





ARTICLE



<https://doi.org/10.1057/s41599-024-02623-3>

OPEN

Sex differences in the mediation role of political mobilization between the search for status and risk-taking behaviors in adolescents

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One of the primary drivers behind adolescents engaging in risk-taking behaviors is the pursuit of status. This study examines how activism and radicalism mediate the relation between the search for status and risk-taking behaviors, moderated by sex. A total of 482 participants, with an average age of 17.97 (SD = 1.83), reported their levels of status-seeking, activism, radicalism, and engagement in risk-taking behaviors. The study revealed an indirect effect of seeking status on risk-taking behaviors through the mechanisms of activism and radicalism. Furthermore, sex moderated the relation between status, activism and radicalism, and risk-taking behaviors. In both girls and boys, activism correlated with reduced engagement in risk-taking, while radicalism correlated with increased engagement. In terms of sex differences, both activism and radicalism showed a more pronounced effect in boys than in girls. These findings highlight the role of political mobilization on the relation between the pursuit of status and engagement in risk-taking.

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Introduction

According to the World Health Organization risk-taking behaviors are between the main priorities of adolescents' mental and physical health (World Health Organization WHO (2021)). These behaviors begin during adolescence and have been related to both the health of the individual engaging in them and that of their closest circle (Azevedo et al. 2017). A study carried out in 11 western and non-western countries showed that risk assumption is more common in adolescents (Duell et al. 2017). In traditional terms, behaviors are labeled as risky when they lead to undesirable or potentially dangerous consequences (Furby and Beyth-Marom 1992). This perspective prompts the exploration of adolescent risk-taking behaviors from a psychopathological standpoint (Luciana 2013). Adolescents are thought to engage in risk-taking behaviors because they may struggle to link their current actions with future outcomes (Elkind 1967). However, engaging in risk-taking behaviors might have potential benefits, despite some of the negative consequences. Analyzing the potential advantages of risk-taking aligns with an evolutionary perspective, framing these behaviors as mechanisms to fulfill fundamental objectives of survival and reproduction—such as acquiring more resources and increasing mating opportunities (Ellis et al. 2012). Embracing an evolutionary perspective involves evaluating the drawbacks and advantages of risk-taking behaviors. Behavioral risk-taking, when viewed through an evolutionary lens, serves a particular adaptive function achieved by weighing potential costs and benefits. Hence, instances where the benefits outweigh the costs shouldn't be perceived as a psychological aberration or dysfunction. Instead, risk-taking would be serving the purpose of achieving specific advantages associated with evolutionary challenges in survival and reproduction (Salas-Rodríguez et al. 2022).

The evolutionary perspective of human behavior has fostered to the development of the theoretical framework of fundamental social motives, which suggests the existence of specific motivations pivotal in addressing recurrent adaptive challenges from the past. According to Kenrick et al. (2010), seven fundamental social motives exist for humans: (1) Self-protection; (2) Illness avoidance; (3) Membership; (4) Status; (5) Mating; (6) Mate retention; and (7) Family care. These motives vary across life stages and are arranged based on individual priorities. Indeed, the pursuit of status, which involves seeking prestige and dominance, strongly influences the behavior of adolescents and young individuals (Griskevicius and Kenrick 2013; Hochberg and Konner 2020). A positive reputation can greatly increase the chances of individuals receiving support and protection within a group. This, in turn, can boost their opportunities for survival and reproduction (Whitten 1987). This means that humans take risks when they compete to defend or improve their status within a social group (Ermer et al. 2008).

Engaging in risk behaviors can actually boost an individual's reputation within a group (Carroll et al. 2009). Additionally, as per the 'crazy bastard hypothesis,' in situations of violent conflicts, individuals showing indifference towards the possibility of injury or death can be seen as formidable opponents and valuable allies (Fessler et al. 2014).

The pursuit of status is often linked to a quest for meaning (Leary and Baumeister 2000). This quest for meaning is sparked by two distinct reasons: either a sense of meaning loss due to deprivation, feelings of rejection or discrimination, or instances of humiliation, or by the opportunity to acquire significance through recognition or the presence of an admiring audience (Kruglanski et al. 2022). Consequently, the pursuit of significance drives behaviors aimed at affirming, actualizing, and demonstrating commitment to essential values.

The connection between status and risk-taking behaviors is extensively documented. Status often correlates with a tendency

to seek out danger, which also suggests that messages about health and safety directed at adolescents might inadvertently encourage unsafe and harmful behaviors (Salas-Rodríguez et al. 2021b). Adolescents are increasingly fighting for status, and the behaviors associated with achieving this goal have become of great importance to them (Laninga-Wijnen et al. 2020). Young individuals of lower status, who have fewer chances to achieve prestige and significance through traditional means in society, notably demonstrate a disproportionate involvement in risk-taking behaviors (McCauley and Moskalko 2011).

Search for status through political mobilization: activism and radicalism. The quest for meaning can hence construct a compelling narrative for individuals, leading them to take risks as a pathway to attain status (Kruglanski 2018). Indeed, across history, the pursuit of dignity and acknowledgment has been the foundation for numerous social movements. For instance, in events like the French Revolution, societal groups rebelled collectively to combat feelings of insignificance, injustice, or the denial of freedom (Kruglanski et al. 2022). Many ideological narratives extensively elaborate on the cause-effect relationship between group violence and the achievement of status (Kruglanski et al. 2012).

Political mobilization is one of the mechanisms through which individuals seek to achieve status. In fact, according to Olagbegi (2021), political mobilization and participation are ways through which individuals gain status, respect and power. Speaking in front of a crowd, participating in a controversial political discussion, or joining new political groups provide personal benefits such as social validation and status improvement (Oosterhoff and Wray-Lake 2020). Furthermore, activism and radicalism are two mechanisms of political mobilization expression (Olagbegi 2021). Activism is an individual or collective tendency aiming to make a political change through transgressive action without using violence (Couch 2004); on the opposite, radicalism is an individual disposition to participate in illegal or violent political actions as the only path to political change. The intentions of legal activism have barely shown relation with the illegal and violent political action of radicalism (Corning and Myers 2002). Activism and radicalism are different and independent dimensions, meaning that an individual can become radicalized without having been previously involved in activism. In fact, only a minority with activist intentions have radical intentions too (McCauley and Moskalko 2014). However, there are studies that consider activism as a conveyor to radicalism, suggesting that those individuals who fail through legal and non-violent political action will move to illegal and violent political action if they feel strongly committed and motivated with a specific cause (Baran 2005).

According to Kruglanski et al. (2018), the primary driver behind violent radicalism is the need for personal meaning, specifically the desire to establish significance and find purpose in life. This author outlines three fundamental factors contributing to violent radicalism, known as the 3Ns: the need (where all individuals seek to matter, receive respect, and "be someone"), the narrative (which justifies violence as an effective means to attain meaning, portraying it as morally acceptable), and the network (composed of like-minded individuals).

Being part of a group offers security, anonymity, and reduced individual responsibility, factors that can contribute to elevated levels of risky or violent behaviors (Mercedes-Brea 2014). Additionally, prosocial behavior involves actions that support and protect the esteemed ideals and values of the group, leading individuals to receive acknowledgment and significance within

their group (Atran 2010). According to Koirikivi et al. (2021), adolescents and young adults are more prone to activism and, more specifically, radicalism, since they might gain status, prestige and personal value through violent acts, as well as receiving other rewards from the group (Giordano et al. 1986).

Sex differences. There is enough evidence showing that risk-taking behaviors in young adults have different patterns based on sex (Moss et al. 2014). In fact, sex appears to be a significant influencing factor in risk-taking, with males exhibiting higher rates of engagement (Salas-Rodríguez et al. 2021a). This trend is attributed to a higher prevalence of sensation seeking among males compared to females (Arnett 1992). There is also substantial evidence pointing to the link between status and fertility (Betzig 1986), implying a potential evolutionary advantage favoring men through status. On the other hand, considering an evolutionary perspective, females may avoid risk due to their higher sensitivity to potential losses (Harrant and Nicolas 2008). The importance of producing offspring can also play a role in limiting females' investment in costly competitive signaling (Stockley and Campbell 2013). Therefore, we can expect that the effect of activism and radicalism on risk taking differs according to the sex of the individuals. Therefore, women tend to prefer safer and less expensive activist actions (Olagbegi 2021).

Finally, it is crucial to highlight that evolutionary psychology does not dismiss the influence of socialization on sex differences. In fact, there can be an interplay between both processes in shaping sex differences (Archer 2019). According to Lewis et al. (2017), the evolutionary hypothesis functions at the distal level of analysis, determining why and how a specific psychological mechanism evolved, particularly its adaptive function. In line with this, Conway and Schaller (2002) argue that evolutionary factors precede social influences associated with gender roles. These authors suggest that cultural gender norms originated from evolutionary processes. Furthermore, the evolutionary premise concerning sex differences in the variability of psychological traits implies an acknowledgment of individuals' capacity to adapt their behavior based on environmental influences, transcending consistencies across diverse contexts (Archer 2019). Hence, our research focuses on sex differences from an evolutionary standpoint.

Present study

Risk-taking behaviors are a key adaptive mechanism associated with the pursuit of status among adolescents and young adults. Political mobilization is one way of gaining status, whether through activism (legal and non-violent mobilization) or radicalism (illegal and violent mobilization). The present study analyzes the indirect effect of search for status on risk-taking through mechanisms of political mobilization such as activism and radicalism. The study also looks at the modulating effect of sex to observe differences between boys and girls. A positive relation between search for status and risk-taking behaviors (direct effect) is expected (Hypothesis 1); activism and radicalism are also expected to mediate the relation between search for status and risk-taking behaviors (indirect effect) (Hypothesis 2); finally, differences between boys and girls are expected, both in the direct and indirect relations between search for status and risk-taking behaviors (Hypothesis 3). Figure 1 shows the theoretical model with the directions of the expected effects.

Method

Participants and procedure. A total of 482 students from three different schools participated in the study. In total, 270 participants were males, 212 females. Most participants were Spanish

nationals ($n = 422$). Ages ranged between 14 and 22 years ($M = 17.97$, $SD = 1.83$) and participants came from three schools in the city of Málaga. Researchers purposefully selected these three schools because of their locations in the most densely populated areas of the city of Malaga. They were all state schools, enabling access to a diverse sample of adolescents and young people. The questionnaires were distributed among classes comprising both high school and vocational training students. All questionnaires were handed during school hours in each school. Two researchers, with the help of schoolteachers and counselors, explained and handed out the questionnaires in the different classrooms in each school. The questionnaires were written in Spanish, and all participants easily understood the questionnaire items without any issues. The data collection took place in 2021.

Variables

Search for status. The level of activation of search for status in participants was measured through the subscale of status seeking of the short version of the Fundamental Social Motives Inventory (FSM; Neel et al. 2016; Spanish version, Gómez-Jacinto and Salas-Rodríguez 2018; see Supplementary Information). This subscale consists of three items through which participants report their agreement or disagreement on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Internal consistency of the subscale is $\alpha = 0.56$. Subscales with low number of items require analyzing inter-item correlations, which should range from 0.15 to 0.50 (Clark and Watson 1995). Values from inter-item correlations ranged between 0.24 and 0.33, meaning the requirements were met. The McDonald's omega value for the status-seeking scale is provided in the supplementary information, available in the attached Annex (Table S1).

Activism-radicalism. The Spanish version of the Scale of Activism and Radicalism Intention was used to measure levels of activism and radicalism (McCauley and Moskalenko 2009); see Supplementary Information. This instrument comprises two subscales, each of them composed of four items. Its aim is to assess political mobilization through willingness to sacrifice oneself for a group or a cause. The first scale assesses Activism and the second assesses Radicalism. Items are answered through a Likert-type scale of 7 points, ranging from 1 (strongly disagree) to 7 (strongly agree). Internal consistency of both scales for the present sample was appropriate (activism, Cronbach's $\alpha = 0.87$; radicalism, Cronbach's $\alpha = 0.84$). Table S1 shows McDonald's omega values for activism and radicalism subscales (supplementary information).

Risk-taking behaviors. Participants answered the Risky Behavior Questionnaire (RBQ, Auerbach and Gardiner 2012; see Supplementary Information), to express to what extent they engaged in a wide range of risk-taking behaviors in the last twelve months: unsafe sexual practices, aggressive and/or violent behaviors, rule breaking, dangerous, destructive and illegal behaviors, self-injurious behaviors, and substance use. This scale comprises 20 items which are answered through a 5-point scale ranging from 0 (Never) to 4 (Usually). Internal consistency was satisfactory ($\alpha = 0.84$). Table S1 (supplementary information) shows McDonald's omega for this scale.

Statistical analysis. Descriptive analyses and Pearson correlations were initially carried out for the variables of the study. Model 59 on the moderated mediation of Macro PROCESS was used to examine how sex moderates both the direct and indirect relationships—via activism and radicalism—between status and risk-taking behaviors. The variables included in this model had been mean-centered prior to the analysis. Participants who showed missing values in any of the variables were not included in the analyses.

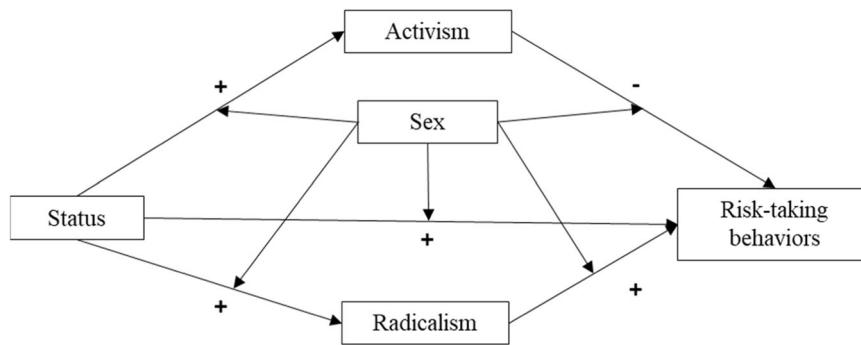


Fig. 1 Theoretical model for the moderated mediation proposed.

Table 1 Descriptive statistics and correlations between the variables of the study.

	1	2	3	4	5	M _{males}	SD _{males}	M _{females}	SD _{females}
1. Risk-taking behaviors	–					0.78	0.54	0.66	0.48
2. Status	0.188***	–				3.18	0.90	3.12	0.80
3. Activism	–0.111*	0.099*	–			3.45	1.59	3.58	1.59
4. Radicalism	0.212***	0.200***	0.526***	–		2.66	1.49	2.25	1.25
5. Sex	–0.119*	–0.031	0.042	–0.147**	–				

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

Results

Table 1 shows descriptive statistics based on sex and correlations for the study’s variables. As it can be observed, risk-taking behaviors related positively to status and radicalism, showing negative correlation with activism. Status showed a positive relation with both activism and radicalism. Activism and radicalism showed a positive relation. Sex showed a negative correlation with risk-taking behaviors and radicalism, meaning that boys reported higher engagement in risk-taking behaviors and higher radicalism compared to girls.

Results obtained from moderated mediation analysis are shown in Table 2. Model 1 for activism as criterion variable was not significant ($F(3, 412) = 1.93, p = 0.124$). Model 2 on radicalism as criterion variable was significant ($F(3, 412) = 9.21, p \leq 0.001$). Status showed a positive prediction on radicalism ($\beta = 0.35, p \leq 0.001$). Model 3 on risk-taking behaviors was statistically significant ($F(7, 408) = 11.60, p \leq 0.001$). Status did not showed an effect on risk-taking behaviors ($\beta = 0.04, p = 0.211$). Activism showed a negative effect over risk-taking behaviors ($\beta = -0.14, p \leq 0.001$); and radicalism showed the opposite effect ($\beta = 0.17, p \leq 0.001$). Status seeking and sex showed significant interaction ($\beta = 0.13, p \leq 0.05$). Status predicted higher engagement in risk-taking behaviors in girls ($b = 0.17, p \leq 0.001$); in boys, the relation between status and risk-taking behaviors was not significant ($b = 0.04, p = 0.211$). Interaction between sex and activism was observed ($\beta = 0.08, p \leq 0.05$). Both in girls and boys activism related negatively to risk-taking behaviors, being this effect greater in boys ($b = -0.14, p \leq 0.001$) than in girls ($b = -0.06, p \leq 0.05$). Sex and radicalism also showed significant interaction ($\beta = -0.10, p \leq 0.05$). In both sexes, radicalism related to higher engagement in risk-taking behaviors, mainly in boys ($b = 0.17, p \leq 0.001$) compared to girls ($b = 0.07, p \leq 0.05$). Figure 2 illustrates the statistical diagram representing the moderated mediation model.

Discussion

The present study analyzes the indirect effect of search for status on risk-taking behaviors through the political mobilization mechanisms of activism and radicalism. In general, results show an indirect effect of search for status on engagement in risk-

Table 2 Analysis of the moderated mediation effect of status on risk-taking behaviors.

Predictors	Model 1 Activism		Model 2 Radicalism		Model 3 Risk-taking behaviors	
	β	t	β	t	β	t
Status	0.21	1.84	0.35	3.60***	0.04	1.25
Activism					-0.14	-5.77***
Radicalism					0.17	6.28***
Sex	0.10	0.65	-0.36	-2.73**	-0.08	-1.60
Status x Sex	0.01	0.05	0.00	0.02	0.13	2.19*
Activism x Sex					0.08	2.36*
Radicalism x Sex					-0.10	-2.42*
R ²	0.01		0.06		0.17	
F	1.93		9.21***		11.60***	

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

Model 1: effect status on activism.

Model 2: effect status on radicalism.

Model 3: effect status/activism/radicalism on risk-taking behaviors.

taking behaviors through radicalism. Additionally, sex acts as moderator in the relation between search for status, activism and radicalism and engagement in risk-taking behaviors. In particular, political mobilization interferes in the relation between search for status and risk-taking behaviors in adolescents and young adults, with a higher effect in boys than in girls. More specifically, radicalism acted as a risk factor by promoting higher engagement in risk-taking behaviors. Activism showed a protective effect against risk-taking behaviors according to its negative relation with the latter.

The moderated mediation analysis showed a direct influence of the pursuit of status on engagement in risk-taking behaviors, supporting hypothesis 1. In addition, the analysis indicated that the direct impact of status on involvement in risk-taking behaviors specifically occurs in girls. This finding aligns with hypothesis 3 which predicted disparities between sexes concerning the relation between the pursuit of status and risk-taking

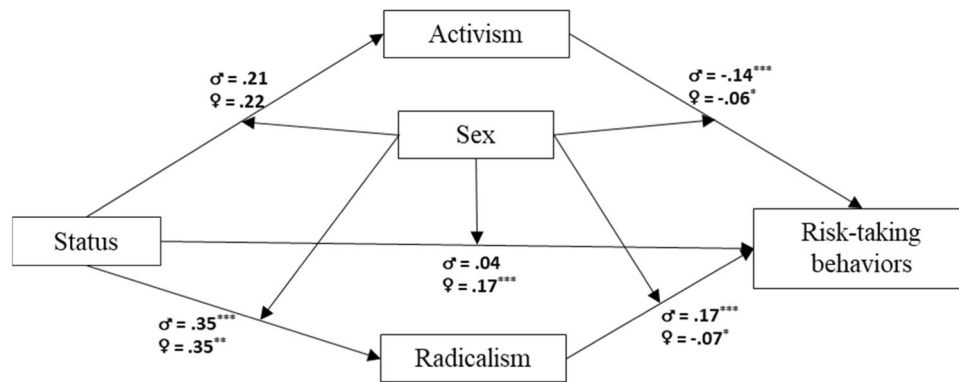


Fig. 2 Moderation mediated model for risk-taking behaviors by status, activism, radicalism, and sex. * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

behaviors. Specifically, higher motivation for status was linked to increased engagement in risk-taking behaviors among girls. Intriguingly, this direct impact of status on engagement in risk-taking behaviors was not evident in boys. These findings might be explained by the observation that adolescent girls typically experience earlier maturation and development compared to adolescent boys (Singh et al. 2018). Consequently, they may engage in intra- and intersexual competition at an earlier stage. Additionally, the formation of hierarchies within female groups could intensify competition, often associated with striving for elevated status (Arnocky and Vaillancourt 2017).

On another aspect, radicalism showed a mediating influence in the relation between the pursuit of status and engagement in risk-taking behaviors. These results partially validate hypothesis 2, as activism did not act as a mediator between the pursuit of status and risk-taking behaviors. Specifically, the quest for status had a favorable impact on radicalism, subsequently correlating positively with involvement in risk-taking behaviors. These results also imply that the inclination of radical individuals to participate in violent and unlawful risk-taking behaviors, as established in prior research (e.g., McCauley and Moskaleiko 2009), is, in part, directed toward obtaining prestige and recognition from others.

Finally, the hypothesis regarding the moderating impact of sex on the indirect link between status and risk-taking behaviors (hypothesis 3) was partially substantiated. Sex did not moderate the relation between search for status and activism-radicalism. However, sex differences were observed in the relation between activism and radicalism and engagement in risk-taking behaviors. In both girls and boys, activism promoted lower engagement in risk-taking behaviors, while radicalism increased it being these effects higher in boys than in girls. These findings suggest that boys express two types of competition-reproduction strategies—a less risky one related to activism which reduces engagement in risk-taking behaviors, and a more antisocial one related to radicalism which increases engagement in risk-taking behaviors. These results are in line with other studies which confirm higher variability in males than in females in relation to risk-taking behaviors (Salas-Rodríguez et al. 2021b). The reason behind this could be that risk-taking behaviors can potentially be more beneficial for males in terms of status and reproductive success (Birkhead 2002). This result is in line with previous studies (Salas-Rodríguez et al. 2021a), which show that sex plays an important role in individuals' engagement in risk-taking behaviors. Under an evolutionary approach, males show higher competition for intangible resources such as political influence and social status. These resources can lead to reproductive opportunities, whether because they make males directly attractive for females or because they help oppress rival males (Wilson and Daly 1985). The present study shows that political mobilization can act as a competition

mechanism in males to access such resources, whether it be by taking further risks in the case of radical males or by taking less risks in the case of activist males.

The relation between radicalism and risk-taking behaviors is also in line with males' higher engagement in extremist groups (Sommers 2019). These findings suggest that risky acts make perpetrators feel powerful and respected, which can be an appealing behavior for males seeking status. In this sense, Jasko and LaFree (2020) suggest that if committing violent acts is a means to gain respect and status, it could be then considered that participants satisfy their purposes. Therefore, our results are related to the Crazy Bastard Hypothesis which states that risk taking serves as a sign of worth as a potential ally. Thus, extremist individuals might engage in risk-taking behaviors to signal their awesomeness, so that other kids would see these people as potential allies (Fessler et al. 2014).

In girls, radicalism also showed a relation with engagement in risk-taking behaviors, but to a lower extent compared to boys. The same occurs with activism, where the effect is higher in boys. The results suggest that political mobilization could act in individuals as a mechanism of intrasexual competition to a greater extent in men than in women and that it is expressed through participation in risk behaviors. So, in women, the expression of risks has a less signaling function, in this case of an activist and radical attitude. These studies also show that female competition has many shapes, which in most cases involves low-risk competition strategies, probably due to limitations related to the care of their offspring (Stockley and Campbell 2013). Findings from the present study coincide with those observed in another study which shows that 14-year-olds in the US do not differ in anticipated political participation levels, but that girls prefer ways related to social movements while boys tend to prefer radical actions and confrontation (Hooghe and Stolle 2004). This can also be explained by females' socialization ways, which tend to be more passive, private and respectful towards rules, as well as compassionate (West and Zimmerman 1987).

Finally, it is worth noting that the link between radicalism and risk-taking behaviors in this study might be influenced by the specific types of risk-taking behaviors examined. Radicalism typically encompasses a disposition toward engaging in violent and illegal activities, while this study focuses on particular actions of a similar nature (e.g., property destruction, physical altercations, or selling illegal drugs). Furthermore, there exist other forms of risk-taking behaviors that are both legally and socially acceptable, associated with political mobilization (e.g., advocating for what is deemed fair) (Duell and Steinberg 2019). Consequently, the relationship between radicalism and these prosocial risk-taking behaviors could differ and might even exhibit an opposite direction.

Limitations

The research employed a quantitative methodology using questionnaires that contained sensitive inquiries, which could have constrained students' honesty, especially considering that the questionnaires were distributed in a general manner within the classroom. Hence, it seems crucial to incorporate supplementary qualitative methods to gain deeper insights into the rationales driving adolescents' behaviors, thereby complementing the obtained results. Initiating open discussion groups or conducting interviews would allow participants to elaborate on their responses. Given the absence of a distinct mediating effect of activism between status and risk behaviors, future research should persist in analyzing the mediating role of activism.

Conclusion

The findings from this study contribute to a deeper understanding of the psychology behind activism and radicalism, highlighting the significance of exploring the connection between lawful and unlawful political actions. The protective role of activism against risk-taking suggests the need to establish preventive measures through programs aimed at promoting peaceful action and mitigating or eliminating violent radicalism. Given to the protective role of activism among adolescents, professionals intervening in risk-taking behaviors ought to encourage prosocial behaviors to fulfill adolescents' fundamental need for status-seeking. Similarly, to diminish engagement in risk-taking behaviors, intervention programs should incorporate mechanisms to identify potentially radical adolescents, considering their association with such behavior.

Data availability

All data generated or analyzed during this study are included in this published article and its supplementary file.

Received: 9 May 2023; Accepted: 8 January 2024;

Published online: 18 January 2024

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Author contributions

NdP-B (corresponding author): (i) Conception and design (ii) data collection (iv) manuscript drafting and revising. JSR: (iii) data analysis and interpretation (iv) manuscript drafting and revising. IHM: (i) Conception and design, (ii) data collection. LGJ: (v): data analysis and interpretation.

Funding

This article was made possible by grants from the Spanish Economy and Competitiveness Ministry (Project 311 I + D: PSI2017-85941-R) and the Research Project UMA18-FEDERJA-071 (FEDER Andalucía 2014-312 2020).

Competing interests

The authors declare no competing interests.

Ethical approval

All research was performed in accordance with ethical standards of the Declaration of 476 Helsinki. Accepted principles of ethical and professional conduct have been approved by the Ethical 477 Committee on Experimentation from the University of Málaga (CEUMA) (Registry number: 45-2018-H).

Informed consent

Participants were duly informed about the purpose of the study and voluntary participation and they were asked to provide informed consent to participate. Students' parents and legal guardians were informed about the objective and method of the study, and they were requested previous informed consent.

Additional information

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1057/s41599-024-02623-3>.

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