirois, 2017). Emotion-focused coping involves attempts to lessen emotional distress associated with a stressful situation (Lazarus & Folkman, 1984, Schoenmakers, et al., 2015), which includes different strategies such as denial, seeking out for help, positive reappraisal of events (Baker & Berenbaum, 2007). For instance, heightened emotion-focused coping has been associated with a lower four-year GPA (Grade Point Average) (Thomas et al., 2017). However, conflicting findings have emerged, as another study found no correlation between emotion-focused coping and academic procrastination (Siah et al., 2022).

One's confidence level in achieving a goal such as academic success, but also capacity to control impulses and plan are related to individual schemas, which in case of individuals prone to procrastination, might be maladaptive (Young et al., 2003). Early Maladaptive Schemas (EMS) develop as a result of negative childhood experiences, leading to self-destructive emotional and cognitive patterns, rigid beliefs, and physical sensations. These inflexible schemas can exacerbate psychological challenges and distress, potentially contributing to procrastination. (Schouwenburg et al., 2004; Ellis & Knaus, 1977; Renner et al., 2012; Mojallal et al., 2014). EMS are related to academic anxiety which may become one of main contributors to academic procrastination (Isanejad et al., 2012). Regarding the achievement of long-term goals, people who suffer from procrastination have problems dealing with self-control over short-term pleasures (Sirois & Pychyl, 2013).

The Self-Control schema has been associated with difficulties in achieving long-term goals, emotional instability, and feelings of frustration (Young et al., 2003), which may be linked to both

self-esteem and emotion-focused coping. Dealing with discomfort, a central challenge within Insufficient Self-Control schema, may serve as another contributing factor to procrastination, as indicated by research linking procrastination with difficulties in managing discomfort (Harrington, 2005).

CURRENT STUDY

In this study, our focus was on cognitive factors (schema), emotional factors (self-esteem), behavioral factors (coping), aiming to investigate their predictive roles in academic procrastination. Building upon previous research (Steel, 2007; Wolters, 2003; Lazarus & Folkman, 1984), we hypothesize that lower self-esteem predicts higher levels of academic procrastination (H1). However, relationship between academic procrastination and early maladaptive schemas has been relatively underexplored (Renner et al., 2012; Mojallal et al., 2014), with limited research examining also coping behaviors and inconsistent findings within context of academic procrastination (Sirois & Kitner, 2015; Siah et al., 2022). Therefore, our study aims to fill this gap by investigating whether higher levels of emotion-focused coping and insufficient self-control schema predict academic procrastination over and above impact of self-esteem (H2). Our study aims to comprehensively analyze academic procrastination behavior across emotional, behavioral, and cognitive aspects.

METHODS

PROCEDURE

The online questionnaire was distributed via social media platforms to various communities that gather student studying in Poland. The study was conducted in full accordance with all ethical guidelines. Informed consent was obtained from all participants. Participants were informed that there was no time restriction, although the questionnaire typically took 10 to 15 minutes to complete. English language level of our participants was asked as a single self-report question with 5 items ranging from pre-intermediate A2 to Upper Advanced C2. Participants with minimum B1 English level were included.

PARTICIPANTS

Sample size for our study was calculated via G*Power 3.1.9.7 (Faul et al., 2007) as 119 for a medium effect size of 0.15, power $(1-\beta) = 0.95$, and $\alpha = 0.05$. Study included 141 (85 female; 53 male) university students from various cities in Poland, with 66 bachelor's students, 73 master's students, and 2 doctoral students. The minimum age was 18 and maximum was 49, with mean age 26. Participants reported their GPA on a scale from 1 to 5. 60 students had a GPA above 4.00 (42.6%). Regarding their time in Poland, 59 participants (41.8%) had been in Poland for 0-1 years, 42 were from Poland (29.8%). Participants were mainly from Poland, Turkey, Azerbaijan, and Ukraine.

MEASURES

Academic Procrastination Scale (APS) is a comprehensive measure of procrastination in students (McCloskey & Scielzo, 2015). It comprises 25 questions rated on a 5-point Likert scale ranging from 1 (Disagree) to 5 (Agree). Example items include "I put off projects until last minute" and

“I tend to put off things for next day.” The scale demonstrated high internal consistency ($\alpha = 0.94$) (McCloskey & Scielzo, 2015), consistent with our study’s findings ($\alpha = 0.92$).

Brief-COPE (BC) is a shortened version of original COPE Inventory (Carver 1997; Carver et al., 1989), is a multidimensional self-reported questionnaire with 28 items assessing both effective and ineffective coping strategies in response to stress. A 4-point Likert scale (1=“I haven’t been doing this at all” to 4=“I’ve been doing this a lot”) is used. We used 10-item emotion-focused coping subscale. Facets of the scale demonstrated moderate to good internal consistency ($\alpha = 0.50, 0.90$) (Carver 1997) and in our study 10 items of emotion-focused subscale showed moderate reliability in general ($\alpha = 0.62$).

Rosenberg Self-Esteem Scale (RSE) measures general self-esteem (Rosenberg, 1965). Respondents rate items on a 4-point Likert scale from “strongly agree” to “strongly disagree”. The scale demonstrates high reliability ($\alpha = 0.92$) (Rosenberg, 1965) and in our study reliability was good, ($\alpha = 0.83$).

Young Schema Questionnaire-Revised (YSQ-R) assesses early maladaptive schemas (Yalcin et al., 2021). It is a 6-point Likert scale consisting of 116 items. Scale ranged from 1(Completely untrue of me) to 6(Describes me perfectly). Insufficient Self-Control subscale used for research. All subscales showed good (0.74) to excellent (0.86) reliability (Yalcin et al., 2021). In this study, Insufficient Self-Control/ Self-Control schema subscale showed good ($\alpha = 0.80$) reliability.

RESULTS

Academic procrastination was found correlated with self-esteem and insufficient self-control schema, without showing significant correlation with emotional coping. (Table 1).

Table 1. Pearson’s correlation coefficients

	M	SD	1.	2.	3.	4.
1. Self-Esteem	2	.54	-	-		
2. Emotional Coping	2.74	.54	.26**	1	-	
3. Self-Control Schema	2.90	0.98	-.31**	.03	1	-
4. Academic Procrastination	2.73	.73	-.31**	-.03	.55**	1

** Correlation is significant at the 0.01 level (2-tailed).

To test both hypotheses, hierarchical regression was employed. Firstly, demographic variables: Age, gender and education level are entered to the analysis as control variables. Self-esteem was added in the second step as a predictor of academic procrastination, and in the third step, emotional coping and early maladaptive schema (self-control schema) were added as predictors. Control variables were not significant predictors of academic procrastination. . When added, self-esteem negatively predicted academic procrastination, and Model 2 explained 13% of the variance in academic procrastination. Adding emotional coping and early maladaptive schema significantly improved the model, (R^2 change = .20, $p < .001$). Model 3 explained 33% of variance in academic procrastination. (Table 2).

Table 2. Model Summary

Model	R	R ²	R ² _{Adj}	Std. Error of the Estimate	R ² Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.23 ^a	.05	.03	.72	.05	2.38	3	133	.07
2	.36 ^b	.13	.10	.70	.08	11.56	1	132	<.001
3	.58 ^c	.33	.30	.61	.20	20.17	2	130	<.001

a. Predictors: (Constant), Age, Gender, Education level

Predictors: (Constant), Age, Gender, Education level, Self-esteem

Predictors: (Constant), Age, Gender, Education level, Self-esteem, Emotional coping, self-control schema

Gender was a significant predictor of academic procrastination when controlling for age and education level. Women exhibited higher levels of academic procrastination compared to men. In the second model, gender and self-esteem remained as significant predictors when others are controlled. Self-esteem is demonstrated as a significant prediction along with insufficient self-control schema in the last model. (Table 3) Emotion-focused coping had non-significant effect on academic procrastination.

Table 3. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients Beta		
		B	Std. Error		t	Sig.
1	(Constant)	3.23	.25		13.03	<.001
	Age	-.01	.01	-.11	-1.22	.226
	Gender	-.25	.13	-.17	-2.00	.048
	Education level	-.11	.13	-.08	-.85	.396
2	(constant)	3.79	.29		13.09	<.001
	Age	.00	.01	-.03	-.34	.73
	Gender	-.24	.12	-.16	-1.99	.05
	Education level	-.05	.12	-.03	-.39	.70
	Self-esteem	-.40	.12	-.29	-3.40	<.001
3	(constant)	2.04	.41		5.03	<.001
	Age	.00	.00	-.02	-.28	.78
	Gender	-.15	.11	-.10	-1.32	.19
	Education level	.06	.11	.04	.54	.59
	Self-esteem	-.25	.11	-.18	-2.22	.03
	Emotional coping	.10	.10	.08	.99	.33
	Self-control schema	.36	.06	.48	6.10	<.001

DISCUSSION

The aim of our research was to investigate the factors that predict academic procrastination. Our first hypothesis proposed that self-esteem would significantly predict academic procrastination. Our second hypothesis posited that incorporating emotional coping and insufficient self-control schema into the initial model would provide a better explanation of academic procrastination. The results partially confirmed our hypotheses, revealing that only self-esteem and insufficient self-control schema were significant predictors.

Our analysis showed that lower self-esteem was associated with higher procrastination, confirming the first hypothesis. This finding is also consistent with previous literature, which links

self-esteem to self-doubt and fear of failure (Steel, 2007; Lazarus & Folkman, 1984; Wolters, 2003). Indeed, when students have low self-esteem, they struggle with continuing on what they started, which leads to academic procrastination (Alegre, 2013; Arias-Chávez et al., 2020).

Furthermore, the analysis revealed that self-esteem remains a significant predictor of academic procrastination, along with the insufficient self-control schema, but not with emotion-focused coping, which was found to have a non-significant effect on procrastination. Therefore, our second hypothesis must be rejected. Academic procrastination is linked to the ability to exercise self-control over short-term pleasures in order to achieve long-term goals (Sirois & Pychyl, 2013). Our results align with previous studies (Harrington, 2005; Isanejad et al., 2012), as the self-control schema was found to be a significant predictor of academic procrastination.

Although emotional coping behavior was significantly related to self-esteem, it was unrelated to academic procrastination. This finding echoes the contradictory findings in the literature regarding emotional coping and procrastination (Sirois & Kitner, 2015; Siah et al., 2022).

LIMITATIONS AND CONCLUSION

Both academic procrastination and emotion-focused coping are linked to GPA (Thomas et al., 2017). Future studies should include this analysis, which we could not do due to missing data. Examining also the interaction between external stressors like academic workload, social pressure, and procrastination could offer a deeper understanding of the phenomenon. Additionally, the questionnaires were in English, even though most participants were not native English speakers. Future studies involving native speakers could provide valuable insights.

Despite its limitations, this study provides valuable insights into psychological factors related to academic procrastination. The results can guide the development of intervention programs to enhance students' academic performance by targeting the emotional (self-esteem) and cognitive (self-control) aspects of procrastination, rather than focusing solely on behavioral coping strategies.

All the authors declare that they have no conflict of interest.

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U. MUSTAFALI, D. KOŞUCU, D. BÜRÜCE, G.S. TOSUN, A. DEMIRALP, G. DABANOĞLU, R. ADALI, M.K. TUNUSLUOĞLU, A. ZAJENKOWSKA

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RELIGIOUS, MORAL AND POLITICAL INFLUENCES ON ABORTION SUPPORT: ROLE OF FINANCIAL, EMOTIONAL AND PARTNER JUSTIFICATIONS

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ABSTRACT

We explored how various reasons for women to have abortions shape attitudes toward the procedure while similarly considering demographic variables predictive of one's attitudes toward abortion. Participants ($N = 302$) read a single vignette presenting financial, emotional, or partner-related reasons for a hypothetical woman to have an abortion that varied in whether the reason was present for that woman. Participants completed measures assessing religiosity, conservatism, and moral foundations as candidate moderators for these effects. Despite the reason for abortions having no effect on attitudes themselves, various effects emerged implicating religiosity and conservatism as predictive of anti-abortion attitudes. Namely, more religious men were less supportive of the hypothetical woman's abortion decision when driven by financial unreadiness, whereas more conservative men were less supportive of a target's abortion decision when driven by emotional unreadiness and partner absence concerns. This study expands knowledge of factors contributing to abortion attitudes, thus informing public discourse on this divisive topic.

KEYWORDS

attitudes, morality, moral foundations, abortion policy



INTRODUCTION

Recent developments in abortion legislation in the United States, including the overturning of *Roe v. Wade* in *Dobbs v. Jackson* (19-1392), reflects a decades-long conflict between those who describe abortion as a basic human right and others who are opposed to its practice (Jozkowski et al., 2018; Kortzmit et al., 2022). However, abortion decisions are frequently motivated by other factors, oftentimes factors that fall out of the purview of what is considered an appropriate circumstance for abortion by the law (Guttmacher, 2022). The purpose of the current study was to better understand how specific justifications for getting an abortion (i.e., financial, emotional readiness for motherhood and partner's presence) might correlate with attitudes of people toward abortion and the role of gender and certain moral, religious, and political values in influencing these attitudes.

FACTORS AFFECTING ATTITUDES TOWARD ABORTION

Public opinion on the legality of abortion has constantly fluctuated. Much of these shifts have ties to sociodemographic factors. Recently, 63% of respondents in a Pew Research Survey (2022) supported the legality of abortion in most cases, which included 85% Democrats. Most Republicans (57%) supported the notion of abortions being illegal in most cases. Those identifying as Republican and pro-life do not support the overturning of *Roe v. Wade*, particularly when they were knowledgeable of the original ruling (Crawford et al., 2022). Conversely, Independents, Democrats and people who identified as neither "pro-life" nor "pro-choice" were consistently in favor of upholding the ruling.

Men and women additionally vary in support for abortion. Women are generally more supportive of abortion than men (Pew Research Center, 2022). This difference could have a basis in the fact that women would be more directly affected by the abortion policies (Ruppanner et al., 2019). However, these attitudes vary based on religious, political, or other factors (Loll & Hall, 2019; Osborne et al., 2022).

Various situational factors influence whether individuals support abortion. Factors include rape, threat to the life of the mother, or a nonviable fetus (Guttmacher, 2022), which themselves are oftentimes included as legal reasons for abortion. Some of the most cited reasons provided by women who have an abortion include financial (40%), timing (i.e., indicating that it was not the right time in one's life to have a child, 36%), partner related reasons (31%), need to focus on other children (29%), career (20%), and not being emotionally or mentally prepared (19%), which are themselves factors not included in legal circumstances for abortion and are therefore less understood (Biggs et al., 2013; Wetstein & Albritton, 1995).

MORALITY AS AN INFLUENCE ON ABORTION ATTITUDES

Despite considerable focus in previous research on how political and religious preferences shape attitudes toward abortion, such factors tend to lack consideration of the underpinnings of individuals' support or opposition. Attitudes toward abortion could similarly be informed by morality, as such values are conceptually and empirically related to religiosity and political ideology while similarly being distinct from these latter constructs (Battista et al., 2015; Shariff, 2015; Stewart et al., 2021). This distinction is critical in understanding how justifications of abortion may differentially influence people based on their moral reasoning, as politically conservative and religious individuals place greater emphasis on moral reasoning that emphasizes decisions to protect a moral imperative that disallows exceptions to moral rules in certain situations (Piazza & Sousa, 2014). In

the context of abortion, decisions are oftentimes based at the intersection of these decisions and require individuals to balance competing ethical perspectives (Theofanidis et al., 2013).

One fruitful theoretical framework that provides an opportunity to understand how individual differences predict support for abortion across different contexts is Moral Foundations Theory. Namely, individuals' morality is oft-rooted in how individuals view specific violations, with much research focusing on five foundations (Graham et al., 2018). That is, people's morality is often rooted in a valuation of care, fairness, ingroup loyalty, obedience to authority, and purity. Previous research suggests that moral foundations are indeed predictive of various abortion-related attitudes. Individuals whose morality is rooted in fairness demonstrate greater warmth toward women who had abortions, whereas endorsement of purity was associated with less warmth, even after consideration of religiosity as a covariate (Watt, 2020). Pro-life women report higher levels of the so-called binding moral foundations (i.e., loyalty, authority, purity), whereas pro-choice women reported greater endorsement of the individualizing moral foundations typical of political liberals' morality (i.e., care, fairness; Paruzel-Czachura et al., 2024). Given these dispositionally rooted endorsements of abortion, contextual factors for abortion should resonate with some individuals more readily when justifying the action.

CURRENT RESEARCH

Though this prior work provides critical additional understanding of factors underlying abortion attitudes, several weaknesses require additional research to clarify morality's role in abortion attitudes. We aimed to explore how abortion attitudes may be influenced by the presence or absence of reasons for women to get abortion, whether they be rooted in a partner's presence or financial or emotional reasons, particularly as a function of political, religious, and moral attitudes that are oftentimes related to each other. Given its consonance with self-reported reasons for abortions (Biggs et al., 2013), we predicted that financial reasons for abortion will produce the most abortion support, followed by partner absence reasons, and emotional reasons.

Nonetheless, we predicted this reasoning would be less predictive of supportive attitudes among individuals espousing greater religiosity and political conservatism, in addition to those whose moral foundations are especially rooted in binding foundations. Conversely, we hypothesized that individuals whose morality is rooted in individualizing foundations will be more supportive of abortions for financial reasons (see Barkan, 2014; Pew Research Center, 2022). Because women are more supportive of abortion than are men (Ruppanner et al., 2019), we predicted that women's support would be higher than men's in these conditions. Lastly, we predicted that the above pattern of results will hold even when controlling for participants' religious and political attitudes. Because there is only a moderate relationship between moral attitudes, political ideology, and religiosity (Battista et al., 2018), moral attitudes will uniquely account for individuals' support for abortion based on provided justifications. Materials and data are available: https://osf.io/tb943/?view_only=9967e463dc6a45bbb4430d2f3a9c22a0.

METHODS

PARTICIPANTS

We recruited 302 participants via Prolific Academic, compensating each \$1.20 (US \$12/hr.). Based on *G*Power* calculations (Faul et al., 2007), for a factorial ANCOVA with 6 groups and a small-medium effect size at 95% power (Cohen's $f = .20$), the required sample size was 279. Our power analysis was specifically conducted to detect the critical interaction effect central to our hypothesis, making our sample sufficient.

We had 114 (self-described) men and 181 women from which 225 were (self-described) White, 29 were Black, 33 were Asians, and 14 others, all aged 18-65. Participants additionally reported their general political orientation by responding to a single item (1=*Very Liberal*; 9=*Very Conservative*), which indicated that our sample was relatively liberal politically ($M_{\text{Grand}} = 3.21, SD = 1.83$). Two attention checks were included in the survey (i.e., “If you are reading this, select, *Yes*”); all participants responded correctly and were this included.

MATERIALS AND PROCEDURES

Written Vignettes. We developed six vignettes to which participants responded on a between-subjects basis about a hypothetical woman who had scheduled an abortion. These vignettes provided information that varied as a function of why a person would have an abortion (hereafter the Justification Type), as manifested by the circumstances of the hypothetical woman. These reasons are specifically based on ones that tend to fall outside standard justifications for an abortion (i.e., emotional, partner-related, and financial reasons; Guttmacher, 2022). We additionally manipulated whether this woman was in a situation in which she felt ready (hereafter Readiness) to have a child despite each vignette ending with her opting for an abortion (for vignettes, see Appendix A).

In addition to their respective vignette, participants responded to three items that served as our primary abortion attitude dependent measures, assessing the extent to which participants supported the woman’s choice to have an abortion (1) in a state in which it was legal, (2) in a state in which it was illegal, and (3) overall. Items operated along 5-point scales (1 = *Strongly Disagree*; 5 = *Strongly Agree*). Items were highly correlated with each other ($r_s > .91$), prompting aggregation into a single composite.

Moral Foundations. We used the 20-item short version of the Moral Foundations Questionnaire to measure the extent to which participants endorsed each moral foundation as central to their morality. This version considered five domains: care, fairness, loyalty, obedience to authority, and purity, which consists of two 10-item sections. The first section had participants indicate the extent to which various scenarios were relevant to their morality (e.g., Whether or not someone suffered emotionally) on 6-point scales (0 = *Not at All Relevant*; 5 = *Extremely Relevant*). The second section had participants indicate the extent to which they agreed with moral statements (e.g., I would call some acts wrong on the grounds that they are unnatural) on a 6-point scale (0 = *Strongly Disagree*; 5 = *Strongly Agree*).

Given previous research suggesting a general clustering of moral foundations into two broader categories mapping onto ostensibly liberal and conservative morality (Brown et al., 2021; Graham et al., 2009), we aggregated items from each subscale into their respective categories of Binding Moral Foundations (i.e., Loyalty, Obedience to Authority, Purity) and Individualizing Moral Foundations (i.e., Care, Fairness).

Religiosity. Religiosity was assessed using the Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccaccini, 1997). This 10-item measure assesses general religiosity on 4-point scales (e.g., “My religious faith is extremely important to me”; 1 = *Strongly Disagree*; 4 = *Strongly Agree*).

RESULTS

PRELIMINARY ANALYSES

Our preliminary analyses considered the basic associations between our dispositional predictor variables and support for abortion. Table 1 provides relevant statistics for bivariate correlations and scale reliabilities. Consistent with predictions, greater endorsement of binding moral foundations,

religiosity, and political conservatism were all associated with less support for abortion. These three predictors were additionally positively correlated with each other. Conversely, greater endorsement of individualizing moral foundations was associated with more support for abortion.

Table 1. Bivariate correlations between predictor variables and abortion support (with reliabilities for composite scales)

	Binding	Individualizing	Religiosity	Conservatism
Individualizing	.03			
Religiosity	.54**	-.01		
Conservatism	.11*	-.08	.19**	
Abortion Support	-.47**	.28**	-.52**	-.25**
Cronbach's α	.85	.78	.98	-

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

PRIMARY ANALYSES

Our next analysis considered the conditional factors under which these individual differences predict support for abortion. Following the exclusion of seven participants for not disclosing their sex, we conducted a 3 (Justification Type: Financial Readiness vs. Emotional Readiness vs. Partner Presence) \times 2 (Readiness: Present vs. Absent) \times 2 (Participant Sex: Male vs. Female) custom ANCOVA. Religiosity, conservatism, and endorsement of individualizing and binding moral foundations were entered in this model as custom covariates from which we could test interactive effects between categorical and continuous predictors within the same model. This analytic strategy afforded us the opportunity to test for interactive effects within the same model while reducing the likelihood of Type I Errors inherent in multiple omnibus analyses. Table 2 provides descriptive statistics for each experimental condition.

This omnibus analysis consisted of four separate tests to identify four-way interactions, each including the three categorical predictors with one of the four continuous predictors as a moderator. Given the variety of decomposition approaches, we thought it most informative to decompose higher order interactions in ways that produced significant lower order interactions for further decomposition. By repeatedly adopting this approach, it ensured we could decompose higher order effects into the simplest variable relationships responsible for them. None of the main effects were significant nor were the superordinate interactions including the binding and individualizing moral foundations ($ps > .103$). Our analyses below consider the omnibus interactive effects for religiosity and conservatism with their subsequent decompositions.

Table 2. Descriptive statistics for across experimental conditions for support for abortions

Justification Type	Justification	<i>N</i>	<i>M</i> (<i>SD</i>)
Financial	Present	48	5.46 (2.20)
	Absent	47	5.62 (1.98)
Emotional	Present	50	5.09 (2.62)
	Absent	52	5.28 (2.21)
Partner	Present	51	5.83 (1.95)
	Absent	47	5.24 (2.11)

Religiosity. Effects were initially qualified by a Justification Type \times Justification Presence \times Participant Sex \times Religiosity interaction, $F(11, 235) = 2.93, p = .001, \eta_p^2 = .121$. In decomposing this interaction, we conducted two subordinate analyses, separate for when readiness was present and absent; each of the other continuous predictors remained in the model as covariates. The subordinate 3-way interaction for the absence of readiness was not significant and considered no further, $F(5, 133) = 0.70, p = .625, \eta_p^2 = .026$. However, the subordinate interaction for the presence of readiness was significant, $F(5, 136) = 32.39, p < .001, \eta_p^2 = .192$.

The subsequent decomposition of this interaction considered interactive effects between sex and religiosity for each justification type separately within the participants who knew of the target's readiness. The subordinate 2-way interactions were not significant for the partner and emotional justifications (p s > .140). Nonetheless, the subordinate 2-way was significant for the financial reason, $F(1, 41) = 13.72, p < .001, \eta_p^2 = .251$.

Our final decomposition of this interaction considered the differences in associations between religiosity and support for abortion for men and women. We conducted separate bivariate correlations for both sexes within the specific experimental condition of readiness being present and the justification being financial. Greater religiosity was associated with less support for abortion in both sexes, although the effect was larger for men ($r = .91, p < .001$) than for women ($r = .55, p < .001$). These two correlations were significantly different from each other, Fisher's $Z = -2.82, p = 0.005$.

Conservatism. Effects were additionally qualified by a Justification Type \times Readiness \times Participant Sex \times Conservatism interaction, $F(11, 235) = 2.26, p = .012, \eta_p^2 = .096$. We decomposed this interaction by considering two subordinate analyses, separate for men and women. The subordinate interaction for women was not significant, $F(5, 166) = 1.66, p = .145, \eta_p^2 = .048$. The subordinate interaction for men was significant, $F(5, 99) = 2.84, p = .019, \eta_p^2 = .126$. We decomposed the subordinate interaction for men with subordinate interactions when the justification was present and absent. The subordinate 2-way interaction for the absence of readiness was not significant, $F(1, 48) = 1.26, p = .293, \eta_p^2 = .050$. The 2-way interaction for the presence of readiness was significant, $F(1, 48) = 5.67, p = .006, \eta_p^2 = .191$.

The final decomposition for this interaction considered the associations between conservatism and support for abortion among men with a justification present, specifically considering these associations for each justification. When conducting the separate bivariate correlations, the association was not significant for the financial justification ($r = -.22, p = .373$). However, greater conservatism was associated with less support for abortion for men with emotional unreadiness ($r = -.87, p = .001$) and partner unavailability as justifications ($r = -.76, p = .001$). The latter correlations were significantly different from the nonsignificant association, Fisher's Z s > 2.11, p s < .035. The latter correlations were not different from each other, Fisher's $Z = -0.96, p = .337$.

DISCUSSION

The purpose of this study was to clarify the interactive effects of situations and dispositional bases for abortion attitudes. First, people who adhered to individualizing moral reasoning expressed more support for abortion, a finding that aligns with the more politically liberal disposition of those endorsing care and fairness as central to their own morality (Graham et al., 2009). Conversely, people endorsing binding moral reasoning and people who were more religious and politically conservative were less supportive of abortion, replicating previous findings (Barkan, 2014; Pew Research Center, 2022; Piazza & Sousa, 2014; Watt, 2020).

Both surprisingly and contrary to our initial expectations, there were no reliable effects of binding and individualizing moral foundations when considering religiosity and political ideology in the same analysis. However, our findings highlighted crucial roles of religiosity and political conservatism in influencing abortion support, along with participant gender. Specifically, more religious men were *less* supportive of abortion when the woman was *not* financially ready to have a child. This pattern is consistent with past findings showing that, among divinity students at a Presbyterian seminary, men were significantly less supportive than women for legal abortion when the woman was unemployed (Finaly, 1996). Additionally, politically conservative men were *less* supportive of abortion decisions when the mother was *not* emotionally prepared to have a child and when her partner was *not* present. These results could be potentially explained more readily

through a system justification lens, given that men are less affected by abortion legislation compared to women (see Jost & Kay, 2005). It is possible that men's responses may stem from attempts to enforce traditional gender roles, wherein women are expected to prioritize child-rearing with financial support of men. This is consistent with past research demonstrating that individuals higher in social dominance orientation are less supportive of abortion, insofar as higher social dominance orientation predicts greater system justification beliefs and is consistently higher in men than women (Osborn & Davies, 2009).

Nonetheless, additional research would need to be designed to specifically compare system justification to other plausible explanations. Alternative to this argument, religious and conservative men's greater abortion disapproval could be driven by empathy and compassion rather than punitive attitudes. Indeed, more empathetic and compassionate people towards unborn babies were less supportive of abortion (Cheng & Thostenson, 2024). In our study, it may be that religious and conservative men's empathy is directed more toward the fetus than the mother, leading to stronger opposition to abortion.

One unexpected finding is that we found no independent effects of moral reasoning when religiosity and political conservatism were included in the models. Although past research highlights the unique role of moral values in predicting abortion attitudes, no study has accounted for moral reasoning, political conservatism, religiosity, gender, and reasons for abortion together. It is possible that effects of moral reasoning are driven by its relation to political ideology and religiosity. Recent research supports this, such that when moral values are assessed abstractly, inclusion of religiosity and political conservatism mute effects of moral values on abortion attitudes (Paruzel-Czachura et al., 2023).

LIMITATIONS AND FUTURE DIRECTIONS

Our study could have been limited based on several factors which would necessitate future research to address these potential limitations. First, our sample was overrepresented with White participants, which may affect the generalizability of our findings. Future studies could be done with a more racially representative sample, given that ethnic minorities comprise 60% of women seeking abortions in the U.S. (Jerman et al., 2016). Additionally, although the sample for the study was recruited by Prolific Academic, which has many strengths (Douglas et al., 2023), the platform is nonetheless limited by rapid-responder bias and a relatively WEIRD population. Future research would benefit from using a more diverse randomly selected sample that better reflects the general population.

Moreover, the study's most interesting and novel findings consisted of unexpected higher-order interactions involving four variables. The current study's power analysis did not adequately account for these higher order interactions, which can raise Type I error concerns. Thus, future research would benefit from replicating the current study's findings with a larger, and more representative sample. Nonetheless, these effects were consistent across comprehensive and parsimonious statistical models and when decomposed, resulting in findings that were consistent with results of other independently conducted studies (e.g., Paruzel-Czachura et al., 2023). As such, concerns with Type I errors may be less pronounced in the current study than would normally be expected.

Additionally, this study was not designed to determine the underlying mechanisms for findings. Future research could include constructs like how system justification tendencies influence abortion attitudes (Kay & Jost, 2003). Similarly investigating the role of empathy, either towards the pregnant woman or the fetus, could further clarify the moral and emotional dimensions of abortion decision-making. Some people may be more likely to oppose abortion because they feel an emotional connection to the fetus, whereas others may be more sympathetic to the pregnant woman's

circumstances. Future studies can examine how these emotional processes shape moral reasoning and decision making offering a more nuanced understanding of abortion attitudes.

CONCLUSION

Attitudes toward abortion are shaped by myriad social and dispositional factors. Results from the current study provide evidence for how these factors may interact with each other insofar as men's attitudes toward abortion are informed by religiosity and conservatism, particularly when presented with information about the basis for women's decision-making. These findings contribute to an ever-growing nuance in the ethics of abortion.

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APPENDIX – VIGNETTES

Financially unready

Emma is a 28-year-old woman who has found out that she is 6 weeks pregnant. She recently lost her job and is struggling to make ends meet and doesn't think she will be able to provide the financial support needed to raise a child. Under these circumstances, she has scheduled an appointment to have an abortion.

Financially ready

Emma is a 28-year-old woman who has found out that she is 6 weeks pregnant. She has a well-paying job and has a healthy savings account, and thus she believes she would be able to provide the financial support needed to raise a child. Nonetheless, she has scheduled an appointment to have an abortion.

Emotionally unready

Emma is a 28-year-old woman who has found out that she is 6 weeks pregnant. She has experienced ups and downs in her life that have really affected her emotional well-being, and she doesn't think she would be able to provide the emotional support needed to raise a child. Under these circumstances, she has scheduled an appointment to have an abortion.

Emotionally ready

Emma is a 28-year-old woman who has found out that she is 6 weeks pregnant. She has experienced significant emotional growth over the past few years that has vastly improved her emotional well-being, and she thinks she would be in a good position to provide the emotional support needed to raise a child. Nonetheless, she has scheduled an appointment to have an abortion.

Partner absent

Emma is a 28-year-old woman who has found out that she is 6 weeks pregnant. She was in an unstable and difficult relationship and recently broke up. Dealing with the break-up and realizing she would be raising her child as a single parent; she doesn't think she has the social support needed to raise a child. Under these circumstances, she has scheduled an appointment to have an abortion.

Partner present

Emma is a 28-year-old woman who has found out that she is 6 weeks pregnant. She is currently in a stable and satisfying intimate relationship. With her partner present, she thinks she has the social support needed to raise a child. Nonetheless, she has scheduled an appointment to have an abortion.