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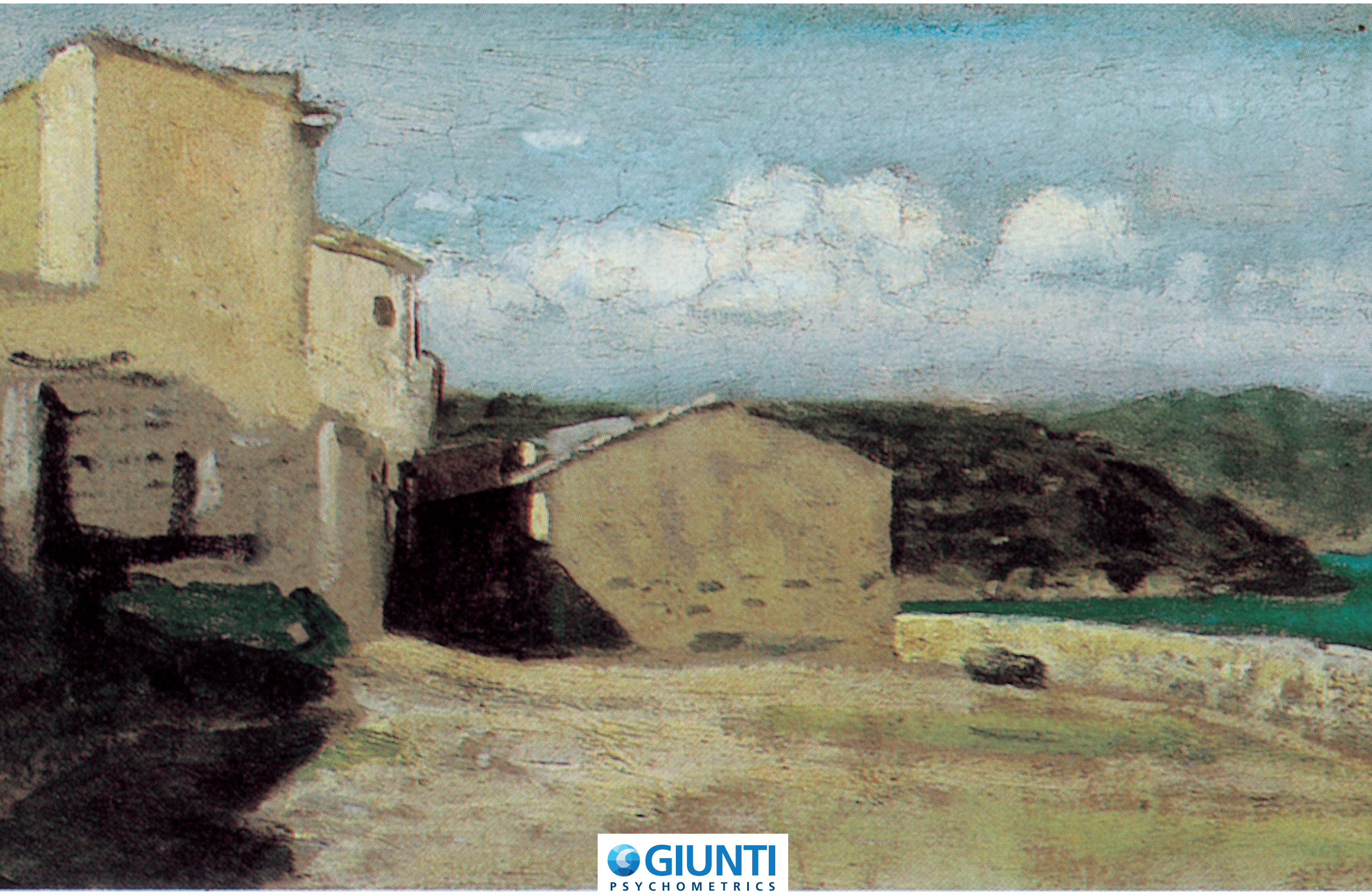

GIUNTI PSYCHOMETRICS

Scientific Director Alessandro Zennaro

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Research

Experiences & Tools

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Effect of career adaptability on flourishing among Pakistani university undergraduates: Mediating role of study engagement

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ABSTRACT. Il presente studio mira a capire se gli studenti universitari che sono più adattabili in termini di aspirazioni e obiettivi di carriera hanno maggiori probabilità di affermarsi nella loro vita accademica e personale e se questa relazione è influenzata dal loro livello di impegno nei loro studi. Basandosi su un campione mirato di 300 studenti universitari in varie università pubbliche nella provincia del Punjab in Pakistan, lo studio ha utilizzato il *Career Adapt–Abilities Short Form Questionnaire* (Maggiori, Rossier & Savickas, 2015), l'*Utrecht Study Engagement Scale* (Sui et al., 2014) e la *Flourishing Scale* (Diener, Napa Scollon & Lucas, 2009) da cui sono emersi effetti diretti positivi tra adattabilità alla carriera e impegno nello studio. Questa ricerca può fornire spunti di approfondimenti su come l'adattabilità alla carriera e l'impegno nello studio contribuiscano allo sviluppo di interventi per sostenere le attività accademiche e di carriera degli studenti.

SUMMARY. University students are at a critical stage of personal and professional development. Understanding the factors that contribute to their academic success and well–being can inform effective interventions and policies. The present study aims to understand whether students who are more adaptable in terms of their career aspirations and goals are more likely to flourish in their academic and personal lives and whether this relationship is influenced by their level of engagement in their studies. Thus, we hypothesized that study engagement plays a mediating role between career adaptability and flourishing. This study was based on a purposive sample of 300 undergraduate students at various public sector universities in the Punjab province in Pakistan. The study employed a cross–sectional survey design and used the Career Adapt–Abilities Short Form Questionnaire (Maggiori, Rossier & Savickas, 2015), the Utrecht Study Engagement Scale (Sui et al., 2014), and the Flourishing Scale (Diener, Napa Scollon & Lucas, 2009) to operationalize the focal constructs. Structured equation modeling indicated that after controlling for age, gender, and family background; career adaptability and study engagement had positive direct effects on flourishing, and career adaptability had positive direct effect on study engagement. Moreover, career adaptability had a significant positive indirect effect on flourishing through study engagement, indicating that career adaptability led to enhanced study engagement, resulting in improved flourishing. This study can provide insights into how career adaptability and study engagement influence flourishing and contribute to the development of interventions to support student's academic and career pursuits.

Keywords: *Study engagement, Career adaptability, Flourishing, University students*

INTRODUCTION

To successfully adapt to changes in the workplace, employees must improve their self–directed career management (SDCM) in terms of flexible self–management and adaptability (Sullivan, Carden & Martin, 1998). In line with this trend, there has been a significant increase in theoretical and empirical studies in the career literature. Entrenched in Super's (1951, 1990) developmental theory of career choice, career construct theory (CCT; Savickas, 2005) is one of the most influential recent theoretical approaches to career and work. CCT provides a way of thinking about how individuals choose and use their work. The theory presents a model for comprehending vocational behavior across the life cycle as well as the methods and materials that career counselors use to help clients make vocational choices and maintain successful and satisfying work lives. It seeks to be comprehensive in its purview by taking three perspectives on vocational behavior: differential, developmental, and dynamic.

From the perspective of individual differences in psychology, it examines the content of vocational personality types and what people prefer to do. Professional skills, values, interests, and needs shape vocational personalities (Savickas, 2005). It is based on a career guidance paradigm in which composition, career paths that individuals choose, and individual values are interrelated. People's images of themselves are formed as they fall into certain occupational categories (Savickas, 2011). CCT argues that occupational interests and related career characteristics should not be viewed as categories but as strategies for adapting to transitions and reflecting socially constructed meanings (Savickas, 2005).

From the perspective of developmental psychology, it examines the process of career adaptability to explain how individuals cope with vocational development tasks, occupational transitions, and work trauma. Career adaptability involves assessing an individual's developmental level, making one familiar with developmental challenges, and providing the behaviors and skills necessary for specialization (Savickas, 2011). Concern, control, curiosity, and confidence are the four dimensions of adaptability (Savickas, 2005). Adaptable individuals: (a) consider the future, (b) control the future, (c) see and be curious about their future self and goals, and (d) are confident in pursuing their goals (Savickas & Porfeli, 2012).

From the perspective of narrative psychology, it examines the dynamics by which life themes impose meaning on vocational behavior, and why individuals fit work into their lives in distinct ways. According to CCT, life themes address working life and examine why people practice their profession. Career development stories demonstrate how individuals use themes to make meaningful career decisions. Life themes refer to activities that promote self–creation, identity formation, and career structure through life–form paradigms (Savickas, 2011).

In coordination, the three perspectives (vocational personality types, life themes, and career adaptability) enable counselors and researchers to survey how individuals construct their careers by using life themes to integrate the self–organization of personality and self–extension of career adaptability into a self–defining whole that animates work, directs occupational choice, and shapes vocational adjustment. CCT promotes skill development across different life stages and empowers individuals to accomplish career–related tasks (Savickas, 2005).

Higher education institutions can use CCT to support students in their career development by providing opportunities for them to explore their interests, values, and skills and to make informed career decisions based on their unique career construction. This can be achieved through career counseling, mentorship programs, and experiential learning opportunities such as internships and volunteer work. Furthermore, higher education institutions can create an environment that fosters career adaptability, which is a central construct in CCT. This can be achieved by providing students with the necessary knowledge, skills, and resources to manage their careers proactively, adapt to changing circumstances, and pursue meaningful and fulfilling careers. Institutions can also encourage students to reflect on their career construction and experiences to develop a more coherent and intentional career narrative. By applying CCT to the context of higher education, institutions can support students in their career development and enhance their well–being.

Career adaptability

The idea of career adaptability is at the heart of the career construction theory. A professional's adaptive capacity is influenced by self–regulation and psychological resources to adapt and achieve adaptive goals. Career adaptability involves four basic elements as a multidimensional structure: concern, control, curiosity, and confidence, commonly known as the 4Cs (Savickas & Porfeli, 2012). Concerns include a focus on the future and a bright and hopeful outlook for the future (Savickas, 2005; Savickas et al., 2009; Savickas & Porfeli, 2012). This essentially means a future direction, a sense that it is important to prepare for the future (Savickas, 2013). Control emphasizes the need to take responsibility for building and shaping the professional future. It focuses on intrinsic self–discipline and processes of conscious, organized, and conscientious behavior and awareness of professional tasks and transitions. Control guides individuals to engage in career development tasks rather than avoiding career transitions (Savickas, 2013). Curiosity plays a central role in career development, with both exploratory and information–seeking behaviors as its main components, and self–knowledge and career information as direct consequences (Savickas, 2013). Those who demonstrate career curiosity explore their strengths and compatibility with the fields they seek (Savickas, 2013). Confidence refers to a sense of self–efficacy in one's ability to take the actions necessary to make and carry out appropriate educational and professional decisions. It is related to an individual's effectiveness in achieving their career aspirations, decisions, and goals, even in the context of limitations, problems, and obstacles (Savickas, 2005; Savickas et al., 2009; Savickas & Porfeli, 2012).

A person's occupational adaptability is related to current and anticipated employment challenges or transitions and the ability to cope with work–related traumas that have some impact on social cohesion (Savickas, 1997). Career adaptability resources are qualities or self–regulatory skills that individuals can rely on to resolve unexpected, complex, and uncertain situations due to stress, job changes, and trauma (Savickas et al., 2012).

Study engagement

Study engagement has been based on work engagement. Work engagement can be defined as "a person's state of mind toward positivity and work fulfillment, characterized by vigor, dedication, and absorption" (Schaufeli & Bakker, 2004, p. 295). Salanova and colleagues (Salanova, Schaufeli, Martinez & Breso, 2010) showed that there are core student activities that can be considered work. A student's main activity is attending lectures or working on and completing homework. Additionally, students may have specific academic goals to which they aspire. These goals may vary, such as the completion of courses and achievement of academic grades or degrees. Thus, in this study, engagement in learning was understood as a fulfilling and positive state that includes dedication, power, and immersion in an educational context.

A blend of involvement, interest, and focus on the learning process can represent student engagement. Despite these challenges, vigor is the driving force that motivates students to achieve their academic goals by investing a tremendous amount of perseverance, determination, and perseverance (Carmen et al., 2018). Students' dedication to learning is reflected in their excitement, inspiration, importance, challenge, pride, and relevance in study–related activities and their perception of these activities as meaningful to them (Carmen et al., 2018; Ouweneel, Le Blanc & Schaufeli, 2014; Salmela–Aro & Upadyaya, 2014; Upadyaya & Salmela–Aro, 2013). The characteristic of absorption is that time flies when one is completely focused on one's studies and enjoys doing so. Enthusiastic students are energetic and passionate about their studies. In addition, their studies are often so intensive that they lose track of time (Bakker & Demerouti, 2008). When one is completely immersed in one's studies, time flies by, and one is more likely to be unable to separate one activity from another (Isabel et al., 2019).

Career adaptability and study engagement

Career adaptability can lead to better study engagement among university students because it promotes a proactive and forward–thinking approach to career development. Students who are more adaptable to their career plans tend to be more open to exploring new opportunities, taking risks, and being flexible in their career goals (Savickas, 2011). These attitudes can also translate into a more engaged and proactive approach to academic study. For example, students who have developed career adaptability skills may be more likely to engage in extracurricular activities, internships, or volunteer work, which can provide them with a range of experiences and skills that can be applied to their academic studies. They may also be more likely to seek out and take advantage of opportunities for mentorship, career counseling, or academic advice, which can further support their academic success.

Moreover, students who have developed career adaptability skills may have a clearer understanding of their career goals and aspirations, which can help increase their motivation and engagement in academic studies. By linking their academic pursuits to their long–term career goals, they may be more invested in their studies and more willing to invest the time and effort needed to achieve their academic and career aspirations.

Merino–Tejedor and colleagues (Merino–Tejedor, Hontangas & Boada–Grau, 2016) investigated the relationships between career adaptability and self–regulation, career construction, and academic engagement among Spanish university students. The findings suggest that career adaptability is positively related to self–regulation and academic engagement and that self–regulation partially mediates the relationship between career adaptability and academic engagement. Similarly, Paradnikě and Bandzeviciene (2016) found that career adaptability was positively related to study engagement and that this relationship was partially mediated by personal resources, such as self–efficacy and academic motivation, among Lithuanian university students. Overall, these studies suggest that developing career adaptability skills may be beneficial in promoting greater self–regulation and academic engagement among university students, which can lead to greater academic success.

Flourishing

Flourishing is a multidimensional concept that has been extensively studied in positive psychology. Researchers have proposed different definitions and conceptualizations of flourishing, but most agree that it involves the presence of positive emotions, engagement, positive relationships, meaning, purpose, and accomplishment (Diener et al., 2010). An influential model of flourishing is the PERMA model proposed by Seligman (2011). The PERMA model includes five key elements that contribute to flourishing: positive emotions, engagement, relationships, meaning, and accomplishments. According to Seligman, individuals with high levels of each of these elements are more likely to experience a sense of well–being and optimal functioning in their lives.

Other researchers have proposed similar conceptualizations of flourishing. For example, Keyes (2002) proposed a model of mental health that includes both the absence of mental illness (negative affect) and the presence of positive indicators of well–being such as positive emotions, positive relationships, and a sense of meaning and purpose in life. Huppert and So (2013) also proposed a model of flourishing that includes three components: feeling good (positive affect), functioning well (positive psychological functioning), and doing good (positive social functioning). Diener and colleagues (2010) assert that flourishing involves positive social relationships which means that people have supportive and rewarding relationships in their lives and they are contributing to the happiness of others. Thus, flourishing reflects a high degree of positive affect, life satisfaction, autonomy, competence, positive social relationships, and meaning in life and encompasses both subjective and psychological well–being.

Research has shown that flourishing individuals have higher levels of life satisfaction, positive affect, and overall well–being (Diener et al., 2010). Flourishing has also been associated with a range of positive outcomes such as better physical health, greater resilience, and higher levels of academic and work performance (Huppert & So, 2013; Ryan & Deci, 2001).

Flourishing is highly relevant to university students because they are at a critical stage in their personal and professional development. This is a time when individuals explore their identity, form relationships, and develop their skills and knowledge for future career paths. Flourishing can have important implications for academic success, personal well–being, and career prospects. Moreover, a university is an environment in which students are exposed to diverse experiences and opportunities that can shape their personal and professional aspirations. Developing a sense of purpose and meaning in life can help students make more informed decisions about their academic and career paths and can also motivate them to pursue goals that are aligned with their values and interests.

Mediating role of study engagement between career adaptability and flourishing

A possible link between subjective well–being (flourishing) and career adaptability has been found in theoretical literature (Konstam, Celen–Demirtas, Tomek

& Sweeney, 2015). Savickas's career construction theory (2005, 2013) attempts to explain how personal objectives are connected to subjective well–being and how work may contribute to fulfillment and pleasure in general life. Quantitative studies have shown that career adaptability and well–being are positively correlated. In longitudinal research involving 330 Swiss teens, career adaptability predicted life contentment over time (Hirschi, 2009). Another study found that all four components of career adaptability predicted satisfaction and subjective well–being in a sample of 2800 French– and German–speaking adults living in Switzerland (Maggiore et al., 2015). Brown and colleagues (Brown, Bimrose, Barnes & Hughes, 2012) and Rossier and colleagues (Rossier, Zecca, Stauffer, Maggiori & Dauwalder, 2012) found that career adaptability not only had a beneficial influence on work–related well–being but also improved psychological well–being.

Despite these positive results, it remains unclear why this relationship exists between career adaptability and well–being. Buyukgoze and colleagues (2015) noted that the literature investigated the association between career adaptability and well–being but did not consider why such associations exist. This study intends to fill this gap in the empirical literature by proposing study engagement as the missing link between career adaptability and well–being.

Engagement and well–being can be seen as similar states representing the positive and malleable states of people that yield positive outcomes (Robbertson & Cooper, 2010). In a survey of 952 tertiary students in Australia, Bowden and colleagues (Bowden, Tickle & Naumann, 2019) found that student expectations, interest, and commitment played an important role in study engagement. Emotional engagement is the most important determinant of institutional reputation, well–being, and transformative learning. Behavioral engagement predicted self–efficacy and self–esteem. Well–being is central to learning. Numerous studies show that students' well–being, engagement, and academic success are closely intertwined (Heffner & Antaramian, 2016; Pipere & Mieriņa, 2017; Plominski & Burns, 2018). For instance, Boulton et al. (Boulton, Hughes, Kent, Smith & Williams, 2019) showed that personal well–being not only enhances academic performance but also improves attitudes, behavior, and engagement. Antaramian et al. (Antaramian, Huebner, Hills & Valois, 2010) found that individuals with high levels of engagement demonstrated high levels of flourishing, low psychopathology, and improved academic performance. Furthermore, cognitive and academic engagement in schools have been positively related to subjective well–being (Datu & King, 2018; Lewis, Huebner, Malone & Valois, 2011). In a recent study, Iqbal and colleagues (Iqbal, Hassan, Jadoon & Ehsen, 2021) showed a strong positive correlation between engagement and the well–being of students.

Evidence suggests that career adaptability can improve study engagement. A recent study by Magnano and colleagues (Magnano, Lodi, Zammitti & Patrizi, 2021) in a sample of 352 Italian college students of the last year examined the relationships between courage, career adaptability, and readiness to improve well–being. The findings showed that career adaptability had a positive direct effect and a positive indirect effect on well–being through courage. Similarly, Rossier and colleagues (2012) found that career adaptability remained a significant positive predictor of engagement even after controlling for the Big Five personality factors. Moreover, career adaptability is mediated by personality dimensions and engagement. In another study involving 672 undergraduate students from nine colleges and universities in Lithuania, Akkermans and colleagues (Akkermans, Paradniké, Van der Heijden & De Vos, 2018) showed that career adaptability and competencies were positively associated with students' life satisfaction. This relationship is both direct and indirect, with study engagement mediating the relationship between career resources and life satisfaction. Additionally, this study found that career resources were indirectly linked to academic performance through study engagement. In summary, this study concluded that career resources play a crucial role in promoting study engagement, life satisfaction, and academic performance among undergraduate students.

In university education, student engagement refers to the dedication of time, effort, and resources to activities that enhance learning. In addition to being a critical construct, it is one of the best measures of student learning, as it includes the dimensions of the self–set challenge, effort, interaction with academics and teaching institutions, participation in educational programs and extracurricular activities, and feelings of belonging and value (Devlin et al., 2008). Engagement in coursework is linked to persistence (Bridges, Cambridge, Kuh & Leegwater, 2005) and student satisfaction, both of which contribute to students' well–being (Kuh, Kinzie, Schuh & Whitt, 2005).

In light of the aforementioned literature, this study formulated the following hypotheses:

H1: Career adaptability will have a positive direct effect on flourishing;

H2: Career adaptability will have a positive direct effect on study engagement;

H3: Study engagement will have a positive direct effect on flourishing;

H4: Career adaptability will have a positive indirect effect on flourishing through study engagement.

METHOD

Sample

To determine the appropriate sample size, we conducted a power analysis using G*Power (version 3.0; Faul, Erdfelder, Buchner & Lang, 2008). The analysis indicated that for multiple regression involving three predictors, we may detect a small–to–medium effect size of Cohen's f^2 = .07, with a power of 95% and α of .05, in a sample of N = 250. To be more cautious methodologically, we recruited a purposive sample of N = 300 undergraduate students from various public sector universities of the Punjab province including the University of Sargodha, University of the Punjab Lahore, and Govt. College University Faisalabad. All participants were enrolled in BS programs of various departments/disciplines (3rd semester to 8th semester). The ages of the participants ranged from 18 to 25 years (M = 20.71, SD = 1.80). Boys constituted 46.7% and girls constituted approximately 53.3% of the whole sample. 67.3% of students belonged to the nuclear family system and 32.7% belonged to the joint family system. Of the participants, 57.3% had an urban background (belonging to Sargodha, Lahore, and Faisalabad cities) and 42.7% had a rural background (belonging to villages surrounding Sargodha, Lahore, and Faisalabad cities). The sample included 28% of students from the arts and social sciences and 72% from the sciences.

As per the inclusion criteria of the present study, regular full–time university undergraduate students enrolled in BS programs of various departments/disciplines studying in the third to eighth semesters within the age range of 18–25 years were eligible to participate in the study. Graduate, post–graduate, private, and part–time students; students age range 18–25 years, and students of BS programs in semester I or II were excluded from the present sample.

The researchers approached undergraduate students in lecture halls at different university campuses to recruit them for this study. The method of contact was face–to–face interaction. They were briefed on the scope and nature of the study. Rapport was built and they were further assured that their information would be used only for research purposes. Written consent was signed by each participant, and all scales were individually administered. All confusion regarding the research on the part of participants was satisfied. Participants were not offered any incentives to participate in the study, and they were free to withdraw from the study at any point. Finally, we thank the participants for their cooperation. Among the participants, 370 questionnaires were distributed, 321 of which were returned. Of these, 21 questionnaires were excluded from the analysis due to excessive missing responses (any questionnaire with 5% or more missing response data was considered excessively missing) and random responses. The response rate was 86.75%.

Study design

A cross–sectional survey research design was used in the present research.

Measures

Psychometrically sound self–reporting instruments were used to measure all focal variables in the current study, which provided the best operationalization of the variables. These instruments have been used across different cultures and have sound psychometric properties. The details are as follows.

– *Career Adapt–Abilities Short Form Questionnaire* (Maggiori et al. 2015) was used to measure career adaptability. The scale comprised 12 items, and Maggiori and colleagues (2015) reported that it measured four career adaptability resources: (a) concern (e.g., thinking about what my future is like) (Cronbach α = .79; items 1 to 3), (b) control (e.g., counting on myself) (Cronbach α = .78; items 4 to 6), (c) curiosity (e.g., observing different ways of doing things) (Cronbach α = .74; items 7 to 9), and (d) confidence (e.g., working up to my abilities) (Cronbach α = .76; items 10 to 12). The reliability of the total *Career Adapt–Abilities Scale – Short Form* was .85 (Maggiori et al. 2015). The response format was a 5–point Likert scale ranging from 1 (not a strength) to 5 (greatest strength). The scale did not contain any reverse–coded items. The total score is computed by summing the individual scores for each item.

– *Utrecht Study Engagement Scale* (Sui et al., 2014) was used to assess study engagement among university students. The scale included 9 items on a 7–point Likert scale (0 = Never and 6 = Always) and it measures three components of engagement: (a) vigor (e.g., "I feel energetic and capable when I'm studying or going to class"), (b) dedication (e.g., "I feel happy when I am studying intensely"), and (c) absorption (e.g., "I get carried away when I am studying"). None of the items were negatively coded. Sui and colleagues (2014) reported that Cronbach's α of the scale was .90. All the items were summed to create a total score for study engagement.
– *Flourishing Scale.* Flourishing was measured using the *Flourishing Scale* (Diener et al., 2009), which consists of eight items with a response format of a 7–point Likert–type scale ranging from 0 (Never) to 6 (Always), with Cronbach's α = .86. It is an indicator of psychosocial development, based on new psychological and social welfare theories. All items were summed to create a total score for flourishing. The scale is intended to quantify sociopsychological prosperity to supplement current subjective well–being scales. An example item from the scale is "I lead a purposeful and meaningful life".

Data analysis

The data collected for the study were analyzed using the IBM SPSS software. The analysis involved calculating Cronbach's alpha reliability coefficients and descriptive statistics, such as mean, standard deviation, range, and skewness. In addition, a correlation matrix was computed to investigate the relationship patterns among the focal constructs of the study. Finally, to test the proposed hypotheses, structured equation modeling was performed using IBM Amos software.

RESULTS

Table 1 displays the mean, standard deviation, range, skewness, kurtosis, and alpha coefficient for each measurement instrument used in the current study. From standard deviation scores, it can be discerned that mean scores were representative of their respective distribution, and minimal differences between actual and potential ranges suggest that restriction of the range is not a pertinent issue in the present study. The results in Table 1 show that all scales yield a high satisfactory magnitude of reliability, which justifies their use in the present research. The skewness and kurtosis values are within the acceptable range, which indicates that the total scores on various measures used in the

Table 1 – Descriptive statistics and alpha reliability coefficient of the scales (N = 300)

Scales	*M*	*SD*	Range		Sk[a]	Ku[b]	α	1	2	3	4
			Actual	Potential							
1. Career adaptability	44.6	6.90	21–60	12–60	–.33	.11	.75	–	.37*	.51*	–.03
2. Flourishing	45.32	6.88	11–56	8–56	–1.27	2.63	.75	–	–	.56*	–.05
3. Study engagement	63.15	38.85	3–54	0–54	–1.06	.62	.78	–	–	–	–.08
4. Age	20.71	1.80	16–27	–	.46	.47	–	–	–	–	–

Legenda. [a] Standard error of skewness = .14; [b] Standard error of kurtosis = .28
*p<.001

present study are normally distributed.

Table 1 further shows that career adaptability has a significant positive correlation with flourishing and study engagement and non–significant results with age. Flourishing is significantly and positively related to study engagement but has a non–significant correlation with age. All demographics taken as the control variables had a non–significant relationship with flourishing.

Table 2 presents the fit indices for the measurement models used in this study. The first model tested was Harman's single–factor model, in which all indicators of flourishing, study engagement, and career adaptability were loaded onto one latent factor. The fit indices showed that this model did not fit the data well, suggesting that common method variance was not a biasing factor in the current study. In the second model, the indicators were loaded onto their respective factors, resulting in improved model fit. All fit indices indicated a good fit to the data, which was superior to that of the first model ($\Delta\chi^2$ = 710.33 and Δdf = 27).

Table 3 presents the results of path the proposed structural model analysis. The proposed model of the present study was tested in IBMSPSS Amos v 24 (IBM Corp., 2016) using the maximum likelihood method with 5000 bootstrapped samples. According to Hooper et al. (Hooper, Coughlan & Mullen, 2008), for a good model fit; the chi square test should be non–significant, whereas CFI, GFI, and TLI values should be ≥.95. Moreover, values of RMSEA and SRMR should be <.07. The analysis revealed that the model provided a very good fit to the data, as indicated by the chi–square statistic of 12.45 with 9 degrees of freedom and a non–significant *p*–value of .19. Additionally, all other fit indices also indicated a very good fit, including a Comparative Fit Index (CFI) of .98, the Goodness of Fit Index (GFI) of .99, Tucker–Lewis Index (TLI) of .97, Root Mean Square Error of Approximation (RMSEA) of .036, *p*–value for the RMSEA close fit test (*p*close) of .65, and standardized root mean square residual (SRMR) of .052. Figure 1 shows a schematic diagram of the path model used in the present study.

After controlling for the effect of age, gender, and family background; career adaptability and study engagement demonstrated significant positive direct effects on flourishing. Career adaptability has a significant positive direct effect on study engagement. Finally, the indirect positive effect of career adaptability on flourishing through study engagement was significant, indicating that study engagement mediates career adaptability and flourishing.

Table 2 – Fit indices of measurement model

Model	χ^2	*df*	CFI	GFI	TLI	RMSEA	$\Delta\chi^2$	Δdf
Model 1 (Single factor)	1440.56*	337	.67	.67	.60	.09		
Model 2 (3–Factor)	730.23*	364	.95	.94	.92	.06	710.33*	27

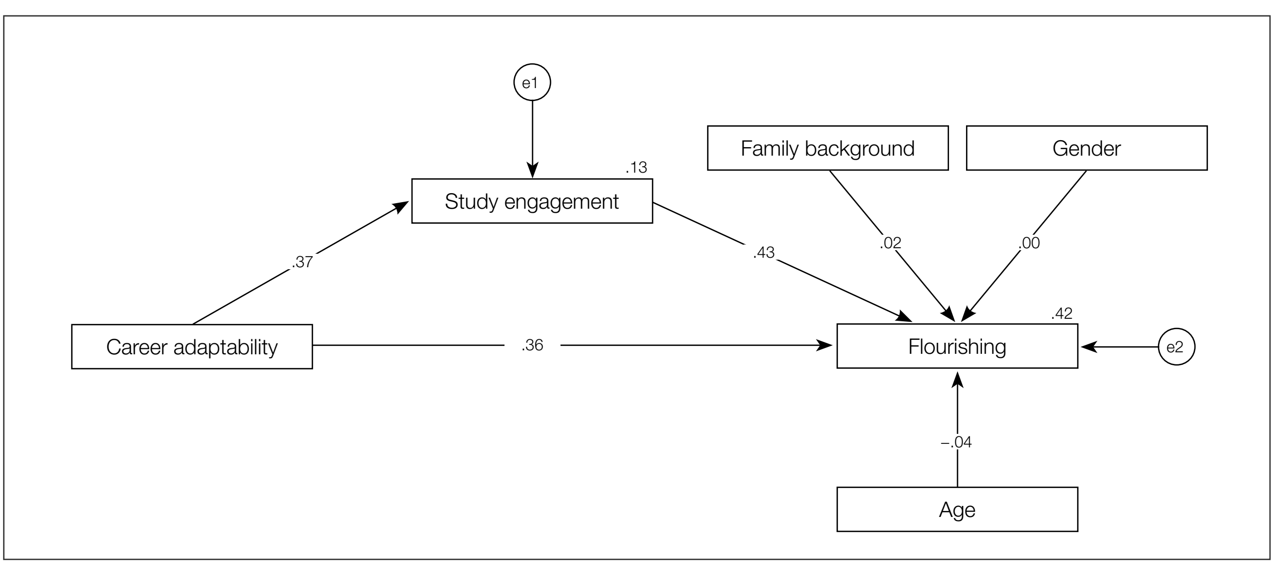
Legenda. df = degree of freedom; CFI = Comparative Fit Index; GFI = Goodness of Fit Index; TLI = Tucker–Lewis Index; RMSEA = Root Mean Square Error of Approximation.
*p<.001

Table 3 – Standardized path coefficients with bias corrected 95% confidence intervals (N = 300)

Paths	β	*p*	95% CI	
			LL	UL
Career adaptability → Study engagement	.37	.001	.28	.45
Study engagement → Flourishing	.43	.001	.36	.52
Career adaptability → Flourishing	.35	.001	.27	.43
Career adaptability → Study engagement → Flourishing	.16	.001	.11	.21
Age → Flourishing	−.04	.31	−.11	.03
Gender → Flourishing	.001	.92	−.08	.07
Family background→ Flourishing	.02	.65	−.06	.09

Note. χ^2 = 12.45; *df* (degree of freedom) = 9; p = .19; CFI (Comparative Fit Index) = .98; GFI (Goodness of Fit Index) = .99; TLI (Tucker–Lewis Index) = .97; RMSEA (Root Mean Square Error of Approximation) = .036; p_{close} = .65; Standardized RMR (Root Mean Residual) = .052

Figure 1 – Path model of the present study



DISCUSSION

The primary objective of this study was to examine the impact of career adaptability on flourishing. Furthermore, this study also examined the mediating role of study engagement between career adaptability and flourishing. The results of the present study show that career adaptability has a direct positive impact on study engagement and flourishing. Study engagement also has a positive direct impact on flourishing. Furthermore, career adaptability had an indirect positive impact on flourishing.

Our first two hypotheses suggested that career adaptability would have positive direct effects on study engagement and flourishing, and both hypotheses have been supported by our results. If a student has all the 4Cs (concern, control, curiosity, and confidence) of career adaptability, they are more likely to be engaged in her/his studies, since studies provide an optimal balance between her/his personal resources and academic challenges that may lead to a state of flow and engagement. This finding of the present study is also in line with the pertinent literature; Tladinyane and Van der Merwe (2016) found a strong positive association between career adaptability and work engagement in a South African sample of insurance employees. These findings clearly explain that the higher the career adaptability, the higher the engagement, and vice versa. So, it can be concluded that career adaptability and engagement foster each other mutually.

Concerning the positive association between career adaptability and flourishing, individuals with career adaptability possess the ability to carry out various career tasks and adapt to changes in the workplace in general (Duffy, 2010), which may enhance their well–being. To facilitate a successful transition from school to work, university students must place immense importance on self–belief in their abilities, openness to change, and a willingness to embrace and adapt to new circumstances (Wang & Fu, 2015). This is why career adaptability leads to an improved sense of well–being among students. This finding of the present study is consistent with that in the pertinent literature. Kirdok and Bolukbasi (2018) found that career adaptability is positively associated with subjective well–being among Turkish university seniors. This study found that control was the strongest predictor of subjective well–being among the career adaptability subscales. Moreover, the concern and confidence dimensions of career adaptability were found to be predictive of subjective well–being. In contrast, curiosity failed to predict subjective well–being. Similarly, Savickas (2005) found that career adaptability could be utilized for challenges outside the work environment as well as for challenges encountered in daily life. Thus, career adaptability increases the likelihood of finding suitable jobs, well–being, and career success (Hirschi, 2010; Skorikov, 2007).

Our third hypothesis proposed that study engagement has a direct positive impact on flourishing, which was also supported by the analysis. Students' participation in activities that enhance their academic learning is a critical part of their engagement. Student engagement and optimal functioning are also associated with subjective well–being (Steele & Fullagar, 2009). This includes the development of self–acceptance, positive relationships with others, autonomy, competence, and a goal–oriented sense (Ryff, 1989). Engaged students are more likely to persist (Bridges et al., 2005) and be satisfied with their education (Kuh et al., 2005). Bakker and Demerouti (2008) suggest that engaged employees enjoy higher levels of well–being. For example, one's engaged experience of work includes factors such as autonomy, mastery of one's environment, and purpose in life, which are also characteristic of eudaimonic well–being.

The fourth and last hypothesis of the present study postulated that study engagement is a mediator between career adaptability and flourishing. Our findings support this hypothesis as we found that career adaptability leads to enhanced study engagement, which in turn leads to improved well–being. The theoretical basis for the mediating role of study engagement between career adaptability and flourishing comes from the conservation of resources theory (Hobfoll, 1989) and self–determination theory (Deci & Ryan, 2008). These theories suggest that individuals who possess personal resources such as career adaptability are more likely to engage in positive behaviors and experiences such as study engagement. In turn, this engagement leads to an improved sense of well–being and flourishing. Specifically, the conservation of resources theory proposes that individuals strive to build and maintain their resources and that this process can be facilitated by engaging in resource–building behaviors. Similarly, self–determination theory suggests that individuals have innate psychological needs for autonomy, competence, and relatedness, which can be fulfilled by engaging in activities that foster growth and development, such as study engagement. Therefore, the mediating role of study engagement in the relationship between career adaptability and flourishing is grounded in the idea that possessing personal resources promotes engagement in positive behaviors, which in turn leads to improved well–being and flourishing.

Students who exhibit elevated levels of career adaptability are inclined to take an active stance in their career development and decision–making processes. This predisposition enables them to remain open to a range of career options and be equipped to navigate the complexities and challenges of contemporary workplaces. Furthermore, individuals with greater career adaptability are more likely to be engaged in their studies, displaying higher motivation and commitment toward their academic goals. Such students exhibit active participation in class discussions, the timely completion of assignments, and opportunities for learning and development. This engagement is likely to contribute to a sense of purpose and meaning, an essential component of flourishing, further leading to positive emotions, meaningful relationships, a sense of accomplishment, and personal growth.

Existing literature provides evidence that supports the relationship between career adaptability and well–being. Studies by Zhuang and colleagues (2018) and Parola and Marcionetti (2022) indicate that career adaptability is positively related to life satisfaction, positive affect, and flourishing among university and high school students. Our study contributes to this understanding by highlighting the mediating role of study engagement in this relationship. Empirical evidence suggests that study engagement positively influences flourishing among university students, as demonstrated by Montano's (2021) study on the positive association between academic engagement and flourishing mediated by psychological needs satisfaction (i.e., autonomy, competence, and relatedness) among online learners. Therefore, it can be concluded that career adaptability and study engagement are essential components in promoting the well–being of university students.

CONCLUSION

The present study demonstrated the impact of career adaptability on well–being via study engagement among university undergraduates. The findings showed that career adaptability positively predicted study engagement and well–being. The results also indicated that study engagement led to improved flourishing. The findings of this study also shed light on the mediating role of study engagement in the relationship between career adaptability and well–being. Overall, the present study indicated the significance of career adaptability, which should be harnessed in students so that they may enjoy being engaged in their studies and consequently enjoy a better, happier, and healthier life.

Implications

The implications of career adaptability for promoting students' academic work and well–being in the actual academic context are multifaceted. By cultivating career adaptability, educational institutions can empower students to navigate challenges, make informed career decisions, and foster a sense of purpose and satisfaction. Recognizing the value of career adaptability as a resource in higher education can lead to more effective support systems, curriculum design, and interventions that enhance student success and well–being. To manage the demands and challenges of the twenty–first century, career adaptability is an essential psychosocial resource for the development of students' careers. Students should be psychometrically tested for their natural aptitudes and be guided as to the right choice of career that may suit their unique talent. They should also be taught the skills to adapt flexibly to the challenges of their careers to excel in their fields. Workshops and seminars should be arranged to highlight the importance of career adaptability so that students might be equipped with flexible career plans commensurate with their talents so that they can enjoy their work by deeply engaging in it. The findings of this study indicate that career adaptability and study engagement are two salient predictors of flourishing. Career counseling centers in educational institutions should launch intervention programs designed to inspire study engagement. Teachers, educationists, school counselors, and educational policymakers should be aware of study engagement and career adaptability so that they can help students improve their psychological health, leading to a healthier, happier, and more fulfilling life. Furthermore, there should be a balance between the academic skills of the students and academic demands or challenges, because an imbalance between both could harm the well–being of the students.

Limitations and suggestions for the future research

1. The sample of the present study may not be reflective of the population of Pakistani university undergraduates because the sample was collected from approachable universities in the Punjab province. A larger, more diverse, and nationally representative sample should be used in future studies to maximize the external validity of the findings of the present research.
2. The present study utilized a cross–sectional survey research design that does not warrant a causal interpretation of the findings. Therefore, we were unable to offer any evidence for the causal interpretation of our results. Thus, further studies should use experimental or longitudinal designs to determine causal relationships.
3. The current study was limited in its ability to examine the specific components or facets of career adaptability and study engagement. It would be valuable for future research to investigate the relationships between the individual components of career adaptability and those of study engagement, to gain a deeper understanding of how these constructs are related and how they impact well–being outcomes.
4. Future research should be undertaken with a sample of young adults who have completed their academic degrees and are searching for jobs.
5. Future research should investigate vocational personality as a depositional variable related to career resources, career success, well–being, and academic performance. Vocational personality may be studied as a predictor or moderator of career success.

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To be or not to be Bi in Italy: Psychological well–being in a sample of bisexual individuals

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ABSTRACT. Il presente studio ha l'obiettivo di indagare aspetti relativi al benessere psicologico della popolazione bisessuale presente in Italia, dato che in letteratura risultano esserci ancora pochi studi sull'argomento. Nello specifico, sono stati indagati aspetti di sviluppo dell'identità sessuale, sintomatologia ansiosa e depressiva e storie di traumi infantili in una popolazione composta da 326 individui bisessuali. Dai risultati sono emerse differenze significative per età e genere riguardo le dimensioni di sviluppo dell'identità sessuale. Tra gli sviluppi futuri, saranno necessari interventi che affrontino i fattori di stress unici associati all'identità bisessuale.

SUMMARY. Since the Italian bisexual community is largely underrepresented in the scientific literature, the purpose of the current study was to shed light on the experiences of Italian bisexual people and to investigate their psychological well–being. Specifically, aspects of sexual identity development, anxiety and depressive symptoms, and a history of childhood trauma will be investigated. 326 (% F = 73.9; 80.4% aged between 18–25) bisexual individuals completed an online survey. Results showed age and gender differences in aspects of sexual identity development. Bisexual young adults were less concerned with their sexual orientation and had more positive feelings about their LGB+ identity than older bisexual individuals. Bisexual men reported more uncertainty and concern about their sexual orientation, more internalized homonegativity, and more difficulties in their LGB+ identity development and acceptance than bisexual women. Bisexual individuals with higher sexual identity acceptance concerns reported more anxiety symptoms. Having experienced childhood traumata is associated with greater levels of anxiety and hopelessness. Interventions addressing the unique stressors associated with a bisexual identity are needed.

Keywords: *Bisexuality, Sexual orientation, Anxiety*

INTRODUCTION

The definition of sexual orientation is included in a broader concept of sexual identity (Shively & De Cecco, 1977). In fact, sexual identity comprises (i) gender identity (i.e., "a person's deeply felt, inherent sense of being a girl, woman, or female; a boy, a man, or male; a blend of male or female; or an alternative gender", APA, 2015, p. 834); (ii) gender expression (i.e., "the presentation of an individual, including physical appearance, clothing choice and accessories, and behaviors that express aspects of gender identity or role", APA, 2015, p. 861); and (iii) sexual orientation, defined as "a person's sexual and emotional attraction to another person and the behavior and/or social affiliation that may result from this attraction" (APA, 2015, p. 862).

Past research on sexual orientation was focused on a dichotomic view (i.e., heterosexual/same–sex sexual orientation) that further erased the notion of bisexuality as sexual orientation (e.g., Bieber, 1976; Freud, 1910); currently, the scientific community widely recognizes the presence of at least three sexual orientations, including heterosexuality, same–sex sexual orientation (gay or lesbian) and bisexuality (e.g., Kinsey, Pomeroy & Martin, 1948); more recently, asexuality was also included in the conceptualization of sexual orientations (Brotto & Yule, 2017).

Yoshino (2000) defines bisexuality as "the ability to feel more than an incidental sexual desire for both sexes" (p. 3), emphasizing the desire–based aspect of its conceptualization. Additionally, Miller and colleagues (Miller, André, Ebin & Bessonova, 2007) defined bisexuality as the capacity for romantic, emotional, or physical attraction for more than one sex or gender. More recently, the dictionary of the American Psychological Association (APA, 2015) conceptualizes bisexuality as a sexual behavior with or sexual attraction to both men and women.

Several large representative studies conducted in the US and Australia have attempted to quantify sexual orientations in the general population by asking participants how they self–identify, reporting that .9–2.6% and 1.4–3.6% identify as bisexual, respectively (e.g., Richters et al., 2014; Smith, Rissel, Richters, Grulich & De Visser, 2003). A more recent study reported that 5.5% of women and 2.0% of men self–identified as bisexual (Copen, Chandra & Febo–Vazquez, 2016). To date, no studies on the prevalence of bisexual individuals in the Italian population are available.

Sexual orientation identity development in LGB+ individuals and psychological well–being

Recent research on the development of sexual orientation identity has focused on the assumption that to understand better the phenomena, milestone–focused studies, rather than stage models, are preferred (e.g., Maguen, Floyd, Bakeman & Armistead, 2002). Milestones are defined as significant events in human development regarding life changes or achievements. Hall, Dawes & Plocek (2021) in their systematic review and meta–analysis, showed four milestones in sexual orientation identity development in lesbian, gay, bisexual, and other–identifying (LGB+) individuals, including self–identifying, coming out, sexual activity, and awareness of attractions. According to sexual identity development theory (Elizur & Mintzer, 2001), one of the tasks that LGB+ individuals have to face with is developing self–acceptance of their sexuality.

Sexuality self–acceptance is defined as accepting one's sexuality, which is achieved through depathologizing sexual orientations that differ from heterosexuality and through rejecting internalized negative attitudes (Elizur & Mintzer, 2001). A recent systematic review enlightened that bisexual individuals report lower sexuality self–acceptance compared to same–sex sexual orientation individuals and that the lower self–acceptance is associated with poorer mental health (Camp, Vitoratou & Rimes, 2020). In line with this, the existing data on mental health in bisexual individuals reveals a broad consensus: bisexual individuals suffer poorer mental health than other sexual orientation groups (e.g., Jorm, Korten, Rodgers, Jacomb & Christensen, 2002; Koh & Ross, 2006; Pompili et al., 2014; Steele, Ross, Dobinson, Veldhuizen & Tinmouth, 2009). Minority stress model (Meyer, 2003) is the major conceptual framework used to explain bisexual health inequalities and suggests that chronic stress connected to bisexual stigma and discrimination is linked to elevated risks for poor health outcomes. All sexual minorities face prejudice and abuse because of their sexual orientation, but bisexual people face additional challenges (for a review see Feinstein & Dyar, 2017). For instance, binegativity is defined as a stigmatization of bisexuality that reflects negative attitudes and stereotypes toward these individuals (Dyar & Feinstein, 2018), and in the literature, bisexual people face double discrimination from both heterosexual and same–sex sexual orientation individuals (Mulik & Wright, 2008; Ochs, 1996).

A large Canadian population–based study of 61,715 females found that bisexual women were much more likely than heterosexual or lesbian women to report mood and anxiety disorders, as well as bad or fair self–reported mental health; moreover, an alarming 45.4% of bisexual respondents reported suicidal ideation in their lifetime, compared to 29.5% of lesbian women and 9.6% of heterosexual women (Steele et al., 2009).

A study on 381 Italian bisexual individuals found a very high percentage of anxiety and depressive symptoms related to experience minority stressors, specifically anti–bisexual discrimination and internalized binegativity (Scandurra et al., 2020). Some studies (e.g., Brewster, Moradi, DeBlaere & Velez, 2013; MacLeod, Bauer, Robinson, MacKay & Ross, 2015) have confirmed that experiences of binegativity are linked to psychological distress and anxiety. Unsurprisingly, many bisexual people internalize others' negative attitudes regarding bisexuality and anticipate rejection and hostility as a result of their prior experiences with binegativity, discrimination, and trauma.

Additionally, bisexual women reported greater rates of depressive symptoms, stress, anxiety symptoms, and prior self–harm (Hughes, Szalacha & McNair, 2010; McNair, Kavanagh, Agius & Tong, 2005); they were nearly twice as likely as lesbian women and four times as likely as heterosexual women to state life "was not worth living" (Hughes et al., 2010). Similarly, more bisexual men (34.8%) reported considering suicide compared to same–sex sexual orientation (25.2%) or heterosexual men (7.4%) (Brennan, Ross, Dobinson, Veldhuizen & Steele, 2010). A meta–analysis on sexual minority individuals in US and Canada showed that LGB+ individuals significantly reported higher scores of childhood traumas compared to heterosexual individuals, for instance, bisexual men and women (*vs* same–sex sexual orientation individuals *vs* heterosexual individuals) reported more frequently to have experience parental physical abuse (Friedman et al., 2011). In line with this, several studies support the role of childhood trauma experiences as risk factors for developing psychopathology (for a review see McCroy, De Brito & Viding, 2012).

The current study

Since the Italian bisexual community is largely underrepresented in the scientific literature, and given the potential negative influence of the specific Italian culture on LGB+ population's lives (e.g., the Italian legal system not contemplating a law prohibiting hate crimes based on sexual orientation, only in 2016 same–sex civil unions were recognized, same–sex parents are not allowed to adopt children, bisexual identity not mentioned in any law) the main purpose of the current study was to shed light on the experiences of bisexual people in Italy and to investigate their psychological well–being. Specifically, aspects of sexual identity development, the presence of anxiety and depressive symptoms, and a history of childhood trauma will be investigated. As bisexual–specific minority stress may differ based on gender identity (Conron, Mimiaga & Landers, 2010; Katz–Wise, Mereish & Woulfe, 2017), we will first test whether there were significant differences in study variables in bisexual men and women. According to previous research (e.g., Hall et al., 2021), we hypothesized that bisexual men would report more difficulties in sexuality self–acceptance. Then, age differences in study variables will be explored by comparing groups of different ages (i.e., 18–25 years old, 26–30 years old, 31–35 years old, and more than 35 years old). Previous studies (e.g., Meyer, Russell, Hammack, Frost & Wilson, 2021; Puckett, Tornello, Mustanski & Newcomb, 2022) found that sexual and gender identity milestones (e.g., self–identification, coming out, etc.) occurred much earlier in younger cohorts than in older cohorts. However, minority stress remained unchanged, and mental health was better in the older cohorts. In Italy, Rosati and colleagues (Rosati, Pistella, Nappa & Baiocco, 2020) found in a sample of 266 Italian LGBQ+ aged 20–80 that younger generations became self–aware, self–labeled, and came out earlier than older generations. Scandurra et al. (2023) found no differences between age groups in identity affirmation. Instead, the youngest generation reported poorer psychological well–being than the older, with a small effect size. Given contradictory results, we cannot make specific hypotheses on this issue.

Finally, the association between sexual identity development, history of childhood trauma, anxiety, and depressive symptoms will be explored. Since previous research has found that a positive LGB+ identity is inversely associated with depressive symptoms and positively associated with psychological well–being (e.g., Petrocchi et al., 2020; Rostosky, Cardom, Hammer & Riggle, 2018), we hypothesized that lower–level of self–acceptance would be associated with higher levels of anxiety and depressive symptoms. Having experienced childhood trauma was expected to be associated with higher anxiety and depressive symptoms.

METHOD

Participants

A sample of 326 bisexual individuals (% F = 73.9%) agreed to participate in the study. The majority of the sample were 18–25 years old (80.4%; n = 262), 12% (n = 39) were 26–30 years old, 3.1% (n = 10) were 31–35 years old, and 4.6% (n = 15) were more than 35 years old. Regarding educational qualifications, 62% reported having a high school diploma, 20.6% had a bachelor's degree, 8.3% had a master's degree, 5.27% had a middle school diploma, 3.1% had postgraduate education, and .9% declared having other educational qualifications.

Procedure

Participants were recruited using advertisements on social network groups and thematic forums. Participants were informed that participation was voluntary and anonymous and that confidentiality was guaranteed. A web link directed the participants to the study website. The first page of the study website explained the confidentiality of the data, and the informed consent was presented. If participants consented to engage in the study, they were directed to a second page containing basic demographic questions and the self–report questionnaires. No remunerative rewards were given. Ethical approval for this study was obtained from the institutional review board of the University of Florence.

Measures

- *Beck Anxiety Inventory*. The Italian version (Sica & Ghisi, 2007) of the 21–item *Beck Anxiety Inventory* (*BAI*; Beck, Epstein, Brown & Steer, 1988) was used to assess symptoms of anxiety (i.e., fear of losing control, inability to relax) during the last week, including the day of completion of the questionnaire. Participants answered on a four–point Likert scale ranging from 0 = not at all to 3 = severely. The final score ranges from 0 to 63, with higher scores indicating greater anxiety. The BAI showed good reliability and validity for assessing anxiety symptoms in both anxiety patients and nonclinical adults (Beck et al., 1988; Carlucci et al., 2018; de Beurs, Wilson, Chambless, Goldstein & Feske, 1997). Cronbach's alpha for the current study was .97.
- *Beck Hopelessness Scale*. The Italian version (Pompili et al., 2009) of the 20–item true/false *Beck Hopelessness Scale* (BHS; Beck, Weissman, Lester & Trexler, 1974) was used to assess hopelessness, or the severity of negative attitudes toward the future. Participants were instructed to respond to sample items with true or false while referring to the previous week (e.g., "I never get what I want"). The BHS showed good psychometric properties in general and clinical populations (Beck et al., 1974; Dyce, 1996; Kocalevent et al., 2017; Steed, 2001). Cronbach's alpha for the current study was .91.
- *Childhood Trauma Questionnaire – Short Form*. The Italian version (Sacchi, Vieno & Simonelli, 2018) of the *Childhood Trauma Questionnaire – Short Form* (*CTQ–SF*; Bernstein et al., 2003) was used to investigate whether participants had experienced trauma in their childhood. The CTQ–SF is a 28–item self–report questionnaire on a five–point Likert scale ranging from 1 = never true to 5 = very often true; the final score ranges from 5 (absence of traumatic events) to 25 (severe history of abuse). The five scales which composed the CTQ–SF and their definitions are: (i) Emotional Abuse (CTQ–EA), defined as a verbal assault of a child by an adult or older person that affects the child's sense of worth and well–being; (ii) Physical Abuse (CTQ–PA), defined as any physical assault committed by an adult or an older person toward a child that resulted in, or had the risk of, injury; (iii) Sexual Abuse (CTQ–SA), referred to any sexual contact or behavior between a child younger than 18 years and an adult or a person at least six years older; (iv) Emotional Neglect (CTQ–EN), the inability of caregivers to meet children's basic emotional and psychological needs; and (v) Physical Neglect (CTQ–PN), the inability of caregivers to provide child's basic physical needs such as food, safety, health care, and clothing. The scale performs equivalently across diverse clinical and nonclinical populations (Bernstein et al., 2003). Additionally, the scales have good internal consistency reliability (Thombs, Bernstein, Lobbestael & Arntz, 2009). Cronbach's alphas for each scale in the current study were

α = .88 for CTQ–EA, α = .87 for CTQ–PA, α = .92 for CTQ–SA, α = .88 for CTQ–EN, and α = .87 for CTQ–PN.

– *Lesbian, Gay, and Bisexual Identity Scale – Revised version.* The *Lesbian, Gay, and Bisexual Identity Scale – Revised version* (*LGBIS–RV*; Mohr & Kendra, 2011) is a 27–item self–report measure used to investigate eight dimensions related to lesbian, gay and bisexual identity; for the present study, a preliminary Italian translation of this scale was used. Participants gave their answers on a seven–point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree. The dimensions of the questionnaire are: (i) Concealment Motivation (LGBIS–CM), concern with and motivation to protect one's privacy as an LGB person (sample item "My sexual orientation is a very personal and private matter"); (ii) Identity Uncertainty (LGBIS–IU), uncertainty about one's sexual orientation identity ("I get very confused when I try to figure out my sexual orientation"); (iii) Internalized Homonegativity (LGBIS–IH), rejection of one's LGB identity ("If it were possible, I would choose to be straight"); (iv) Difficult Process (LGBIS–DP), perception that one's LGB identity development process was difficult ("Admitting to myself that I'm an LGB person has been a very slow process"); (v) Acceptance Concerns (LGBIS–AC), concern with the potential for stigmatization as an LGB person ("I think a lot about how my sexual orientation affects the way people see me"); (vi) Identity Superiority (LGBIS–IS), a view favoring LGB people over heterosexual people ("I look down on heterosexuals"); (vii) Identity Centrality (LGBIS–IC, the view of one's LGB identity as central to one's overall identity ("Being an LGB person is a very important aspect of my life"); and (viii) Identity Affirmation (LGBIS–IA) affirmation of one's LGB identity ("I am proud to be LGB"). The scale demonstrated good test–retest stability after six weeks and high internal consistency reliability. Cronbach's alphas for each scale in the current study were α = .71 for LGBIS–CM, α = .82 for LGBIS–IU, α = .82 for LGBIS–IH, α = .88 for LGBIS–DP, α = .81 for LGBIS–AC, α = .75 for LGBIS–IS, α = .74 for LGBIS–IC, and α = .89 for LGBIS–IA.

Statistical analysis

Statistical analysis was performed using IBM Statistical Package for the Social Sciences (SPSS), version 23.0 (IBM Corp., Armonk, NY, USA). Gender and age differences in the study variables were examined through a one–way ANOVA. To analyze the associations between anxiety, hopelessness, a history of childhood trauma, and sexual identity development dimensions, Pearson's correlations were computed.

RESULTS

Age and gender differences for the study variables are reported in Table 1 and Table 2, respectively.

Concerning age differences, significant differences were found between the highest (<35 years old) and the lowest (18–25 years old) age groups. Compared to participants who were older than 35, bisexual individuals who were between 18 and 25 years old reported significantly lower scores in concealment motivation (F = 3.07, p = .028; M = 14.15, SD = 2.48 and M = 11.26, SD = 3.66 respectively) and in identity superiority (F = 4.60 p = .004; M = 7.15, SD = 3.65 and M = 4.75, SD = 2.51respectively). Finally, the 18– to 25–year–old participants reported significantly higher scores in identity affirmation than those older than 35 (F = 2.68, p = .047; M = 14.36, SD = 3.39 and M = 11.69, SD = 2.63 respectively).

Regarding gender differences, men had lower scores for anxiety symptoms (F = 7.19, p = .001, men: M = 17.63, SD = 11.84; women: M = 23.67, SD = 12.57), emotional abuse experienced during childhood (F = 6.19, p = .002; men: M = 8.78, SD = 4.61; women: M = 11.20, SD = 5.49), and identity affirmation (F = 21.45, p = .000, men: M = 11.91, SD = 4.09; women: M = 14.85, SD = 2.86) than women. Men scored significantly higher than women on concealment motivation (F = 16.95, p<.001, men: M = 13.68, SD = 3.47; women: M = 10.81, SD = 3.47), identity uncertainty (F = 5.44, p = .005, men: M = 13.55, SD = 5.80; women: M = 11.47, SD = 4.69 internalized homonegativity (F = 23.38, p<.001, men: M = 8.65, SD = 4.36; women: M = 5.42, SD = 2.91), difficult process (F = 4.33, p = .014, men: M = 10.95, SD = 3.76; women: M = 9.43, SD = 3.48), acceptance concerns (F = 10.04, p<.001, men: M = 12.17, SD = 4.24; women: M = 9.54, SD = 4.04) and identity superiority (F = 3.52, p = .031; men: M = 5.45, SD = 3.17; women: M = 4.55, SD = 2.23).

Descriptive statistics and correlations are presented in Table 3. Sexual identity acceptance concerns were positively associated with anxiety levels (r = .122, p<.05). Statistically significant positive correlations were found between all the

Table 1 – Comparisons of the study variables between age groups

	18–25	26–30	31–35	>35			
	M±*SD*	*M*±*SD*	*M*±*SD*	*M*±*SD*	*F*	*p*	Bonferroni post hoc test
BAI	22.56±12.41	20.77±13.17	17.60±11.13	21.47±15.45	.69	.555	
BHS	8.60±5.22	8.74±6.21	5.20±5.29	8.93±5.85	1.34	.260	
CTQ–EA	10.60±5.27	11.57±6.34	9.89±6.68	9.6±4.14	.69	.561	
CTQ–PA	6.56±3.33	7.00±4.16	6.56±3.28	8.00±4.51	.86	.460	
CTQ–SA	6.93±4.32	6.68±4.19	6.78±4.05	7.29±4.23	.08	.972	
CTQ–EN	12.33±4.94	13.03±5.59	11.00±7.09	12.57±5.14	.43	.731	
CTQ–PN	6.91±2.43	9.08±3.49	6.56±1.94	7.71±3.71	1.45	.229	
LGBIS–CM	11.26±3.66	11.81±3.82	12.86±2.61	14.15±2.48	3.07	.028	“>35”>“31–35”>“26–30”>“18–25”
LGBIS–IU	11.96±5.16	11.64±4.92	11.71±4.72	11.92±4.21	.04	.987	
LGBIS–IH	6.14±3.55	6.03±4.16	5.14±1.77	8.08±2.78	1.44	.229	
LGBIS–DP	10.01±3.71	9.63±3.81	8.86±3.24	9.08±2.61	.49	.692	
LGBIS–AC	10.26±4.31	10.00±4.45	8.57±2.57	10.31±4.13	.38	.770	
LGBIS–IS	4.75±2.51	4.25±2.09	4.14±1.34	7.15±3.65	4.60	.004	“>35”>“18–25”>“26–30”>“31–35”
LGBIS–IC	16.07±4.27	16.91±5.09	16.33±5.01	17.25±4.73	.55	.649	
LGBIS–IA	14.36±3.39	13.83±3.71	14.43±2.37	11.69±2.63	2.68	.047	“18–25”>“31–35”>“26–30”>“>35”

Legenda. BAI = *Beck Anxiety Inventory*; BHS = *Beck Hopelessness Scale*; CTQ = *Childhood Trauma Questionnaire – Short Form*; CTQ–EA = CTQ–Emotional Abuse; CTQ–PA = CTQ–Physical Abuse; CTQ–SA = CTQ–Sexual Abuse; CTQ–EN = CTQ–Emotional Neglect; CTQ–PN = CTQ–Physical Neglect; LGBIS = *Lesbian, Gay, and Bisexual Identity Scale – Revised Version*; LGBIS–CM = LGBIS–Concealment Motivation; LGBIS–IU = LGBIS–Identity Uncertainty; LGBIS–IH = LGBIS–Internalized Homonegativity; LGBIS–DP = LGBIS–Difficult Process; LGBIS–AC = LGBIS–Acceptance Concerns; LGBIS–IS = LGBIS–Identity Superiority; LGBIS–IC = LGBIS–Identity Centrality; LGBIS–IA = LGBIS–Identity Affirmation.

Table 2 – Comparisons of the study variables between men and women

	Male (M)	Female (F)			
	M±SD	*M±SD*	*F*	*p*	Bonferroni post hoc test
BAI	17.63±11.84	23.67±12.57	7.19	.001	F>M
BHS	7.96±5.59	8.64±5.29	1.16	.191	
CTQ–EA	8.78±4.61	11.20±5.49	6.19	.002	F>M
CTQ–PA	6.27±2.98	6.82±3.67	.66	.515	
CTQ–SA	6.11±3.08	7.08±4.41	4.06	.018	F>M
CTQ–EN	11.41±5.11	12.67±5.06	2.02	.134	
CTQ–PN	6.71±2.24	7.14±2.74	.73	.483	
LGBIS–CM	13.68±3.47	10.81±3.47	16.95	.000	M>F
LGBIS–IU	13.55±5.80	11.47±4.69	5.44	.005	M>F
LGBIS–IH	8.65±4.36	5.42±2.91	23.38	.000	M>F
LGBIS–DP	10.95±3.76	9.43±3.48	4.33	.014	M>F
LGBIS–AC	12.17±4.24	9.54±4.04	10.04	.000	M>F
LGBIS–IS	5.45±3.17	4.55±2.23	3.52	.031	M>F
LGBIS–IC	15.87±4.69	16.41±4.36	.51	.601	
LGBIS–IA	11.91±4.09	14.85±2.86	21.46	.000	F>M

Legenda. BAI = *Beck Anxiety Inventory*; BHS = *Beck Hopelessness Scale*; CTQ = *Childhood Trauma Questionnaire – Short Form*; CTQ–EA = CTQ–Emotional Abuse; CTQ–PA = CTQ–Physical Abuse; CTQ–SA = CTQ–Sexual Abuse; CTQ–EN = CTQ–Emotional Neglect; CTQ–PN = CTQ–Physical Neglect; LGBIS = *Lesbian, Gay, and Bisexual Identity Scale – Revised Version*; LGBIS–CM = LGBIS–Concealment Motivation; LGBIS–IU = LGBIS–Identity Uncertainty; LGBIS–IH = LGBIS–Internalized Homonegativity; LGBIS–DP = LGBIS–Difficult Process; LGBIS–AC = LGBIS–Acceptance Concerns; LGBIS–IS = LGBIS–Identity Superiority; LGBIS–IC = LGBIS–Identity Centrality; LGBIS–IA = LGBIS–Identity Affirmation.

Table 3 – Descriptive statistics and bivariate correlations between the study variables

	M±SD	BAI	BHS	CTQ–EA	CTQ–PA	CTQ–SA	CTQ–EN	CTQ–PN	LGBIS–CM	LGBIS–IU	LGBIS–IH	LGBIS–DP	LGBIS–AC	LGBIS–IS	LGBIS–IC	LGBIS–IA
BAI	22.14±12.60	1														
BHS	8.53±5.38	.366**	1													
CTQ–EA	10.64±5.40	.262**	.234**	1												
CTQ–PA	6.68±3.49	.186**	.107	.646**	1											
CTQ–SA	6.91±4.27	.194**	.118*	.343**	.293**	1										
CTQ–EN	12.39±5.08	.215**	.287**	.742**	.499**	.245**	1									
CTQ–PN	7.04±2.64	.222**	.118*	.579**	.527**	.248**	.615**	1								
LGBIS–CM	3.83±1.22	−.015	.023	−.124*	−.098	−.116	−.111	−.098	1							
LGBIS–IU	2.98±1.26	.118	.096	.03	.061	−.019	.036	.104	.361**	1						
LGBIS–IH	2.06±1.19	.017	.054	−.047	−.047	−.052	.002	.06	.426**	.436**	1					
LGBIS–DP	3.40±1.42	.001	.064	.04	.022	.069	.06	.08	.300**	.226**	.360**	1				
LGBIS–AC	3.29±1.21	.122*	−.006	.036	.031	.101	.066	.048	.324**	.278**	.376**	.429**	1			
LGBIS–IS	1.59±.85	.135*	.058	.043	.069	.063	.018	.086	.130*	.259**	.126*	.062	.209**	1		
LGBIS–IC	3.25±.88	−.017	−.062	.054	−.045	.024	.003	−.03	−.056	−.221**	−.066	.095	.146*	.189**	1	
LGBIS–IA	4.72±1.14	.029	−.024	−.018	−.059	.058	−.095	−.09	−.364**	−.347**	−.626**	−.206**	−.183**	.068	.291**	1

Legenda. BAI = *Beck Anxiety Inventory*; BHS = *Beck Hopelessness Scale*; CTQ = *Childhood Trauma Questionnaire – Short Form*; CTQ–EA = CTQ–Emotional Abuse; CTQ–PA = CTQ–Physical Abuse; CTQ–SA = CTQ–Sexual Abuse; CTQ–EN = CTQ–Emotional Neglect; CTQ–PN = CTQ–Physical Neglect; LGBIS = *Lesbian, Gay, and Bisexual Identity Scale – Revised Version*; LGBIS–CM = LGBIS–Concealment Motivation; LGBIS–IU = LGBIS–Identity Uncertainty; LGBIS–IH = LGBIS–Internalized Homonegativity; LGBIS–DP = LGBIS–Difficult Process; LGBIS–AC = LGBIS–Acceptance Concerns; LGBIS–IS = LGBIS–Identity Superiority; LGBIS–IC = LGBIS–Identity Centrality; LGBIS–IA = LGBIS–Identity Affirmation.

subscales of the CTQ and anxiety symptoms and hopelessness, indicating that the experience of childhood trauma was associated with greater levels of anxiety (CTQ–EA: $r = .262$, $p<.001$; CTQ–PA: $r = .186$, $p<.001$; CTQ–SA: $r = .194$, $p<.001$; CTQ–EN: $r = .215$, $p<.001$; CTQ–PN: $r = .222$, $p<.001$) and hopelessness (CTQ–EA: $r = .234$, $p<.001$; CTQ–SA: $r = 118$, $p<.05$; CTQ–EN: $r = 287$, $p<.001$; CTQ–PN: $r = .118$, $p<.05$).

DISCUSSION

To date, few studies have examined the psychological well–being of bisexual people in Italy. The current study attempted to enrich the existing evidence by investigating psychological difficulties and some related factors in a sample of Italian bisexual individuals, considering age and gender differences.

Regarding age differences in sexual identity development dimensions, we found that participants who were between 18 and 25 years old reported lower scores in concealment motivation and identity superiority and higher scores in identity affirmation than participants older than 35 years. Consistent with some previous studies (e.g., Meyer et al., 2021; Puckett et al., 2022) bisexual young adults seem to be less concerned with their bisexual orientation and have more positive feelings about their LGB identity than older bisexual individuals. Popular views of sexuality in Western societies have long maintained a firm binary construction wherein sexualities were either heterosexual or same–sex sexual orientation. Only recently have more individuals stepped outside monosexual identity categories to claim labels that better align with their attraction to more than one gender, such as bisexual (Copen et al., 2016). Age has also been identified as a factor related to LGB identity development, and several researchers have found younger ages of disclosure to be related to greater comfort with sexual orientation (e.g., Floyd & Stein, 2002). A study conducted among a sample of LGB adolescents and young adults (Bregman, Malik, Page, Makynen & Lindahl, 2013) found that the majority of LGB youth experienced identity affirmation (i.e., had minimal internalized homonegativity, and lower scores on the acceptance concerns, identity uncertainty, and difficult process subscales), highlighting the considerable resiliency of sexual minority youth against identity struggles in the face of societal stigma. Regarding gender differences, in accordance with our hypothesis, bisexual men reported more uncertainty and concern about their sexual orientation, more internalized homonegativity, and more difficulties in their LGB identity development and acceptance than bisexual women. Research also indicates that females are more likely to identify as bisexual and to vacillate between identity labels (Diamond, 2007). A recent systematic review and meta–analysis on sexual orientation identity development among LGB+ people (Hall et al., 2021) showed that females reached the main milestones in a shorter time than males. The authors suggested that the more prolonged process for males could be due to men having higher levels of internalized heterosexism, which may delay coming out and starting an LGB+ relationship.

Consistent with previous studies (e. g. Bostwick, Boyd, Hughes, West & McCabe, 2014; Persson & Pfaus, 2015), bisexuals in our sample report anxiety associated with hopelessness; mean scores (22.14±12.60) on the B*eck Anxiety Scale* (Beck et al., 1988) indicate moderate anxiety, which could reflect emotional difficulties that this population might face with. Bisexual individuals, in fact, face unique minority stressors related to their bisexual orientation, including anti–bisexual stigma or biphobia in heterosexual as well as in lesbian and gay communities (Brewster et al., 2013; Chmielewski & Yost, 2013; Mulick & Wright, 2002; Roberts, Horne & Hoyt, 2015). This could be also observed in mean scores obtained in our sample at the *Lesbian, Gay, and Bisexual Identity Scale – Revised version* (Mohr & Kendra, 2011) which are higher than normative data in the subscales of concealment motivation, identity uncertainty, internalized homonegativity and difficult process and lower in the subscale of acceptance concerns, identity superiority, identity centrality and identity affirmation; it is important to note that mean scores obtained by Mohr and Kendra (2011) had been computed on a sample composed of 70% of individuals with same–sex sexual orientation and 30% of bisexual individuals.

Consistent with previous studies (Balsam & Mohr, 2007; Chan, Operario & Mak, 2020; Kuyper & Fokkema, 2011), bisexual individuals seem more prone to protect their privacy as an LGB person and feel less involved in LGB+ community. This may be because, as reported in the literature (Feinstein, Dyar & London, 2017), coming out can expose bisexual individuals to double discrimination from both heterosexual and same–sex sexual orientation communities.

In line with previous studies (e.g., Chan et al., 2020), we found that bisexual individuals with higher sexual identity acceptance concerns reported more anxiety symptoms.

Previous studies involving Italian sexual minority populations had already investigated the association between stigma and psychological health, concluding that these individuals might deal with additional stressors associated with the not very accepting socio–cultural context in which they live (e. g. Pistella, Caricato & Baiocco, 2020). Finally, we found that experiences of childhood trauma were associated with greater anxiety and hopelessness.

Limitations

The limitations of the current study are mainly related to the sample characteristics. Recruiting via social media and adopting non–random sampling method limited the generalizability of the current findings to other more aged populations. Moreover, the sample was mainly composed of women. In addition, the use of self–report measures can lead to biases in respondents such as social desirability or lack of introspection. Future studies could shed light on the experience of bisexual individuals in Italy through larger and more representative samples and by considering comparisons with the heterosexual population. Moreover, cross–cultural studies are needed in order to evaluate the potential influence of the Italian socio–cultural context.

Implications

As suggested by Hendricks and Testa (2012), for counselling and/or psychotherapy interventions, clinicians need to assess the different dimensions of minority stress. Investigating the psychological well–being of the bisexual population and the possible causes of potential psychological distress could direct clinicians toward a better understanding of their specific vulnerabilities and needs. Without neglecting the uniqueness of the individual, an extremely vital topic in psychology, understanding the context and the social and cultural communities in which the individual is inserted remains important. The bisexual population faces unique stereotypes, prejudices and difficulties compared to other LGB+ sexual minorities. Knowledge of these challenges can certainly improve both in the assessment and treatment phases of therapy. Social and psychoeducational interventions are also necessary to transform the monosexist culture and eradicate binegativity in the LGB+ and wider communities.

CONCLUSION

Although explorative, the current study sheds light on some aspects of the psychological well–being of a sample of Italian bisexual individuals, a population highly underrepresented in the literature. Moderate levels of anxiety, as well as difficulties in bisexual identity development (e.g., identity uncertainty, internalized homonegativity and low level of involvement in the LGB+ community), were found. Moreover, those aspects seem to correlate, confirming what was previously reported by studies conducted in other countries (e.g., Chan et al., 2020), that bisexual individuals face unique stressors. Addressing bisexual–specific minority stress is necessary to improve the psychological well–being of individuals with a bisexual orientation. Still, fortunately, Italian bisexual youths seem to be more resilient against identity struggles in the face of societal stigma.

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School leadership and crisis management in the COVID-19 pandemic: Qualitative research in the Italian context

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ABSTRACT. Lo studio coinvolge un campione di 25 dirigenti scolastici durante le primissime fasi della pandemia da COVID-19 per esplorare minacce, opportunità di crescita professionale e personale, nuove pratiche di lavoro e stili di leadership adottati. Sono state condotte interviste semi-strutturate, analizzate con la tecnica della Template Analysis. I dirigenti scolastici hanno gestito le conseguenze della crisi, identificando anche alcuni aspetti positivi e nuove pratiche di gestione da mantenere in seguito. Alle attività puramente manageriali si è aggiunta l'attenzione ad aspetti psicologici volti all'ascolto e al sostegno emotivo dei follower, cercando di agire per loro come una risorsa.

SUMMARY. The COVID-19 pandemic forced school leaders to identify rapid solutions to adapt to an altered context. We studied a sample of school leaders from a northwest Italian city, investigating how they managed the consequences of the crisis, the threats and opportunities for professional and personal growth they identified, and what they learned with regard to new practices in terms of work and leadership. 25 semi-structured interviews were conducted with school leaders (6 males and 19 females, between July and November 2020). From the transcripts, analysed using the Template Analysis technique, 18 themes emerged: 6 addressed the threats encountered (e.g. neglected teaching aspects, work-life conflict, loss of direct relationships, and fatigue); 9 related to opportunities for growth (e.g. change in working practices, new attitudes towards technology, and e-leadership skills); and 3 leadership styles were observed: Transformational, Distributive and Directive. Our findings reveal that school leaders addressed the threats emerging from the crisis but also identified some positive outcomes and useful management practices both to overcome that difficult period and to be maintained once it was over. Finally, changes occurred in the way they saw their role: the managerial focus was supplemented by a psychological aspect, aimed at listening to and emotionally supporting followers, attempting to be a useful resource for them.

Keywords: *School leadership, Crisis management, COVID-19, Emotional support, Leadership styles, Template analysis*

INTRODUCTION

The spread of COVID-19 has had dramatic effects on social relationships and on the world economy, leading to a need to redesign the world of work (Bajaba, Bajaba, Algarni, Basahal & Basahel, 2021). However, due to the enormous changes brought about by this emergency situation, precious opportunities for psychological research have emerged, including studies on leadership: leaders took on the challenge to lead their followers towards adaptation. Indeed, educational leaders had to face and facilitate a high degree of innovation, agility and collaboration (Bauwens, Batistič, Kilroy & Nijs, 2021).

The widespread COVID-19 pandemic also affected schools. In Italy, schools of all levels and universities were closed in March 2020 until the end of the academic year. Italian school workers, from management to teachers, were caught unprepared to tackle the huge changes to their working routines (Pellegrini & Maltinti, 2020). Education could only continue virtually, meaning that teachers and school leaders had to alter their work practices to engage in remote working. Thus, the role of school leaders became significant in managing these abrupt transitions.

In this study, a sample of school leaders of Italian nursery and primary schools was considered. Their dual role as leaders and educators was investigated in order to identify critical issues and positive challenges triggered by the pandemic and how these circumstances affected their work and leadership role.

Crisis leadership

Crisis management encompasses the actions of organisational leaders who work to minimise damage and strive to restore order. Studies on leadership during crises have investigated the type of leadership style effective during these difficult times, e.g., transformational leadership, which fosters value congruence (Zhang, Jia & Gu, 2012).

Crisis leadership is defined by Wu and colleagues (Wu, Shao, Newman & Schwarz, 2021) as a process in which leaders take action to prepare for the emergence of an unexpected crisis, react to the salient implications of crises, and grow from destructive experiences. Their meta-analysis on crisis leadership identified several thematic meta-clusters. The first includes theories on the cognitive processes of leaders during times of crisis. According to Brockner and James (2008), leaders may perceive crises as a threat or as an opportunity: if the leader is oriented towards learning and perceives an opportunity for improvement, s/he can implement positive behaviours, including acquiring the point of view of the various stakeholders involved and encouraging divergent and creative thinking among followers. The second meta-cluster answers questions about how the characteristics and behaviours of leaders influence important organisational results during times of crisis. For example, the theory of threat-rigidity (Stoker, Garretsen & Soudis, 2019) claims that when an organisation faces a crisis an increase in rigidity is observed among individuals, groups and organisations, reducing the processing of information by simplifying communications and centralising authority.

Leadership during the COVID-19 pandemic

The COVID-19 pandemic has also affected how leadership is exercised. New leadership styles gained greater prominence, e.g. adaptive leadership, with a tendency to be oriented toward the present, to be flexible, quick to learn and optimistic about change (Bajaba et al., 2021).

The consequences of the COVID-19 pandemic include an alteration of the relationship between leadership and new technologies, particularly in terms of remote working. Cortellazzo and colleagues (Cortellazzo, Bruni & Zampieri, 2019) identify peculiar skills suited to e-leaders, a new leader profile able to cope with ever-changing technology and to inspire followers to embrace changes: the ability to communicate through multimedia tools, decision-making in a short time, and to maintain direction and sense-making skills for followers.

Finally, other common themes highlighted on leadership during the COVID-19 pandemic include: the relationship between leadership and outcomes in terms of follower well-being, as inclusive leadership styles appear to reduce significantly workers' distress (Ahmed, Zhao & Faraz, 2020); leadership in the healthcare sector (Bauwens et al., 2021); and leadership in the context of education.

School leadership during the COVID-19 pandemic

Bush and Glover (2003) stated that successful school leaders "develop a vision for their schools based on their personal and professional values. They articulate this vision at every opportunity and influence their staff and other stakeholders to share their vision" (p. 8). Furthermore, school leaders must also engage on the management front, focusing on school policies and on the efficient maintenance of school activities.

In the early 1980s, instructional leadership was considered the most effective model for achieving improvements in schools, a style consisting in school principals strictly controlling the quality of teaching and learning. Over time, other leadership styles were found more functional on school outcomes. For example, the transformational leadership model (Bass & Avolio, 1993) focuses on the importance of building the school's vision and goals, providing intellectual stimulation, offering individual support and promoting participation in school decisions (Leithwood & Jantzi, 1999). Moreover, distributed leadership implies that leadership is not an exclusive prerogative of the school leader but is also distributed to other members of the institution, requiring improvements in the communication of goals, and more active involvement in professional learning by staff (Daniëls, Hondeghem & Dochy, 2019). With regard to the outcomes of these leadership styles in school contexts, Liebowitz and Porter (2019) highlighted a significant relationship between school leaders' behaviours, teachers' well-being and the richness of their teaching methods.

During the COVID-19 pandemic, schools all around the world were forced to close in order to limit the number of infections and 1.6 billion students had to stay at home (Harris & Jones, 2020). The main themes emerged from studies were: how school leaders coped with the emergency and the leadership styles that proved to be effective; the critical issues they encountered; and the future perspectives regarding educational leadership. School leaders' priority was to take care of their teachers, students and communities, prioritising their safety and well-being. Longmuir (2023) reports that the school leaders perceived the need to be a reference point for their community, returning to the more humane purposes of education.

Communication is another important theme, a fundamental leadership lever for school leaders during COVID-19: they recognised the importance of a more informal communication style during that period, oriented towards supporting teachers, students and their families (McLeod & Dulsky, 2021). Conversely, the top-down communication of new rules by political authorities - considered ambiguous by many school leaders - was a cause of great stress (Fotheringham, Harriott, Healy, Arenge & Wilson, 2021). Lastly, McLeod and Dulsky (2021) highlighted that school leaders also emphasised the opportunity, provided by the crisis, to consider the future of education and to question the status quo. According to them, changes should be considered in almost every area of education, including new structures for involving families and an expansive integration of technology. Indeed, research in educational leadership conducted during the pandemic, while also considering the post-pandemic era, identified remote work as a central topic for discussion and development. Therefore, there is a growing need to enhance e-leadership and communication skills. Furthermore, leaders must now deliver information to their followers in innovative ways to help alleviate anxiety (Bauwens et al., 2021). In conclusion, again regarding the post-pandemic era, several themes emerged as crucial for the education system, for example with leaders playing a pivotal role in improving family involvement in their children's education, elevating the quality of students' learning experiences, and ensuring more inclusive decision-making (McLeod & Dusky, 2021).

Aims

In light of the literature review, this study reports the results of interviews with school leaders identifying "the potential for crisis events to become turning points for positive changes through creating opportunities" (Wu et al., 2021, p. 3). Our work pursues two research questions:

1. to explore how school leaders handled the crisis, highlighting the threats and opportunities for growth they identified;
2. to clarify the implications of the COVID-19 crisis on the leadership styles they implemented.

METHOD

Procedure

Semi-structured individual interviews (average duration: 1 hour and 22 minutes) were conducted with 25 school leaders (6 males and 19 females) between July and November 2020, i.e. between the first and second waves of COVID-19 pandemic in Italy.

The interviews were structured in two sections: the first related to COVID-19 crisis management and its negative consequences, also exploring the opportunities posed by the crisis; the second section involved questions relating to leadership themes (see Table 1).

Participants

The participating school leaders represent the whole population of the middle management working in a large city located in northwest Italy, and leading several zoned nursery and primary schools. School leaders participated in a special agreement with the authors for the implementation of staff retraining activities in order to give support at work. Their tenure in the role ranges from 9 months to 29 years, and they direct from 4 to 7 schools.

This study respects the Declaration of Helsinki (2013), as participants were informed about the research goals and outcomes. Authors ensured participants' anonymity, and their participation was on a voluntary basis, giving their informed consent before participating.

Data analysis

The Template Analysis method (Brooks, McCluskey, Turley & King, 2015) was used to analyse our interviews, since it conceives both a deductive approach, with the categories defined *a priori*, and an inductive one, in which the categories emerge from the data. In this approach,

Table 1 – Interview questions

Themes	Questions
COVID-19 crisis management (threats and opportunities)	How did you work during the pandemic?
	What activities did you carry out? What were your deadlines? What type of interaction did you have between colleagues and families?
	What was your most exhausting experience?
	Which experience still leaves you with a positive memory/lesson learnt?
	Is there anything you will retain in the organisation of your work that you learned or experienced during the pandemic?
Leadership	Thinking about your role, what term would you use to indicate your role of responsibility?
	Thinking about your role, what leadership-related lessons did the emergency teach you?
	What would you do more or less of, as a leader, than you would pre-COVID-19?
	As a leader, what did you do differently that you did not do before?

researchers are allowed to start with *a priori* themes deriving from the literature (King, 2004), refining the final template with emerging themes, to make sense of data. The researchers identified some *a priori* themes both of first order (i.e. COVID-19 crisis management and leadership styles) and of second order (threats and opportunities).

The first phase involved a double independent analysis of the same interviews by two researchers, followed by a comparison and an agreement to ensure that subsequent encodings were aligned. The final template was reached with codes of third order emerging from the coding processes.

In the last step, a third independent coder was trained in the meaning of the categories, before performing the third coding process with the 10% of the set of statements (O'Connor & Joffe, 2020). In order to assess the reliability of our categories, an intercoder reliability analysis was performed, reaching a Cohen's k = .70, which indicates a substantial strength of agreement between coders (Landis & Koch, 1977).

RESULTS

The authors specified two main *a priori* themes, i.e. COVID-19 crisis management and leadership styles, identifying for both themes specific elements.

The former theme was divided into two sections regarding the definition of crisis, highlighting both the threats faced by the school leaders and the opportunities they identified. The leadership styles theme was divided into three sections relating to the leadership styles used by the school leaders in managing the crisis, i.e. Transformational, Distributive and Directive leadership (see Table 2).

The following paragraphs will describe each label, quoting the most significant transcriptions from the anonymized interviewees, accompanied by the random code assigned to the individual respondent (e.g. school leader 1 = SL_01).

COVID-19 crisis management: Threats

Neglected teaching aspect. One of the first threats triggered by COVID-19 for school leaders was that of a greater investment of energy into administrative issues to the detriment of the teaching side of their work.

> During this period one of the two areas became too important [i.e. administrative, at the expense of teaching]. Compartmentalising, which was the buzzword of this period, means precisely closing sections within a defined space, forcing teachers into a defined space. It is the opposite of education, which instead means living, breathing, moving. (SL_07)

Loss of direct teacher-pupil relationship. The lockdown imposed on the community triggered a major threat to children from an educational point of view, drastically reducing the quality of teaching and the care of children. Interactions and education took place through purely digital tools, which very young children are unable to use.

> The work was mainly about caring for the relationship, guarding the relationship with families and children who, in some cases, also showed impatience; this is interesting. Almost a little bit of anger. I think the fact that you see the teacher on the video and you can't interact with her normally after a while gets you annoyed. (SL_16)

Impoverishment of peer/follower relationship quality. Also the school leader-teachers relationship quality was impoverished. COVID-19 seemed to increase the selfishness of some teachers, who said:

> "I tried to do…to be on my own, because if I went to help the other teacher, I ended up dealing with other children and other teachers so I tried to be on my own as much as possible." (SL_15 reporting a teacher's words)

Work-life conflict. School leaders witnessed both a significant increase in working hours and an invasion of work into their private lives due to the increased use of technologies.

> For my work, at one point, the most exhausting experience was drawing boundaries [...], so I was getting calls [...] at every hour, at 8 p.m., emails in the middle of the night [...] still now I struggle to feel able to switch off ... (SL_11)

Forced use of technology. Almost all school leaders had to use technological tools they were not accustomed to using in their everyday lives, but that suddenly became essential in order to continue working.

Table 2 – Overview of the main themes and specific elements emerging from the analysis

A priori themes		**Emerging themes**	**Count**
First level codes	*Second level codes*	*Third level codes*	
COVID-19 crisis management	**Threats**	Neglected teaching aspect	4
		Loss of direct teacher-pupil relationship	10
		Impoverishment of peer/follower relationship quality	5
		Work-life conflict	10
		Forced use of technology	19
		Fatigue	11
	Opportunities	Positive change of working practices	8
		New attitude towards technology	18
		Online training	5
		Better relationship with families and children	12
		Increased closeness with the team	8
		Communication and feedback	7
		Emotional support	9
		Need for leadership	3
		E-leadership skills	16
Leadership styles	**Transformational**		(N = 9)
	Distributed		(N = 11)
	Directive		(N = 5)

Note. (N =) refers to the number of school leaders to which a specific leadership style was attributed by the researchers.

> Then the work we did was to send materials designed by the teachers, who, by the way, struggled a lot because many of them were unfamiliar with technology. [...] I had become a kind of... director, who had to analyse everything that came to me, from the song, to the video, to the tutorial... everything. (SL_18)

Fatigue. School leaders had also to tackle the COVID-19 crisis while respecting many stringent rules imposed to protect users' health, such as wearing masks and the application of entrance quotas.

> There are so many rules to be followed, it's another school [...] even just banally in the way you come in ... well, freedom is another story. (SL_10)

COVID-19 crisis management: Opportunities

Positive change of working practices. School leaders reported greater attention now paid to the quality of the documentation to be produced and checked before sending it to the children.

> What I think I can maintain is definitely to continue in the vein of documenting products for the children also to be viewing at school or, at any rate, for families to witness the work done at school. So holding the button down more on documentation. (SL_05)

New attitude towards technology. The benefits that technologies can bring to everyday working life, if properly integrated, include the possibility of reducing dead time, such as travel time, by holding meetings online or exchanging information faster via chat, even though digital tools should not replace the possibility of face-to-face meetings.

> We discovered the advantages of technology, being able to have a meeting even remotely. We've been working a lot with Google-related systems, so Drive, Calendar helped us, even me, from an organisational point of view. I believe that the benefit of these tools […] is that, on the one hand, we can continue to use them for meetings, but we can also benefit from the in-person aspect of the direct relationship; the presence of people and physicality even between adults is important. (SL_09)

Online training. Technologies have also given rise to new possibilities, including more opportunities to undertake online training courses.

> One lesson learnt relates to training; we found that through webinars, there is a lot of richness on the web, and this allows staff, even now, to access training paths without having to leave their homes. (SL_19)

Better relationship with families and children. School leaders noticed new and greater attention to the more emotional aspect of the relationship with families. Having to "enter homes" via video calls allowed teachers to gain a clearer idea of each family's particular situation, not allowing social distancing to exclude children from school.

> As these were very young children, the family was included in the contacts and in the relationships, so [...] there was generally a willingness to have conversations with the families, because there was a very strong need for closeness […], to be emotionally supported, by the families. (SL_10)

Increased closeness with the team. There is a trend towards greater closeness and attention to followers as individuals, not only regarding work aspects, with the aim of getting to know each other and creating better group cohesion.

> We met with teachers remotely; we met paradoxically more than we were able to do at school. They did some very nice work. And yes, we eventually had time to get to know each other. (SL_06)

Communication and feedback. Considering the introduction of remote working, feedback, both given and received by school leaders, was also important as it was perceived as a learning opportunity that is not judgmental towards the person, but useful for understanding how best to overcome the crisis.

> I think it is very important to have a discussion with others... I always expect others to give me feedback on the good things I do but also on my mistakes, because it makes it easier for me [to learn and improve]. (SL_13)

Emotional support. Followers expressed a need for emotional support, going beyond mere work tasks. School leaders implemented emotional support strategies to facilitate the emergence of a climate of support with an indirect positive impact on the quality of the relationship with other stakeholders.

> Sometimes it was enough to pass by [in schools], to say "come on, I'll buy you a tea" to see that there was some discontent and perhaps some problems; this is no longer possible now, so we established (online) meetings for a while, once every 15 days. I realised that this was also needed just to hold the group together. (SL_11)

Need for leadership. Team needed guidance. Followers needed a point of reference to follow, to point the way in the fog of uncertainty.

> At this particular time I realised that workers were demanding this service role because the request was "we want to work at our best, and to do that, we need someone to play a coordinating role". (SL_12)

E-leadership skills. School leaders had to change management practices in light of the rapid introduction of new technologies, from purely face-to-face to almost completely virtual working practices.

> I had come up with this thing where I had my Monday morning e-mail with all the teachers in the [school] circle and on Friday afternoon I would close [the working week] with homework; there was a continuous dialogue. (SL_15)

Leadership styles

Transformational leadership. The interviews revealed examples concerning each of the characteristics of transformational leadership, namely the 4 Is (Bass & Avolio, 1993). The school leaders stated that, particularly in terms of the management of emotions, they managed to interact with followers in an individual way, paying attention to the follower's concerns and needs, giving examples of individual consideration.

> One thing I did that I didn't really think about before was during the week I called all of my co-workers individually, at least once, which I didn't do before. (SL_09)

School leaders were called upon to provide motivational inspiration, with teachers challenged to raise the bar of their performance and to take greater responsibility.

> [My role as a leader is to] make sure that everyone has a problem-solving orientation and an active attitude; so not "help, boss, tell me how to solve this problem", because first you activate the energies of the people […]to develop a leaning towards solving problems autonomously. (SL_23)

Aiming for intellectual stimulation, transformational school leaders inspired their followers to pursue bigger objectives with greater awareness.

> To get to a goal and then to a project, you have to know how to create your own project work, but you also have to know how to involve people to achieve a common goal. (SL_21)

Finally, transformational school leaders also provided definitions of their role and relationship with followers through metaphors that conveyed their charisma to ensure followers identified with the leader (idealised influence).

> I am also responsible for this [role], the networking. I'm kind of fixated on this so I always tell the teachers, "We are part of a team; we don't function like a conservatoire instructing the first violin. No, we are the orchestra, we play together". (SL_21)

In conclusion, transformational school leaders provide a metaphor that encompasses their role during the pandemic.

> It requires soft armour. (SL_21)

Distributed leadership. Some school leaders showed a very widespread use of liaison officers, i.e. people who, despite not having a formal leadership role, are appointed to be their spokesperson within the various schools they manage. In this way, school leaders feel that they have more control of the situation, while at the same time appointing people they trust with an authority that holds them accountable.

I identified a liaison officer for each structure; after identifying them, I asked the group in some way to "elect" them, to recognise that during the COVID period these people would work for a little while with me. (SL_25)

Directive leadership. A style in which leaders create a rigid framework, feeling that he/she can overcome the crisis through actions that do not allow followers much discretion. This involves greater attention to the control of tasks, the establishment of rules to be respected, the provision of precise deadlines and rhythms for the activities, and respecting the hierarchy.

You cannot overstep certain boundaries. In my opinion, hierarchy helps everybody, because I believe it is right for one person to make certain decisions. (SL_22)

DISCUSSION

Two main topics were investigated, i.e. how school leaders managed the COVID-19 pandemic, both in terms of facing the difficulties and of acknowledging opportunities, and the leadership styles they implemented. Some recurring labels cover themes related to the specific role of the school leader or teacher, while others involve issues that scholars (Kniffin et al., 2021; Rudolph et al., 2021) have highlighted as emerging due to the COVID-19 pandemic in terms of workplace psychology. Moreover, some labels are in line with the results of the review by Wu and colleagues (2021), which have been pinpointed as possible future theoretical advancements (i.e. leader emotion management in crisis contexts) or with their first meta-cluster, recalling the leadership styles of our school leaders, covering their psychological and behavioural responses to the crisis.

As regards the threats of COVID-19 faced by the school leaders, the neglected teaching aspect highlighted that the school leader's work became too imbalanced in favour of administrative tasks rather than teaching goals, with "the priority being to survive day by day" (SL_22). School leaders stopped focusing on long-term planning and instead strove to ensure that educational content was available on a day-to-day basis. The aspects of social distancing and increased workload seem to have seen teachers become less inclined towards collaboration and more inclined towards focusing on their own goals - impoverishment of peer/follower relationship quality. In addition, school leaders felt their role as creators of a workspace based on sociality and continuous knowledge sharing was impoverished. At the same time - loss of direct teacher-pupil relationship - school leaders reported that teachers complained about the new way of interacting with children only at a distance, which became a less empathic learning experience for them, with the impoverishment of education becoming clear.

Among the threats, the interviews revealed issues and implications of workplace psychology (Rudolph et al., 2021), since school leaders complained about work-life conflict issues. They are related both to time-based conflict, when work extended into hours usually devoted to family time, and strain-based conflict, when work-related stress also affected the home domain. For our sample of school leaders, these aspects also related to the construct of techno-stress, which describes how technologies, on one hand, helped them to continue working, but, on the other, increased their workload and invaded other spaces and periods of non-work life (Molino et al., 2020). The difficulties faced by the school leaders included the sophistication level of the devices and softwares that enabled work to continue even at a distance - forced use of technology. Initially perceived as a threat, the use of technologies led school leaders to change the way they managed their followers, with a more results-focused assessment, not being able to monitor their followers' outputs or behaviours directly in person, recalling the characteristics of e-leadership (Kniffin et al., 2021).

All these characteristics led to the fatigue school leaders felt when facing the difficulties of technology, administrative demands, and enforcing the new health regulations. On one hand, they had to ensure that teachers continued to do their work from home, thus adopting a more productivity-oriented perspective and, on the other hand, they had to ensure that teachers had all the equipment they needed to perform at their best, in line with all the issues related to changes in human resources policy (Rudolph et al., 2021). Supervising short video content, sharing materials with families (on the teaching side), complying with anti-COVID regulations, and handling administrative requests (on the bureaucratic side) were the antecedents that led school leaders to feel fatigued.

Shifting to the opportunities that emerged from the crisis, school leaders recognised a better relationship with families and children, also established by teachers. While communicating with children was difficult due to the distance and the lack of practicality in using technology, school leaders identified a new and greater focus on the emotional aspect of the relationship with families. Having to "enter homes" through video calls allowed teachers to gain a clearer idea of each family's particular situation.

Online training was also a benefit, necessary in order to enhance the resources and to tackle the enforced switch to virtual work and teamwork. Both school leaders and some teachers autonomously searched for and participated in online courses to learn how to use some of the software to improve their work performance (Kniffin et al., 2021). Indeed, school leaders reported that they had changed their new attitude towards technology, despite the initial difficulties, intending to maintain some of these new practices even in the future (Rudolph et al., 2021), e.g. holding online meetings rather than wasting time travelling across the city, however without completely substituting physical in-person meetings, so as not to lose the emotional contents.

Another important feature that emerged was the need for leadership, described in the literature as the demands by employees to have a leader who facilitates actions towards individual, group or organisational outcomes (de Vries, Roe & Taillieu, 2002). In line with this definition, the school leaders reported that their followers explicitly expressed the need for a guide to overcome this new uncertain situation, to clear up the fog of the new work rules and demands.

This need by followers resulted in the leaders' increased closeness to the team, whereby school leaders frequently got in touch with teachers. Leaders' closeness, indeed, could be perceived, in some situations, as a resource for followers which can act as a buffer against negative outcomes (Garzaro et al., 2021).

Among the opportunities, school leaders recognised the increased importance of communication and feedback management (Kniffin et al., 2021). Indeed, school leaders also felt the need to receive feedback from the "bottom up" in order to calibrate their behaviours over time.

One of the most resonant consequences was followers' need for emotional support, in line with the future themes to be studied in the field of crisis leadership after the spread of COVID-19 (Wu et al., 2021). School leaders implemented some strategies to support their followers emotionally: for example, the creation of a supportive climate, in which leaders make themselves available to hear the problems of their followers, including their personal and family issues.

In conclusion, all aspects mentioned thus far could contribute to the definition of the e-leadership skills (Kniffin et al., 2021; Rudolph et al., 2021), a new way of managing a leader's role, which must take account of the evolutions in modern times and the fact that one's skills must be adapted for the effective management of virtual groups. Some practical examples of task management were the use of video-conferences for meetings (to deal with administrative issues), Google Drive folders for document sharing, and fixing online meetings every Monday to draw up a checklist of objectives to be completed by the closing meeting on Friday afternoon.

In line with the review by Wu and colleagues (2021), from our interviews three recurrent leadership styles among the school leaders were identified.

Transformational leadership is one of the most commonly investigated styles to be effective during a crisis. Transformational leaders during crises can foster followers' agreement with the leader's goal and value system (Zhang et al., 2012) while promoting positive emotions and resilience among followers (Sommer, Howell & Hadley, 2016). In our interviews, the teachers' resilience was evident in their increased involvement in educational tasks despite the negative consequences of the crisis, learning to use new technologies to create increasingly engaging content for children (intellectual stimulation). Our transformational school leaders also expressed their attitudes towards listening and emotionally containing their followers (individual consideration), highlighting that each of them has a unique contribution to make by enacting an active attitude (motivational inspiration) and aligning them around a common vision (idealised influence).

Distributed leadership was the most widespread leadership style enacted during the pandemic among our sample. Most school leaders delegated some of their managerial tasks to a "liaison officer" in each of their schools, the reference point for the school leaders when their workload increased. The delegation was aimed not at maintaining control but at recognising the competencies of some followers. Therefore, school leaders shared with these liaison officers both tasks and some influence processes, in line with the very definition of the style itself, according to which leadership is not a prerogative of those "with a formal leadership position at the top of the organisation" (Daniëls et al., 2019, p. 115). This method of managing schools appeared to reduce job demands for school leaders, and to increase resources, i.e. liaison officers' support. The liaison officers also benefited, being recognised as experts involved in improving the school.

Finally, some school leaders seemed to enact a more restrictive and controlling leadership style, recalling directive leadership. They aimed to provide their followers with clear top-down instructions, establishing clear objectives at the beginning of the week to be achieved by its end. They felt that during times of crisis there is no leeway for making decisions collaboratively, and, instead, what was needed was guidance and clear directions. These thoughts are in line with the characteristics of directive leadership, in which leaders are expected to provide followers with a "framework for decision making and action in alignment with the leader's vision" (Somech, 2005, p. 778), centralising the decision-making process. This also accords with the threat-rigidity hypothesis (Stoker et al., 2019), the tendency for leaders, during times of crisis, to give clear and detailed instructions to followers, with which compliance is required, along with respect of hierarchy and adherence to rules.

CONCLUSION

This study proposes some examples of how school leaders managed the COVID-19 pandemic during the first lockdown. The closing of schools increased the job demands for school leaders on the practical side, with regard to the increased administrative demands and the need to learn how to use electronic devices and software to work virtually, on the educational side, linked to the loss of quality of the relationship with children and families, and, finally, at individual level, with regard to the fatigue caused by the invasion of the private life domain.

At the same time, school leaders identified opportunities emerging from the crisis: firstly, technologies offer a new way of working smarter, with the helpful offer of online training; secondly, school leaders answered their followers' need for leadership with an attitude more inclined towards listening and supporting than in the past; lastly, school leaders tested the efficacy of giving feedback and the different way of communicating in virtual teams. Considering the network of school leaders at the national level, our sample's findings about opportunities could be shared with colleagues leading other schools throughout the national context. These best practices could be transversally applied and then adapted to the different organizational cultures in the post-pandemic period.

However, this study has limitations. Firstly, the results should be interpreted with reference to the participants involved as, given the inability to generalise the results due to the sample size, they cannot be fully extended to other contexts. Secondly, online interviews limited the possibility of fully identifying the emotive and nonverbal aspects of the participants' communication and to avoid distractions. Lastly, one limitation of Template Analysis is that the focus is spread across cases rather than within cases, thus losing sight of a more "holistic understanding in relation to individual accounts" (Brooks et al., 2015, p. 218), which could provide more insights.

Further studies are needed to produce more generalisable results, by analysing a wider sample and performing data analysis using content analysis software.

From a practical standpoint, our results highlighted some best practices and consequences emerging from the crisis period, going beyond the obvious negative aspects. Best practices regard both instrumental and leadership topics. Indeed, school leaders may maintain some aspects of virtual teamwork in their everyday work, their stance of considering their followers individually and listening to them, adopting new rules facilitating the achievement of working tasks on a weekly basis. Ensuring that the identified best practices were used in the post-pandemic period could give greater emphasis and essence to the exploratory findings of this study.

Furthermore, on the practical side, consultants should be made aware of the workload and emotional burden that school leaders are required to manage in the early years of a pandemic, in order to help them identify pathways to support their well-being at work and also to reframe their experiences; with regard to leadership training in schools, some positive elements arising from leadership during the pandemic could inspire new working practices aimed at implementing these new behaviours in our so-called new normal.

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"Are you gonna go my way?": A first contribution to the Italian validation of the HRM Policies and Practices Scale

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ABSTRACT. L'etichetta Human Resource Management Policies and Practices si riferisce all'insieme delle credenze e dei valori di una organizzazione che ispira azioni e pratiche riferite al modo in cui vengono valorizzate le persone, viene supportata la gestione della loro carriera e viene progettato il contesto organizzativo. Negli ultimi decenni la letteratura di settore si è concentrata sulla necessità di raccogliere le percezioni dei lavoratori circa le pratiche di gestione delle risorse umane per allineare le scelte strategiche a tali esigenze. Lo studio di seguito riportato propone la versione italiana della *Human Resources Management Policies and Practices Scale (HRMPPS)*: si tratta di una misura breve ed affidabile, utile nella pratica professionale come nella ricerca applicata, per supportare le organizzazioni nella definizione di proposte operative e decisioni strategiche in tema di sviluppo delle persone.

SUMMARY. The label 'Human Resource Management Policies and Practices' refers to the set of beliefs and values of an organisation that inspire actions and practices related to the way people are valued (e.g. through recruitment and selection, compensation and reward processes), the way their career management is supported (through training and development opportunities) and the way the organisational context is designed (through actions aimed at improving the quality of life and psycho-social wellbeing). The purpose of these actions is to better manage organisational and individual effectiveness, affecting employee engagement and at the same time the resilience of the organisation over time. In the light of this evidence over the past decades, the literature has focused on the need to gather workers' perceptions of human resource management practices in order to align strategic choices with these needs. Hence, a vast scientific production geared towards providing scholars and practitioners with tools to investigate these dimensions. In line with these assumptions, the following study proposes the Italian version of the Human Resources Management Policies and Practices Scale (HRMPPS) developed in English by Demo and collaborators (2012). It is a short and reliable tool, useful in professional practice as well as in applied research, to support organisations in the definition of operational proposals and strategic decisions on the subject of people development.

Keywords: *Human Resource Management, HRMPPS, Validity, Reliability*

INTRODUCTION

The strategic value of HRM policies and practices for organizations

Human Resource Management (HRM) is the term used to refer to the strategic function that an organization may exercise to efficiently govern its complexity, combining demands coming from personnel administration, performance management, employee relations and resource planning. Therefore, considering organizations as socio-technical systems, the objective of HRM is to maximize the return on investment from the organization's human capital and to minimize financial risk, enhancing economic competitiveness. To meet these ambitious goals, the function of HRM concretely operates through the activation of specific policies and practices, as for instance programmes for recruitment and selection, training, compensation, that should be coherent with the wider organizational mission, vision, and strategic plans. Yet, the more employees will perceive that the organization has a clear strategy to manage its evolution across time and that this strategy also involve its human capital, the more they will engage in positive organizational behaviours supporting the achievement of its goals, invest the most of their energies, motivations, skills.

In this perspective, conscious about the intangible precious value of people in organizations, over the past 20 years, a resource-based or soft approach to HRM emerged as opposed to a control-based or hard approach, arguing that to invest in human resources could make a return in terms of commitment which is intangible but strictly related to performance and competitiveness. This perspective is fully attuned with the social exchange theory (Gouldner, 1960), according to which the relationship between workers and the organization is based on a set of reciprocal social and economic acknowledgements resulting in higher levels of mutual trust and loyalty.

This approach has been used extensively as a framework to explain the relationship between what are labelled High-Performance Human Resource Practices (HPHRPs) and employee outcomes. HPHRPs are conceived as strategically planned combinations of HR practices meant to improve performance (see Sheng, 2022, Wood, 2019 for a review). Some authors also refer to them in terms of high-commitment practices (Boon, Den Hartog & Lepak, 2019) underlining the scope of such work systems designed to foster employee commitment, control/efficiency, or involvement (Alqudah, Carballo-Penela & Ruzo-Sanmartín, 2022; Zhao, Yu, Liu & Yan, 2022).

Beyond labels, Human Resource Management policies and practices encompass a set of beliefs, attitudes, expectations, and values of the organization inspiring how workers are treated (recruitment and selection, compensation, and reward), how their career is managed (training and development opportunities) and how work environments are designed (work conditions with special reference to health, safety, and technology) to allow them to perform efficiently. Indeed, HRM policies are also the reference for the development of organizational practices and for the strategic decisions making organizations sustainable contexts (Demo, Neiva, Nunes & Rozzett, 2012).

Based on these assumptions, recent developments showed that when organizations invest in HPHRPs, employees perceived this effort as an expression of the organization's trust and commitment to them, as an appreciation of their work and as a desire to engage in a long-term relationship (Hai et al., 2020; Sun, Aryee & Law, 2007) rather than in a short-term economic exchange relationship with employees (Kehoe & Wright, 2013; Zeb, ur Rehrman, Arsalan & Usman Khan, 2021) especially if they perceive a stronger managerial support (Yunus, Whitfield & Sayed Mostafa, 2023). Most of perceived HRM studies have showed job satisfaction (Kremmydas & Austen, 2020; Savanevičienė & Stankevičiūtė, 2011), affective organizational commitment and work engagement (Peccei & Van de Voorde, 2019) as some of the main attitudinal outcomes of the person/organization relationship.

In view of the above, organizations have a great potentiality: they could manage people through enlightened people-based HR policies and practices, addressed not simply to distribute tasks and to control results, rather designed to support workers' wellbeing and consequently to foster a reciprocal and interdependent, win-win, sustainable development. This goal is easily achievable if organizations engage in collecting employees' perceptions and in considering them in the making of a HRM strategic plan. Accordingly, the assessment of this information is crucial.

Assessing employees' perception of HRM policies and practices

Moving from the widely shared acknowledgement of the importance of a strategic management of people in organizations, the issue of measuring the consistency, coherence, and appreciation of policies and practices is a priority for all organizations. Accordingly, to gather knowledge about what employees think about the way their organization treat them and about the extent to which it succeeds in corresponding their expectations is crucial to voice workers' attitude and behaviours and to attune them to a wider strategic plan for development, cultivating their motivation and engagement.

However, to measure HRM policies and practices is, as already Guest (2002) suggested, one of the most difficult methodological issues, because often organizations fail to follow how human resources are concretely managed for many reasons (e.g, external influences on HRM policies and practices, technological changes, and organizational structure) as well as for the lack of an explicit HRM organizational plan governing these practices. Thus, a focus on the methodologies useful to investigate employees' feedbacks on HRM policies and practices is inevitably a priority for theory development and for good organizational practices.

As argued above, despite the growing interest toward the impact of employees' perception about human resources management policies and practices, there is still a lack of validated self-report measures, useful to catch them. Basically, this gap could be related to at least two kinds of difficulties.

First, although most studies concentrated on the investigation of HR practices, research on HR policies useful to mark and clarify the difference between the two remains scarce. Yet, these two concepts, often used as synonyms, concretely refer to different aspects of a HRM plan: policies being strictly linked with the organizational mid and long-term strategy and practices to the short-term actualization of it through actions and choices oriented to manage the workforce coherently.

Second, the evidence according to which it is hard to agree upon an exhaustive list of HRM policies and practices indispensable to operationalize the concept, since each organization differently interpret and manage this important function, choosing the actions that best suit to one's own strategy and culture or even choosing not to act any HR practice at all.

Moving from the acknowledgement of these difficulties, a pioneering contribution to the identification of HRM practices is the study by MacDuffie (1995) who analysing results coming from a large international longitudinal dataset survey identified a consistent HR bundle or system which was proved to best affect performance, productivity, and quality. Although limited to the automotive context, this study was the start of a valuable debate about possible classifications of HR practices. In 1998 Pfeffer gave a further relevant contribution relating a bundle of best practices in HRM with high commitment or high performance. The elements identified by the author and recalling the ones proposed by MacDuffie (1995) are now widely recognised and were also used lately to develop measures of HRM practices perception. These are employment security, selective hiring, teamworking, high wages linked to organizational performance, extensive training, communication, and employee involvement. Likewise, using suggestions coming from previous studies in 1997 Guest and Conway conducted a study involving 1308 managers adopting a sequential tree analysis and finding a set of effective HR practices that partly overlapped with the ones already discussed and that were proved to be related to positive organizational behaviours.

Therefore, in line with all this evidence, the assumption that a bundle of HR practices impacts on performance was largely adopted (Guest, Conway & Dewe, 2004) supporting the development of scales useful to capture employees' perceptions about this set of actions. MacDuffie and Pfeffer's list of HR practices was used as a common basis.

In 1995 Huselid first engaged in the development and validation of a measure the High-Performance Work Practices. The scale is composed by 13 items distributed in two factors basically referring to specific categories of HR practices: employees' skills and organizational structures and employees' motivation. Further studies by Huselid and Becker (1996) and by Huselid, Jackson and Schuler (1997) found results consistent with the bundles of High-Performance Work Practices developed in the previous study.

Some years later, the systematic review of the literature conducted in 2005 by Boselie, Dietz and Boon and covering studies published from 1994 to 2003 showed that the relationship between HRM practices and performance is not so clear as it seemed. Therefore, the authors proposed to reconsider the bundle of High-Performance Work Practices linking them to the Ability-Motivation-Opportunities to participate (AMO) model (Appelbaum, Bailey, Berg & Kalleberg, 2000). According to the model, people perform well when they have the capabilities, they have the adequate motivation, and their work environment provides opportunities to participate, therefore if organizations wish their employees to show high performance could develop HRM practices addressed to stimulate these driving forces. In line with this premise, the AMO model has soon become a point of reference to explain the linkage between human resources management and performance.

A crucial contribution in this direction came in 2010 when Boselie proposed to classify high-performance work practices (HPWPs) according to their focus on abilities, motivation and/or opportunities to participate enhancement (AMO model). According to the author, HPWPs aimed at enhancing employees' abilities should include skills training, general training, job enrichment and coaching. HPWPs aimed at strengthening their motivation should focus on high wages, fair pay, and pay for performance. Finally, HPWPs addressed to improve the opportunity to participate should focus on employee involvement in decision making, participation, job and team autonomy, and decentralisation. The operationalisation of the measures relied upon the scales developed by Huselid (1995) and by den Hartog and Verburg (2004). The scales proposed by Boselie were converted from the organisational-level items originally used by the authors (e.g. "what is the average number of hours of training received by a typical employee over the last 12 months"; Huselid, 1995, p. 646) into individual employee-level items (e.g. "the organisation offers opportunities for training and development").

Parallel to this effort, in 2008 Demo and colleagues gave a great contribution to the discussion about HRM practices and policies assessment by developing the Perception of Personnel Management Policies Scale (PPMPS). The scale, which is in Portuguese, is composed by 19 items distributed across 4 factors representing HRM policies: involvement; training, development, and education; work conditions; and compensation and rewards. This is a valuable effort to systematize a large literature on HRM policies and to classify them into shared categories. The authors regained the term organizational policy from Singar and Ramsden (1972) and defined it as a set of principles established by the organization marking a general course of action in which some practices are developed collectively, in a constructive way, to reach certain objectives. Consequently, HRM policies define the attitude, expectations and values of the organization concerning how individuals are treated, and still serve as point of reference for the development of organizational practices and for decisions made by people, besides resulting in equal treatment among individuals.

In 2012 Demo and colleagues worked on a validation in English of this measure and presented the *Human Resources Management Policies and Practices Scale* (*HRMPPS*). Based on an extensive literature review and on a qualitative pilot study conducted in three times with a panel of more than 60 managers, the authors proposed to enlarge the classification of HR bundles coming from previous studies adding policies for recruitment and selection and competency-based performance appraisal. Therefore, the measures proposed by Demo and colleagues encompasses 40 items articulated into 6 areas of HRM policies and practices: recruitment and selection, involvement, training and development, work conditions, competency-based performance appraisal, compensation, and reward. Items represent general assumptions about HRM actions carried out in each area by the organization and ask employees to express if they are present in their context by rating their agreement/disagreement using a 5-point Likert scale, varying from "I totally disagree" to "I totally agree". The explorative and confirmative factor analysis conducted on the tool showed good psychometric properties and a high reliability. The scale in its final version encompasses 19 items.

In line with Demo et al. (2012) the present study aims to propose a valid measure of the HRMPPS in Italian. Moreover, considering that the length of the instrument may be a barrier for its application for practitioners and researchers, the study proposes a short version of the HRMPPS and evaluations of its validity, reliability, and measurement invariance across different groups.

METHOD

Procedure and participants

Two studies with two data collections and different samples were conducted. A non-probabilistic and convenience sampling procedure was used to recruit both samples through digital calls for participation launched in social networks and blogs. The studies observed the Helsinki Declaration and the prescriptions of the General Data Protection European Regulation (GDPR, EU n. 2016/679). Respondents participated voluntarily giving their informed consent after reading the aims of the research.

Study 1. Participants to the first study were 440 Italian workers, among which 47% of women and 53% of men, with a mean age of 36.6 (*SD* = 12.7) and different levels of education (42% had a bachelor's degree, 45% had a secondary school degree, 13% had lower education). They were blue-collars (33%) and white-collars (67%) from small and medium-sized (61%) or large (39%) enterprises of private (61%) or public (39%) sector, with many service industries (59%). They had different levels of seniority (60% had less than ten years of working activity, 40% had more).

Study 2. Participants to the second study were 580 Italian workers, among which 51% of women and 49% of men, with a mean age of 36.3 (SD = 11.8) and different levels of education (41% had a bachelor's degree, 46% had a secondary school degree, 13% had lower education). They were blue-collars (26%) and white-collars (74%), from small and medium-sized (57%) or large (43%) enterprises of private (69%) or public (31%) sector, with many service industries (64%). They had different levels of seniority (59% had less than ten years of working activity, 41% had more).

Materials

Study 1. The HRMPPS (Demo et al., 2012) was administrated in Italian. The original items passed through a back-translation procedure supported by a native English speaker. A pilot test was carried out with 21 Italian employees to verify the clarity of the translated items.

Study 2. A short form of the HRMPPS was administrated to the second sample. This version was composed by 18 items, three for each sub-scale described above. The choice of the items of this new version was guided by the results of Study 1.

Work engagement was measured using the *Italian Version of the Utrecht Work Engagement Scale* (Balducci, Fraccaroli & Schaufeli, 2010) with nine items on a 5-point Likert scale (e.g., "At my work, I feel bursting with energy", α = .94).

Affective commitment was assessed using the correspondent scale of the measure developed by Meyer and colleagues (Meyer, Allen & Smith, 1993) with six items on a 7-point Likert scale (e.g., "I would be very happy to spend the rest of my career with this organization", α = .88).

Job satisfaction was measured using a single item (Wanous et al., 1997) on a 7-point Likert scale.

Data analysis

Study 1. An explorative factorial analysis (EFA) was conducted after checking for skewness and kurtosis of observed variables distributions, for sampling adequacy, and for sphericity. To determine the number of factors to extract in the EFA, we used both theoretical (i.e., the original validation of the instrument) and analytical (i.e., parallel analysis) criteria. A maximum likelihood estimation method with Oblimin rotation was used because it was theoretically evident and empirically reasonable that different components of HRM would be related.

Study 2. A series of CFA with maximum likelihood estimation was conducted on the data of the second sample to confirm the factorial validity of a 18-item form. Different measurement models were tested and compared investigating, in addition to the exact fit test of the chi-squared statistic (χ^2), the following pragmatic fit indices: Comparative Fit Index (CFI); Tucker-Lewis Index (TLI); Standardized Root Mean Square Residual (SRMR); Root Mean Square Error of Approximation (RMSEA); Akaike's Information Criterion (AIC); and Bayesian Information Criterion (BIC). Values of CFI and TLI greater than .90 and values of SRMR and RMSEA lower than .08 suggest a good fit of the model. As for AIC and BIC, smaller values indicate better models (Kline, 2023).

Measurement invariance tests using multigroup CFA was run to verify whether the 18-item form is interpreted the same way by respondents belonging to different groups. Four levels of invariance were tested, comparing nested measurement models with additional equality constraints across groups: configural invariance (equivalent factor structure); weak invariance (equivalent items' factor loadings); strong invariance (equivalent items' intercepts); and strict invariance (equivalent items' residual variances). Each level of invariance was tested comparing the correspondent model to the model of the previous level adopting a ΔCFI value of .010 as a criterion to evaluate their difference (Cheung & Rensvold, 2002).

RESULTS

Study 1. Observed variables showed acceptable skewness and kurtosis values <|1.00|. The sampling adequacy was checked with the Kaiser-Meyer-Olkin test, which revealed an excellent value of .95. The Bartlett's test of sphericity (χ^2 = 15528.79, df = 780, p<.001) revealed correlations high enough to not being similar to zero, allowing the process of the extraction of latent factors. The parallel analysis suggested the extraction of six factors, which was in line with the original validation of the instrument (Demo et al., 2012).

Results of the EFA (see Table 1) with the extraction of six factors showed adequate loadings for the items on the respective theoretical factors. On the other hand, results showed some cross-loadings higher than .30, revealing that the meanings of the items 28, 29, 30, and 40 may be misleading for the interpretation of the different factors, suggesting the deletion of these items. The factor solution accounted for 66.54% of the total variance and highlighted relevant correlations between factors ranged between .29 and .62. The interpretation of the pattern matrix was focused on the development of a new shorter form of the tool composed by 18 items, three for each of the six factors. The three items showing the highest loadings on each factor were retained for the new version.

Study 2. A series of CFA were conducted to analyse the factorial validity of a short form of the instrument. Different measurement models (see Table 2) were tested and compared to highlight the best factor solution for the 18 items: a single-factor solution (Model 01), a six-factor solution with uncorrelated factors (Model 02), a six-factor solution with intercorrelated factors (Model 03), and a second-order factor solution (Model 04). Model 01 showed a poor fit to the data, suggesting that a single factor did not account for all the covariances among the indicators. Also Model 02 showed a poor fit, suggesting the addition of the covariances between the six factors. Model 03 showed a good to the data with significant standardized factor loadings ranged between .70 and .93, suggesting the factorial validity of a measurement model with intercorrelated latent variables. Model 04 consisted of one second-order latent variable and six uncorrelated first-order factors. Also this model showed a good fit to the data. Model 04 was a more parsimonious solution (i.e., with more degrees of freedom) but it showed lower fit indices compared to Model 03.

In view of the above, we selected the best fitting model, namely Model 03, to conduct measurement invariance analyses (see Table 3) for gender (man or woman), seniority (more or less than ten years of working activity), and company size (small, medium, or large enterprises). Results sustained all levels of measurement invariance (configural, weak, strong, and strict) since each model showed adequate fit indices and the differences in CFI between a nested model and the less constrained one were lower than .010.

Considering the stability of measurement across different groups, we analysed internal consistency of each subscale of the instrument on the total sample of Study 2, revealing adequate reliability indices for each set of items with Cronbach's alphas ranged between .79 and .91. Since the six factors showed high intercorrelations and the measurement model with one second-order factor showed good fit indices, internal consistency of the entire questionnaire was also analysed, showing a α value of .95.

Criterion validity was investigated analysing the relationships of HRM factors with measures of theoretically related constructs. The correlation analysis (see Table 4) showed moderate to strong relationships of HRM factors with affective commitment, work engagement, and job satisfaction.

DISCUSSION AND CONCLUSION

The purpose of the study was to contribute to the evaluation of the psychometric properties of a shorter Italian version of the HRMPPS developed by Demo and colleagues (2012). The EFA conducted on the Italian complete version (40 items) of the instrument revealed a valid six-factor structure. The CFA performed on the shorter version (18 items) sustained a six-factor measurement model, which had better fit indices than the alternative solutions. The measurement invariance analyses showed that the instrument was able to measure the perceptions of HRM policies and practices in the same way for men and women, for workers with different levels of seniority, and for workers coming from organizations with different sizes. The reliability of each dimension of the HRMPPS was satisfactory, as well as the reliability of the total scale. The correlation analysis sustained the criterion validity of the measure showing significant relationships with affective commitment, work engagement, and job satisfaction.

The study has relevant implications for researchers and practitioners because it provides an easy-to-use short instrument for the evaluation of employees' perceptions of HRM which was lacking in the Italian context and that could be complemented with objective measures of HRM policies and practices efficacy (e.g. turnover rates, production, etc.) both in research and in professional practices. Yet, focusing specifically on the perception and opinions that human

Table 1 – Exploratory factor analysis of the initial 40-item HRMPPS (*N* = 440)

Items	Factors					
	1	2	3	4	5	6
1. L'organizzazione per cui lavoro diffonde ampiamente le informazioni circa i processi di reclutamento sia interno che esterno [The organization I work for widely disseminates information about both external and internal recruitment processes]	.84					
2. L'organizzazione per cui lavoro informa i candidati della procedura e dei criteri del processo di selezione [The organization I work for discloses information to applicants regarding the steps and criteria of the selection process]	.95					
3. L'organizzazione per cui lavoro comunica ai candidati i risultati della loro performance al termine del processo di selezione [The organization I work for communicates performance results to candidates at the end of the selection process]	.72					
4. Nell'organizzazione in cui lavoro, i test di selezione sono condotti da personale opportunamente formato ed imparziale [Selection tests of the organization where I work are conducted by trained and impartial people]	.57					
5. L'organizzazione per cui lavoro mette in atto processi di selezione competitivi in grado di attrarre candidati competenti [The organization I work for has competitive selection processes that attract competent people]	.56					
6. L'organizzazione per cui lavoro utilizza vari strumenti di selezione (es. test psico-attitudinali, colloqui individuali e/o di gruppo, ecc.) [The organization I work for uses various selection instruments (e.g. interviews, tests, etc.)]	.49					
7. L'organizzazione per cui lavoro mi tratta con rispetto e attenzione [The organization I work for treats me with respect and attention]		.75				
8. L'organizzazione per cui lavoro ha a cuore il mio benessere [The organization I work for is concerned with my well-being]		.78				
9. Nell'organizzazione in cui lavoro, si respira un clima di comprensione e fiducia tra manager e dipendenti [In the organization where I work, there is an environment of understanding and confidence between managers and employees]		.83				
10. L'organizzazione per cui lavoro riconosce il lavoro da me svolto ed i risultati raggiunti (es. con riconoscimenti verbali, attraverso mailing list o articoli pubblicati sull'house aziendale o affissi in bacheca, ecc.) [The organization I work for recognizes the work I do and the results I achieve (e.g., in oral compliments, in articles in corporate bulletins, etc.)]		.51				
11. L'organizzazione per cui lavoro incoraggia l'autonomia sia nella gestione delle mansioni che nella presa di decisioni [The organization I work for favors autonomy in doing tasks and making decisions]		.44				
12. L'organizzazione per cui lavoro cerca di soddisfare le mie necessità ed aspettative professionali [The organization I work for seeks to meet my needs and professional expectations]		.58				

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continued

Items	Factors					
	1	2	3	4	5	6
13. Nell'organizzazione per cui lavoro, i dipendenti ed i manager sono costantemente in comunicazione al fine di svolgere al meglio il proprio lavoro [In the organization where I work, employees and their managers enjoy constant exchange of information in order to perform their duties properly]		.54				
14. L'organizzazione per cui lavoro incoraggia la mia partecipazione al processo di presa di decisioni e di soluzione dei problemi [The organization I work for encourages my participation in decision-making and problem-solving]		.46				
15. Nell'organizzazione in cui lavoro, si respira un clima di fiducia e cooperazione tra colleghi [In the organization where I work, there is an environment of trust and cooperation among colleagues]		.62				
16. L'organizzazione in cui lavoro incoraggia l'interazione tra colleghi (es. incontri conviviali di tipo informale, eventi sociali, eventi sportivi, ecc.) [The organization I work for encourages interaction among its employees (e.g., social gatherings, social events, sports events, etc.)]		.36				
17. L'organizzazione per cui lavoro incoraggia i dipendenti ad adattarsi alle necessità del proprio ruolo [The organization I work for follows up on the adaptation of employees to their functions]		.46				
18. Nell'organizzazione per cui lavoro vi è coerenza tra quel che il management dice e quel che fa [In the organization where I work, there is a consistency between discourse and management practice]		.42				
19. Posso utilizzare le conoscenze e i comportamenti appresi durante la formazione nel mio lavoro [I can use knowledge and behaviors learned in training at work]			.47			
20. L'organizzazione in cui lavoro mi aiuta a sviluppare le competenze di cui ho bisogno per svolgere al meglio il mio lavoro (es. seminari, training specifici, ecc.) [The organization I work for helps me develop the skills I need for the successful accomplishment of my duties (e.g., training, conferences, etc.)]			.73			
21. L'organizzazione in cui lavoro investe nella mia formazione e nel mio sviluppo promuovendo la mia crescita personale e professionale in senso più ampio (es. corsi di lingua, partecipazione a master e formazione professionale qualificata, permessi per il completamento dello studio universitario) [The organization I work for invests in my development and education promoting my personal and professional growth in a broad manner (e.g., full or partial sponsorship of undergraduate degrees, postgraduate programs, language courses, etc.)]			.81			
22. Nell'organizzazione in cui lavoro, l'utilità della formazione viene valutata dai partecipanti [In the organization where I work, training is evaluated by participants]			.61			

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continued

Items	Factors					
	1	2	3	4	5	6
23. L'organizzazione per cui lavoro stimola l'apprendimento e favorisce l'applicazione delle conoscenze apprese [The organization I work for stimulates learning and application of knowledge]			.68			
24. Nell'organizzazione in cui lavoro, vengono identificati periodicamente i bisogni formativi dei dipendenti [In the organization where I work, training needs are identified periodically]			.58			
25. L'organizzazione per cui lavoro fornisce benefit basilari (es. assicurazione sanitaria, buoni pasto, agevolazioni per l'uso di trasporti, ecc.) [The organization I work for provides basic benefits (e.g., health care, transportation assistance, food aid, etc.)]				.59		
26. L'organizzazione per cui lavoro prevede programmi e/o processi specifici che aiutano i dipendenti a far fronte ad incidenti sul lavoro e/o a prevenirli [The organization I work for has programs or processes that help employees cope with incidents and prevent workplace accidents]				.51		
27. L'organizzazione per cui lavoro garantisce la sicurezza dei suoi dipendenti attraverso il controllo delle persone che entrano nell'edificio e/o usufruiscono dei suoi servizi [The organization I work for is concerned with the safety of their employees by having access control of people who enter the company building/facilities]				.54		
28. L'organizzazione in cui lavoro fornisce benefit aggiuntivi (es. iscrizioni agevolate a centri sportivi, stabilimenti balneari, scontistica dedicata in servizi convenzionati, ecc.) [The organization I work for provides additional benefits (e.g., membership in gyms, country clubs, and other establishments, etc.)]				.45	.32	
29. Nell'organizzazione in cui lavoro, i servizi e le condizioni fisiche della struttura sono ergonomici, confortevoli e adeguati (es. illuminazione, temperatura d'ambiente, rumori, ecc.) [The facilities and physical condition (lighting, ventilation, noise and temperature) of the organization I work for are ergonomic, comfortable, and appropriate]		.48		.38		
30. L'organizzazione in cui lavoro ha a cuore la mia salute e la qualità della mia vita [The organization I work for is concerned with my health and quality of life]		.60		.31		
31. L'organizzazione per cui lavoro discute i criteri ed i risultati del sistema di valutazione delle competenze e delle performance con i dipendenti [The organization I work for discusses competency-based performance appraisal criteria and results with its employees]					.55	
32. Nell'organizzazione in cui lavoro, il sistema di valutazione delle competenze e delle performance è la base per definire il piano di sviluppo individuale dei dipendenti [In the organization where I work, competency-based performance appraisal provides the basis for an employee development plan]					.53	

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Items	Factors					
	1	2	3	4	5	6
33. Nell'organizzazione in cui lavoro, il sistema di valutazione delle competenze e delle performance è la base per decidere promozioni ed aumenti di stipendio [In the organization where I work, competency-based performance appraisal is the basis for decisions about promotions and salary increases]					.47	
34. L'organizzazione per cui lavoro condivide con i dipendenti i criteri ed i risultati della valutazione delle competenze e delle performance [The organization I work for disseminates competency-based performance appraisal criteria and results to its employees]					.61	
35. L'organizzazione per cui lavoro conduce periodicamente la valutazione delle competenze e delle performance [The organization I work for periodically conducts competency-based performance appraisals]					.52	
36. Nell'organizzazione in cui lavoro, ricevo incentivi come promozioni, deleghe, premi, bonus, ecc. [In the organization where I work, I get incentives such as promotions, commissioned functions, awards, bonuses, etc.]					.39	
37. Nell'organizzazione in cui lavoro, il mio stipendio è adeguato ai miei risultati [In the organization where I work, my salary is influenced by my results]						.93
38. L'organizzazione per cui lavoro mi offre uno stipendio coerente con le mie competenze, la mia formazione e la mia esperienza [The organization I work for offers me a salary that is compatible with my skills, training, and education]						.95
39. L'organizzazione in cui lavoro mi offre uno stipendio commisurato alla retribuzione che riceverei con la mia formazione e con le mie competenze in una qualsiasi altra organizzazione nel mercato del lavoro pubblico o privato [The organization I work for remunerates me according to the remuneration offered at either the public or private marketplace levels]						.83
40. L'organizzazione per cui lavoro prende in considerazione le aspettative ed i suggerimenti dei suoi dipendenti nel definire un sistema retributivo [The organization I work for considers the expectations and suggestions of its employees when designing a system of employee rewards]					.32	.44

Legenda. Factor 1 = Recruitment and selection; Factor 2 = Involvement; Factor 3 = Training and development; Factor 4 = Work conditions; Factor 5 = Competency-based performance appraisal; Factor 6 = Compensation and reward.
Note. The items that were retained for the 18-item version of the scale are shown in bold. Factor loadings <.30 are not shown for the sake of clarity.

Table 2 – Confirmatory factor analysis on the 18-item HRMPPS: model comparison (*N* = 580)

Model	χ^2	*df*	*p*	CFI	TLI	RMSEA	SRMR	AIC	BIC
Model 1	2406.60	135	.00	.72	.69	.17	.09	29529.60	29686.67
Model 2	2339.19	135	.00	.73	.69	.17	.43	29462.20	29619.27
Model 3	387.72	120	.00	.97	.96	.06	.04	27540.72	27763.24
Model 4	482.74	129	.00	.96	.95	.07	.05	27617.74	27800.99

Legenda. df = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion; Model 1 = single-factor solution; Model 2 = six-factor solution with uncorrelated factors; Model 3 = six-factor solution with intercorrelated factors; Model 4 = second-order factor solution.

Table 3 – Measurement invariance analyses of the 18-item HRMPPS for gender, seniority, and company size

Grouping variables	Levels of invariance	χ^2	*df*	*p*	CFI	TLI	RMSEA	SRMR	AIC	BIC	ΔCFI
Gender	Configural invariance	597.43	240	.00	.957	.94	.07	.04	27571.04	28173.14	
	Weak invariance	605.34	252	.00	.957	.95	.07	.04	27554.95	28104.69	.000
	Strong invariance	641.33	264	.00	.954	.95	.07	.05	27566.94	28064.32	–.003
	Strict invariance	690.65	282	.00	.951	.95	.07	.05	27580.26	27999.11	–.004
Seniority	Configural invariance	582.78	240	.00	.959	.95	.07	.04	27555.86	28157.96	
	Weak invariance	605.18	252	.00	.958	.95	.07	.05	27554.25	28104.00	–.001
	Strong invariance	651.79	264	.00	.953	.95	.07	.05	27576.87	28074.25	–.004
	Strict invariance	687.90	282	.00	.951	.95	.07	.05	27576.98	27995.83	–.002
Company size	Configural invariance	535.65	240	.00	.965	.95	.07	.04	27335.75	27937.85	
	Weak invariance	547.34	252	.00	.965	.96	.06	.04	27323.44	27873.19	.000
	Strong invariance	627.00	263	.00	.956	.95	.07	.05	27381.10	27882.85	–.008
	Strict invariance	711.99	280	.00	.948	.94	.07	.05	27432.09	27859.67	–.008

Legenda. df = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion.

Table 4 – Cronbach's alpha values and correlations associated with the study variables (*N* = 580)

Variables	1	2	3	4	5	6	7	8	9	10
1. Recruitment and selection	(.84)									
2. Involvement	.45	(.91)								
3. Training and development	.53	.76	(.91)							
4. Work conditions	.44	.56	.60	(.79)						
5. Competency-based performance appraisal	.54	.62	.72	.65	(.87)					
6. Compensation and reward	.40	.65	.60	.60	.63	(.91)				
7. HRMPPS total score	.69	.83	.87	.79	.86	.80	(.95)			
8. Organizational affective commitment	.39	.60	.52	.38	.45	.41	.57	(.88)		
9. Work engagement	.30	.46	.46	.26	.46	.39	.48	.58	(.94)	
10. Job satisfaction	.40	.58	.58	.38	.53	.54	.62	.62	.77	—

Note. All correlations are statistically significant at *p*<.001. Cronbach's alpha values are shown on the diagonal within parentheses.

resources have on organizational policies and practices, the instrument can be useful for practical assessment purposes to support the strategic decisions of managers and organizations (e.g to assess employees' wellbeing and to plan coherent HR and welfare actions), but also for research purposes to expanding the scientific knowledge in the field of HRM, correlating information gathered with this measure with those coming from the assessment of more individual variables explaining positive organizational behaviours (e.g. organizational commitment, work engagement, job satisfaction) used in this study to assess the criterion validity and proved to be strongly related constructs.

The limitations of the study concern the cross-sectional design, the non-probabilistic sampling procedure, and the use of only self-reported measures. Future studies should confirm the psychometric properties of the shorter version of HRMPPS on larger samples using a longitudinal design and including the comparison with multiple sources of evaluation of the same variables.

Despite these limitations, the present study provides a valid and reliable short form of the HRMPPS that can be used for research and practical purposes.

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Measure of anxiety in selection interviews: An Italian validation of the Performance Anxiety Scale

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ABSTRACT. L'ansia da colloquio di lavoro ha assunto particolare rilevanza negli ultimi anni. Questo studio ha l'obiettivo di proporre l'adattamento italiano della scala di ansia da prestazione nei colloqui di lavoro tratta dal questionario *Measure of Anxiety in Selection Interview* (*MASI*). Si tratta di uno strumento breve, composto da sei item. I dati sono stati raccolti da 203 partecipanti con esperienza recente di colloqui di lavoro. I risultati hanno confermato la struttura e l'affidabilità della scala, così come alcune ipotesi sulla sua relazione con altri costrutti e le differenze di genere. L'utilizzo dello strumento nel contesto italiano può avere importanti implicazioni.

SUMMARY. According to McCarthy and Goffin (2004), selection interview anxiety (SIA) is expressed by feelings of nervousness or apprehension that are relatively stable within job applicants across employment interview situations and can be organized into five distinct dimensions. These dimensions constitute the five scales of the Measure of Anxiety in Selection Interview (MASI) questionnaire. The principal aim of this study is to evaluate the Italian adaptation of one of the five scales of the MASI, namely the Performance Anxiety Scale, which is a short and efficient instrument consisting of six items. Data were collected from a convenience sample of 203 participants who reported having recently participated in at least one job interview. Confirmatory factor analysis confirmed the one–factor structure of the Performance Anxiety Scale, which also showed good reliability. Finally, the results confirmed some hypotheses derived from the literature about the scale's relations with other constructs and gender differences.

Keywords: *Selection interview anxiety, Performance anxiety, Scale adaptation*

INTRODUCTION

Recently, the Italian labor market has experienced the sharpest decline in the number of employed people since 2004 due to the consequences of the Covid–19 pandemic. In March 2020, the onset of the pandemic caused a reduction of 124,000 employed people (–.5%), mainly affecting temporary employees and the self–employed. In April, the number of unemployed doubled (–274,000, –1.2%), affecting all components of the labor market (ISTAT, 2020). For women and young people in particular, the pandemic has exacerbated some long–standing problems in the Italian labor market, which for years has been characterized by job insecurity due to the increase in precarious forms of contract and the decline in contract stabilization (ISFOL, 2007). These critical conditions justify the interest, for work psychology in particular, in the mechanisms of job search and selection and in ways to improve performance in these areas. There are elements, which are worth studying, that are capable of enhancing or hindering the job search and the selection process: one of them is selection interview anxiety (SIA).

SIA has been conceptualized by McCarthy and Goffin in 2004 following the principles of the interactional theory, according to which "the employment interview could be perceived as an anxiety–provoking situation, and individual differences in trait anxiety specific to this situation could be assessed" (p. 610). Therefore, SIA is considered as a "situation–specific, or contextualized, trait". Since there were no other SIA theories, the authors based on theories on general anxiety, test–taking anxiety and interactional anxiety. Test–taking anxiety scientific literature identifies two components in particular: performance anxiety, which means worrying about the test result, and behavioral anxiety, which regards the autonomic arousal connected to test situations (Spielberger & Vagg, 1995). McCarthy and Goffin (2004) also addressed the social characteristics of the job interview situation, using communication, appearance, and social anxiety as portions of SIA construct. Accordingly, SIA has been defined as "feelings of nervousness or apprehension that are relatively stable within job applicants across employment interview situations and can be organized into five distinct dimensions: Communication Anxiety, Appearance Anxiety, Social Anxiety, Performance Anxiety, and Behavioral Anxiety" (p. 616). These dimensions were incorporated in the five scales of a context–specific measure of interview anxiety, the *Measure of Anxiety in Selection Interviews* (*MASI*), that was developed and validated by the authors (McCarthy & Goffin, *2004*). To evaluate criterion validity of the construct, authors observed the relation between MASI and both self–rated and interview–rated performance: the results suggested that SIA could negatively affect the interview performance. This effect could have important implications on the predictive validity of job interviews (Schmit & Ryan, 1992), leading to hiring the less anxious employees, and not the most qualified.

For these reasons, studying SIA is important and can represent a contribution to the improvement of the selection process. An Italian version of the MASI does not yet exist, although this tool could be a great help to understand and improve selection dynamics.

Study aims

In particular, the first purpose of this study is to evaluate the property and the structure of the Italian version of one of the scales of the MASI questionnaire, namely the Performance Anxiety Scale. We chose to examine just one scale in order to propose a shorter tool. Moreover, the Performance Anxiety Scale, besides having good psychometric properties (alpha = .83; correlation with the full scale: r = .86) according to McCarthy and Goffin's (2004) study, is the one that relates most strongly to performance during a job interview and therefore could provide direct information about how the applicant experiences the selection situation. In addition, the other four MASI's dimensions (Communication Anxiety, Appearance Anxiety, Social Anxiety, and Behavioral Anxiety) could be more affected by the pandemic and the resulting restriction, while the performance scale refers exclusively to the situation during the interview.

The second objective of this study is to explore the criterion validity of the scale investigating its relation with some other constructs that resulted correlated to it in the literature (Brown, Hillier &Warren, 2010): job search self–efficacy, job search behaviors, employability, and concern for the future.

Theoretical background and study hypotheses

Based on our research objectives, our first hypothesis regarded the Italian version of the Performance Anxiety Scale, which, with the other four dimensions, forms the SIA construct. First of all, we expected to confirm the one–factor structure behind the 6–item Performance Anxiety Scale, finding a good internal reliability, according to the results of McCarthy and Goffin (2004) (Hypothesis 1).

Moving to the second study objective, the one concerning criterion validity, we focused on all the variables mentioned above (job search self–efficacy, job search behaviors, employability, and concern for the future) to build our second hypothesis, divided into four sub–hypotheses, described below.

We considered job search self–efficacy in its behavioral dimension, that corresponds to "the belief or confidence that one can successfully perform specific job search behaviors" (Saks, Zikic & Koen, 2015, p. 107). Few studies have investigated the relationship between SIA and this construct, but some interesting data can be retrieved by the result of the second study described in the 2010 paper by Brown and his colleagues. There, significant negative correlation is reported between a measure of self–efficacy based on job search behaviors and the MASI scale, for what concerns both the full MASI scale and the Performance Anxiety Scale. So, we expected job search self–efficacy to be moderately negatively related to the Performance Anxiety Scale (Hypothesis 2.1).

Job search behaviors followed the conceptualization of van Hooft and colleagues (Van Hooft, Born, Taris & Van der Flier, 2004), from which a scale was derived to measure the intensity of job search behaviors. In Brown and colleagues' 2010 study, job behaviors were positively and significantly correlated with the total MASI scale and the Performance Anxiety Scale. For this reason, we expected job search behaviors to be positively associated with Performance Anxiety Scale (Hypothesis 2.2).

Regarding employability, this research is based on the work of Van der Heijde and Van der Heijden (2006), who addressed employability with a competence–based approach, identifying five dimensions. The one measured in this study is anticipation and optimization. As stated by the authors, this dimension represents acts of creative, proactive, and personal preparation and adaptation to the future, which can reduce periods of unemployment. Thus, employability and SIA have opposite effects, so we can expect a negative relation between these two variables (Hypothesis 2.3).

The fourth variable considered in relation to SIA is concern for the future, a tailor–made scale, created ad hoc for this study to examine whether people are worried about their occupational future given the impact of the pandemic on the labor market. It is possible that the more people are worried about the future, the more anxious they feel, and vice versa. For this reason, SIA is expected to be positively correlated with concern for the future (Hypothesis 2.4).

Finally, in the study by Santos, Arriaga and Simões (2021), the results showed a significant difference between the mean scores of SIA in men (lower scores) and women (higher scores), both in the MASI total scale and in the Performance Anxiety Scale. Our final hypothesis relates to the differences between men and women: according to the literature findings, women should exhibit higher levels of performance anxiety during job interviews (Hypothesis 3).

METHOD

Participants

The study included a convenience sample of 203 participants recruited through social networks. Research team members posted the questionnaire on their social profiles and asked their contacts to complete it and share it within each participant's network. All participants indicated that they had recently attended at least one job interview. They provided informed consent and completed a self–report online questionnaire. The voluntary and not paid participation to the research and the anonymity and confidentiality of the data were explained.

Among the participants, 61.8% were females and 37.7% were males. They were aged between 18 and 54 years (M = 28.01, SD = 8.54). Most of them (60.0%) had a bachelor, master degree or a higher educational qualification. As regards the professional situation, 67.2% were working at the moment they completed the questionnaire, 25.1% were students and 7.7% were unemployed.

Measures

- *Selection Interview Anxiety* has been considered only for what concerns performance anxiety, that constitutes a scale of the MASI questionnaire (McCarthy & Goffin, 2004). The six items of the scale were translated into Italian, performing multiple back translations, until a good correspondence between the original form and the Italian form was found (see Table 1). The International Test Commission's guidelines (2017) have been followed for the translation procedure of this scale and all the others used for this study: native Italian speakers, who were both experts in the field of Work and Organizational Psychology, checked that cultural references and lexis of the scales were coherent with the Italian context. Some pilot test administrations were carried out with people who speak both Italian and English to identify mistakes and mistranslations. In the Italian translation an inclusive language was used (e.g. "sopraffatto/a; preoccupato/a"). Participants were asked to respond on a 5–points Likert scale (1 = Strongly disagree; 5 = Strongly agree).
- *Job search self–efficacy* has been considered just in its behavioral dimension. In fact, in this research participants

Table 1 – Italian version of the Performance Anxiety MASI Scale

Original items	Italian translations
1. In job interviews, I get very nervous about whether my performance is good enough.	1. Durante i colloqui di lavoro mi innervosisco molto chiedendomi se la mia performance è sufficientemente buona.
2. I am overwhelmed by thoughts of doing poorly when I am in job interview situations.	2. Sono sopraffatto/a dal pensiero di andare male durante un colloquio di lavoro.
3. I worry that my job interview performance will be lower than that of other applicants.	3. Temo che il mio colloquio di lavoro andrà peggio rispetto a quello degli altri candidati.
4. During a job interview, I am so troubled by thoughts of failing that my performance is reduced.	4. Durante un colloquio di lavoro, sono così turbato/a da pensieri di fallimento che la mia prestazione ne risente.
5. During a job interview, I worry about what will happen if I don't get the job.	5. Durante un colloquio di lavoro, mi preoccupo di cosa succederà se non ottengo il lavoro.
6. While taking a job interview, I worry about whether I am a good candidate for the job.	6. Durante un colloquio di lavoro, sono preoccupato/a di non essere il/la candidato/a adatto/a.

responded only to Job Search Self–Efficacy – Behavior (JSSE–B): one of the two subscales of JSSE questionnaire (Saks et al., 2015). The subscale is originally composed of 10 items, but we excluded item 4 ("Make cold calls that will get you a job interview"), because it does not fit into the Italian job search culture. Again, the items were translated in Italian with the same process described before. Participants responded on a 5–points scale with anchors (1 = Not at all confident; 5 = Totally confident). McDonald's Omega value was equal to .83.

– *Employability* was measured only in its component of anticipation and optimization, that represents one of the subscales of the tool presented in Van der Heijde and Van der Heijden (2006) paper. Items were translated with the same method used for the other scales. Originally, the subscales had 8 items, but in this research just items from 2 to 5 were used, because the others were repetitions of other items of the questionnaire, or they were not suitable for the Italian context. Respondents had to answer using a 5–points Likert scale (1 = Strongly disagree; 5 = Strongly agree). McDonald's Omega value was equal to .82.
– *Job search behaviors* were investigated with a scale reformulated by Van Hooft and colleagues (2004), based on prior findings. Items were translated, in the same way of the other scales, and 3 out of 11 were excluded, due to their unsuitability to the Italian labor market and to the pandemic period. The result was a scale made out of 8 items, with a five–points response scale (1 = I have not devoted time to this activity; 2 = I rarely devoted time to this activity; 3 = Sometimes I devoted time to this activity; 4 = Often I devoted time to this activity; 5 = Very often I devoted time to this activity). McDonald's Omega value was equal to .64.
– *Concern for the future* was investigated with a scale built ad hoc for this research. The scale has 5–point Likert response scale (1 = Strongly disagree; 5 = Strongly agree) and 4 items. McDonald's Omega value was equal to .72.

Table 2 shows the results of confirmatory factor analysis (CFA) for each measure, except for Selection Interview Anxiety Scale, which is analyzed in the Results section.

Statistical analysis

The psychometric characteristics of the CQS were examined through a CFA performed by Mplus 7 to test the psychometric characteristics of the Performance Anxiety

Table 2 – Confirmatory factor analysis results for the measures job search self–efficacy, employability, job search behaviors and concern for the future

Measures	χ^2	*df*	*p*	RMSEA	CFI	TLI	WRMR
Job search self–efficacy	158.96	27	< .001	.08	.92	.90	.90
Employability	4.46	2	.108	.06	.99	.99	.28
Job search behaviors	70.13	20	< .001	.07	.92	.90	.89
Concern for the future	2.24	2	.732	.00	1.00	1.00	.11

Legenda. df = degree of freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; WRMR = Weighted Root Mean Square Residual.

Scale. Since we have a a–priori knowledge of the factor structure of the scale, based on previous research and theory, we decided to conduct a CFA, as suggested by some authors (e.g., Costello & Osborne, 2005) according to which a CFA should be preferred to an exploratory factor analysis for well–established scales. Because the data did not have a normal distribution and the variables were ordinal, we used Weighted Least Square Mean and Variance Adjusted (WLSMV) as method of estimation (Li, 2015). The following have been considered as goodness–of–fit criteria (Bollen & Long, 1993): the χ^2 goodness–of–fit statistic; the Root Mean Square Error of Approximation (RMSEA); the Comparative Fit Index (CFI); the Tucker–Lewis Index (TLI); the Weighted Root Mean Square Residual (WRMR). Non–significant values of χ^2 indicate that the hypothesized model fits the data. Values of RMSEA smaller than .05 indicate a good fit, values smaller than .08 indicate an acceptable fit and values greater than 1 should lead to model rejection. CFI and TLI values greater than .90 indicate an acceptable fit, and values greater than .95 indicate a good fit. WRMR values below .90 provided evidence of a good fitting. Following the recommendations of Mundfrom, Shaw and Ke (2005), a sample of more than 200 participants is considered good for the variables–to–factors ratio in our study.

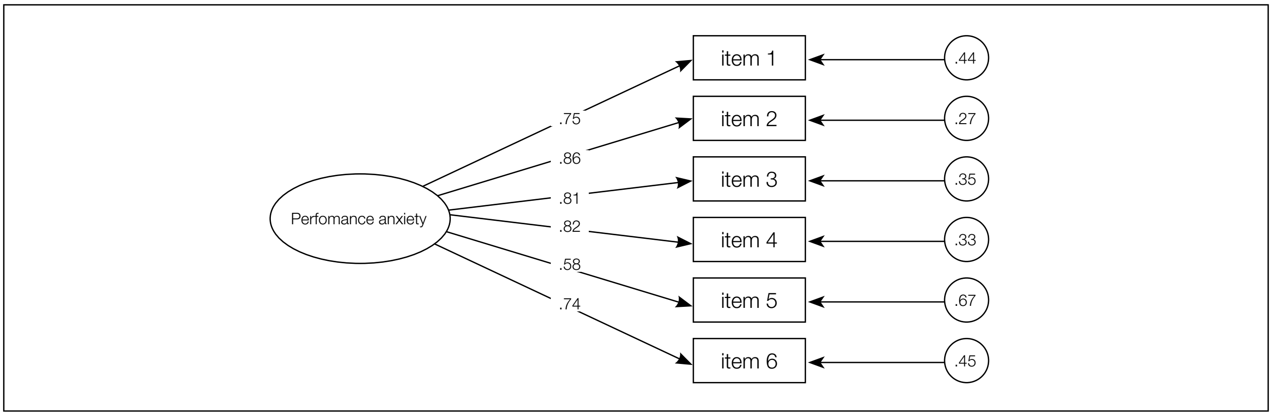
As a measure of reliability, McDonald's Omega was calculated. Moreover, the criterion validity was tested through correlations between performance anxiety and other constructs indicated in the literature as potentially related to it: job search self–efficacy, employability, job search behaviors, and concern for the future (Brown et al., 2010). Finally, analysis of variance (t–test for independent samples) has been calculated based on gender in order to evaluate the capability of the scale to discriminate among different groups. IBM SPSS 28 was used for all these analyses.

RESULTS

Confirmatory factor analysis

CFA was performed on the whole sample and showed a good fit to the data: $\chi^2_{(9)} = 33.86$, $p<.001$; RMSEA = .07; CFI = .98; TLI = .97; WRMR = .63. Figure 1 shows the standardized solution. Factor loadings ranged between .58 and .86, all exceeding the threshold of .40 recommended for samples of 200 or more (Hair, Black, Babin & Anderson, 2014). Internal consistency was good, with a McDonalds' Omega value of .86. Hypothesis 1 was thus confirmed.

Figure 1 – CFA (N = 207): standardized solution



p<.001

Reliability and correlations with other related dimensions

Table 3 shows correlations between Performance Anxiety Scale and other variables. A significant and negative correlation with both job search self–efficacy (Hypothesis 2.1) and employability (Hypothesis 2.3) was found. Moreover, the correlation with job search behaviors (Hypothesis 2.2) and concern for the future (Hypothesis 2.4) was significant and positive. As for criterion validity, all the hypotheses were confirmed.

Finally, Performance Anxiety Scale showed a positive correlation with female gender and higher levels of performance anxiety were found for women (M = 2.43; SD = .89) compared to men (M = 2.16; SD = .08) [$t_{(194)}$ = 2.42; p = .016]. Hypothesis 3 was also supported by the data.

Table 3 – Means, standard deviations and correlations

	M	*SD*	1	2	3	4	5	6
1. Performance anxiety	2.33	.83	–					
2. Job search self–efficacy	3.45	.63	–.27**	–				
3. Employability	3.54	.75	–.25**	.39**	–			
4. Job search behaviours	3.49	.58	.20*	.32**	.13	–		
5. Concern for the future	2.98	.86	.26**	–.26**	–.18*	.26**	–	
6. Gender (1 = F)	–	–	.16*	.03	.04	.11	.22**	–

* p<.05; ** p<.01

DISCUSSION AND CONCLUSION

The main objective of this study was to evaluate the characteristics and structure of the Italian version of the Performance Anxiety Scale, one of the five scales of the MASI questionnaire. The results confirmed all research hypotheses, including factorial structure and reliability (Hypothesis 1), relations with other variables (Hypothesis 2), and gender differences (Hypothesis 3).

The one–factor structure of the scale was confirmed by a CFA, which showed a good fit between the model and the data, consistently with the original scale (McCarthy & Goffin, 2004). Moreover, reliability of the construct was confirmed by its good internal consistency.

The second goal of this work was to investigate the criterion validity of the Performance Anxiety Scale through the relations between the scale itself and other variables, namely job search self–efficacy, employability, job search behaviors, and concern for the future. As we expected based on the scientific literature, performance anxiety showed a significant and negative correlation with job search self–efficacy (Brown et al., 2010). This result encourages a reflection on the association between the two variables: further studies could shed light on whether improving job search self–efficacy can reduce performance anxiety in the selection interview or vice versa. As for the relation between performance anxiety and employability, findings showed another significant negative correlation. This is consistent with our hypothesis, based on opposite effects of the anticipation and optimization dimension of employability (Van der Heijde & Van der Heijden, 2006) and the SIA construct (McCarthy & Goffin, 2004) on unemployment. On the contrary, job search behaviors variable demonstrated a positive and significant relation with performance anxiety, confirming this research hypothesis and the results by the work of Brown and colleagues (2010). More in–depth future studies may clarify the direction of the relation, that is, explaining whether it is performance anxiety that stimulates more job search behaviors, or whether performing many job search behaviors is responsible for an increase in the level of performance anxiety. Finally, the last relation explored was also consistent with our hypothesis: the tailor–made scale regarding concern for the future was significantly and positively correlated with performance anxiety in selection interviews. It would be interesting to further investigate the relation between concern and anxiety, especially in the context of job search and interviews. The results also confirmed the differences in the levels of performance anxiety experienced by men and women: as in Santos and colleagues (2021), women reported significantly higher mean scores. Compared to 2019, in 2020, there was a 4.7 percentage point decrease in the women's employment rate (ISTAT, 2020). Moreover, during the same year, the gender divide in Italy related to the employment rate increased from 17.8 to 18.3 points (ISTAT, 2020). The higher levels of SIA experienced by Italian women could be both a cause or consequence of their more difficult employment situation. Further research is needed to examine these relations.

These findings allow us to consider the Performance Anxiety Scale as a valid brief instrument to study the experience of the selection process, both to deepen the scientific knowledge about it, with the intention of improving selection procedures, and to compensate for at least one of the interview biases that we know about. Indeed, SIA could have a negative impact on interview performance (McCarthy & Goffin, 2004). This could affect the predictive validity of job interviews (Schmit & Ryan, 1992) and lead to hiring the less anxious rather than the most qualified candidates. Therefore, the MASI instrument could be useful in assessing the impact of applicants' SIA on their interview performance.

As for the future development of research, some suggestions have already been made, such as searching for causal relations and deepening the knowledge of relation between concern and anxiety. In addition, only one of the five scales of the MASI was validated in this study because a short instrument was preferable: it may be useful to validate the entire instrument to obtain a more complex and complete view of the phenomenon of SIA.

This research also has some limitations that should be addressed in future studies. First of all, the design of the study was cross–sectional, whereas a longitudinal one would be preferable, especially for studying the reliability of the questionnaire through the test–retest method. Moreover, MASI is a self–report questionnaire, which implies some biases, such as that of acquiescence. To balance this questionnaire feature, next studies should insert in the research design some other–report evaluations, such as those of job interviewers, or some objective measure of anxiety. Besides, study participants indicated that they had recently undergone at least one job interview, but the method by which these interviews were conducted was not asked. Nowadays, job interviews can take place either in person or online, with the latter becoming increasingly common post–pandemic. Since the type of interview (in–person or remote) could potentially have an impact on the SIA of participants, the lack of investigation of this aspect is a limitation of this study that could be addressed in future research. Finally, the sample was small and not representative of the population.

In conclusion, even considering these important limitations, the Italian version of the Performance Anxiety Scale of MASI questionnaire can be considered a useful tool to study SIA in Italy.

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The representations of well–being and expectations among academic and administrative staff in the post–Covid phase: An Italian case study

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ABSTRACT. L'obiettivo di questo studio è stato esplorare come docenti e personale tecnico–amministrativo universitari percepiscono e descrivono il loro benessere personale, professionale e comunitario. Ventuno interviste individuali narrative focalizzate sono state realizzate e il materiale testuale, analizzato seguendo l'approccio della Grounded Theory, evidenzia che il benessere è percepito come un fenomeno dinamico e multidimensionale, condizionato da esperienze individuali e contestuali. Inoltre, le implicazioni di tale studio permettono di sottolineare il ruolo dell'università nella promozione del benessere comunitario.

SUMMARY. Scientific literature reports quite scarce attention to university employees' well–being. The majority of studies focus instead on students' well–being and learning. Moreover, several theoretical perspectives confirm that when talking about individual well–being, there is a need for a multidimensional and ecological definition. This study aims to explore how university clerks and scholars perceive and describe their personal, professional, and community well–being. Twenty–one university workers were interviewed using a narrative approach. The Grounded Theory Methodology was used to analyze the textual corpus with the support of Atlas 8.0 software. From the textual data, 195 representative codes were defined and grouped into seven categories that reflect the main dimensions related to well–being, considering both the work context and the community environment. Results suggest that well–being in this post–pandemic scenario is perceived by clerks and scholars as a dynamic and multidimensional phenomenon that is shaped by individuals' experiences and contexts. The implications of these findings for promoting well–being among clerks and university scholars are discussed with a specific focus on the potential role of academic institutions in fostering community well–being.

Keywords: *Well–being, University workers, Grounded theory methodology*

INTRODUCTION

Universities as institutions create and improve health and well–being and institutions have a profound significance in individual psychism and social grouping.

As Jaques (1953) and Bleger (1967) stated the institution performs a protective function for individual psychism, founded on the possibility of allowing and maintaining a split between the more evolved and the more archaic levels of its operation.

Moreover, universities play an important role in setting the local surrounding context (Brennan, King & Lebeau, 2004).

The academic world is a complex and articulated environment where different relationships, structures, and visions of different professional profiles interact (Torrisi & Pernagallo, 2022); and therefore, within it, well–being is characterized as the effect of a set of indicators on multiple domains, rather than as a single factor (Forgeard, Jayawickreme, Kern & Seligman, 2011; Keyes, 2007; Ryff & Keyes, 1995). The well–being of universities is even more important in this phase following the pandemic emergency. In fact, during the pandemic, new ways of working, increased job insecurity and instability and also changed the timing and methods of these activities, affecting the welfare of workers (Evanoff et al., 2020; Pacheco et al., 2020). Moreover, Esposito and colleagues (Esposito, Agueli, Arcidiacono & Di Napoli, 2022) considered the effects of the isolation that the Covid–19 health emergency determined both in its acute phase and for the effects of long Covid.

Di Martino and colleagues (manuscript under review) in their review highlighted which factors generate and maintain well–being in academics: building a sense of community, mattering, and inclusion; enhancing meaningful collaboration between all the actors involved in the system; fostering relationships as emotional connections and positive interactions with other community members within and outside of the universities; strengthening elements of successful transition and strategies for the promotion of university health; and, providing constant monitoring and tutoring.

Specifically, literature describes students' well–being mainly through the domains of the PERMA model (Seligman, 2011) or the domains of thriving (Schreiner, 2013; Schreiner, Louis & Nelson, 2012) which emphasizes the subjective dimensions of well–being. However, understanding the interacting contextual factors we rather refer to an ecological perspective, which considers the action of variables inherent in the social–cultural context and its organization, together with the forms with which the individual defines himself and interacts within the reference context.

From an ecological perspective, Prilleltensky (2012) divided well–being into various dimensions, identifying an interdependence between individual, organizational and community well–being, and in his theorization well–being is defined "a positive state of affairs, brought about by the simultaneous and balanced satisfaction of diverse objective and subjective needs of individuals, relationships, organizations, and communities" (p. 2).

Starting from these premises, Prilleltensky and colleagues (2015) developed the I COPPE model, which is a multidimensional model that considers six specific areas of well–being: interpersonal, community, occupational, physical, psychological and economic.

Well–being is, definitely, given by the satisfaction perceived by the individual concerning the individual dimensions and closely connected to the context of which it is part.

Moreover, literature has paid very little attention to lecturers and administrative technical staff because studies are in fact directed above all to students' well–being despite the role that the university, understood with its teachers and technical administrative staff, carries out in the achievement of higher education objectives, and how their performance affects the learning and success of students (De Lourdes Machado, Soares, Brites, Ferreira & Gouveia, 2011).

Indeed, the more satisfied academic staff are with their work, the more productive they will be, and the more their perception of well–being in their workplace will increase (Aziri, 2011). Actually, job satisfaction represents a mix of feelings related to work and it is strictly connected to workers' expectations and their effective rewards' experiences (Aziri, 2011). Job satisfaction is characterised by three main aspects: a positive emotional and mental mood of employees; proactive behaviours; effective organisational performance (Aziri, 2011; Spector, 1997). Further studies highlighted that the job satisfaction can be affected by three main classes of variables: salary, working conditions, relations with colleagues (Kohli & Sharma, 2018). More specifically, job satisfaction is influenced by positive social characteristics of workplaces such as the university atmosphere and sense of community, perceptions of the university's climate and culture (Eagan, Jaeger & Grantham, 2015; Moors, Malley & Stewart, 2014), institutional factors such as academic leadership (Fredman & Doughney, 2012) or the social reputation of academics in society (Shin & Jung, 2014), relationships with colleagues, students, and administrators (Bentley, Coates, Dobson, Goedegebuure & Meek, 2013).

In turn, job satisfaction is one of the most important predictors of overall well–being (Sousa–Poza & Sousa–Poza, 2000) and from the scarce literature on this topic, we acknowledged that the factors affecting the well–being of academic staff are also the pressures of teaching and research, the heavy administrative burden, the lack of resources, heavy email management, poor quality work relationships, poor leadership and management and lack of involvement in decision–making (Barkhuizen, Rothmann & Van de Vijver, 2014; Coulthard & Keller, 2016; Guthrie et al., 2017; Torp, Vinje & Haaheim–Simonsen, 2016).

Particularly, job satisfaction of academic staff has a significant relationship with their work performance and the academic performance of students (Muindi, 2011; Noordin & Jusoff, 2009). Moreover, a further element to take into account is mattering. Defined as "an ideal state of affairs consisting of two complementary psychological experiences: feeling appreciated and adding value" (Prilleltensky, 2014, p.151), Flett and colleagues (Flett, Khan & Su, 2019) argue that satisfying the need for mattering is fundamental to the psychological well–being of university students and also in promoting well–being in the workplace.

A mattering organizational culture is one in which employees feel valued by supervisors, colleagues, and the organization and provides them with the opportunity to add value by improving workplace engagement and success by reducing burnout (Dutton, Debebe & Wrzesniewski, 2016; Flett & Zangeneh, 2020; Jung & Heppner, 2017; Reece et al., 2021). When a workplace culture is rewarding, affirmative, and supportive, employees and staff feel a great sense of mattering which, in turn, is related to greater autonomy, satisfaction in life, physical health, and general well–being (Flett, 2018). Prilleltensky and colleagues (2020) argue that universities should ensure that all members feel valued and have the opportunity to add value, since mattering leads to involvement and well–being, encouraging universities to implement structures and policies that fuel mattering across the organization.

Finally, a last indicator to consider in the study of well–being also at the academic level is justice. For Prilleltensky (2012) social justice is defined as a fair distribution of power and has proposed a welfare model that is inseparable from the assessment of social justice in a context. The term organizational justice (Greenberg, 1987) indicates employees' perception of what they consider fair in the organization; it is positively correlated to job satisfaction, trust and organizational support (Deconinck, 2010) and work commitment (Strom, Sears & Kelly, 2014). Moreover, procedural justice correlates positively with job satisfaction and productivity (Colquitt, Lepine, Piccolo, Zapata & Rich, 2012).

There is, therefore, a need to understand how the university staff in its dual component of academics and administrative staff, in particular in their own working environment, represent well–being, since it is closely related to its organizational functioning (Schmidt & Hansson, 2018). Moreover, the interactions between universities and territorial communities fit into ecological framework is also to be considered. Scholars (Benneworth, Charles & Madanipour, 2010; Lazzeroni & Piccaluga, 2015; Stachowiak, Pinheiro, Sedini & Vaattovaara, 2013) have deepened the critical role that the university assumes for the development of the economy of knowledge of the area that hosts it

In particular, Stachowiak et al. (2013) underline the centrality of the relational dimensions that exist between the university and the local context, considering the spaces of interaction and the importance attributed to social networks or personal, that implement trust between university and territorial context.

Aims

Based on the incomplete knowledge of the factors that promote well–being among academics and the universities' administrative staff, the aim of the current study is to detect the factors that improve and/or decrease individual and collective university well–being. Specifically, this qualitative research had the primary purpose of exploring the representations and perceptions of well–being both at the individual and university level.

In particular, this study highlights clerks' and scholars' visions and representations of well–being and what has been helpful to improve them in the university context during recovery from the Covid–19 pandemic. Moreover, another aim was to understand the factors impacting the weaknesses and strengths of universities' well–being at this time.

METHOD

The context

This study is part of a larger participatory action research that was conducted in a small university (14,000 students) in the South of Italy founded in the early '90s. The aim was to increase the university well–being through the involvement and the contribution of students, tenured lecturers and staff. It is a young and ever–changing university aimed at steady growth, being able to adapt its courses to the needs of the environment combining tradition and innovation by creating value and fostering development. It is located in the Foggia communications and industrial center that is the main wheat market of Southern Italy. In this context, the Foggia University has positioned itself as a cultural, social and economic point of reference of ongoing change, thus underlining its role as an active player in the whole district.

Participants and procedures

The research involved 21 workers of the University of Foggia, 13 females and 8 males, aged from 31 to 67 (M = 47.95, SD = 7.02): 10 were scholars, while 11 were clerks. Years of work varied from 1 to 29 with an average of 13.88 (SD = 9.54). 12 participants live in Foggia, while 6 in the province of Foggia and only 3 in other Italian cities.

A purposive sample was used, considering the involvement and working experience of academic and administrative staff and also the city of residence was also considered to gather more information about the representation of the territorial context from those who live in Foggia and those who don't.

The interviews were carried out by a team of young researchers who contacted the participants and made an appointment with each of them, according to the most convenient days. The interviews took place at scholars' and clerks' offices, in the different departments of the University of Foggia. Informed consent declaration was undersigned by each participant: the research objectives, the data disclosure methods, respect for anonymity, and the privacy regulations were explained. The university ethics committee approved the entire procedure.

Data were collected through focalized open interviews (Arcidiacono, 2016; Legewie, 2006) characterized by non–directive conduction, and an interview grid focused on the areas to be examined. This type of interview, therefore, adopts a dialogical approach, which in interaction requires specific criteria: a) to not be directive, by letting the flow of the interviewee's thoughts be as free as possible; b) to ensure specificity; c) to be inclusive by considering all data that emerges; and, 4) to adopt an in–depth approach by exploring personal and intimate aspects depicting the experience.

Therefore, this means that respondents were given enough freedom to share whilst narrowing the narrative to specific areas.

The interview included the following areas to explore:

- academic well–being: this area covered well–being in general and the absence of well–being in the academic context, concerning spaces, bureaucracy, competitiveness, etc.
- perceived well–being at the University of Foggia: this section was focused on the perception of well–being in the context of research, highlighting the strengths and weaknesses of the university in the promotion of well–being;
- well–being of the city: a section oriented to understand the resources and difficulties of the territory of Foggia and the connections of the university with its surrounding context;
- images of well–being: images of well–being that respondents have of their university were collected and deepened by some creative expressions. This section was especially useful for capturing emotional and unconscious aspects. Participants were invited to use metaphors, which represented the unspoken, to convey their personal representations (Ervas, Gola & Rossi, 2017).

Data analysis

The interviews collected were audio recorded, transcribed verbatim, and then analysed by the GTM (Grounded Theory Methodology) (Bryant, 2017; Charmaz & Belgrave, 2018; Corbin & Strauss, 2008), supported by the software ATLAS.ti 8.0 (Muhr, 2017), a strongly inductive method useful for deriving conceptual categories from the data.

Data analysis was carried out through a bottom–up approach, and based on Corbin and Strauss's recommendations (Corbin & Strauss, 2008); as good practice in GTM, the process of data analysis starts after the first interviews were collected and this was aimed at shaping subsequent interview questions in light of the acquired data.

The research team adopted a reflexivity–based iterative process throughout the collection, analysis, and interpretation of the qualitative material.

The interviews were analysed following three coding steps: open coding, axial coding and selective coding. In open coding, two researchers coded independently the interviews, generating a diversity of codes and compared the coding to test the reliability of the coding process and thereafter they met regularly to review and discuss codes.

After this phase, the entire team, starting a collaborative and reflexive process contributed to the axial and selective coding processes, in which these codes were collected into larger code groups and then framed in wider macro–categories.

Several and consistent meetings provided further opportunities for reflection on the assumptions that brought to data analysis and how these might be shaping and defining interpretation. Indeed, the last coding generates what is known as the core category, which is a category that connects all other macro–categories into a theoretical framework.

Memo writing throughout the process captured the reflexive thoughts of the researchers during the coding process and the heterogeneity of the research team, composed of senior and junior researchers, was used as a resource to better interpret the content of the interviews.

In addition, towards the end of the analytical phase, an independent coder separately analysed the data, reaching similar conclusions. Whenever discrepancies were found, they were discussed with the research team and integrated into the analysis of the data.

The research steps and phases followed the guidelines for qualitative research (Critical Appraisal Skills Programme, 2018).

RESULTS

The analysis of the textual material resulted in 195 codes, subsequently grouped into 20 code groups and 7 macro–categories: Problematic areas; University and territory; Relational dimensions; Justice; Mattering; Perceived and proposed academic well–being; and Desired university context. Table 1 reports the coding process with some examples of attribute codes, all code groups and macro–categories.

Problematic areas

In this macro–category what emerged was a double meaning concerning the problematic areas, both from the organizational and the structural point of view.

Area of organizational problems. Within this code group, interviewees talked about planning as a poorly structured process, without design. In this sense, they underlined the lack of a shared design line and therefore the need to create shared design spaces that guarantee the opportunity to give voice to all requests: "the focus of the people around a project is missing, in my opinion, it would bring out all the positive energies around the positive actions of a department" (M, 45, scholar). Moreover, they complained about the poor work organization: "malaise due to unclear procedures, one does not know who should do what and therefore it is taken for granted that some things are done by some people that instead should be done by others at the university level" (F, 54, clerk).

Finally, a further meaning of this code group referred to the availability of an active internal communication system which, however, can also induce problems in terms of absence of boundaries. The clerks perceive constant expectations on their availability in responding to the requests and the needs of the scholars and students affecting the organization and management of their work.

An interviewee referred specifically to the right of disconnection: "it is not said that when I wake up, I must be available to the world [...]. In fact, I wake up early just to have time for myself before I work, so [...] instead, I get reached by WhatsApp messages of work groups that have multiplied. Here, for example, is a negative effect, especially in academia" (M, 46, scholar). In other participants' view, this aspect needs to be addressed, especially after the new communication path introduced by the Covid–19 emergency and remote working practice.

Area of structural problems. As regards to this code group, workspaces were often mentioned in both positive and negative terms. The positive sense regarded the amplitude and the adequacy of the workspaces: "the spaces are such also to be able to manage numerous presences, meanwhile, a minimum quota of well–being is guaranteed" (M, 45, scholar). The negative declination of this category concerned the need or just a desire, for a space for socialization or sharing: "maybe we lack a place where... a relaxation room, for example, where we can take a short break" (F, 43, clerk) or "what is missing is a meeting space for professors" (M, 46,

Table 1 – Coding process

Codes	Codes groups	Macro–categories
Absence of online boundaries; Absence of shared planning; Well–being in the workplace; Situation load; Teaching load; Disorganization of work; Disorientation of the students; Excess of bureaucracy that hinders well–being; Obligation of office hours; Organisation of activities; Work imbalance; Turnover	Area of organizational problems	Problematic areas
Need for equipment and infrastructure; Spaces to be enhanced; Working spaces; Recreational spaces for teachers; Recreational spaces for students	Area of structural problems	
Actively involve citizens; Make research available to the territory; proactivity of the university (in the territory); University as a source of trust and hope for the young people of the territory; University as positive image of the city; University as hope; University as the only resource of the territory; University for cultural change	Role of the university in the territory	University and territory
Deterioration of the territory; Territory as an obstacle to the university; Territory as a complex and problematic reality; Territory critical; Territory not receptive	Critical dimensions of the territory	
Well–being as collaboration; Working well as mutual trust; Collaborative climate; Collaboration between departments; Communication as a source of personal well–being; Cooperation; Synergy; Organizational support; team building	Positive relational dimensions	Relational dimensions
Interpersonal conflicts as a source of harm to the university; Conflict that affects the well–being of students; Difficulties with colleagues; Difficulties in relationships with others; Ongoing interventions to reduce conflict; Malaise caused by exclusion; Disrespect; Fear of sharing information	Negative relational dimensions	
Collective well–being; Welfare as justice; Equal distribution of the workload; free will	Distributive justice	Justice
Need for transparency; Clarity of processes; Clarity of rules and regulations of rules; Lack of clarity of the objectives and tasks of its function; Transparency	Procedural justice	
Malaise as unfairness and injustice; Need to put everyone on the same level; Need to adopt a meritocratic system	Injustice	
Align the work hours of scholars with those of clerks; Lack of recognition by top management; Non–recognition; Marginal role of clerks.	Lack of recognition	Mattering
People before workers; Recognition; Formal recognition as a source of individual well–being	Recognition	
Wellness as satisfaction; Rewards by category; Reward and incentive	Reward	

continued on next page

continued

Codes	Codes groups	Macro–categories
Attention to well–being; Attention to diversity; Organizational change as a source of malaise; Need to break with the past; Pride in the university; Existing services; Unifg as a community	Perception of the current state	Perceived and proposed academic well–being
Attention to health; Benefits of smart–working; Reconciliation of travel and work time; Professional–private life balance; Training as a concrete action; Ongoing training; Proposal for change of vision of work; Smart–working proposal; Psychological support	Proposals to promote well–being	
Well–being as absence of boredom; Well–being as balance; Well–being as work satisfaction; Well–being arising from beauty; Well–being in a multi–density sense	Personal representations of well–being	
Supportive environment; Air conditioning as a source of physical well–being –psychophysical; Activities carried out for the promotion of well–being; Actions to promote well–being; proactivity – initiative; Resilience	Resources to promote well–being	
"Jump the puddle"; the city I would like; new generations at the centre; Perception of a change for well–being; "here comes the sun"; Hope	Hope	Desired university context
Increasing the sense of belonging; Environmental conditions to increase the sense of belonging; Social identity; Not recognizing oneself in a department; Sense of belonging	Sense of belonging	
Central institutional interest; Recovery of institutional dimensions; Request for participation in decision–making processes; University as freedom of expression; Values	University as value	

scholar).

Respondents clearly acknowledged the quality of the working spaces, but they also voiced the need to improve spaces devoted to facilitating personal interactions and communications.

Participants also referred to the need for equipment and infrastructures that inevitably represent a problematic area: "many of them believe that offices are not suitable to meet all the needs in terms of achieving the objectives, I am also talking about technological resources trivially" (F, 38, clerk).

University and territory

This macro–category collected codes that refer to the relationship between the university and the territorial context in which it is embedded.

Role of the university for the territory. Within this code group, the idea that the university is a promoter of well–being for the territory seemed rather widely shared and relevant: "I do not know what Foggia without the university would be now" (M, 46, scholar) or "if there were no University in Foggia it would be a very bad thing for the city. The university has helped a lot, in my opinion, the promotion and improvement of this city" (F, 43, clerk).

These statements displayed a strong attachment to the territory and a solid social identity: some also revealed a certain emotion in saying that the city context is benefiting from the presence of the university.

Moreover, participants underlined the role of the university as the main resource for the territory. Respondents highlighted the difficulties that characterize the territory at a social level, but also to the potential of the university as a promoter of well–being: "is a territory in which we are called to face complex social situations [...] we are therefore faced with a very important challenge [...] the university as well as all the educational structures that act on the territory such as schools, must have the strength to produce an important change and therefore education becomes an important lever for change" (F, 51, scholar). In this case, there was also a strong reference to the primary mission of the university: training, recognized as a tool for social change.

Critical dimensions of the territory. Although some participants recognized this role of the university, others highlighted a lack of responsibility on the part of the community: "I am not convinced that the citizens of Foggia have well understood the wealth that the university brings and could bring to the territory" (F, 45, clerk) and also "it is a symptom of a cultural heritage that does not do well, because it does not approach, because it does not allow the community to be brought closer to academia, therefore to the university" (F, 31, scholar).

It is interesting to note that a sort of asymmetry in communication was perceived and that this was one of the major problems for well–being also in the territorial context.

The asymmetry was clarified by another participant focussing on the slow recognition of the university role by the inhabitants "the university is a great opportunity and the territory has not managed to fully understand it and exploit it. Foggia is very slow to grasp this opportunity, but slowly something is moving. I would like it to accelerate a little in this movement, indeed, the university and the territory go at two different speeds" (F, 56, scholar).

It seemed that this interchange between the university and the territory was already in place, but that it is still to be taken care of and strengthened, so as to create a bond characterized by greater harmony, integration, and openness. "There is a mentality that is a bit […] there is a bit of reluctance [...] a cultural heritage that in my opinion does not fully allow that third mission, of which we spoke before. That is, there is a bit of a culture of suspicion" (F, 31, scholar).

Relational dimensions

Interpersonal relationships emerged as a key element in different aspects of both individual well–being and as a strength for a working environment characterized by sharing and community.

Positive relational dimensions. Some interviewees described their job emphasizing their involvement in the creation of working groups and teamwork: "always in this circular logic, not according to the logic of the military despot that has under him [...]. This kind of logic is fine in certain contexts but I always try to create group and teamwork here" (M, 49, clerk).

Others recognized the importance of the group as a strength for achieving personal and working well–being: "feeling part of a cog, because obviously, my fear at the time I came here was this, that was not feeling part of a group, for me, that is the foundation of well–being" (F, 31, scholar).

Negative relational dimensions. Most statements relating to the relational dimension had a positive connotation and described the current working context; on the other hand, some negative opinions focused on interpersonal conflicts and difficulties with colleagues, capable of hindering the natural development of activities and the construction of well–being: "what disappoints me most is the relationship between colleagues that in this department is not the best" (M, 53, scholar).

Even the organizational support, which was perceived or expected, seemed a recurring theme often described as fundamental for the performance of work activities: "in recent years, something has changed. The fact that we are more listened to has changed. There will also be cases where you do not feel understood, but they will be individual cases; then I speak collectively. Here, collectively the theme of well–being is more listened to" (F, 43, clerk), and still "well–being is being put in a position to be able to give the maximum" (M, 49, clerk).

Justice

Justice was a recurring theme when participants talked about well–being in employment. In particular, this macro–category collects codes referring to distributive justice, procedural justice, and injustice.

Distributive justice. This code group related to well–being as justice, with a collective and community dimension: "a fair distribution of the personal workload must guarantee the opportunity for everyone to have access to incentives" (M, 48, clerk), or also: "to think more in a collegial way, collegiality not to the individual but to the collective well–being not of the individual or the individual department or the individual office. Therefore, to bring well–being to all, a chorus in the action of well–being" (F, 49, clerk).

Procedural justice. Many participants referred to elements that encourage or, on the contrary, hinder the serene performance of work activities: "because often when there is confusion about the roles and the various labels that must be imposed within a working group, often this confusion affects the concept of organizational and working well–being" (F, 38, clerk); "malaise, which has depended on regulations, decrees or notices, competitions in which the principle of transparency is not respected, fairness, to give little advantages to some in spite of others" (F, 45, clerk).

Moreover, some of them believed that resources are distributed and invested in a non–transparent or inconsistent way: "often the perception I have is that the University of Foggia works with deadlines of a week or a month and how do you manage to be transparent [...] a lack of transparency that is sometimes systematically linked to the absence of a vision" (M, 46, scholar) and also: "we need to start with transparency and be aware of why we apply certain criteria for awarding additional assignments, and we are talking about important economic resources, in order to establish a stake in terms of consistency, between what is the additional assignment and what is the additional salary and the premises must be created to create less tension" (M, 48, clerk).

Mattering

This macro category expressed the feeling of being recognized and valued by the work context.

Lack of recognition. Some significant examples had been identified in the code group lack of recognition: "try to be appreciated but find indifference or annoyance on their part" (M, 46, scholar) or "I do not feel, as a working category, I do not feel I belong, in a consistent way, to the decisions of the university policies" (F, 45, clerk).

There seemed to be a general need for recognition and reward both by the teaching staff and by administrative technicians: "choices about careers that leave a bitter taste in the mouth of colleagues, and it is not clear why" (M, 46, scholar) and also "you know that your contribution is also evident and fundamental. This, in my opinion, is what makes me feel good at least" (F, 31, scholar).

Recognition. Recognition was also understood as the need to highlight and increase awareness of their tasks: "the work processes themselves should be clear, that is, we have a technostructure, we know the people who are part of that service or that other service, but it is not clear all the activities that a service must carry out, this is something that we have been carrying on for some time" (F, 54, clerk).

Reward. Rewards could be instruments for the recognition of one's work in the university context. In particular, it was interesting what an interviewee reported requesting a non–economic reward, such as a day off to rest that recognizes the effort made to achieve important work tasks. In his/her words rest represents the need to regain a state of well–being after heavy workload conditions. "The rewards are to recognise who does their job well and who doesn't, you have to offer some type of reward. I do not want to say that it must be an economic incentive but even, for example, a day of leave at the end of a completed job" (F, 42, clerk).

Perceived and proposed academic well–being

Four distinct code groups were gathered in this macro–category: perception of the current state, proposals to promote well–being, personal representations of well–being, and resources to promote well–being.

Perception of the current state. Perceptions of the present condition were generally positive and recognized an active commitment on the part of leaders in the promotion of well–being: "I believe that in this university there is a strong focus on well–being and that therefore it orients itself to try, in any way, to accommodate all these levels, to improve, however, communication and the environment of collaboration between different colleagues also from different disciplines. This seems to me to be an important opening; a place, however well cared for, as much as it tends to take care concerning instruments, places and dimensions" (F, 48, scholar). Among the proposals expressed for the promotion of well–being, there were some references to the desire for ongoing training: "and we feel the need for continuous training of the employee, so that, makes him aware" (M, 49, clerk).

Proposals to promote well–being. This code group collected all codes referring to ideas or effective proposals that respondents have for the promotion of well–being in their university. Great attention to both physical and psychological well–being emerged: "As for my point of view, I am very practical: sincerely, among the forms of well–being that I would expect, but maybe I do not know if it is right, correct, there would also be greater attention to our health not only mental, but physical. That is, we have a polyclinic, and we have no benefit, as personnel, but it can be extended to the whole community, even to teachers [...] we do not have any agreement that creates a path, like saying, I do not say facilitated at the economic level, but at least at the level of service (booking appointments...) to be able to undergo screening tests" (F, 51, clerk).

The attention increased especially during the period of the pandemic: "I gave a contribution as a therapist and as a psychologist, in the critical phase of the pandemic, I proposed the introduction of psychological counselling to the Rector, just to give a space of listening and technical support, specific, to everyone, then from students to professors, and the administrative staff. Therefore, in these two years, we were available practically 5 days a week, morning and afternoon, for all those who requested it. So, I have done a lot to reduce the sense of isolation, to reduce the anxiety deriving from the uncertainty of these difficult years, the depression of seeing life suspended, but also the obsessiveness, but also the hypochondria was in short something that increased a lot" (F, 48, scholar).

Personal representations of well–being. The representations of well–being involved both the strictly individual and the relational sphere, also reinforcing in this way the importance of the community and support, already highlighted in the 'relational dimension' macro–category. For example, there were descriptions which focused mainly on the relational aspect: "in my opinion, the word wellness comes from being well together, with others. Only if we are comfortable with others can we be comfortable at the individual level" (M, 48, clerk). Following this vein, there is great space for predictors of job satisfaction, such as a sense of community and relations with colleagues, which in turn can positively affect well–being as well. There are also other representations that could be defined as more systemic in nature: "well–being cannot be enclosed in small and few aspects, but in a larger set it makes the person feel good both mentally and physically. Well–being depends on many aspects, therefore the work, the family, the friendships, environments, and also the predisposition of the person play a joint role" (M, 50, clerk). It seems that workers are conveying a representation of well–being that confirms the ecological perspective defined by Prilleltensky (2012); indeed, they express a strong interdependence between individual, organizational and community well–being.

Resources to promote well–being. Finally, in the category of resources to promote well–being we included the organizational support and how its perception is fundamental for the well–being of not only individuals but also the work environment: "I also think that well–being is customization and therefore there is well–being at the working level if your organization is able to understand your specific needs and then orient the work choices according to your needs and predispositions" (M, 48, clerk).

A context capable of detecting the professional resources of employees by enhancing more congenial jobs by virtue of their skills and needs was considered to be a key issue for to the protection of everybody's well–being in the workplace.

Desired university context

In this macro category, there were elements representing the ideal context of participants in order to promote and enhance well–being.

Hope. This code group contains codes and quotation that recall a general sense of hope, understood as a possibility for the future. In particular, a sense of hope of being able to take advantage of all the potential of the university, in particular to take advantage of young people trained in the academic context, was recurrent: "students must find a job here instead of moving to the North or leaving Italy. It would be more profitable if they stayed here. Obviously, it is not a situation that affects everyone, there are also those who find work in Foggia" (F, 43, clerk). Meanwhile, the sense of Hope is also intended as a possibility to develop the local territory better and to activate in its context more collaborations to counter any form of fragmentation:

"Support those who choose to stay in this difficult and complicated territory and try to transform it" (F, 51, scholar). A further goal was to propose inter–institutional collaboration spaces supporting internal calls that "encourage university projects to coalesce groups with institutional interests; this could be an innovative institutional solution" (M, 53, scholar).

Sense of belonging, Moreover, increasing one's sense of belonging was considered to be one of the objectives to promote because it is considered an important resource to protect the academic context, especially in times of difficulty: "belonging is something I would work on, because in my opinion, when there are critical or unstable conditions, the sense of belonging is a potential resource for well–being" (F, 48, scholar).

Participants also called for better communication with university students to find a real dialogue and contact point with them.

University as value. Finally, this study highlighted clerks' and scholars' visions and representations of well–being in the university context during the recovery from the Covid–19 pandemic. At this time the potential of well–being at universities was defined by this quote: "University is freedom. Freedom of expression, and then, I have the image of a university in constant motion in the direction of growth" (F, 56, scholar).

Moreover, the respondents stressed the importance of justice and mattering as elements promoting well–being in the university context. Therefore, the importance of procedural and distributive justice and the possibility of increasing personal recognition and contribution were mentioned as the main expectations of respondents to ensure well–being. Last but not least, the potential identity and distinctiveness attributed to the University of Foggia, was considered a significant value issue for the enhancement of its territory.

Overall, giving space to desires and expectations is a key motivation factor toward well–being; for example, the desire for relational attachment is an essential human motivation associated with well–being (Baumeister & Leary, 2017). An agentic hopeful disposition can have a positive impact on personal well–being (Pleeging Burger & van Exel, 2021), also the belongingness feeling is positively related to health and well–being (Baumeister & Leary, 2017).

The core category

The core category that best expressed the representations and perceptions of the well–being that emerged from the responses of both the scholars and clerks involved in our study was "University: bonding and bridging for the future".

The respondents had a positive expectation that the University of Foggia would increase the well–being of those who work there. In fact, trust and hope were the words reported about the possibilities of increasing their own well–being and the entire academic community. Respondents, therefore, recognized the potentiality of the academic context.

For the respondents, the trigger and main resource of the promotion of well–being in the academic community was the relational dimension. Creating collaborative and supportive links was considered very significant for an increasingly wellness–oriented vision of the future.

Although the participants recognized the difficulties of the territory, they were aware that the university plays a significant role in being the pivot identity of the city and promoting and encouraging a positive and project–oriented vision of the future for young citizens; thus, making the cultural domain a context of possible future planning for young people.

The area dedicated to the well–being of the city was among the most mixed: there were references to the difficulty for citizens to receive and absorb the initiatives promoted by the university, as well as the importance of training students who may have the desire to remain in their home territory.

Finally, also the images of well–being strongly recall the sense of hope. In many interviews, the possibility of improving the well–being of the university is common and transversal. This possibility of improvement is expressed through various images, such as the idea of a peaceful skyline and films whose plot is based on the possibility of redemption and resilience, increasing a process of change in contexts characterized by few resources.

DISCUSSION

Universities had to make profound changes in their educational and work organization during the Covid–19 emergency and the impact of this new mode has been widely demonstrated (Marino & Capone, 2021; Novara et al., 2022). Well–being in the academic context of students and staff has become one of the main issue investigated in this specific moment of emergency (Nurunnabi, Almusharraf & Aldeghaither, 2020).

In particular, it is relevant the impact that the isolation from Covid–19 has produced in the human and organizational relations of the university system.

Our findings showed that for scholars and clerks, the central conditions for their well–being in the academic context were: justice, mattering, and relationships. Already other studies have emphasized the importance of procedural justice in promoting academic staff well–being (Mugizi, Rwothumio & Amwine, 2021; Pignata, Winefield, Provis & Boyd, 2016).

The relationship between distributive justice and procedural justice with psychological well–being was positive and significant (Huong, Zheng & Fujimoto, 2016; Sahai and Singh, 2016).

In this regard, Prilleltensky (2012) considered justice as a fundamental aspect of well–being and happiness, according to which the individual is the only maker of his/her own life, to take up a new vision in which a well–lived life is the outcome of personal efforts that are interlinked with the opportunities provided by the environment.

Finley (2016) considered that each university has to assume well–being into their ethos and missions. Other scholars highlighted (Carter, Andersen, Turner & Gaunt, 2022; Keeling, 2014; Sherman, 2020) the importance of justice, respect for rights, and care, underlining their significance in creating a conducive environment for well–being in academic contexts.

Another important aspect considered essential for well–being is mattering, defined by Prilleltensky (2014) as "an ideal state of affairs consisting of two complementary psychological experiences: feeling valued and adding value" (p.151). Within the academic context in several studies the importance of promoting mattering has been argued to increase conditions of well–being (Newton, Dooris & Wills, 2016; Prilleltensky et al., 2020; Schwartz, 2023).

Moreover, referring to relational dimensions, the centrality of positive relationships in enhancing one's well–being emerged in our study. As a recent review points out, relational dimensions remain central to all theorizing on well–being even though there is still the need to delve deeper into the qualities of positive relationships and how they take into account the specifics of the context in which they were established (Mertika, Mitskidou & Stalikas, 2020).

Our findings confirm that any type of intervention must be designed with reference and sensitivity to the organization. Borrowing the Gestalt principle that "everything is more than the sum of the individual parts", it is fundamental to focus on the idea of a system, context, and collective vision, in order to take care of the individual relational structures that are inside. Tay (2021) assumed that well–being in university must be considered in a complex sense that includes the well–being of all members of the university context.

Finally, it emerges the recognition of the university as an institution that promotes hope both for those who work and study in it but also for the territorial context in which it is located.

Tight (2019) identified eight major areas of research in academic context, including teaching and learning, course design, the student experience, quality, system policy, institutional management, academic work, knowledge, and research. Moreover, a positive university actively encourages the utilization of individual and institutional strengths for the benefit of all members within the educational community (Oades, Robinson, Green & Spence, 2014).

This finding is particularly interesting during the post covid where malaise produced by isolation and distrust of both, Others and institutions was one of the challenges facing scholarly communities and professionals. Recently, Ericsson and Kostera pointed out that: "the university as a bringer of hope is an institution of acknowledging complexity, perceiving and narrating it, and turning it into an engagement with the Other" (p. 309, 2022).

Due to the characteristics of qualitative research, the number of participants is limited and recruited with a purposive sample, so our study has as its main limit the non–replicability of the inferential process that induces the generalization of the data to the general population. The views expressed by the participants in this study cannot fully represent the experiences of all the workers of the University of Foggia, or are generalizable to the workers of other universities.

CONCLUSIONS

This study also highlighted that focussing on university well–being enhancement will give operational indication for the governance of the university such as:

a) to create clear pathways for an increasingly transparent and fair university;
b) to welcome, support and strengthen the university's future plans and projects through the definition of objectives and their sharing in the university community;
c) to support and promote positive relationships among academic staff, including taking into account the support and limits of technology. In fact, the impact of the recent Covid–19 has highlighted the perverse effects of new technological tools (i.e., office chats, e–mail) and the need for regulation of communications;
d) to create actions aimed at promoting hope and trust within the university contest and in its relationship with the territorial community.

All practical implications of our study are strategically important to overcome the impact of the recent pandemic which has reduced traditional personal communication systems, has increased the need for effective technologies, but at the same time is requiring new forms of regulation of worker/co–worker interactions, and work/life balance.

The Unifg Pro.be project (see https://www.unifg.it/it/ateneo/salute–sicurezza–benessere/progetto–benessere–probe) applied an innovative participatory methodology (Francescato & Aber, 2015) to promote university well–being. In this frame this research was a preliminary step to gather the voice of clerks and scholars emphasizing specific strengths and weaknesses specifically related to the post Covid–19 time.

Further activity will be directed to deepen students' needs and to create opportunities for shared discussions within the university and in the town of Foggia. In fact, the whole project is intended to be an example of best practice in promoting academic well–being from an ecological and systemic perspective. Its challenge is in being a participatory project aimed at the enhancement of horizontal and vertical communications among the whole community and its stakeholders. Public engagement and shared participatory actions are requested to the university management and all its members. To create a university capable of bonding and bridging for the future, cannot be a say it should be a shared strategy.

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Factorial validity and measurement invariance of the Bangla version of the Brief COPE

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ABSTRACT. Lo scopo del presente studio è stato quello di misurare la struttura fattoriale e l'invarianza di misura del *Bangla Brief COPE*, nonché di misurarne l'affidabilità e la validità. Il *Bangla Brief COPE* tradotto è stato testato attraverso un questionario tra 778 cittadini del Bangladesh di età compresa tra i 18 e i 90 anni. Una analisi fattoriale esplorativa con il Sottocampione–1 (*n* = 395) ha prodotto una struttura a 6 fattori della scala che spiegava il 66.89% della varianza totale; una analisi fattoriale di conferma con il Sottocampione–2 (*n* = 383) ha confermato la struttura a 6 fattori della scala con un indice di adattamento del modello accettabile. I risultati complessivi dello studio indicano questa scala come uno strumento valido e affidabile per valutare le strategie di coping dei bengalesi.

SUMMARY. There is no specific research history on the factorial validity and measurement invariance of the Bangla version of the Brief COPE. Although there is some research evidence of its reliability and validity measures, these are also insufficient. Therefore, the aim of the present study was to measure the factor structure and measurement invariance of the Bangla Brief COPE as well as to measure its reliability and validity. The translated Bangla Brief COPE was tested through a questionnaire survey among 778 Bangladeshi citizens aged 18 to 90 years. The participants of the study were selected through a convenience sampling method from different regions of the country who answered their questionnaire directly in front of the research assistant or indirectly through postal mail. An exploratory factor analysis with Subsample–1 (n = 395) yielded a 6–factor structure of the scale that explained 66.89% of the total variance. In addition, the minimum average partial test (i.e., a parallel analysis test) confirmed a total of 6 factors for this scale. A confirmatory factor analysis with Subsample–2 (n = 383) confirmed the 6–factor structure of the scale with an acceptable model fit index. The scale was found to be invariant across gender and education. Furthermore, the internal consistency reliability and convergent and discriminant validity of this scale were found to be acceptable. The overall findings of the study suggest that mental health professionals can adopt this scale as a valid and reliable tool to assess the coping strategies of Bangladeshis.

Keywords: *Brief COPE, Factor structure, Reliability, Validity, Invariance analysis*

INTRODUCTION

Coping is an ongoing behavioral, cognitive, and emotional process of managing stress (Blum, Brow & Silver, 2012); or a specialized category of adaptation in normal individuals to unusually taxing situations (Costa, Somerfield & McCrae, 1996); or attempts to manage demands that may exceed resources (Lazarus & Folkman, 1984). A coping strategy is an action or a thought process used to cope with a stressful situation. It can be of different types, for example, task–oriented versus defense–oriented (Carson, Butcher, Mineka & Hooley, 2007), problem–focused versus emotion–focused (Lazarus & Folkman, 1984), and approach versus avoidance (Eisenberg, Shen, Schwarz & Mallon, 2012). Some researchers have conceptualized problem–focused versus emotion–focused coping as adaptive versus non–adaptive coping or positive adjustment versus avoidance coping (e.g., Penley, Tomaka & Wiebe, 2002; Schnider, Elhai & Gray, 2007). People follow different coping strategies based on their perceived stress. Coping strategies are therefore not stable or the same over time and they may change in the context of different stressors (Schnider et al., 2007), or may vary in terms of gender (Eschenbeck, Kohlmann & Lohaus, 2007).

Existing scales measuring individuals' coping

Measuring an individual's coping behavior is challenging because it depends on a variety of factors, including personality traits, specific environments, support networks, and personal life experiences. Despite the challenges, there are many existing coping scales to measure people's coping that have been widely accepted around the world.

Carver, Scheier and Wientraub (1989) developed a 60–item multidimensional coping inventory called the *Coping Orientation to Problems Experienced* (*COPE*) to assess people's various coping strategies. It measures two basic components of coping: problem–focused coping and emotion–focused coping. This inventory also measures an additional measure called the 'coping response measure'. Hence, a statement of inventory falls under one of its three components. The *Brief COPE*, a 28–item brief version of the full COPE, was adapted by Carver in 1997. Chesney and colleagues (Chesney, Neilands, Chambers, Taylor & Folkman, 2006) developed a 26–item coping scale, named the *Coping Self–Efficacy Scale* (*CSES*), to measure an individual's confidence in performing their coping strategies. The *Brief Resilient Coping Scale* (*BRCS*) was designed by Sinclair and Wallston in 2004 to measure an individual's ability to cope with stress in highly adaptive ways. It is a 5–point Likert–type scale with only four statements. A score above 17 on the scale indicates a highly resilient coping individual and a score between 4 and 13 indicates a low resilient coping individual. A 55–item coping inventory, the *Proactive Coping Inventory* (*PCI*), was developed by Greenglass and Schwarzer in 1998 to measure a variety of coping styles, including proactive coping, preventive coping, reflective coping, strategic planning, instrumental support seeking, emotional support seeking, and avoidant coping.

The *Ways of Coping Checklist* (*WCCL*), a 68–item multidimensional coping scale, was developed by Folkman and Lazarus in 1980 to measure people's coping strategies. It consists of seven subscales. A 48–item *Coping Inventory in Stressful Situations* (*CISS*) developed by Endler and Parker (1990, 1994) is used to measure individuals' coping strategies in stressful situations. It consists of three subscales where each subscale consists of 16 items. A shortened version of the CISS (*CISS–21*) was also developed by Endler and Parker in 1994. A 37–item *Dyadic Coping Inventory* (*DCI*) developed by Bodenman (2008) is used to measure close relationships between partners, when one or both partners are experiencing stress.

Apart from the above–mentioned coping measurement scales, there are many other coping scales that have been developed or adopted to measure human coping strategies worldwide such as the *Ways of Coping Scale* (Lazarus & Folkman, 1984), the *Ways of Coping Questionnaire* (Folkman & Lazarus, 1988), the *Coping Responses Inventory–Youth* (Moos, 1993), the Coping *Schemas Inventory–Revised* (Wong, Reker & Peacock, 2006), and the *Measure of Affect Regulation Style* (Larsen & Prizmic, 2006). Among them, COPE (Carver et al., 1989) is one of the most popular coping scales, which consists of 15 subscales, with 4 items in each subscale. But a significant limitation of the aforementioned coping scales is their relatively extended length, ranging from 48 to 66 items, which may limit their long study protocols and widespread use in clinical settings. Consequently, the 28–item Brief COPE (Carver, 1997) was developed to reduce the time to completion of the scale as well as the burden on participants.

Literature reviews on the psychometrics of the Brief COPE

Based on factor loadings and field experience, Carver dropped two subscales from the original COPE and added a new subscale to the Br–COPE (Carver, 1997). In addition, he reduced the items from the original COPE to the Br–COPE from 4 to 2 in each subscale. The original English Br–COPE has already been translated into several languages such as French, Malay, Portuguese, Greek, Spanish, Turkish, Persian, Japanese, and Chinese. The scale has not only been translated into different languages but has also been validated in different countries around the world. The scale has shown good reliability and validity with good factor structure across its different language versions. Carver (1997) investigated the factor structure of the original English Br–COPE on a sample of 168 survivors of Hurricane Andrew. He found nine factors for this scale through EFA that explained 72.4% of the total variance.

To date, considerable research has been done to determine the number of factors of Br–COPE. In these studies, the total number of factors in the scale varied from a minimum of two (e.g., David & Knight, 2008) to a maximum of fourteen (e.g., Bacanli, Surucu & Ilhan, 2013; Garcia, Barraza–Pena, Wlodarczyk, Alvear–Carrasco & Reyes–Reyes, 2018; Monzani et al., 2015). Research has often identified two broad factors for the Br–COPE: (a) positive coping, which includes the positive reframing, proactive coping, and planning subscales (e.g., Carver, 1997; Miyazaki, Bodenhorn, Zalaquett & Ng, 2008; Snell, Siegert, Hay–Smith & Surgenor, 2011), and (b) social support–seeking, which included emotional and instrumental support (e.g., Carver, 1997; Kapsou, Panayiotou, Kokkinos & Demetriou, 2010; Yusoff, 2011). In some studies, however, some subscales of the Br–COPE were scattered, such as acceptance (Miyazaki et al., 2008), venting and self–distraction (Miyazaki et al., 2008), and positive reframing (Snell et al., 2011). Internal consistency reliability and content validity of the original English Br–COPE have been found in several studies (e.g., Carver, 1997; Cooper, Katona, & Livingston 2008; Monzani et al., 2015; Peters, Solberg, Templin & Cassidy–Bushrow, 2020). Some recent studies have attempted to test whether Br–COPE is invariant to various socio–demographic factors (e.g., Garcia et al., 2018; Nunes et al., 2021).

A summary of studies conducted on the translation, validation, and cultural adaptation of the Br–COPE is presented in Table 1.

The rationale of the study

Most of the coping scales mentioned above have been developed and adapted to a Western cultural context. Coping scales need to be culturally adapted before use because psychological patterns and culture can influence people's stressors, coping strategies, goals, and outcomes (Chun, Moos & Cronkite, 2006; Lam & Zane, 2004). Research findings have shown inconsistent results on the actual factors of the Br–COPE, which may limit its applicability to the study area, especially in cultural contexts. In addition, past studies have examined the factor structure of the Br–COPE considering only small and homogeneous samples. Therefore, coping strategies need to be validated in a large and heterogeneous sample across cultures. Thus, the present study aimed to validate the Br–COPE in a Bangladeshi culture with a large heterogeneous sample. Although there are some studies on the Bangla Brief COPE scale considering some psychometric properties, they are sparse, and there is no research on its measurement invariance (Hossain et al., 2021; Hossain et al., 2023; Islam & Sultana, 2020; Nguyen et al., 2022). Thus, the aim of the current study was to investigate the factorial validity and measurement invariance of the Br–COPE.

Research Question (RQ) and objectives of the study

A research question (RQ) is an attempt to answer or improve knowledge on a specific topic (Mattick, Johnston & de la Croix, 2018). A research question was considered in the present study: "Does the Bangla version of Br–COPE meet good psychometric properties?".

The main objective of the present study was to assess the basic psychometric properties of the Br–COPE in a Bangladeshi sample. In addition, we considered the following specific research objectives for the present study:

1. confirming a valid factor structure of the Br–COPE–B by EFA and CFA;
2. to know whether the scale is invariant with respect to gender and education;
3. to analyze and evaluate the reliability and validity of the scale.

Table 1 – Comparative summary of factor analytic results of the Br–COPE across languages and countries

Source	Scale's version	Sample	Analysis	Factors	Observations
Ashktorab et al. (2017)	Persian	Iranian women	CFA	14	14–factor structure by CFA, good content and face validity, and test–retest reliability
Bacanli et al. (2013)	Turkish	Turkish under–grad	PCA	14	PCA extracts 14 factors, good internal consistency reliability, and concurrent validity with self-esteem and life satisfaction
Baumstarck et al. (2017)	French	French people	PCA	4	4–factor structure by PCA, good internal consistency reliability, and construct validity
Doron et al. (2014)	French	French college students	CFA	5	5–factor structure by CFA, measurement invariance across gender, concurrent validity with anxiety and perceived stress
Garcia et al. (2018)	Spanish	Chilean people	CFA	14	CFA confirms a 14–factor structure, good internal consistency reliability, invariant across genders, and concurrent validity with scales
Kapsou et al. (2010)	Greek	Greek people	EFA and CFA	8 but broadly 4	8–factor structure with 4 broader factors, good internal consistency reliability, and concurrent validity with psychological scales
Muller & Spitz (2003)	French	French speaking people	EFA and SEM	14	Factor structure extracts 14 factors, good in both situational and dispositional context, and convergent and discriminant validity
Nunes et al. (2021)	Portuguese	Portuguese sample	CFA	14	CFA fits a 14–factor structure, good internal consistency reliability, and invariant across samples
Otsuka et al. (2008)	Japanese	Japanese school teachers	CFA	14	CFA confirms a 14–factor structure, acceptable internal consistency reliability, and construct, convergent and concurrent validity
Pavlova et al. (2022)	Russian	Russian school teachers	PCA and CFA	6	Both the PCA and CFA shows a revised 6–factor structure, and construct validity
Peters et al. (2020)	English	African–Americans	CFA and ESEM	13	The CFA proved 13 factors of the scale, ESEM resulted in three second–order factors: disengaged, active, and social support
Snell et al. (2011)	English	MTBI patients in NZ	EFA and CFA	9 but broadly 3	The EFA solution extracted 9 initial factors, and more reliably and meaningfully interpreted 3 factors rather than 9
Su et al. (2015)	Chinese	Chinese having HIV	EFA and CFA	6	The EFA identified 6 factors, significant correlation between subscales, and convergent and discriminant validity
Yousoff (2011)	Malay	Malaysian adolescents	EFA	14	Factors were loaded in their original 14 factors, good internal consistency reliability, and construct validity
Yuan et al. (2007)	Chinese	Chinese adolescents	EFA	3	3 higher order factors through factor analysis, adequate internal consistency reliability, and criterion validity with self–esteem

Legenda. EFA = Exploratory Factor Analysis; CFA = Confirmatory Factor Analysis; PCA = Principal Component Analysis; SEM = Structural Equation Modeling; MTBI = Mild Traumatic Brain Injury; ESEM = Exploratory Structural Equation Modeling.

METHODS

Participants

A total of 778 Bangladeshis aged 18 to 90 years (M = 40.18, SD = 18.25) were selected to conduct the present study. They were selected through a convenience sampling method from different areas of Bangladesh. Among them, males and females were 370 (47.56%) and 408 (52.44%) respectively. To conduct exploratory and confirmatory factor analyses with different data sets, we divided the total participants into two subsamples: Subsample–1 (n = 395) and Subsample–2 (n = 383). The division of the total sample was carried out in SPSS by the random sampling of cases and about 50% of all cases functions. No significant differences were found between the two subsamples in terms of each socio–demographic considered in the study (see Table 2), meaning that the data in terms of each socio–demographic were equally distributed across the two subsamples.

Rationale for selection of total sample and subsample

We determined the total sample size of the study using the Raosoft calculator (Raosoft, 2004) considering four conditions: a) 5% margin of error, b) 99% confidence interval,

Table 2 – Number of respondents with percentage by specific socio–demographic

Variable	Levels	Total sample (n = 778)	Subsample–1 (n = 395)	Subsample–2 (n = 383)	Differences between two subsamples
Gender	Male	370 (47.56)	195 (49.40)	175 (45.70)	χ^2 (1) = 1. 05, p = .305 (*ns*)
	Female	408 (52.44)	200 (50.60)	208 (54.30)	
Residence	Rural	275 (35.30)	140 (35.44)	135 (35.25)	χ^2 (2) = 2.51, p = .284 (*ns*)
	Suburban	235 (30.20)	128 (32.41)	107 (27.94)	
	Urban	268 (34.40)	127 (32.15)	141 (36.81)	
Education	Primary (Grade–5)	160 (20.60)	93 (23.50)	67 (17.50)	χ^2 (6) = 7.41, p = .285 (*ns*)
	JS (Grade–8)	160 (20.60)	73 (18.50)	87 (22.70)	
	SSC (Grade–10)	180 (23.10)	85 (21.50)	95 (24.80)	
	HSC (Grade–12)	55 (7.10)	28 (7.10)	27 (7.00)	
	Under–graduation	142 (18.30)	70 (17.70)	72 (18.80)	
	Graduation	52 (6.70)	30 (7.60)	22 (5.70)	
	Others	29 (3.70)	16 (4.10)	13 (3.40)	
Age *M (SD)*		40.18 (18.25)	41.01 (19.15)	39.27 (17.26)	t (775) = 1.33, p = .185 (*ns*)

Legenda. JS = Junior School; SSC = Secondary School Certificate; HSC = Higher Secondary Certificate; *ns* = not significant.

c) population size, and d) 50% response distribution. The sample size recommended by this calculator was 664. The current study had an adequate sample size because the actual sample size (n = 778) was larger than the recommended sample size (n = 664).

The sample size for EFA (n = 395) was reasonably acceptable as it was based on a rule of thumb given by Tabachnick and Fidell (2013) who suggested an acceptable sample size of 300 for performing EFA. This sample size was good enough considering another rule of thumb, the N: q ratio (5:1), where N is the number of participants and q is the variable considered in the analysis (Tanaka, 1987). Similarly, the sample size for the CFA (n = 383) was reasonably acceptable because it was based on a rule of thumb for ratios (N: q). A commonly recommended ratio (10:1 to 20:1) given by Schumacher and Lomax (2015) was used to calculate the sample size for CFA or SEM in the study.

Measures

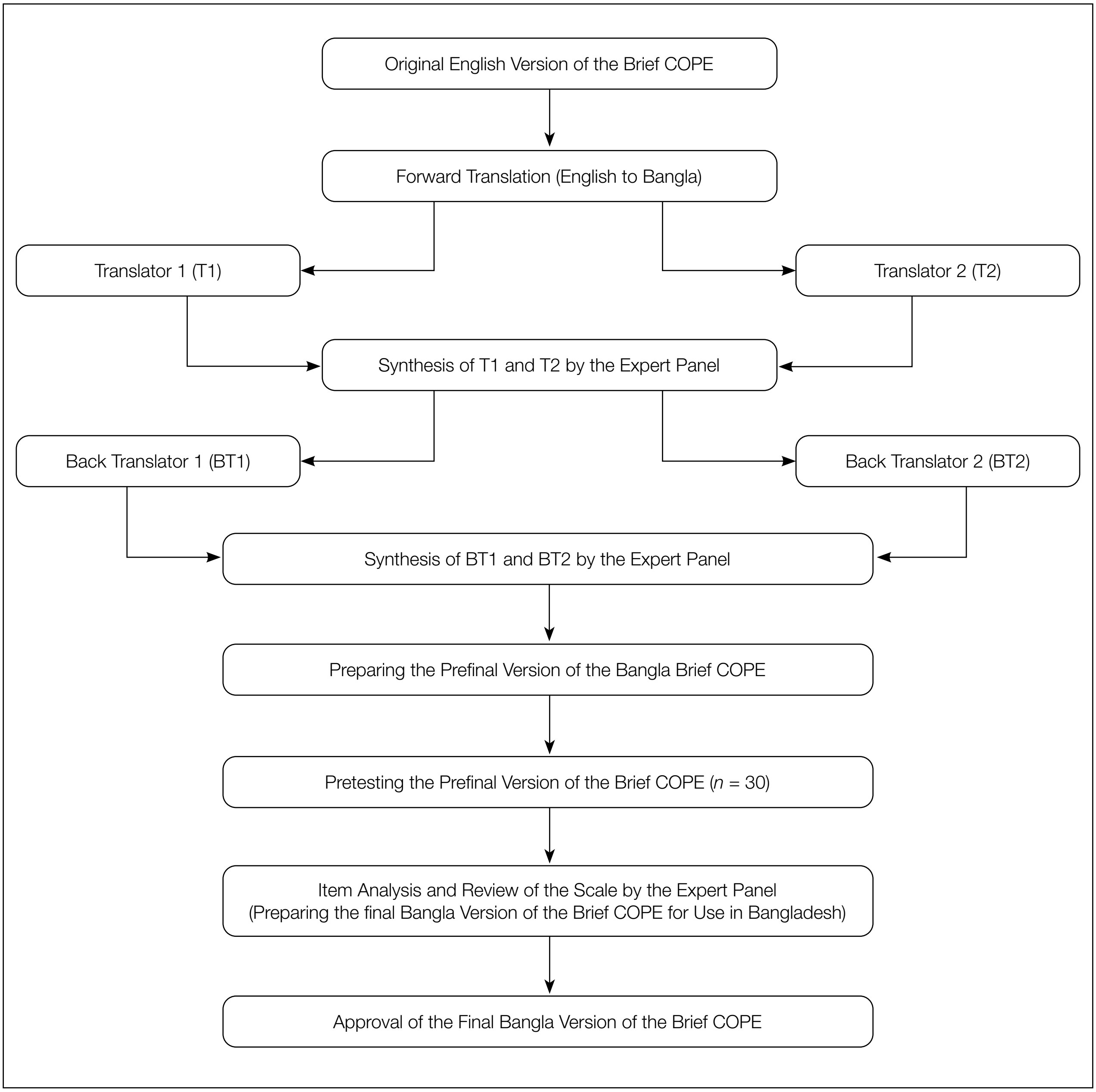
- *Brief COPE* (*Br–COPE*). The Br–COPE (Carver, 1997) consists of 28 items with 14 subscales with 2 items for each subscale. The subscales of the Br–COPE are: self–distraction (items 1 and 19), active coping (items 2 and 7), denial (items 3 and 8), substance use (items 4 and 11), emotional support (items 5 and 15), instrumental support (items 10 and 23), behavioral disengagement (items 6 and 16), venting (items 9 and 21), positive reframing (items 12 and 17), planning (items 14 and 25), humor (items 18 and 28), acceptance (items 20 and 24), religion (items 22 and 27), and self–blame (items 13 and 26). It is a 4–point Likert–type scale with answers ranging from 1 (I don't do it at all) to 4 (I do it a lot). There is no reverse scoring for any item on the scale, nor is there a total scale score for the scale. The total score on each subscale indicates an individual's coping strategies on that subscale.
- *Bangla version of the Brief COPE* (Br–COPE–B). The Br–COPE was translated into Bangla from the original English version following a standard scale translation guideline provided by the International Test Commission (ITC, 2017). Before starting the translation of the scale, we asked permission from Carver (developer of the original scale) via email. A focus group discussion (FGD) was conducted with 8 adults to get feedback on the scale. We constituted an expert panel of 6 members (two researchers of the present study, two psychologists, one linguist and one English professor) to carry out the translation process of the study. Based on the data obtained from the FGD, the expert panel assessed the linguistic and cultural differences between the scale's source language (English) and target language (Bangla).

  A forward translation (from English to Bengali) of the scale was done by two expert panel members who were proficient in the English language and also knew the assessment principles. They not only translated the scale items but also assessed the cultural equivalence of these items. The expert panel then evaluated the scale items to see if they were accurately translated from their original items. After that, a back translation of the scale (from Bangla to English) was done by two members of the expert panel (one a linguist and the other a professor of English). The expert panel, then, assessed whether the translated items were appropriate and standardized to the original English items. After judging both forward and backward translations, the expert panel developed a pre–final version of the Bengali Br–COPE. A pilot test (n = 30) was then conducted using this pre–final version of the Br–COPE–B. Positive corrected item–total correlations (value ≥.30) and significant positive correlations between items in each subscale suggested the appropriateness of inclusion of the items in the scale. The overall process of translation and cultural adaptation of Br–COPE–B is presented in Figure 1.
- *Personal Information Form* (*PIF*). A separate PIF was used along with the questionnaire to collect some socio–demographic information including gender, age, residence, and education.

Procedure

We followed a standard survey method to ensure data collection and we did not follow any online survey method. The data collection process went through a smooth progression and no hiccups were encountered in the middle of the road. We collected data from people with the help of research assistants (psychology graduates). Data were collected in two ways. The first was the face–to–face method where participants answered their questionnaires in front of research assistants. A questionnaire was provided to

Figure 1 – Flowchart of the process of translation and cross–cultural adaptation of the Bangla Brief COPE



each individual along with instructions and an informed consent form (ICF). They were first requested to read the instructions and the ICF carefully and sign the informed consent form. After confirming their signature on the ICF they were requested to answer the questionnaire. They were told that there was no option to mention their name, personal information, or contact address anywhere in the questionnaire which could hamper the reliability of the study. The research assistant thanked each participant who participated in the study.

The second method of data collection was postal method. As in the first method, each individual was provided with a questionnaire with instructions and an informed consent form (ICF). Furthermore, each of them was provided with a return envelope with a printed postal address of the principal researcher of the study and a revenue stamp, so that they could send their questionnaire back to the researcher confidentially. Before providing the questionnaire to the participants, the research assistant briefed the entire postal procedure of data collection. For any questions, they were requested to contact the research assistant via email or cell phone provided in the questionnaire.

Data analysis

We used two statistical programs for data analysis, namely Statistical Package Program for Social Sciences (SPSS v.26), and Analysis of Moment Structure (AMOS v.24). The cut–off values we considered to ensure CFA model fit were: $\chi^2/df \leq 5$, Goodness of Fit Index (GFI)≥.90, Comparative Fit Index (CFI)≥.95, and Root Mean Square Residual (RMSR) and Root Mean Square Error of Approximation (RMSEA)≤.08 (Schermelleh–Engel, Moosbrugger & Muller, 2003).

RESULTS

Before conducting the final analysis, we checked whether there were any missing values or outliers in the total data set (n = 778). We found at least 1 missing value in the data of 8 participants. These missing values were imputed using a mean substitution method (i.e., the mean value of a particular subscale was used in place of the missing value of any item in that subscale). We found no outliers in the total data set (n = 778) by both Explorer and Mahalanobis distance tests.

Descriptive statistics

Initially, we performed some descriptive statistics for Br–COPE–B (see Table 3). The highest mean value (M = 3.22) was found for two items of the scale (e.g., items 8 and 15) and the lowest mean value (M = 2.49) was found for item 27 of the scale. Each item in the scale had an acceptable skewness and kurtosis value (values were between +1.96 and –1.96), indicating that the scale items were individually normally distributed.

Exploratory Factor Analysis (EFA)

We conducted an exploratory factor analysis (EFA) on Subsample–1 (n = 395) to determine the number of factors for the Br–COPE–B. We found a 6–factor structure for Br–COPE–B based on the principal axis factoring method, direct oblimin rotation method, and eigenvalues greater than 1. Based on eigenvalues greater than 1, Figure 2 clearly showed 6 factors for Br–COPE–B.

The 6–factor structure of the Br–COPE–B explained 66.89% of the total variance with an acceptable KMO (Kaiser–Meyer–Olkin) value and a significant test of sphericity (see Table 4). The scale items loading into the six factors were as follows: F1 (items 5, 10, 12, 15, 17, 20, 23 and 24), F2 (items 4, 6, 11 and 16), F3 (items 9, 13, 21 and 26), F4 (items 18, 22, 27 and 28), F5 (items 2, 7, 14 and 25), and F6 (items 1, 3, 8 and 19). We conducted a Minimum Average Partial (MAP) test to determine whether the six factors of the Br–COPE–B derived by the EFA were true factors of the scale. Similar to the EFA, the MAP test (Velicer, 1976) showed six factors for the Br–COPE–B, indicating its actual six factors (see Table 4).

We named the six factors of the Br–COPE–B based on the structural fit of the scale items: F1 (Problem solving), F2 (Substance use and behavioral disengagement), F3 (Expression of negative emotions), F4 (Emotion–focused coping), F5 (Seeking support), and F6 (Avoidant coping). The naming of the new six factors of the Br–COPE–B was consistent with some previous studies (e.g., Baumstarck et al., 2017; Carver, 1997; Carver et al., 1989).

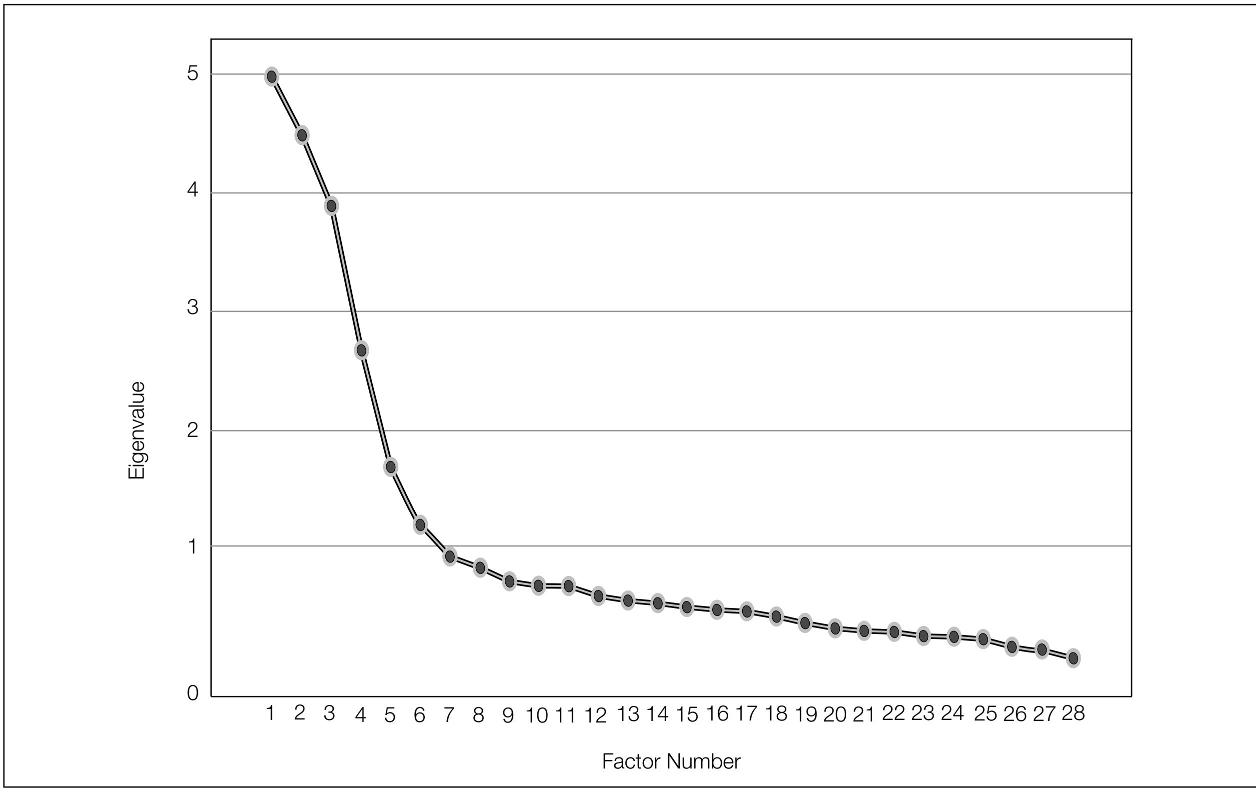
Confirmatory Factor Analysis (CFA)

We conducted a confirmatory factor analysis (CFA) on Subsample–2 (n = 383) to examine the structural fit of the Br–COPE–B. Before performing CFA, we created a model in AMOS for the scale's 6–factor structure. The CFA model showed an acceptable fit index for the Br–COPE–B (χ^2 = 457.11; df = 309; χ^2/df = 1.48; GFI = .922; CFI = .977; RMR = .034; RMSEA = .035). Additionally, all items on the scale had significant standardized regression weights (p<.01) (see Figure 3).

Table 3 – Descriptive statistics for items of Br–COPE–B (*N* = 778)

Item	M		SD	Skewness		Kurtosis	
	Statistic	*SE*	*Statistic*	*Statistic*	*SE*	*Statistic*	*SE*
c1	3.18	.030	.825	−.898	.088	.379	.175
c2	2.96	.034	.939	−.700	.088	−.329	.175
c3	2.95	.032	.903	−.670	.088	−.231	.175
c4	2.96	.034	.939	−.700	.088	−.329	.175
c5	3.18	.030	.825	−.898	.088	.379	.175
c6	2.80	.034	.947	−.479	.088	−.631	.175
c7	2.96	.034	.937	−.684	.088	−.351	.175
c8	3.22	.031	.852	−1.065	.088	.647	.175
c9	2.91	.034	.944	−.645	.088	−.416	.175
c10	3.00	.031	.863	−.749	.088	.083	.175
c11	2.82	.035	.971	−.479	.088	−.722	.175
c12	2.80	.034	.947	−.479	.088	−.631	.175
c13	2.82	.035	.971	−.479	.088	−.722	.175
c14	2.91	.034	.944	−.645	.088	−.416	.175
c15	3.22	.031	.852	−1.065	.088	.647	.175
c16	2.91	.034	.944	−.645	.088	−.416	.175
c17	2.80	.034	.951	−.473	.088	−.654	.175
c18	2.66	.033	.927	−.143	.088	−.840	.175
c19	3.00	.031	.863	−.749	.088	.083	.175
c20	2.82	.035	.976	−.473	.088	−.744	.175
c21	2.80	.034	.947	−.479	.088	−.631	.175
c22	2.59	.034	.958	−.106	.088	−.931	.175
c23	2.95	.032	.906	−.669	.088	−.244	.175
c24	2.82	.035	.971	−.479	.088	−.722	.175
c25	2.92	.034	.941	−.642	.088	−.412	.175
c26	2.96	.034	.939	−.700	.088	−.329	.175
c27	2.49	.033	.926	−.093	.088	−.851	.175
c28	2.64	.031	.862	−.211	.088	−.583	.175

Figure 2 – Scree plot for factor representation of Br–COPE–B (Subsample–1, *N* = 395)



Note. Six factors above the straight line with eigenvalues 1 indicate the true factors of the scale.

Reliability and validity analysis

Good internal consistency reliabilities ranging from .814 to .909 were found for the factors of the Br–COPE–B (see Table 5). We tested the convergent and discriminant validity of the scale based on standardized regression weights of the scale items. In line with the criteria proposed by many researchers, we considered the following criteria for convergent validity: Composite reliability (CR)≥.70 and Average variance extraction (AVE)≥.50; and the following criteria for convergent validity: AVE≥Average shared variance (ASV) and Maximum shared variance (MSV), and square root of AVE≥.70 (Fornell & Larcker, 1981; Hair, Black, Babin & Anderson, 2010; Henseler, Ringle & Sinkovics, 2009). Convergent and discriminant validity of the Br–COPE–B was established as the observed values fully met the above–mentioned cut–off criteria (see Table 5).

Measurement invariance analysis

It is always an assumption that a good scale will be equally applicable in measuring its intended outcomes across different socio–demographics. In our study, we hypothesized that the Br–COPE–B would be invariant with respect to gender and education variables. So, we performed two multi–group CFAs separately to test whether the Br–COPE–B was invariant across gender and education. We considered four models to test measurement invariance in our study including unconstrained, measurement weights, structural covariance, and measurement residuals. The model fit indices we considered to verify a model fit was: χ^2/df, CFI, and RMSEA; and the criteria we considered to compare one model with another were: ΔCFI≤.010 and ΔRMSEA≤.015 (Chen, 2007).

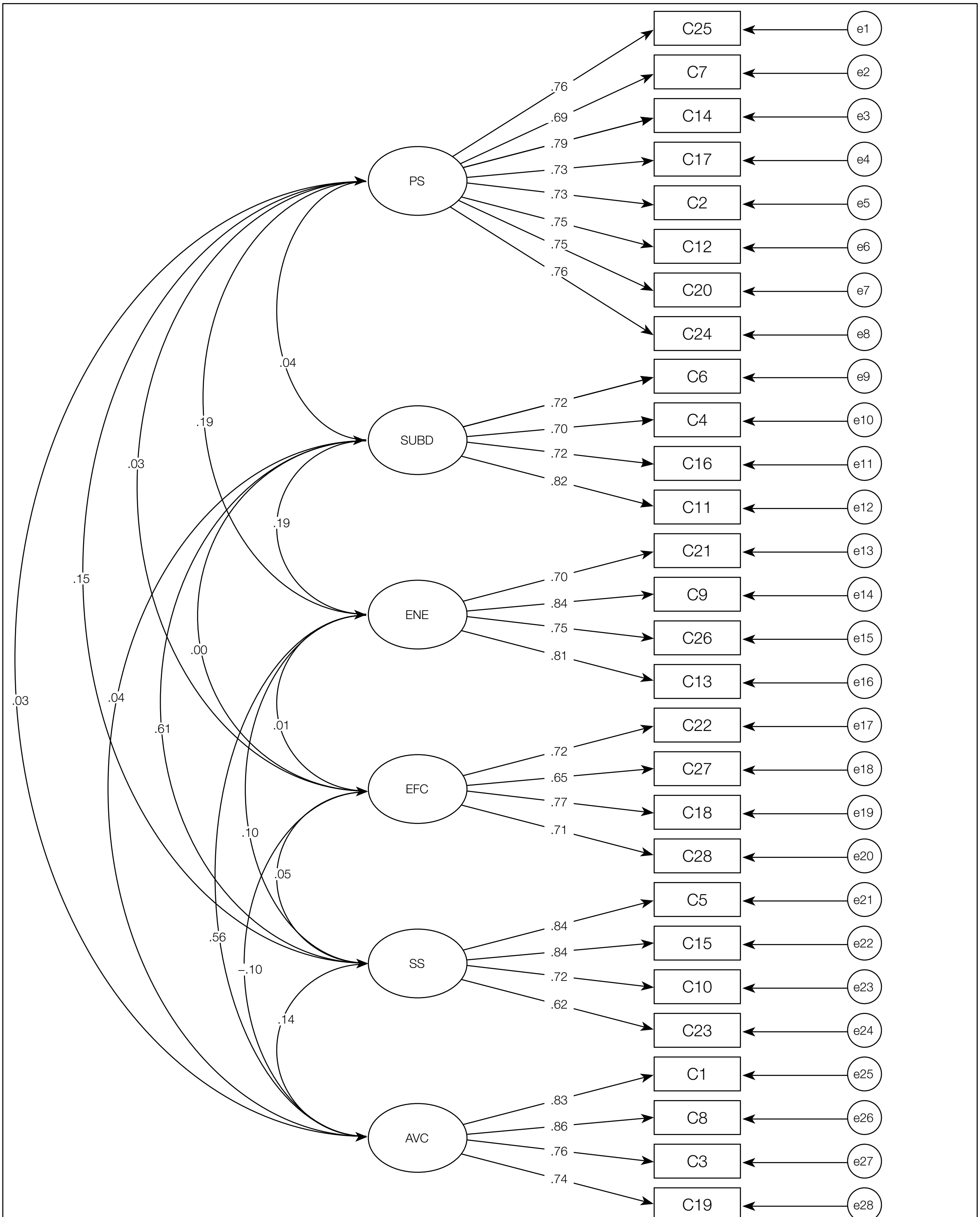
We first performed an unconstrained model to examine whether the scale's latent factors had the same pattern of

Table 4 – Factor structure of the Br–COPE–B by EFA and MAP Test (Subsample–1, *N* = 395)

	6–factor structure of the scale							MAP test	
Item	*Communality (h^2)*	*F1*	*F2*	*F3*	*F4*	*F5*	*F6*		*Squared*
c25	.860	**.792**	.080	–.049	.005	.056	.050	.0000	.0626
c7	.802	**.772**	.140	–.003	–.114	–.171	.014	1.0000	.0505
c14	.863	**.753**	.014	–.019	.026	.129	.072	2.0000	.0475
c17	.737	**.749**	–.064	–.021	–.028	–.032	–.053	3.0000	.0290
c2	.798	**.736**	.125	–.013	–.060	–.123	.030	4.0000	.0260
c12	.711	**.730**	–.086	–.002	.030	.008	.011	5.0000	.0228
c20	.769	**.695**	–.089	.080	.066	.107	–.120	6.0000	**.0221**[a]
c24	.752	**.677**	–.192	.077	.108	.129	–.079	7.0000	.0246
c6	.587	.031	**.786**	–.051	–.007	.005	.072	8.0000	.0279
c4	.613	–.007	**.758**	.037	–.016	.042	–.080	9.0000	.0307
c16	.688	–.038	**.755**	–.018	.034	.170	.067	10.0000	.0334
c11	.592	–.017	**.696**	.152	.065	.131	–.129	11.0000	.0382
c21	.576	–.022	–.030	**.794**	.003	.060	–.015	12.0000	.0423
c9	.640	.011	.007	**.785**	.002	–.017	.074	13.0000	.0475
c26	.578	–.025	.036	**.727**	–.043	.001	.023	14.0000	.0516
c13	.624	.073	.074	**.700**	.007	–.160	.120	15.0000	.0544
c22	.495	.003	.099	–.056	**.785**	–.072	.036	16.0000	.0611
c27	.465	.011	–.001	.063	**.736**	–.001	–.028	17.0000	.0734
c18	.453	–.028	–.021	.002	**.729**	.024	–.009	18.0000	.0933
c28	.419	.013	–.009	–.037	**.688**	–.030	.028	19.0000	.0932
c5	.602	.008	.029	.009	–.016	**.805**	–.047	20.0000	.1089
c15	.584	–.010	.050	–.013	.024	**.769**	.017	21.0000	.1363
c10	.503	.022	.099	.014	–.026	**.667**	.045	22.0000	.1838
c23	.516	.036	.095	–.074	–.087	**.645**	.062	23.0000	.2487
c1	.585	.013	.010	–.054	.037	–.021	**.889**	24.0000	.2931
c8	.548	–.022	–.103	.064	.037	.128	**.706**	25.0000	.3945
c3	.436	–.029	–.014	.075	–.037	.006	**.605**	26.0000	.5743
c19	.399	.011	.038	.091	–.010	–.037	**.576**	27.0000	1.0000
Eigenvalues by factor		4.95	4.46	3.86	2.64	1.66	1.17		
Variance extraction by factor (%)		17.66	15.91	13.79	9.44	5.91	4.18		
Total variance (%)		66.89%							
Kaiser–Meyer–Olkin (KMO) value		.746							
Bartlett's test of sphericity		χ^2 = 6519.17, *df* = 378, *p*<.01							

Legenda. MAP = Minimum Average Partial; *df* = degree of freedom.
Note. [a] = the number of components according to the original MAP test (Velicer, 1976) is 6, as the smallest average squared partial correlation is .0221; Extraction method: Principal Axis Factoring; Rotation method: Direct Oblimin.

Figure 3 – Six-factor model of the Br-COPE-B (Subsample-2, *N* = 383)



Legenda. PS = Problem Solving; SUBD = Substance Use and Behavioral Disengagement; ENE = Expression of Negative Emotions; EFC = Emotion Focused Coping; SS = Seeking Support; AVC = Avoidance Coping.

Table 5 – Internal consistency reliability and convergent and discriminant validity of the Br-COPE-B

Factor	α	CR	AVE	ASV	MSV	PS	AVC	SS	EFC	ENE	SUBD
PS	.909	.909	.555	.012	.034	**.745**					
AVC	.831	.874	.635	.070	.316	.032	**.797**				
SS	.833	.844	.579	.085	.368	.152	.144	**.761**			
EFC	.814	.805	.509	.003	.010	.034	–.099	–.047	**.714**		
ENE	.860	.860	.608	.079	.316	.185	.562	.100	–.008	**.780**	
SUBD	.861	.830	.551	.082	.368	.043	.038	.607	–.001	.193	**.742**

Legenda. CR = Composite reliability; AVE = Average variance extraction; ASV = Average shared variance; MSV = Maximum shared variance; PS = Problem solving; AVC = Avoidance coping; SS = Seeking support; EFC = Emotion-focused coping; ENE = Expression of negative emotions; SUBD = Substance use and behavioral disengagement.
Note. Values presented in bolds are the square root of AVE.

free and fixed loadings. In the second step, we conducted a measurement weight invariance test (i.e., a metric model) by constraining the factor loadings (i.e., testing the equality of item loadings on the factors). The third step in our invariance test was a structural covariance model. This was a test to see if the latent factors had the same structural variance and covariance across groups. The fourth and final step of the study's measurement invariance test was the measurement residual invariance model. This model was considered to determine whether item–specific variances and error variances were similar across groups. In the analysis of invariance, each model had an acceptable model fit index as well as an acceptable invariance cut–off value that was not meaningfully different from the subsequent model (see Table 6). Thus, the Br–COPE–B was found to be invariant across gender and education.

DISCUSSION

The original Br–COPE has been tested empirically using various multivariate statistics worldwide. As a continuation of this, the aim of the present study was to test its Bangla version through various multivariate statistics including factor structure, reliability, validity and measurement invariance. Factor structure is basic evidence of a translated scale, which adequately reflects the structure of the constructs measured in the scale (Eker, Arkar & Yaldiz, 2000). Many researchers recommend both EFA and CFA rather than EFA alone to explain the factor structure of a scale (e.g., Terwee et al., 2012). Therefore, we performed both EFA and CFA to explain the factor structure of the Br–COPE–B. Both EFA and CFA confirmed a 6–factor structure of the Br–COPE–B that was consistent with some past findings. For example, Amoyal and colleagues (Amoyal, Fernandez, Ng & Fehon, 2016) demonstrated a 6–factor structure of the Br–COPE through a construct validity analysis. Matsumoto et al. (2020) also confirmed a 6–factor structure of the Br–COPE by both EFA and CFA. The 6–factor structure of the Br–COPE–B was also consistent with the findings of Pavlova et al. (2022) and Su et al. (2015).

Because researchers claim that a 2–item factor rarely reflects its true factor structure in factor analysis (Eisinga, Grotenhuis & Pelzer, 2013), we obtained a 6–factor structure

Table 6 – Test of measurement invariance of the Br-COPE-B by gender and education (*N* = 778)

Variable	Model fit						Model comparison		
	Model	χ^2	*df*	χ^2/df	*CFI*	*RMSEA*		*ΔCFI*	*ΔRMSEA*
Gender	M1	914.23	618	1.48	.977	.025			
	M2	914.23	640	1.43	.979	.024	M1–M2	–.002	.001
	M3	914.23	661	1.38	.981	.022	M2–M3	–.002	.002
	M4	914.23	715	1.28	.985	.019	M3–M4	–.004	.003
Education	M1	2276.56	1024	2.22	.911	.040			
	M2	2328.27	1046	2.23	.909	.040	M1–M2	.002	.000
	M3	2394.28	1067	2.24	.905	.040	M2–M3	.004	.000
	M4	2851.53	1121	2.54	.884	.045	M3–M4	.021	–.005

Legenda. df = degree of freedom; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; M1 = unconstrained; M2 = measurement weights; M3 = structural covariances; M4 = measurement residuals.

instead of the original 14–factor structure of the Br–COPE. Even with reduced factor structure, the model fitness of the Br–COPE–B was comparable to that of the original Brief COPE. Acceptance, planning, active coping and positive reframing subscales were formed into the Problem–solving factor (Factor 1). These four subscales are relevant to problem–focused coping which explains all proactive efforts to manage stress. There are past studies that have found similar factor construct names to Factor 1 (e.g., Carver, 1997; Miyazaki et al., 2008; Snell et al., 2011). Although Carver made a conceptual distinction between emotional support and instrumental support, he claimed that they are primarily relevant to problem–focused copin and often work together. It would have been better if these two support subscales were included in the Problem solving factor instead of a separate Support seeking factor (Factor 5). However, this factor was considered acceptable because it was not confounded with other avoidant coping factors. The Seeking support factor (Factor 5) was supported by some past findings (e.g., Carver, 1997; Kapsou et al., 2010; Perczek, Carver, Price, & Pozo–Kaderman, 2000; Yusoff, 2011).

Theoretically, four subscales of the original Brief COPE such as denial, behavioral disengagement, substance use, and self–distraction are relevant to avoidant coping. Theoretically as well as conceptually, it would have been better if these four subscales were extracted into a single factor structure. But they were extracted into two separate factors in the Br–COPE–B (Factor 2 and Factor 6), which did not mean that they were theoretically different. Furthermore, these two avoidant coping subscales were not confounded with the problem–focused or emotion–focused coping subscales. Similar to the structural pattern of avoidant coping, factors relevant to emotion–focused coping in the original Brief COPE were structured into two factors instead of one factor in the Br–COPE–B (Factor 3 and Factor 4). It was clear that the approach–based (problem–focused and emotion–focused coping) and avoidance–based coping subscales formed separate factors in the factor structure of the Br–COPE–B which was supported by the findings of Eisenberg et al. (2012). Dias, Cruz, and Fonseca (2012) conceptualized the Brief COPE items within three basic factors including problem–focused coping, emotion–focused coping, and avoidant coping. The items of the Br–COPE–B were structured into three factors as noted by Dias et al. (2012), but each factor was structured into two sub–factors.

The Br–COPE–B showed both internal consistency reliability and composite reliability, which was consistent with previous findings (e.g., Bacanli et al., 2013; Baumstarck et al., 2017; Garcia et al., 2018; Nunes et al., 2021; Otsuka, Takada, Suzuki, Tomotake & Nakata, 2008; Yusoff, 2011). The convergent and discriminant validity of the Br–COPE–B was adequately supported by past research conducted on the Br–COPE across cultures (e.g., Baumstarck et al., 2017; Muller & Spitz, 2003; Otsuka et al., 2008). This scale was invariant to gender, which was supported by some past research on it (e.g., Doron et al., 2014; Garcia et al., 2018; Nunes et al., 2021). Furthermore, it was invariant across education levels. There are almost no studies on the Br–COPE that have attempted to analyze its measurement invariance taking into account different educational groups. Thus, the invariance analysis of Br–COPE–B in terms of education revealed a new analysis in the field of Br–COPE research.

Limitations of the study

The current study had some limitations that should be addressed. First, the study was not free from sampling bias because it considered a convenience sampling method rather than a random sampling method. Second, the study did not consider a gold–standard Bangla coping scale to measure the concurrent validity of the Br–COPE–B. Finally, the study was unable to conclude that the Br–COPE–B is equally applicable to non–clinical and clinical samples because the study included only non–clinical samples.

Practical implications

Since we have proven the Br–COPE–B to be a valid and reliable scale for measuring the coping strategies of Bangladeshis, it is very clear that it will measure the actual coping behavior of Bangladeshis. The Br–COPE–B would be effective in measuring the coping strategies of Bangladeshis in a short period of time because it has no item loadings. Researchers around the world will not only be able to gain knowledge about the validation process and psychometric properties of the Br–COPE–B, but also will be able to compare this scale with other coping scales.

Future research directions

Although the Brief COPE is a globally accepted scale for measuring people's coping strategies, its original fourteen factors have not been supported with sufficient empirical evidence across cultures. Future research could be conducted on the Brief COPE to determine its underlying factor structure. If future studies could take into account the limitations of the current study (e.g., sampling bias, concurrent validity, invariance tests for different samples), they would be the most comprehensive studies in the field of coping research. It would be most appreciated if future studies could examine coping strategies in specific contexts such as situational, cultural, and economic.

CONCLUSION

The Br–COPE–B was structurally validated by both EFA and CFA and was found to be reliable and valid through reliability and validity analyses. Moreover, it was found to be invariant across gender and education. The overall results of the study strengthened the factorial validity of the Br–COPE–B and increased the robustness of its psychometric properties. Thus, a new Bangla 6–factor structure of Br–COPE can be recommended as a valid and reliable scale for assessing the coping strategies of Bangladeshi people. Future studies considering measurement invariance analysis across samples as well as across cultures would advance a new field of study of this scale.

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Italian validation of the Generic Conspiracist Beliefs Scale (GCBS)

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ABSTRACT. L'obiettivo di questa ricerca riguardava la validazione in italiano della *Generic Conspiracist Beliefs Scale (GCBS)*. Sono stati definiti cinque fattori: illeciti governativi (GM), occultamento degli extraterrestri (ET), cospirazioni globali malevoli (MG), benessere personale (PW) e controllo delle informazioni (CI). La coerenza interna, la validità convergente e di criterio erano accettabili. Infine, le caratteristiche sociodemografiche erano associate all'ideazione cospirazionista.

SUMMARY. Although conspiracy theories influence Italian society, there are no Italian questionnaires to evaluate conspiracist ideation. Hence, the study aimed to validate the Generic Conspiracist Beliefs Scale (GCBS) in Italian, investigating its validity and reliability. The validation has been done in 2 studies. Specifically, participants completed a translated version of GCBS in Study 1. Explorative Factor Analysis (EFA) showed that the five-factor structure was interpretable. Factors were government malfeasance (GM), extraterrestrial cover-up (ET), malevolent global conspiracies (MG), personal well-being (PW), and control of information (CI). Finally, overall internal consistency was excellent ($\alpha = .93$). Regarding study Study 2, Confirmatory Factor Analysis (CFA) confirmed the structure's excellent fit indexes ($\chi^2/df = 2.87$, robust CFI = .957, robust TLI = .941, robust RSMEA = .066, 90% CI [.054, .078]; SRMR = .041). In addition, convergent and criterion validity were acceptable. Finally, socio-demographic characteristics such as political orientation, age, and educational level were related to the likelihood of being engaged in conspiracy theories.

Keywords: *Generic Conspiracist Beliefs Scale, Italian validation, Conspiracist ideation*

INTRODUCTION

Conspiracy beliefs are widespread worldwide, and their diffusion has triggered a particular interest in these last years. Specifically, the pandemic era of Covid-19 and the war between Russia and Ukraine have generated many conspiracy theories (e.g., Covid-19 and war are hoaxes, Covid-19 has been released to reduce population or to make earn pharma companies, Goodman & Carmichael, 2020; McManus, D'Ardenne & Wessely, 2020).

Conspiracy beliefs are important because they can influence intentions and behaviors. For instance, conspiracy beliefs about Covid-19 reduce the intention to vaccinate or to adopt norms to prevent the infection, such as social distancing or washing hands (Bierwiaczonek, Kunst & Pich, 2020; Freeman et al., 2020). In addition, conspiracy theories about a population (e.g., Jews) predict negative attitudes toward it (Swami, 2012). Finally, conspiracy beliefs hinder social behaviors like voting or protecting the environment (Biddlestone, Azevedo & van der Linden, 2022; Jolley & Douglas, 2014).

Sociodemographic characteristics and psychological traits or states have been studied in relation to conspiracy beliefs. For example, the tendency to believe in conspiracy theories is associated with lower education, lower income, and younger age (Swami, 2012; Uscinski & Parent, 2014; van Prooijen, 2017; van Prooijen & Acker, 2015). In addition, some studies have found that people on the far right and left are more likely to believe in conspiracies, while others have failed to do so (McHoskey, 1995; van Prooijen, Krouwel & Pollet, 2015). Regarding psychological traits, anxiety, boredom, schizoid, and paranoid traits are associated with a predisposition to believe in conspiracies (Brotherton & Eser, 2015; Darwin, Neave & Holmes, 2011), while agreeableness has received mixed results (Galliford & Furnham, 2017; Goreis & Voracek, 2019). Instead, stress appears to be a good predictor. Indeed, people in situations rated as stressful tend to believe more in conspiracies (Grzesiak-Feldman, 2013; Sallam et al., 2020).

Unfortunately, conspiracy theories are hard to fight or prove false. One reason for this difficulty could be that people believe in conspiracy theories to satisfy their needs. For instance, Douglas and colleagues (Douglas, Sutton & Cichocka, 2017) hypothesized that conspiracies addressed social (i.e., maintaining a positive image of the self or the group), epistemic (i.e., providing a logical explanation of events or phenomena that are difficult to understand), and existential needs (acquiring a sense of control a new meaning about our existence). Some studies have also confirmed the role of these needs. For instance, a lower level of knowledge about Covid-19 is associated with conspiracy beliefs, satisfying the episteme need (Sallam et al., 2020). In addition, people believe more likely in conspiracy theories when their appearance is threatened, addressing the social need (Cichocka, Marchlewska & de Zavala, 2016). Therefore, an anti-conspiracy theory campaign should consider this evidence and seek alternative explanations that equally satisfy the needs of people.

The assessment of conspiracy theories

Hence, the assessment of conspiracies is essential to investigate their diffusion over the population and plan campaigns to address them. For this aim, there are many self-reports to evaluate conspiracy beliefs and conspiracist ideation, that is, the tendency to be engaged in conspiracy theories (Brotherton, French & Pickering, 2013). The most used questionnaires are the *Generic Conspiracist Beliefs Scale* (GCBS; Brotherton et al., 2013), the *Flexible Inventory of Conspiracy Suspicions* (*FICS*; Wood, 2017), the *Conspiracy Mentality Questionnaire* (*CMQ*; Bruder, Haffke, Neave, Nouripanah & Imhoff, 2013) and the *Conspiracy Mentality Scale* (*CMS*; Stojanov & Halberstadt, 2019).

The difference between these instruments is that GCBS and CMQ measure conspiracist ideation by proposing a series of statements that refer to general conspiracies (Brotherton et al., 2013; Bruder et al., 2013). For example, GCBS asks how much the subject agrees that alien contacts are kept hidden from citizens (Brotherton et al., 2013). Conversely, FICS and CMS have content-independent items (Stojanov & Halberstadt, 2019; Wood, 2017). For instance, FICS proposes that sentences be completed at the participant's discretion (Wood, 2017). Finally, questionnaires exist that investigate specific conspiracies, that is, on a particular exact topic. For example, the 9/11 questionnaire investigates conspiracies involving the terrorist attacks on the Twin Towers of 9/11 (Swami, Chamorro-Premuzic & Furnham, 2010).

THE GENERIC CONSPIRACIST BELIEFS SCALE (GCBS)

GCBS is one of the most used and famous self-reports that measures conspiracist ideation, that is, the engagement level in conspiracy theories. It consists of 15 items. Brotherton et al. (2013) identified five dimensions: a) government malfeasance (GM), that is assuming that the government is involved in criminal operations (α = .93); b) extraterrestrial cover-up (ET), regards thinking that the encounters with extra-terrestrials and associated evidence are hidden (α = .94); c) malevolent global conspiracies (MG) theorize that small secret groups control the world's fortunes (α = .94); d) personal well-being (PW), that is, some events, such as the spread of diseases, are secretly caused by some organization (α = .95); e) control of information (CI) relates to control and suppress information at various levels, such as media, scientists, or governments (α = .87). The instrument showed good psychometric characteristics, such as excellent internal consistency (α = .93), test-retest reliability (r = .89, p<.001), as well as good convergent (r = .86, p<.001) and discriminant (r = .20, p<.05) validity (Brotherton et al., 2013).

AIM

Although the infodemic of conspiracy theories also affected Italy (Diseases, 2020), there is no Italian questionnaire to evaluate conspiracy beliefs or conspiracist ideation. The only exception is one by Antichi and colleagues (Antichi, Goretzko & Giannini, 2022) that assesses conspiracies about Covid-19 and the related agent engaged in its diffusion. However, there is a need for a questionnaire that evaluates conspiracies in general without focusing only on a single historical phenomenon. Furthermore, to our knowledge, there is no Italian validation of any international self-report that assesses conspiracies.

Hence, this article aims to validate the *Generic Conspiracist Beliefs Scale* (*GCBS*; Brotherton et al., 2013) in Italian. The first study investigates the structure of the GCBS and the internal consistency for the subscales and the overall GCBS. In contrast, the second study aims to confirm the structure of GCBS on a second different sample, calculating fit indexes, convergent, and criterion validity and investigating sociodemographic characteristics' effect on conspiracist ideation.

STUDY 1

Study 1: Sample

Five hundred sixteen participants were recruited to complete the online questionnaire through convenience sampling (N = 516, 197 men, 314 women, 5 other, M_{age} = 32.69, SD_{age} = 14.11). Indeed, participants could apply to the study through a link shared on social networks (e.g., Facebook, LinkedIn). In this sample, 98.6% were Italian, while the remaining 1.4% were from other countries. Regarding Italian regions, 79.5% of participants were from the Center, while the different zones were a minority, such as North-West (7.9%) or North-East (7.6%), and Southern (2.5%). Most of the sample was single (71.5%) and lived with their parents (53.1%). Considering the job condition, 40.5% were unemployed, 42.8% were employed, while minorities were housewives (11.4%), students (3.3%), and retirees (1.9%). In addition, the majority had a family income lower than 36151.98 euros (55.4%), while 30.8% indicated an income between 36151.99 and 70000 euros. Furthermore, most had homeownership (77.1%). Regarding educational qualifications, 45.3% had a high school degree, whereas 25.8% had a bachelor's and 20% had a master's degree. Political orientation was predominately left (30.4%) or center-left (32.9%), followed by center-right orientation (15.7%).

Study 1: Materials

- *Sociodemographic characteristics.* Participants indicated nationality, Italian region, ethnicity, gender identity, marital status, housing situation, living situation, highest educational qualification, total household income, employment, and political orientation.
- *Generic Conspiracist Beliefs Scale* (*GCBS*; Brotherton et al., 2013). GCBS measures conspiracist ideation. It consists of 15 items. Participants must indicate how each assertion is true on a 5-point Likert scale (1 = definitely not true; 5 = definitely true). Every item score is summed up to obtain an overall score reflecting conspiracist ideation. A higher score corresponds to higher conspiracist ideation.

Study 1: Procedure

Regarding the translation process from English to Italian, the first and the last authors generated their translation versions. Subsequently, the two versions were merged into a single consensus one. This step was carried out to detect any bias or ambiguity and correct them in a preventive way. Then, the Italian version was compared by a mother tongue with the original English version, investigating any discrepancies. The back-translation ensured that the meaning of each item was the same for both versions. The instruments were then tested on a small group of people to investigate their alternative formulations, to verify their intelligibility, interpretation, and cultural relevance. Finally, the final proofreading of the translation was done to highlight and correct any typographical and grammatical errors (see the Appendix for the Italian version of GCBS).

Once the questionnaire was completed, a web version was created through Google Forms. The link has been shared on social networks (e.g., Facebook, LinkedIn). Participants had to accept informed consent before answering the questionnaire, which was 15 minutes long. Participants did not receive compensation (e.g., money, educational credit). The university's ethics committee approved the study.

Study 1: Data analysis

Descriptive statistics were calculated using the Statistical Package for Social Science (SPSS) version 26. Moreover, item analysis was performed by calculating the item's means, standard deviations, kurtosis, skewness, and correlation coefficients.

Exploratory Factor Analysis (EFA) was performed to investigate the structure of the GCBS using principal-axis factoring. Factor retention methods were the scree-plot and the Kaiser-Guttman rule. In addition, the solution underwent Promax oblique rotation. The Kaiser-Meyer-Olkin (KMO) criterion and Bartlett's test were performed to determine the feasibility of EFA. Furthermore, the uniqueness and communality indices were estimated for each item. Finally, Cronbach's alfa was calculated for each dimension.

Study 1: Results

Item analysis showed that skewness and kurtosis values were between -1 and 1 for almost every item. Exceptions were items 3, 13, and 14, showing a slightly positive skewness; items 1, 2, 12, and 15, indicating a slightly negative kurtosis; and item 3, with a slightly positive kurtosis (see Table 1).

Furthermore, KMO (.94) and Bartlett test (χ^2 = 4833.66, p<.001) reported that EFA was feasible. The correlation matrix shows that every GCBS item correlated significantly with each other (see Table 2). Indeed, every correlation was over .30. However, the fifth item correlated at .80 with the fourth. Since multicollinearity hinders evaluating every variable's loading on each factor, we decided to eliminate the fifth item.

We obtained a solution with only two factors in the first EFA, explaining 60.68% of the variance. Scree-plot and Kaiser's criterion agreed with this solution. Every item loaded on the first factor except for items 3, 8, and 13, which loaded on the second (see Table 3). However, since the first solution was not interpretable and Brotherton et al. (2013) isolated five factors, another EFA was run, setting five as a fixed value for factor retention. This second solution explained 76.96% of the variance (see Table 4), and every factor correlated with each other (see Table 5).

In the second EFA solution, items 1, 6, and 11 loaded on the government malfeasance (GM) factor, while items 2, 7, and 12 loaded on malevolent global conspiracies (MG) one. Moreover, the extraterrestrial cover-up (ET) factor comprised items 3, 8, and 13, while the personal well-being (PW) factor comprised items 4, 9, and 14. Finally, items 10 and 15 loaded on the control of information (CI) factor.

Regarding reliability, Cronbach's alfa was .84 for GM, .85 for MG, .86 for ET, .79 for PW, and .57 for CI. Finally, overall, Cronbach's alfa was .93.

STUDY 2

Study 2: Sample

Four hundred and two participants responded to the online questionnaire through convenience sampling. Specifically, 99.9% were Italian; there were 50% of women and men, and the average age was 42.27 (*SD* = 15.07). Most were from the North-West (52.2%) and Center (32.6%) of Italy, while the other zones were a minority, such as North-East (9.7%), Southern (4%), and Peninsular (1.7%). The majority of the sample was celibate (44.5), married (42.8), single (23.6), and without children (49%). Regarding the total house income, 47.5% declared a lower 36151.98 euros, while 39.3% indicated an income between 36151.99 and 70000 euros. Most were homeowners (66.9%) or lived in a rented house (25.1%). The majority were full-time (38.1%), self-employed (18.9%), or part-time employed (16.1%), while minorities were housewives (5%), students (10.4%), and retirees (7.7%). Regarding educational qualifications, high school (28.6%), bachelor's (22.6%), and master's (39.6%) degrees were the most frequent. Dominant political orientations were left (21.4%), center-left (29.1%), right (11.9%), and center-right (22.9%).

Table 1 – Item analysis

Item	*Mean (SD)*	Skewness	Kurtosis	Item-Total score correlation
1	2.39(1.21)	.381	−1.104	.67**
2	2.53(1.29)	.248	−1.235	.70**
3	1.61(.97)	1.558	1.556	.64**
4	2.06(1.19)	.844	−.453	.81**
5	2.06(1.19)	.946	−.169	.81**
6	2.30(1.24)	.602	−.815	.76**
7	2.19(1.24)	.637	−.874	.77**
8	2.06(1.24)	.899	−.422	.62**
9	2.19(1.39)	.728	−.962	.70**
10	2.33(1.12)	.334	−.969	.58**
11	2.30(1.20)	.509	−.959	.82**
12	2.31(1.22)	.448	−1.074	.79**
13	1.75(.96)	1.100	.298	.68**
14	1.75(1.04)	1.306	.725	.72**
15	3.21(1.32)	−.342	−1.085	.74**

Note. The table shows the main descriptive statistics for every item, such as mean and standard deviation. Skewness and Kurtosis indices are calculated to assess the distribution of each item. The Item-Total score correlation column reports every correlational coefficient between each item score and the GCBS total score.
** p<.01

Study 2: Materials

- *Sociodemographic characteristics.* Participants indicated nationality, Italian region, ethnicity, gender identity, marital status, housing situation, living situation, highest educational qualification, total household income, employment, and political orientation.
- *Modified Generic Conspiracist Beliefs Scale* (*GCBS*; Brotherton et al., 2013). Participants completed the GCBS with 14 items indicating how each assertion is true. The fifth item of the original version was eliminated to prevent multicollinearity (see the Appendix for the Italian version of GCBS).
- *Contemporary Conspiracist Beliefs about Covid-19* (Antichi et al., 2022). The questionnaire comprises 21 items to investigate contemporary conspiracist beliefs about

Table 2 – Correlation matrix between items

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1														
2	.463	1													
3	.407	.334	1												
4	.504	.475	.468	1											
5	.492	.451	.481	.800	1										
6	.623	.518	.390	.590	.630	1									
7	.421	.602	.432	.617	.628	.572	1								
8	.389	.309	.702	.488	.446	.422	.454	1							
9	.341	.359	.336	.552	.515	.422	.449	.313	1						
10	.289	.365	.325	.419	.406	.372	.400	.325	.290	1					
11	.609	.471	.506	.627	.655	.686	.597	.488	.474	.435	1				
12	.437	.610	.414	.637	.634	.589	.733	.386	.494	.383	.626	1			
13	.380	.328	.643	.528	.500	.439	.477	.706	.445	.359	.525	.475	1		
14	.433	.449	.444	.605	.640	.548	.573	.417	.556	.352	.512	.542	.506	1	
15	.445	.474	.385	.540	.540	.528	.484	.424	.466	.401	.549	.541	.440	.486	1

Note. The table shows the correlation matrix between the 15 items of GCBS. Every correlation is statistically significant ($p<.001$).

Covid-19 and the related agents involved in its spread. Participants had to indicate their degree of agreement or disagreement on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). A higher score corresponded to a more significant agreement on conspiracy theories about Covid-19. Moreover, Antichi et al. (2022) identified three dimensions: a) origins of Covid-19 and purposes behind its spreading (α = .94); b) agents that favored Covid-19's spreading (α = .90); c) skepticism (α = .57). Fit indexes were good (e.g., RMSR = .03, TLI = .908, RMSEA = .081, 90% CI [.075, .087]). The instrument has good convergent validity (r = .79, $p<.01$).

Study 2: Data analysis

We recurred to Confirmation Factor Analysis (CFA) for testing the model and calculating fit indexes using R Studio software (lavaan, semPlot, semTools, and haven libraries). Since we found two alternative models in the EFA process,

Table 3 – Solution with two factors

Item	Factor 1	Factor 2
1	.584	.081
2	.778	–.144
3	.021	.782
4	.700	.133
6	.786	–.017
7	.780	.007
8	–.077	.920
9	.567	.066
10	.430	.116
11	.695	.146
12	.870	–.086
13	.104	.746
14	.623	.130
15	.630	.082

Note. This table shows the factor matrix where the two-factor solution is reported. In addition, standardized factor loadings for every item after promax rotation are presented.

the model with two factors was compared with the five-factor model. Maximum likelihood with robust standard errors (MLR) was used to estimate the models.

Moreover, we calculated the chi-square per degree of freedom ratio (χ^2/df) the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), the robust Comparative Fit Index (CFI), the robust Tucker-Lewis Index (TLI), the robust Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR). Finally, the convergent and predictive validity of GCBS was investigated by calculating Spearman coefficients and a regressive model including the five factors.

After confirming the structure, the total score of conspiracist ideation and its descriptive statistics was calculated using SPSS. Next, we explored gender identity and political orientation differences among the conspiracist ideation with one-way independent sample ANOVA with Bonferroni post-hoc. Finally, the Spearman correlation was calculated to investigate the association between conspiracist ideation, age, and educational level.

Table 4 – Solution with five factors

Item	ET	MG	GM	PW	CI	Communalities	Uniqueness
1	.022	−.095	.948	−.057	−.076	.640	.360
2	−.100	.624	.135	−.141	.192	.521	.479
3	.782	.015	.074	−.042	−.024	.634	.366
4	.091	.205	.155	.389	.061	.641	.359
6	−.054	.165	.691	.042	.005	.680	.320
7	.082	.994	−.072	−.017	−.126	.793	.207
8	.952	−.012	.005	−.152	.051	.788	.212
9	−.078	−.084	−.064	.901	.038	.604	.396
10	.105	.161	−.060	−.031	.428	.310	.690
11	.116	.121	.508	.058	.111	.675	.325
12	−.046	.763	−.025	.093	.078	.722	.278
13	.722	−.022	−.078	.222	.021	.686	.314
14	.073	.168	.098	.554	−.079	.573	.427
15	.014	.034	.044	.152	.557	.556	.444

Legenda. ET = extraterrestrial cover-up; MG = malevolent global conspiracies; GM = government malfeasance; PW = personal well-being; CI = control of information.
Note. This table shows the factor matrix where the five-factor solution is reported: every item has a standardized factor loadings for each factor. Promax rotation has been used to improve interpretability. Item 5 has been eliminated. Communalities (i.e., the proportion of shared variance) and Uniqueness (i.e., specific and error variances) indexes are shown for every item.

Table 5 – Factor correlation matrix

Factor	1	2	3	4	5
1. ET	1				
2. MG	.638	1			
3. GM	.650	.812	1		
4. PW	.687	.819	.768	1	
5. CI	.663	.839	.850	.806	1

Legenda. ET = extraterrestrial cover-up; MG = malevolent global conspiracies; GM = government malfeasance; PW = personal well-being; CI = control of information.
Note. The table shows the correlation matrix between the five factors.

Study 2: Results

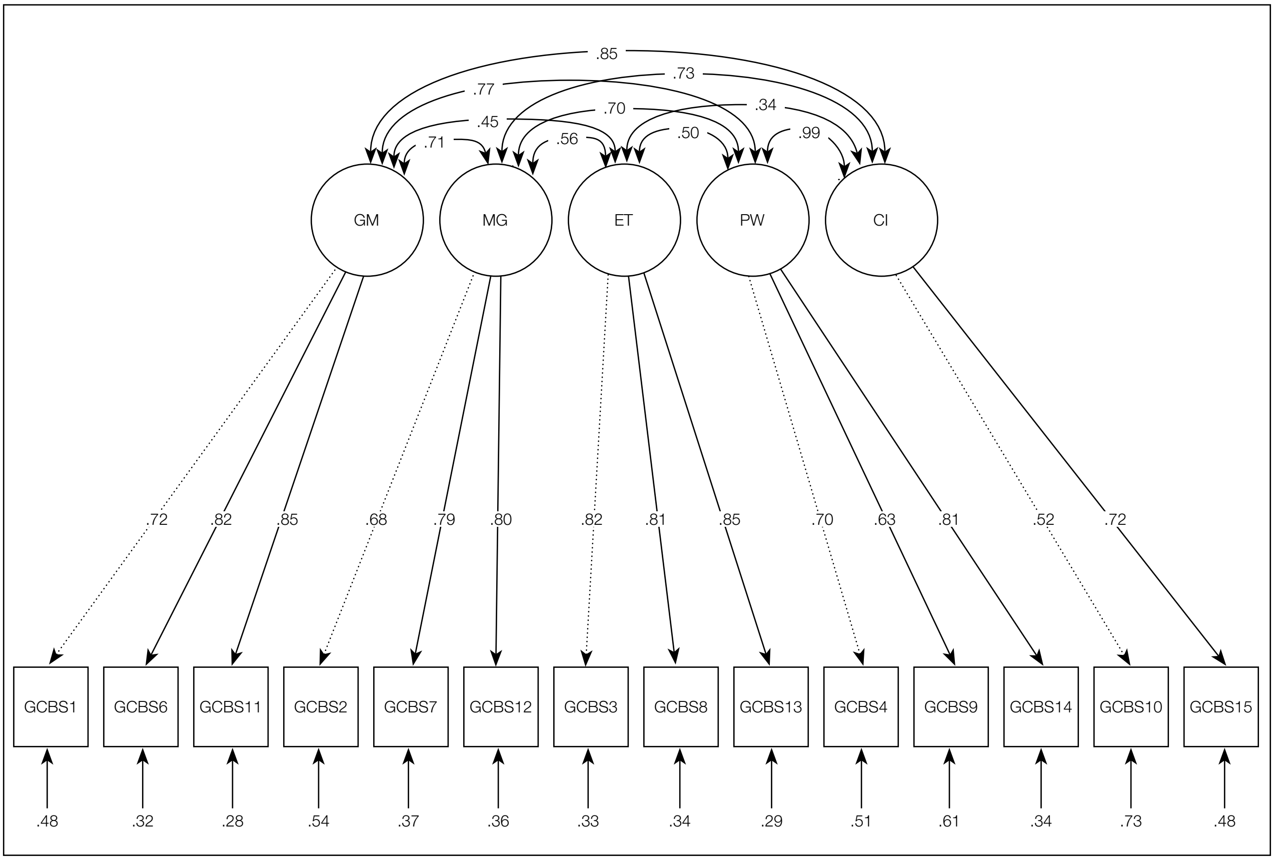
- *Confirmation Factor Analysis (CFA).* The five factors model had better fit indexes than the two-factor model (see Table 6 for a confrontation). Specifically, the five-factor model had $\chi^2/df = 2.87$ (χ^2 (67) = 193.369, $p<.001$), which is an acceptable value since the threshold has to be lower than 3 (Schumacker & Lomax, 2010). In addition, models with robust CFI and TLI above .90 are considered adequately fitted (Bentler, 1990; Tucker & Lewis, 1973). The five-factor model's robust CFI was .957, while the robust TLI was .941. Finally, an RMSEA value below .80 and an SRMR value below .50 indicate a close model fit (Jöreskog & Sörbom, 1982; Steiger, 2000). The five factors model showed a close fit (robust RMSEA = .066, 90% CI [.054, .078]; SRMR = .041). Figure 1 shows the path model.
- *Convergent and criterion-related validity.* Convergent validity with the Contemporary Conspiracist Beliefs about Covid-19 questionnaire was acceptable ($r = .74$, $p<.001$). In addition, to test criterion validity, the five factors were inserted as predictors in a regressive model using the total score of the *Contemporary Conspiracist Beliefs about Covid-19* questionnaire as the outcome variable. The regressive model was significant ($F_{(5, 396)} = 144.73$, $p = .001$), explaining 65% of the variance ($R^2 = .65$). Of the five factors, GM, PW, and CI were significant predictors, while MG and ET were not (see Table 7 for standardized b values, t-tests, and p-values).
- *Conspiracist ideation and sociodemographic characteristics.* The average conspiracist ideation was 35.38 ($SD = 11.20$). Conspiracist ideation did not significantly differ between gender identities ($F_{(1, 400)} = .405$, $p = .525$). Instead, there were significant differences between educational levels ($F_{(6, 395)} = 4.08$, $p = .001$). Specifically, Bonferroni post-hoc shows significative mean differences between far-right and left ($M_{diff} = 15.59$, $p = .044$), centre-left ($M_{diff} = 15.52$, $p = .043$), and centre ($M_{diff} = 17.61$, $p = .017$). Moreover, there was a significant negative association between conspiracist ideation and educational level ($r_s = -.22$, $p<.001$) and a positive one with age($r_s = .14$, $p<.005$).

Table 6 – Confirmatory Factor Analysis (CFA) indexes

	Solutions	
Indexes	*Two-factors solution*	*Five-factors solution*
χ^2/df	5.92	2.87
Akaike Information Criterion (AIC)	15674.625	15436.035
Bayesian Information Criterion (BIC)	15790.522	15587.900
Robust Comparative Fit Index (CFI)	.867	.957
Robust Tucker-Lewis Index (TLI)	.841	.941
Robust Root Mean Square Error of Approximation (RMSEA)	.109	.066
Standardized Root Mean Square Residual (SRMR)	.067	.041

Legenda. df = degree of freedom.
Note. The table shows the confrontation of fit indexes between the two-factor and the five-factor solutions.

Figure 1 – Five-factors solution path model



Legenda. GM = government malfeasance; MG = malevolent global conspiracies; ET = extraterrestrial cover-up; PW = personal well-being; CI = control of information.
Note. The figure shows the path model of the five-factor solution for Confirmatory Factor Analysis (CFA).

Table 7 – Regressive Model with GCBS factors scores predicting Conspiracist Beliefs about Covid-19

Factor	*b*	SE	*b**	*t*	*p*-value	95%CI
ET	.065	.248	.009	.26	.794	[–.423, .552]
MG	–.048	.242	–.008	–.20	.844	[–.523, .428]
GM	1.209	.244	.210	4.95	<.001	[.729, 1.689]
PW	2.991	.269	.496	11.12	<.001	[2.462, 3.520]
CI	1.975	.403	.209	4.90	<.001	[1.182, 2.768]

Legenda. *b** = standardized *b* value; ET = extraterrestrial cover-up; MG = malevolent global conspiracies; GM = government malfeasance; PW = personal well-being; CI = control of information.

DISCUSSION

We performed item analysis and EFA on 516 participants in the first study. Two solutions were found: the first contained only two factors; the other had five factors. Since the first was not interpretable, we chose the five-factor solution. The factors explained the same items in Brotherton et al.'s study (2013). Hence, we named the factors in the same manner: government malfeasance (GM), extraterrestrial cover-up (ET), malevolent global conspiracies (MG), personal well-being (PW), and control of information (CI).

We eliminated the fifth item to prevent multicollinearity. So, while the GCBS of Brotherton et al. (2013) comprises 15 items, our version has 14 items. Moreover, the reliability of every scale of our version is lower than the original. For example, our first study showed that Cronbach's alfa was .84 for GM, .85 for MG, .86 for ET, .79 for PW, and .57 for CI. At the same time, Brotherton et al. (2013) found $\alpha = .93$ for GM, $\alpha = .94$ for MG, $\alpha = .94$ for ET, $\alpha = .95$ for PW, and $\alpha = .87$ for CI. However, overall reliability was .94, similar to Brotherton et al. (2013)'s estimate ($\alpha = .93$). Therefore, GCBS has excellent internal consistency in the Italian and English versions.

We hypothesize that the low Cronbach's alfa for CI could be due to the low number of items since we eliminated one. Indeed, the fifth item loaded for CI is in the original version. Another explanation considers that items from CI and PW are similar and could not discriminate the dimension very well. For instance, the fourteen item states, "Experiments involving new drugs or technologies are routinely carried out on the public without their knowledge or consent" (Brotherton et al., 2013, p. 15). In comparison, the fifteen states, "A lot of important information is deliberately concealed from the public out of self-interest" (Brotherton et al., 2013, p. 15). Although the fourteen-item load on PW and the fifteen on CI, concealed information is the common theme of both.

The second study aimed to confirm the factor structure on another sample of 404 participants. CFA indexes showed that the five-factor solution had a superior fit than the two-factor solution, proving our choice to adopt the first in favor of the latter. The goodness of fit of the model was excellent (χ^2/df = 2.87, CFI = .957, RSMEA = .066, SRMR = .041). Moreover, Brotherton et al. (2013) obtained similar results (χ^2/df = 1.76, CFI = .97, RMSEA = .06, SRMR = .06) although we used the robust version of CFI, RMSEA, and SRMR.

Furthermore, the convergent validity of the Italian GCBS was good (r = .74, p<.001) but lower than what Brotherton et al. (2013) found (r = .86). However, we used a different questionnaire to assess the convergent validity. Indeed, we decided to use a validated Italian questionnaire instead of translating another instrument. The only available when we projected the study was the *Contemporary Conspiracist Beliefs about Covid-19* (Antichi et al., 2022). Instead, Brotherton et al. (2013) used the *Belief in Conspiracy Theories Inventory* (*BCTI*; Swami et al., 2010) and the Belief in 9/11 conspiracy theories (Swami et al., 2010) that no one has ever validated in Italian.

Moreover, the criterion validity was acceptable. Specifically, GM, PW, and CI predicted conspiracist ideation about Covid-19. These results could depend on the fact that Antichi et al. (2022)'s questionnaire focuses on hidden organizations, specific governments, or people (e.g., Bill Gates) responsible for Covid-19 spreading. These items have common themes like government maleficent, well-being, and concealed information significantly related to GM, PW, and CI. In addition, since Antichi et al. (2022)'s questionnaire does not mention alien encounters, it is reasonable that ET was not a significant predictor in our Study 2.

Finally, Study 2 also investigated the relationship between sociodemographic characteristics and GCBS. We found that conspiracist ideation was negatively related to educational level and positively related to age. The higher academic level as a protective factor against conspiracy beliefs is in line with the literature (van Prooijen, 2017; van Prooijen & Acker, 2015). However, younger age is not a protective factor. Indeed, age is negatively associated with conspiracy beliefs (Swami, 2012), and adolescents from 10 to 14 years are more likely to believe in conspiracy theories (Jolley, Douglas, Skipper, Thomas & Cookson, 2021).

Moreover, while there were no differences in gender identity, the political orientation predicted different conspiracist ideation levels whereby far-right participants engaged more likely in conspiracy beliefs. However, since the literature is inconsistent regarding the presence or absence of these associations between gender identity, political orientation, and conspiracist ideation, it is prudent to be cautious in judging this result in line with other studies. For instance, Cassese and colleagues (Cassese, Farhart & Miller, 2020) found that women believed less in conspiracy theories than men, while there was no gender difference in our Study 2. Regarding political orientation, while McHoskey (1995) did not find a significant association, van Prooijen et al.

(2015) found that political extremes (both left and right) were associated with conspiracy beliefs.

Hence, sociodemographic characteristics could explain the different results between our study and Brotherton et al. (2013)'s validation study of GCBS. Regarding the sample, Brotherton et al. (2013) used an undergraduate student sample, while our samples had an older average age. In addition, the sample size between our studies and Brotherton et al. (2013)'s studies are similar. Considering the gender distribution, Brotherton et al. (2013) recruited the first two samples composed of 45% and 77.9% of females. Conversely, our first sample contained 60.85% of women, while the second was perfectly balanced. Cassese et al. (2020) found that gender influenced engagement in conspiracy theories. Finally, since Brotherton et al. (2013) did not specify other sociodemographic characteristics, such as political orientation and education, it is unknown if these variables influenced their results.

CONCLUSION

This article aimed to validate GCBS in Italian since no validated questionnaire assessed general conspiracy beliefs in Italy. A newly validated questionnaire could be helpful for future research to investigate conspiracy theories and associated behaviors more reliably. Indeed, the translated GCBS has good psychometric indexes, such as internal consistency, convergent, and criterion validity. Moreover, new campaigns that aim to fight conspiracy theories could use the translated CGBS to assess the effect of interventions.

However, there are some shortcomings to consider. First, researchers should be aware that our GCBS version misses item five, compromising in part the internal consistency of the CI sub-scale. Hence, the interpretation of the CI sub-scale should be cautious. Second, while Brotherton et al. (2013) assessed test-retest reliability, we still need to. Indeed, we use a Google form where participants could respond entirely anonymously. Although this strategy might prevent social desirability, it is impossible to maintain contact with the same persons to complete the questionnaire two times. Last, most recruited participants were from Center and North-West Italy, while the other zones were a minority, especially South Italy and Peninsular Italy. Although we have shared the link to Google form online, our social network profile could have limited the spread of the questionnaire to some zones.

To conclude, future studies should assess the test-retest reliability of our translated version of GCBS in different samples with various characteristics to extend generalizability. Furthermore, future research should balance the sample considering sociodemographic characteristics since we have demonstrated their influence on the likelihood of being engaged in conspiracy theories. Finally, Anti-conspiracy theory campaigns and a new trend of research in Italy are desirable. Having a validated translated questionnaire is the first step in this direction.

Conflict of interest: The authors declare that the research was conducted without any potential conflict of interest.

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APPENDIX

List of GCBS items

Number of items	Description
1	Il governo è coinvolto nell'omicidio di cittadini innocenti e/o personaggi pubblici noti e lo tiene segreto.
2	Il potere detenuto dai capi di Stato è inferiore rispetto a quello di piccoli gruppi sconosciuti che controllano realmente la politica mondiale.
3	Le organizzazioni segrete comunicano con extraterrestri, ma lo mantengono nascosto ai cittadini.
4	La diffusione di determinati virus e/o malattie è il risultato degli sforzi deliberati e nascosti di alcune organizzazioni.
5[a]	Gruppi di scienziati manipolano, fabbricano o eliminano le prove per ingannare i cittadini.
6	Il governo autorizza o compie atti di terrorismo sul proprio suolo, mascherando il proprio coinvolgimento.
7	Un piccolo gruppo segreto di persone è responsabile nel prendere tutte le principali decisioni mondiali, come andare in guerra.
8	Le prove di contatti con un extraterrestre vengono nascoste al pubblico.
9	La tecnologia con una capacità di controllo mentale viene utilizzata sulle persone a loro insaputa.
10	La tecnologia nuova e avanzata che danneggerebbe l'industria attuale viene soppressa.
11	Il governo usa le persone come capri espiatori per nascondere il proprio coinvolgimento in attività criminali.
12	Alcuni eventi significativi sono stati il risultato dell'attività di un piccolo gruppo che manipola segretamente gli eventi mondiali.
13	Alcune voci o avvistamenti di UFO sono pianificati o messi in scena per distrarre il pubblico da un contatto alieno realmente avvenuto.
14	Gli esperimenti che coinvolgono nuovi farmaci o nuove tecnologie vengono regolarmente condotti sui cittadini senza che ne siano al corrente o che abbiano fornito il loro consenso.
15	Molte informazioni importanti vengono deliberatamente nascoste al pubblico per interesse personale.

Note. [a] Item 5 has been eliminated from the model.