RESEARCH PAPER

The Role of Resilience in Fostering Late Adolescents' Meaning-Making Process: A Latent Profile Analysis

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Abstract

The study presents an application of Latent Profile Analysis to sustain the existence of different profiles of meaning-making (i.e., the process of searching and finding meaning in life) within the late adolescent's population, and to investigate the role of resilience in predicting profiles' belonginess. 943 Italian senior high-school students (52% females) were clustered into two adaptive profiles, *highly-engaged* (high presence, average search) and *balanced* (average presence and search), and two maladaptive profiles, *frustrated* (average presence, high search) and *disengaged* (low presence and search). A multinomial logistic regression revealed that adolescents with robust resilience skills were more likely to show adaptive profiles, and less likely to fall into the disengaged group, suggesting that individuals with higher resilience are more prone to engage in search for meaning even when they perceive a lack of presence of meaning. Findings contribute to a nuanced understanding of meaning-making, calling the development of personalized interventions to foster adolescents' ability to navigate life challenges during their transition toward adulthood.

1 Introduction

The journey from adolescence to adulthood encompasses a series of pivotal developmental goals, each marked by distinct challenges and opportunities. The process of becoming an adult is today more gradual and longer than in the past, and is surrounded by a series of changes that involve the adolescent in all aspects, starting with physical change, the refine-

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ment of cognitive and thinking skills, the development of intimate peer and romantic relationships, and the renegotiation of the relationship with parents (Ellena et al., 2023; Erikson, 1968; Heine et al., 2006; Marcia, 1966; Scabini et al., 2006; Zarrett & Eccles, 2006; Pastore, 2019; Petrescu et al., 2022). All these aspects place adolescents in a delicate phase of defining a personal sense of identity and meaning in life, which plays a key role in guiding adolescents in their daily decisions and behavior and in committing to personal goals (Erikson, 1968; Negru-Subtirica et al., 2016; Zarrett & Eccles, 2006).

One of the most important developmental goals in the transition from late adolescence to emerging adulthood (18–29, Arnett, 2014) is the graduation from high-school and the transition to the next academic or professional step. This transition holds substantial significance, as it necessitates young individuals to manage increased levels of responsibility and independence and make mature decisions about their future, confirming society expectations (Erikson, 1968; Zupančič et al., 2014; Zarrett & Eccles, 2006).

Making a conscious decision about such commitments implies taking a progressive stride towards the construction of a meaningful life project (McAdams, 2001), one that guides individuals from the exploratory phase of adolescence towards the maturity and identity stability of adulthood. On the contrary, the inability to navigate this transition adaptively, for instance, by avoiding or postponing decisions related to moving into college or enter the labor market, may potentially initiate a trajectory characterized by dysfunctional development and social isolation, a pattern exemplified by the NEET (Not in Education, Employment, or Training) phenomenon.

The meaning-making process is generally conceived as the process by which individuals build a sense of life meaningfulness (Kiang & Fuligni, 2010; Negru-Subtirica et al., 2016). This process has been recognized as a protective factor for young people's well-being during the transition toward adulthood (Brassai et al., 2011; Dulaney et al., 2018; Krok, 2015). Research findings unveiled that adolescents who are able to create meaning in life during turning points tend to show higher well-being and positive adjustment (Tavernier & Willoughby, 2012). Moreover, an active engagement in the meaning-making process helps youths envisioning a more hopeful and less frightening future (Brassai et al., 2012), and promoting their commitments to meaningful lifegoals (Mayseless & Keren, 2014), even during highly stressful situations such as the Covid-19 pandemic (Zambelli et al., 2022).

Recent literature adopted a person-oriented approach, in contrast to the more widespread variable-centered approach, to examine the heterogeneity of ways in which the young population engage in the process of searching and finding meaning in life. The application of clustering techniques such as Cluster Analysis and Latent Profile Analysis demonstrated the existence of functional vs. dysfunctional profiles of activation of the meaning-making process (Dezutter et al., 2014; Krok, 2018; Zambelli & Tagliabue, 2023). More specifically, profiles of people engaged in a functional meaning-making process were linked to greater well-being and adaptation, while dysfunctional profiles were characterized by the inability to construct meaning in life and negative psychological outcomes.

Although the results obtained from the mentioned person-centered studies contributed to enriching and complexifying the theoretical reflection that consider meaning-making as a developmental process, empirical evidence remains limited, necessitating further insights into the profiles of meaning-making among the adolescent population. Additionally, there is a need to explore which dispositional factors, such as cognitive or motivational resources, may stimulate a positive activation of the meaning-making process. For instance, resilience

skills are commonly assumed to be essential for dealing with challenges and traumatic situations (Masten & Obradović, 2006; Southwick et al., 2014; Ungar, 2011). However, the theoretical framework positing an association between resilience skills and the engagement in a functional meaning-making process remains scant in empirical exploration.

Based on these premises, the current study endeavors to test a theoretical model that situates the meaning-making process at the core of late adolescents' experiences during their senior year of high school. In this model, personal resources of resilience possessed by late adolescents play a pivotal role in the activation of an adaptive meaning-making process, by equipping young individuals with the cognitive and emotional resources necessary to confront the transition toward adulthood in a proactive way.

1.1 The Role of Meaning-making during the Transition to Adulthood

Despite there are many conceptualisations proposed to define the process of meaning-making in the literature (e.g., King & Hicks, 2021; Park, 2010), in the present work we rely on Steger's et al. (2006) framework as it represents, to date, the most widespread conceptualization in the psychology field. According to Steger, the process of creation of life meaningfulness can be framed as the relationship between the perception of having a life fulfilled with meaning (i.e., the presence of meaning) and the perception of actively searching for a sense of meaningfulness (i.e., the search for meaning). The former concerns with the degree to which individuals are able to create a sense of order and understanding of their life, having a sense of direction and goals, and perceive their life as valuable and worth living, while the latter reflects the active effort to reach a satisfactory level of meaning in life by trying to comprehend the meaning, significance and purpose of their life experiences (Martela & Steger, 2016; Steger et al., 2006, 2009).

The process of meaning-making plays an important role during late adolescence and emerging adulthood. Young individuals attempt to make sense of and arrange their encounters with novel situations and events by recognizing important aspects of their personal and social life and exploring profound meanings in their existence (Kiang & Fuligni, 2010; Steger et al., 2009). Perceiving a life fulfilled with meaning can be seen as the positive outcome of the meaning-making process, indeed, when the activation of the meaning-making process is capable of increasing and maintaining satisfactory levels of meaning in life, people find themselves in a balanced condition of overall well-being and adjustment enriched with feelings of happiness and life satisfaction (Schnell, 2009; Steger et al., 2009).

A more nuanced interpretation must be dedicated to the dimension of search for meaning. Indeed, being in search for meaning has been recognized as a hallmark of young people who are in a developmental phase of exploration of their identity and word's opportunities (Mayseless & Keren, 2014; Negru-Subtirica et al., 2016; Zambelli & Tagliabue, 2023, 2024). During this life period youths strive to answer some key questions: who am I? What I what to do in the future? Which people do I want to be intimate with? Asking these questions means placing oneself in an active position of "search" which is proper to the process of meaning-making (Steger et al., 2008). Thus, a high search for meaning may mirror adolescents and emerging adults' urge to reach some developmental goals, such as succeed in their education career, establish a position in the labor market, satisfy their need for independence and build their relational network (Arnett, 2000; Heine et al., 2006; Marcia, 1966).

1.2 Person-oriented Approach to Investigate Meaning-making Profiles among the Youth Population

The complexity of the meaning-making process during the transition to adulthood requires the consideration of both dimensions of presence and search for meaning in life, as suggested by Steger himself (Steger et al., 2008). One way to do this is by using person-oriented techniques such as cluster analysis, latent profile analysis, and growth mixture models. These are valuable methods for understanding the complexity of psychological processes because they allow for the identification of distinct subgroups of individuals (i.e., profiles) who share similar patterns of responses to certain variables that may be overlooked using traditional variable-oriented methods which, instead, are based on collapsing individual differences into average scores (Marsh et al., 2009; Morin & Marsh, 2015). Once identified, the emerged profiles can be examined in their association with relevant covariates and outcomes.

To the best of our knowledge, only four studies have adopted a person-oriented technique to identify different profiles of meaning-making among late adolescents and emerging adults. All the studies assessed presence and search for meaning in life through the Meaning in Life Questionnaire (Steger et al., 2006).

These studies converge in clearly distinguishing different profiles of meaning-making. Three profiles were systematically found in all studies. First, the profile characterized by high presence and low search, which represents the most mature profile of meaning-making that is common in the adult population. This profile was called *presence style* in Krok (2018), *high-presence low-search* profile in Dezutter et al. (2014), *foreclosure* profile in Lin and Shek (2021) and *fulfilled* profile in Zambelli and Tagliabue (2023). The opposite profile, characterized by medium-low presence of meaning and high search for meaning, was also consistent across studies, being called *search style* in Krok (2018), *low presence-high search* in Dezutter et al. (2014), *moratorium* in Lin and Shek (2021), and *searchers* in Zambelli and Tagliabue (2023). A third profile characterized by an equilibrium between having meaning in life and being in search for meaning emerged across the studies, and was named *presence and search style* in Krok (2018), *high presence and search* in Dezutter et al. (2014), *achievement* in Lin and Shek (2021), and *in-between* in Zambelli and Tagliabue (2023).

From a methodological point of view, these studies present some shortcomings. First, three out of the four works adopted a cluster analysis, while only Zambelli and Tagliabue (2023) used a mixture modelling approach by applying a Latent Profile Analysis, that is a more sophisticated technique that accounts for the classification uncertainty by using a probability-based procedure to assign each person to a specific class (Bauer, 2022; Vermunt & Magidson, 2002). Second, none of these studies investigated the role of individual dispositional factors capable of predicting individuals' membership in different meaning-making profiles.

These studies show differences with respect to the characteristics of the sample and the context of the data collection. The only study focused on the late adolescent population (age 16–20) is Krok (2018), while the other studies were conducted on the population of emerging and young adults (i.e., college students in Dezutter et al. (2014) and Lin and Shek (2021), students and workers in Zambelli and Tagliabue (2023). The studies also show diversity of cultural backgrounds, indeed, two studies involved European participants (Poland and

Italy; Krok, 2018; Zambelli & Tagliabue, 2023), one study involved United States citizens (Dezutter et al., 2014), and one study was conducted on the Asian continent, specifically in Hong Kong (Lin & Shek, 2021). With respect to the contextual background, which could affect the activation of the meaning-making process, Zambelli & Tagliabue's (2023) study was conducted during a stressful and traumatic contextual situation, namely the Covid-19 pandemic, while the other studies collected data under unspecified conditions. Despite little empirical evidence, the fact that similarities have been found in meaning-making profiles across more traditional individualistic cultures (European, U.S.) and collectivistic cultures (Asian) supports the hypothesis that there may be universal features of meaning-making that relate to young people's transition to adulthood across cultures. The only way to test this hypothesis is to accumulate empirical evidence in different samples and contexts, as the present study proposes.

One consideration is dedicated to gender differences. Dezutter et al. (2014) found partial generalizability of profiles across gender, where the main difference was that the *low-presence and low-search* profile was identified only in the male subsample. Lin and Shek (2021) found females to be more likely to fall into the *low presence - high search* cluster than males. Zambelli and Tagliabue (2023) didn't find a significant effect of gender on profiles' belonginess. The only study which focused on the late adolescent population (Krok, 2018) didn't investigate the role of gender. Even the variable-centered literature found contrasting results; few studies found females to report higher on both presence and search for meaning than men (Hamama & Hamama-Raz, 2021; Steger et al., 2009), while a recent meta-analysis (Li et al., 2021) didn't find gender to be a moderator of the association between presence and search for meaning and subjective well-being. All that considered, it cannot be ruled out that there are gender differences in the way late adolescents activate the meaning-making process, so the role of gender must be further explored.

1.3 The role of Resilience in the Meaning-making Process

Resilience skills appear to be one of the most important personal dispositions in activating the meaning-making process when adolescents are facing the multiple choices and challenges of the transition. Resilience is defined as the set of those skills that help people cope with adversity by enabling them to enact positive behaviors and emotions as well as being functional to the situation they are going through (Masten & Obradović, 2006). The term resilience is not exclusively used to describe a positive adaptation to adverse situations, but also refers to the skills needed by people, and especially young people, to cope with the difficulties that may arise from the now pervasive uncertainty of contemporary society (Sapienza & Masten, 2011).

Resilience is usually contextualized mainly in conjunction with processes of change; thus, it can be interpreted both as the ability to 'rise again' from falls and as the ability not to be negatively affected by changes, reacting to them with proactivity and optimism (Camuffo, 2007). An interesting contribution in this sense is provided by the theorists of transformative learning (Mezirow, 1978), who affirm that having a critical and reflective capacity to plan one's life, both personal and work/school, allows people to develop greater resilience to sudden changes in the contexts of reference.

The literature is divided on whether resilience is a process or a trait (e.g., Luthar et al., 2000). However, in our study, we consider resilience in the perspective of Ungar (2011).

According to the author, resilience is the result of the interaction between the individual and the context, from which adolescents develop their resilience skills, a set of competences including the construction of the meaning of one's own experience. Resilience skills allow adolescents to develop a positive mindset and a sense of self-efficacy, which can help engaging in the search for meaning with sufficient confidence and find meaning and purpose in their lives, even in the face of adversity.

Conducting a person-oriented study to identify the role of resilience skills in fostering the meaning-making process in an anticipatory phase of major life choices, such as during the last year of high school, is of pivotal importance for identifying profiles of youths at risk of school dropout, social isolation, and deviant behaviors. Indeed, young and late adolescents (aged 14–17 years; Erikson, 1968) find themselves in a less mature and more vulnerable transitional stage compared to emerging adults (aged 18–29 years, Arnett, 2014). During this developmental stage, young adolescents are called to develop the cognitive, emotional and motivational skills necessary to activate a functional meaning-making process and sustain their identity development toward adulthood. Such individuals are more challenging to intercept after transitioning out of the mandatory education cycle, thereby forming a sub-population that is underrepresented in psychosocial research focused on the broader general population of young adults.

1.4 The Transition from High-school to Adult Life in the Italian Context

In Italy, high school education, or "scuola superiore," is a comprehensive five-year program designed for students aged 14 to 19. The system is divided into three main pathways: Liceo, Istituti Tecnici, and Istituti Professionali, each offering different focuses and preparing students for various futures. The main difference between these typologies of high-schools is that the "liceo" aims at providing a broad theoretical education for university preparation with different curricula among which 'scientific', 'linguistic', 'human sciences' and 'classical literature'; the "istituto tecnico" offers a mix of theoretical and practical learning to develop skills and competences for both work and further studies; "istituto professionale" focuses on learning practical job-ready skills to find an employment immediately after completing a three-year high-school program, with an option for university access if the five-year program is completed. In the final year of high school, Italian students face several concerns. They must prepare for the "Maturità" exam, a comprehensive test that includes written and oral components, crucial for graduation. The transition from school to work or university involves making critical decisions about their future. For those opting for university, they need to navigate the application process, which may include entrance exams for specific courses. Conversely, the transition to work presents unique challenges in Italy (Ellena et al., 2023). The high youth unemployment rate, bureaucratic hurdles, and a job market that often demands significant practical experience even for entry-level positions make this transition particularly difficult (Pastore, 2019). Additionally, the Italian labor market sometimes struggles to absorb new graduates, leading to underemployment or temporary contracts. Internships or apprenticeships, although helpful, are not always readily available or adequately compensated (Petrescu et al., 2022) This period is marked by significant pressure and uncertainty as students make pivotal choices that will shape their careers and lives.

1.5 Aims and Hypotheses

Possessing resilience skills is commonly assumed to be an essential personal resource for navigating challenging and traumatic situations (Masten & Obradović, 2006; Southwick et al., 2014; Ungar, 2011). Moreover, the process of meaning-making is acknowledged as pivotal when young people confront demanding and stressful circumstances (Brassai et al., 2011; Dulaney et al., 2018; Krok, 2015; Park, 2010). However, the theoretical framework positing an association between resilience skills and a heightened inclination to engage in a functional meaning-making process remains scant in empirical exploration. The present work acknowledges this gap by addressing two aims with related hypotheses:

Aim 1 To identify different profiles of meaning-making, which are homogeneous within the class and dissimilar between the classes with respect to the mean level of presence and search of meaning in life. We expect to identify at least three profiles, in line with those found across previous studies, one representing individuals with high levels of presence of meaning in life, one characterized by a strong engagement in the search for meaning, and one characterized by a balance between presence and search for meaning.

Aim 2 To examine if resilience skills predict the belonginess to different profiles, controlling for gender. We hypothesize individuals possessing greater resilience skills to belong to more adaptive manifestations of the meaning-making process characterized by medium to high levels of presence of meaning. As previous evidence on gender differences in the activation of meaning-making profiles is inconsistent and has never been examined in the late adolescent population, gender was included as a covariate for exploratory purposes.

2 Method

This study involves the secondary analysis of data collected by Osservatorio Giovani© of the Istituto Toniolo di Studi Superiori©. Sampling and data collection were conducted using Cawi (computer-assisted web interview) methodology. The survey involved 1,000 nationally representative 18–19-year-old males and females attending the senior year of high-school in Italy. Informed consent has been obtained from participant before participation and was conducted in accordance with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

The survey was carried out between 28 April and 10 May 2020, during the last two months of high-school for Italian students, in a time of restrictions due to the Covid-19 pandemic. Among the sample, 52% were females. The geographical distribution sees 38% in the South and Islands, 25% in the North-West, 18% in the North-East and, finally, 19% in the Centre. The 93% of the students were attending a public school at the time of the survey, 7% a private one. Moreover, the 55.5% ($N=555$) of students attended a "liceo", the 27,8% ($N=278$) attended a "istituto tecnico", and the 16,6% ($N=167$) attended a "istituto professionale".

2.1 Instruments

Descriptive statistics of items included in the administered scales are available in supplementary materials. The measurement structure of each scale was tested with CFA in Mplus and model fit evaluated according to golden roles (Little, 2013). McDonald's Omega (ω) was calculated as a measure of internal consistency for each scale (Bagozzi & Youjae Yi, 1988).

Meaning in Life The Meaning in life Questionnaire (Steger et al., 2006; Italian validation Negri et al., 2019) is a 10 item self-report measure assessing the presence of meaning in life (e.g., I understand my life's meaning) and the search for meaning in life (e.g., I am always looking to find my life's purpose). Participants answered on a Likert scale from 1 (Strongly disagree) to 7 (Strongly agree). The factorial structure of the scale was demonstrated in our sample with CFA ($X^2(34) = 150.6$, $p < .001$; CFI = 0.96; RMSEA = 0.06 [0.05, 0.07]; SRMR = 0.06), together with good internal consistency ($\omega_{presence} = 0.72$, $\omega_{search} = 0.84$).

Resilience The Italian validation of the RS-14 resilience scale (Callegari et al., 2016) was administered. The task was: "Thinking about yourself, tick the box that best represents your degree of agreement with the following statements". The scale consists of 14 items (e.g., I usually manage to cope in one way or another) answered on a of 7-step Likert scale (1 = strongly disagree, 7 = strongly agree). The factorial structure was demonstrated in our sample with CFA ($X^2(77) = 356.8$, $p < .001$; CFI = 0.93; RMSEA = 0.06 [0.06, 0.07]; SRMR = 0.04), together with good internal consistency (ω = 0.88).

Data Availability Statement The data underlying this article were provided by Osservatorio Giovani© of the Istituto Toniolo di Studi Superiori© and will be shared on request to the corresponding author with permission of the data provider. All the Mplus codes have been made publicly available in supplementary materials.

2.2 Preliminary Analysis

We first checked for multivariate outliers using Mahalanobis distance, excluding from subsequent analyses scores exceeded the critical values based on chi-square distribution ($p < .001$) (Tabachnick & Fidell, 2013). 53 cases were excluded as multivariate outliers, for a final sample of 943 participants. All the items approximate well the normal distribution therefore we use ML as estimator in subsequent analyses conducted in Mplus 8.6 software (STBC80040220). The factors' scores of both MLQ's dimensions and RS-14 resilience scale have been saved for each subject from the CFA models to be used in subsequent analysis.

2.3 Latent Profile Analysis with the Three-step Approach

To identify different groups of individuals based on their meaning-making response pattern we conducted a Latent Profile Analysis (LPA) in Mplus using full information maximum likelihood (FIML). Among the few methods available to conduct the LPA analysis, we relied on the three-step manual approach (Asparouhov & Muthén, 2012) which is recommended

when aiming to incorporate auxiliary variables (covariates) in the LPA model (Nylund-Gibson et al., 2019). Adding variables in an LPA model could induce a change in the class assignment of individuals, thus violating the assumption that individuals' class assignment is predicted by LPA indicators and not by distal outcomes (Asparouhov & Muthén, 2014; Marsh et al., 2009). To avoid this situation, the three-step approach provides to first estimate an unconditioned LPA model by including only the designed indicators (first step), second to fix the measurement parameters of the latent class probability (second step), and finally (third step) to include covariates in the mixture model thus ensuring that individual assignment to the profiles won't be affected by the addition of auxiliary variables.

Step 1 We estimated the basic LPA model by including presence and search of meaning factor's scores that were extracted from the CFA model as indicators of the profiles. Using factor scores as indicators allows to remove the measurement errors from estimates (Zumbo, 2005). We compared several k-class models, where k is the number of classes requested, starting from a two-class model, increasing the number of profiles requested incrementally until the models become empirically not well-identified. To select the best model solution, each model has been compared based on model fit indices, parsimony, classification precision and interpretability of the profiles (Nylund et al., 2007). As indices of model fit, we considered several information criteria (IC) including Akaike Information Criterion (AIC) and Consistent Akaike's Information Criterion (CAIC; Bozdogan, 1987), Bayesian Information Criterion (BIC; Schwartz, 1978), adjusted BIC (ABIC; Sclove, 1987), and Approximate Weight of Evidence Criterion (AWE; Banfield & Raftery, 1993). The best k-profile model should have lower AIC and BIC. In addition, we consulted two likelihood ratio-based test: the adjusted Lo–Mendell–Rubin likelihood ratio test (adjusted LMR-LRT; Lo et al., 2001) and the Bootstrapped Likelihood Ratio Test (BLRT; McLachlan & Peel, 2000). Both indices provide p-values indicating whether adding a class leads to a statistically significant improvement in model fit, thus, non-significant p-values for a k-class model leads to prefer the more parsimonious $k - 1$ class model.

In LPA it is common to find more than one model with acceptable fit indices (especially contiguous models for k-classes), in these cases, the choice of the best model should be based on the evaluation of the quality of model classification, that is the ability of the model to yield highly-differentiated latent classes whose members have a high degree of homogeneity in their responses on the class indicators (Sorgente et al., 2019; Nylund et al., 2007). Among the classification diagnostics available we verified (a) that the level of relative entropy (E) of the selected model was greater than 0.70 (Fonseca & Cardoso, 2007); (b) that the modal class assignment proportion (mcaP) for each class was included in the 95% confidence interval of the corresponding class proportion (CP o π); (c) that the average posterior probability (avePP) was > 0.70; and (d) that the odds of correct classification (OCC) were > 5 (Masyn, 2013; Nagin, 2005). Finally, is it important to consider the interpretability of the profiles according to theoretical knowledge (Marsh et al., 2009).

Step 2 As the second step, we fixed the measurement parameters of the latent class probability to logit values to account for measurement error in the class assignment (Asparouhov & Muthén, 2014).

Step 3 The last step was the estimation of a latent regression model including gender (male vs. female) and the factor score of resilience as covariates of latent profiles (to answer aim 2), together with the fixed latent profiles obtained from step two (third step). As suggested by Nylund-Gibson and Choi (2018), resilience factor's score was centered. A multinomial logistic regression expressed the relation between the covariates (i.e., gender and resilience) and the class membership. Odds ratio's confidence intervals (CI) were examined, where the value of 1 falling into the CI represents the absence of impact of the covariate on class membership.

3 Results

3.1 Identification of Different Profiles of Meaning-making (Aim 1)

As reported in Table 1 the comparison of the Fit Indices showed that both the 4-class model and the 5-class model could be candidate to be the best selected solution. The six-class solution was excluded because the last profile included only 15 individuals (1.6%, Table 1). In support of the 5-class model, the relative fit indices AIC, BIC and CAIC show lower values than the 4-class solution. Instead, the lowest AWE is the 4-class model's one, and the Adj-LRM's non-significant p-value for the 5-class model compared to the 4-class model indicates that the former did not significantly improve the general fit, thus suggesting the more parsimonious one. We relied on the classification diagnostics to choose between the four and the five-class model (Table 2).

For both models, most of the classification diagnostic criteria were satisfied. However, the 4-class model showed one class with a subthreshold avePP (average posterior probability, <0.70) and for the 5-class model the problematic classes were two, thus indicating for both models an overlapping between at least one pair of classes. Examining the posterior

Table 1 Fit indices for latent profile analysis' best model selection

Model	LL	df	AIC	BIC	CAIC	AWE	LRT	Adj-LRM p-value	BLRT p-value	Profiles distribution (N=947)
2-class	-2428.32	7	4870.64	4904.61	4884.48	4919.31	155.62	0.024	<0.001	419, 528
3-class	-2369.33	10	4758.67	4807.20	4778.43	4828.19	117.97	<0.001	<0.001	621, 290, 36
4-class	-2345.84	13	4717.69	4780.78	4743.38	**4808.07**	46.98	0.006	<0.001	559, 309, 45, 34
5-class	-2333.71	16	4699.43	4777.08	4731.05	4810.67	24.26	**0.261**	<0.001	397, 353, 120, 43, 34
6-class	-2321.58	19	**4681.16**	**4773.37**	**4718.71**	4813.26	24.27	0.037	<0.001	407, 297, 144, 47, 37, 15

Note. LL=model log likelihood; df=degrees of freedom; AIC=Akaike Information Criterion; CAIC=Consistent AIC; BIC=Bayesian Information Criterion; AWE=Approximate Weight of Evidence Criterion; Adj-LMR=Adjusted Lo, Mendell, and Rubin likelihood ratio test; BLRT=bootstrap likelihood ratio test; The boldface values of this selected class represent better fitness compared to other classes

Table 2 Classification diagnostics for the best model solutions

Model	Class (N)	CP o π	95% CI	mcaP	avePP	OCC	Entropy (E)
4-class	class 1 (*N*=34)	0.046	(0.026-0.066)	0.036	0.615	33.13	0.75
	class 2 (*N*=45)	0.052	(0.029-0.079)	0.047	0.803	74.31	
	class 3 (*N*=559)	0.561	(0.501-0.625)	0.590	0.903	7.28	
	class 4 (*N*=309)	0.341	(0.272-0.341)	0.326	0.820	33.13	
5-class	class 1 (*N*=34)	0.040	(0.017-0.068)	0.036	0.811	102.98	0.66
	class 2 (*N*=353)	0.370	(0.148-0.502)	0.373	0.798	6.73	
	class 3 (*N*=120)	0.144	(0.043-0.260)	0.127	0.680	12.63	
	class 4 (*N*=43)	0.144	(0.043-0.260)	0.045	0.679	12.57	
	class 5 (*N*=397)	0.393	(0.285-0.514)	0.419	0.765	5.03	

Note. CP o π=corresponding class proportion; 95% CI=confidence interval of CP; mcaP=modal class assignment proportion; avePP=average posterior probability; ODD=odds of correct classification; E=relative entropy

probabilities for the 4-class model we noted a slight overlap between the first and the third class, whose subjects have 29.9% of probability to be assigned to the first class. Instead, in the 5-class model, the highest overlapping was around 31.8% between the third and fourth class. Finally, according to the level of entropy, the 4-class model is the best for precision in the identification of profiles with a value exceeding the cut-off of 0.70, which instead was not reached by the 5-class model. All that considered, we opted for the 4-class model as the best solution in clustering our data. The four groups identified describe different path of meaning-making activated by adolescents according to their experience of presence of meaning in life, and their activation in searching for it.

Figure 1 presents the profiles solutions with standardized values on the y-axis, indicating each profile's mean deviation from the total sample mean. Specifically, the two largest groups were the *balanced* (*N*=559, 59%) and the *highly-engaged* (*N*=309, 32.6%), while few individuals were assigned to the *disengaged* (*N*=45, 4.7%) and the *frustrated* (*N*=34, 3.6%) groups.

Highly-engaged individuals were characterized by a high experience of meaning in life (i.e., their scores were 0.77 standard deviation above the sample mean) and average search for meaning, while the *balanced* group showed average levels both in presence and search for meaning in life (i.e., scores included in the range of ± 0.5 standard deviation from the sample mean). These groups represent individuals who were involved in the meaning-making process (as they were searching for meaning) but differed with respect to the outcome of that process. Indeed, highly engaged adolescents were those who found meaning in life to a greater extent than all other young people.

The last two profiles shared a low level of presence of meaning in life compared to the average of the sample (i.e., their scores were between 1.2 and 1.5 standard deviation below the sample mean), but they differed concerning the activation in search for meaning. Specifically, *frustrated* adolescents were searching for meaning more than the average in our sample (i.e., they positioned 0.79 standard deviation above the sample mean), while *disengaged* adolescents coupled a low presence with an equally low search for meaning (i.e., scores −1.9 standard deviation from the mean). These two groups represent late adolescents who did not perceive their life as endowed with meaning. However, while *frustrated*
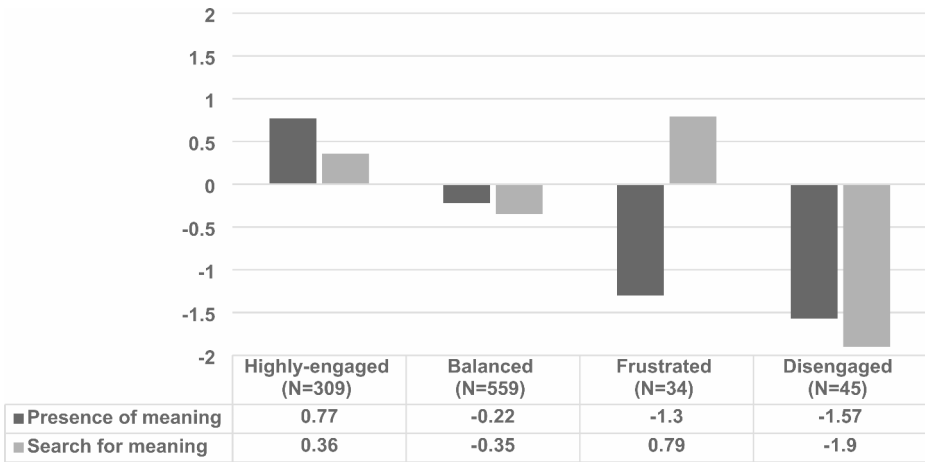
	Highly-engaged (N=309)	Balanced (N=559)	Frustrated (N=34)	Disengaged (N=45)
■ Presence of meaning	0.77	-0.22	-1.3	-1.57
■ Search for meaning	0.36	-0.35	0.79	-1.9

Fig. 1 Characteristics of the meaning-making profiles in terms of presence and search of meaning in life (standardized factor's scores). The results were standardized to a mean of 0 and a standard deviation of 1 to help in the interpretation of the histogram. The figure was created with Microsoft Excel

individuals showed an activation of the search for meaning, the *disengaged* ones were not involved in the meaning-making process.

3.2 Examining the Resilience and Gender as Covariates of Meaning-making Profiles (Aim 2)

Having identified the meaning-making profiles, we investigated the effect of gender and resilience on profile belonginess (aim 2). As shown in Table 3, the multinomial logistic regression revealed that both gender and resilience were associated with profile membership. Regarding gender, we found that the odds ratio's probability of being in the *frustrated* or in the *balanced* group instead of the *highly-engaged* group was respectively 75% higher (odds ratio=3.00), and 59% lower (Odds ratio=0.69) for females. Results also showed that the odds ratio's probability for females was 81% higher of being in the *frustrated* group instead of the *balanced* group (odds ratio=4.32), and 73% higher of being in the *frustrated* group instead of the *disengaged* (odds ratio=2.71).

Taking the role of resilience into account, we discovered that the odds ratio's probability of being in the *frustrated* group (odds ratio=0.12), in the *disengaged* group (odds ratio=0.03) or in the *balanced* group (odds ratio=0.17), instead of the *highly-engaged* group, was between 85% and 97% lower each time the resilience increased of one-unit. In other words, individuals with higher resilience skills were most likely to be assigned to the highly-engaged group, showing a more positive activation of meaning-making (i.e., average search and high presence of meaning in life). Moreover, the odds ratio's probability of being in the *disengaged* group instead of the *balanced* group was 85% lower (odds ratio=0.18) each time the resilience increased of one-unit; meaning that higher resilience skills prevented young people to fall into the *disengaged* group. Instead, the odds ratio's probability of being in the *frustrated* group instead of the *disengaged* group was 80% higher (Odds ratio=4.12) each time the resilience increased of one-unit; thus, individuals with higher

Table 3 Results from the multinomial logistic regression evaluating the effects of gender and resilience skills on latent profile membership

Reference group	Covariate	S.E.	*p-value*	OR	CI 95%	OR's probability
P4: highly-engaged	Gender[a]					
	P1: frustrated	**1.10 (0.41)**	**0.007**	**3**	**1.53–6.68**	75%
	P2: disengaged	0.10 (0.39)	0.793			
	P3: balanced	**−0.36 (0.18)**	**0.047**	**0.69**	**0.51-0.94**	59%
	Resilience					
	P1: frustrated	**-2.09 (0.32)**	**<0.001**	**0.12**	**0.07-0.21**	89%
	P2: disengaged	**-3.51 (0.35)**	**<0.001**	**0.03**	**0.02-0.05**	97%
	P3: balanced	**-1.78 (0.15)**	**<0.001**	**0.17**	**0.13-0.21**	85%
P3: balanced	Gender					
	P1: frustrated	**1.46 (0.39)**	**<0.001**	**4.32**	**2.29–8.16**	81%
	P2: disengaged	0.47 (0.35)	0.188			
	Resilience					
	P1: frustrated	−0.31 (0.31)	0.305			
	P2: disengaged	**-1.72 (0.31)**	**<0.001**	**0.18**	**0.11-0.30**	85%
P2: disengaged	Gender					
	P1: frustrated	**0.997 (0.51)**	**0.049**	**2.71**	**1.18–6.23**	73%
	Resilience					
	P1: frustrated	**1.41 (0.42)**	**0.001**	**4.12**	**2.02–8.17**	80%

Note.[a]Male was the reference group for gender. S.E.= standard error of the coefficient; OR=odds ratio; *p-value*=coefficient's p-value; The OR's probability indicates the increase (+) or the decrease (-) of the likelihood of membership into each profile relative to the reference group when resilience increases of one-unit or when considering the female's group. The boldface values indicate significant coefficients and odds ratios

resilience skills were more prone to engage in the search for meaning when they perceived a lack of presence of meaning.

4 Discussion

The purpose of the present study was to gain more insight into the activation of the process of meaning-making within the under investigated population of late adolescents for which the experience of meaning in life is especially salient (Erikson, 1968; Mayseless & Keren, 2014; Steger et al., 2009). Specifically, two aims guided the empirical investigation: to identify different profiles of meaning-making to explain the heterogeneity of late adolescents' perception of presence and search for meaning in life, and to test the hypothesis that greater resilience skills would predict the activation of a more functional meaning-making process. The peculiarity of this study consists in focusing on late adolescents who were up to facing the developmental transition from high-school to their future.

At the methodological level, the present study is innovative because it uses Latent Profile Analysis, a finite mixture model that allows uncovering hidden groups of subjects who exhibit a similar pattern of response to a set of indicators, in this case presence and search for meaning in life, by using a probabilistic approach. Compared to other clustering algorithms, the LPA allows to directly include covariates in the model to predict individuals' latent class membership. In this study, the three-step manual approach has been adopted to

guarantee that the individual profile assignment was not influenced by the inclusion resilience as a predictor of profiles' belonginess. This person-centered approach made it possible to show a richness and complexity in the meaning-making process among late adolescents that is lost in the traditional variable-centered approach that flattens individual differences in the average levels of the sample.

4.1 Meaning-making Profiles among Late Adolescents

Our expectation was to identify at least three profiles to explain the heterogeneity in the perception of presence and search for meaning in life among late adolescents and to distinguish adaptive vs. maladaptive activations of the meaning-making process. In line with the hypothesis, four meaning-making profiles emerged, that partially overlap with clusters identified in previous person-oriented studies on the youth population.

In order to facilitate the accumulation of knowledge on meaning-making profiles and their generalisability to other contexts and populations, in this paper we have proposed a new designation of meaning-making profiles based on statistical and theoretical criteria. On the one hand, the level of presence and search for meaning characterising each profile was expressed in terms of the distance in standard deviations from the population mean, being ±0.5 standard deviations the cut-off to distinguish between a high, low and average level of presence and search for meaning in each profile. On the other hand, the profiles were named by interpreting the level of the indicators in relation to the functionality of the meaning-making process on the bases of the meaning-making literature discussed in the introduction.

The *highly-engaged* and *balanced* profiles represent a functional activation of the meaning-making process, as they are both characterized by average or above average levels of presence of meaning. The *balanced* group, that is the widest, is characterized by average levels of presence and search for meaning (e.g., the *achievement* profile in Lin & Shek, 2021). This profile represents the *typical* adolescent that is engaged in the normative phase of exploration with the goal of building a solid system of meanings. The average level of presence of meaning indicates that the process of searching for meaning is leading to the progressive construction of a solid and committed identity (Negru-Subtirica et al., 2016). The *highly-engaged* group includes individuals with an exceptional high level of presence of meaning in life (e.g., the *fulfilled* profile in Zambelli and Tagliabue, 2023). This configuration resembles a *mature* meaning-making configuration, in which the normative search for meaning has led to solid certainties about identity and future commitments, which from now on the young individual will try to maintain and enrich over time, activating the search for meaning if a decrease of meaning in life is perceived (Kashdan & Steger, 2007).

The last two profiles identify adolescents with a maladaptive meaning-making functioning. Fortunately, these profiles show a low percentage of the sample (a total of 8.3%), as expected from the general population of adolescents. It is important to emphasise that the application of LPA, an approach that allows the heterogeneity of individuals' experiences to be valued, has enabled to qualitatively differentiating the subjective experience of these "at-risk" late adolescents. The *frustrated* profile represents individuals with high engagement in the search for meaning and very low presence of meaning (e.g., the *search* style in Krok, 2018, and the *moratorium* cluster in Lin & Shek, 2021). Those individuals are struggling with the meaning-making process, representing adolescents for which the process of search for meaning is not leading to the construction of a solid perception of life

meaningfulness, for this reason they were named *frustrated* individuals. However, the most maladaptive functioning of the meaning-making process is showed by the fourth profile of *disengaged*. This group of adolescents showed a negative attitude toward meaning-making, as they were not interested at all in searching or finding meaning in life (e.g., *low presence and search* profile in Dezutter et al., 2014). People might fall into this profile because of a variety of reasons that are worth to be investigated in future studies, for instance the lack of the necessary personal resources to cope with the challenges of the transition to adulthood, a sentiment of indifference to their own existence, or as the result of a prolonged remaining in a frustrated condition.

4.2 Characterization of Meaning-making Profiles Based on Resilience and Gender

Once adaptive vs. maladaptive meaning-making profiles were identified, our interest was directed toward testing the theory-driven hypothesis that possessing greater resilience skills would be associated with a higher probability of activating a functional meaning-making process and a reduced likelihood of belonging to a maladaptive profile. Considering the paucity of literature on gender differences in meaning-making profiles, we also explored the role of gender as a plausible covariate.

Resilience The role of resilience skills as personal resources relevant to the activation of a functional meaning-making process among late adolescents has been empirically sustained. As hypothesized, individuals with higher resilience skills were most likely to be assigned to the *highly-engaged* group. Higher resilience skills also prevented young people from falling into the *disengaged* group, favoring the belonginess to the other three profiles, including the *frustrated* one. In other words, individuals with higher resilience skills were more prone to engage in the search for meaning even when they perceived a lack of presence of meaning. High resilience is associated with higher and more stable self-beliefs. Moreover, possessing resilience resources, including cognitive resources, self-efficacy, and self-awareness, allows individuals to build a solid perception of meaning in life and recognize it. For these reasons, being equipped with solid resilience skills can foster a positive engagement in the search for meaning, thus reducing the risk of becoming *disengaged.* Even when something negative happens and they lose a sense of meaning in life, resilient adolescents have the stability and necessary resources to keep searching for meaning and avoid falling into the disengaged category. Taken together, these results unveiled that resilience skills can support adolescents in engaging in the search for meaning process, driving them, in the best scenario, to find meaning and purpose in their lives, even when faced with challenges and uncertainty. These results partially align with Krok's (2018) findings, in which adolescents in a presence and search profile possessed more environmental mastery and self-acceptance compared to the other styles.

Gender Results unveiled a significant gender role in predicting the belonginess to different meaning-making profiles. Specifically, female participants were more likely to be assigned to the *highly-engaged* group instead of the *balanced* one. These results partially align with previous variable-centered literature showing adolescent females to score higher on both presence and search for meaning in life than their male counterpart (Hamama & Hamama-Raz, 2021; Steger et al., 2009). However, females were also more likely to be in the *frus-*

trated group instead of all the other profiles compared to males. This result partially aligns with Lin and Shek (2021) finding females to be more likely in the *low presence – high search* group than men, and with Dezutter et al. (2014) finding the *low presence – low search* profile (mirroring the *disengaged* profile in this study) only in the male subsample. All in all, this study unveiled a gender effect that is almost inedited in the literature and contrasts part of empirical evidence collected from both person- and variable-oriented literature which doesn't find any gender differences in the meaning-making profiles. High levels of anxiety and depression in adolescence are associated with a negative activation of the meaning-making process (low presence of meaning and high search for meaning) especially following impactful negative events (e.g., Chen et al., 2021). This evidence, paired with the established knowledge that females tend to show more depressive vulnerability and greater reactivity to stressful events than males (e.g., Leadbeater et al., 1995), may explain why females had a higher probability of being in the *frustrated* profile, especially during a period potentially fraught with stressful events such as the high school senior year. However, to make well-founded interpretations, it would be necessary to gather more empirical evidence of gender differences in the meaning-making process, including investigating their interaction effect with other individual and contextual variables.

4.3 Theoretical Implications

This study represents a theoretical advance in the developmental and meaning-making literature, as it helped to better understand how late adolescents construct meaning in life in proximity of the transition from the high-school to the future. The majority of adolescents showed an adaptive meaning-making profile, characterized by medium to high levels of presence of meaning. The *highly-engaged* group also showed high levels of search for meaning, a finding that underscores the dual nature of search for meaning, which is normative when associated with good levels of presence of meaning, and maladaptive when paired with the absence of meaning in life (Negru-Subtirica et al., 2016; Schulenberg et al., 2014). Through the adoption of a person-oriented approach, this study focused for the first time on the experience of fatigue and frustration of late adolescents who are failing to build a solid and meaningful identity, distinguishing youths who are searching but struggling to find meaning in life from youths who have abandoned all tentative and appear completely disinterested and disengaged in the meaning-making process. The study unveiled that having personal resources among which resilience is a promoting factor to actively and adaptively engage into the meaning-making process, reducing the likelihood of late adolescents in their senior year of high-school falling into the disengaged group. Finally, although it is theoretically recognized that the meaning-making process assumes a key role when people face important turning points or life challenge, this is one of the few studies investigating meaning-making functioning at a critical turning point for late adolescents' developmental transition.

4.4 Practical Implications

The practical implications of the present study are of no lesser importance. Nowadays, young people do not just conquer the transitional milestones presented by the socio-cultural

context (e.g., earning a high school diploma, getting a job), but move toward choosing more personally meaningful markers of growth and maturation (Sharon, 2016). In this way, they build their own personalized path to adulthood. For this reason, accompanying young people in building a meaningful life project becomes the primary goal of educational and training agencies, as well as the best way to prevent the risk of social isolation, psychological malaise and the risk of becoming NEET. In this regard, a systemic and multi-dimensional approach such as the positive youth development (PYD; Burkhard et al., 2019), would offer the possibility to integrate individual, family, social, and contextual resources to make adolescents flourishing. In a PYD perspective, meaning-making interventions should be a concerted action between educational institutions and the social and community context.

Educational institutions could develop curricular projects dedicated to accompanying young people in building a meaningful life project, following the latest guidelines on the development of effective meaning-making interventions (e.g., Morse et al., 2019; Seligman et al., 2009; Vos, 2018). Such activities should be based on experiential and practical activities, to help young people gain awareness of their developmental pathway toward adulthood and acquire meaning-specific competences that prepare them to face transition challenges. Those interventions should have the potential of empowering young peoples by emphasizing their positive assets and strengths, nurturing their resilience skills, giving them the opportunity of experimenting positive and supportive relationships with peers and adults and encouraging the active involvement in their social and community context. Conducting such interventions in the educational context would allow to monitor students' individual process and identify early signals of potential maladaptive drift.

Implementing person-oriented interventions means structuring activities that can be personalized based on the specific needs and resources that characterize different meaning-making profiles, addressing the nuances of everyone's experience. Indeed, knowing the characteristics of vulnerable adolescents is the only way to design personalized interventions that are effective in addressing their specific developmental needs. For example, a *frustrated* adolescent may need guidance on better finalize their search for meaning to "adjust the shot". For those individuals, intervention devoted to enriching the set of personal resources and resilience skills and training in supporting the emotional fatigue of this process might be of help, as well as group activities in which they can benefit from peer-tutoring and mentoring to strengthen their network of relations. Instead, the negative attitude toward the meaning-making process displayed by a *disengaged* adolescent is much more concerning, as those individuals show themselves disinterested in exploring their own system of meanings. Although the underlying reasons for such disengagement need to be investigated in future studies, in these 'high risk' cases it is important to provide youths with the same opportunities of their peers to express their agency and improve their personal skills. For them, structured interventions that act at the systemic level, by involving both the school, the family and the community, would be necessary to accompany the adolescent to structure a network of meaningful relations that can reduce the risk of becoming NEET. Individuals with an adaptive meaning-making profiles, such as *highly-engaged* and *balanced*, can be further nurtured and empowered by the involvement in peer-tutoring and mentoring activities to their peers.

4.5 Limitations and Future Directions

The present study, while providing valuable insights into the relationship between resilience and meaning-making, is subject to several limitations that offer avenues for future research. Firstly, our study's cross-sectional design limits our ability to infer causality and understand the temporal dynamics between resilience and meaning-making. Longitudinal studies are needed to unravel the reciprocal influence and to determine the directionality of these associations. For instance, a longitudinal person-oriented technique such as the Latent Transition Analysis (e.g. Collins & Lanza, 2009) would allow to investigate if adolescents shift from one meaning-making profile to another across the high-school or one year after the graduation, and to examine possible predictors and outcomes of individuals' profiles of change.

The generalizability of our findings is also restricted by the sample's homogeneity, as the study was conducted within a single country and cultural context. Replicating this study in different countries, especially those undergoing significant transitions, could provide more robust evidence of the universality or specificity of our results. Additionally, homogeneity with respect to age and the transitional condition may mask heterogeneity in other domains. At this regard, future studies should investigate whether the meaning-making profiles replicates across different transitional conditions. For example, Zambelli and Tagliabue (2023) found that emerging and young adults in an imbalanced condition in both love (i.e., single or unsatisfied with romantic relationship) and work (i.e., students at the end of their educational cycle and unemployed) were more likely to activate a high search meaning-making path (i.e. searchers) instead of a high presence meaning-making path (i.e. fulfilled), controlling for age. It would be important to continue this line of research, comparing meaning-making profiles among young adolescents and emerging adults who are facing different transitional challenges, to identify which profiles are invariant, and which represent a specific transitional configuration.

In this study, only resilience was considered as a protective factor, however, in line with the PYD framework, it would be important to conduct further investigations to examine the role of other individual (e.g., cognitive, emotional, motivational resources, depression and anxiety symptoms), relational (e.g., school climate; social and family support), and sociocontextual (e.g., cultural background; socioeconomic status; early childhood experiences) factors that might further explain late adolescents' heterogeneity in their developmental process (e.g., Miconi et al., 2024).

Additionally, the research has been conducted in a historical contingent situation characterized by restrictions due to the Covid-19 pandemic in Italy, a period during which young people were highly focused on the sense of living and its reconsideration (Aresi et al., 2020; Ellena et al., 2021; Marta & Martinez Damia, 2023). It is also necessary to point out that in the present study we did not control for covid-related variables that might have impacted the activation of the meaning-making process, for instance by reducing the average levels of presence of meaning in life, among those factors there are family history of Covid-19 infection, living conditions, stress related to Covid-19, and worries and fear related to the effects of the pandemic. Therefore, it is necessary to replicate this study in a post-pandemic situational context and compare the distribution of profiles to verify the invariance of typology and characteristics, as done in a previous study on a sample of young adults which compared a pre-pandemic and pandemic conditions and finding the stability of meaning-making

profiles (Zambelli & Tagliabue, 2023). By addressing these limitations, future research will significantly enhance our understanding of the complex interplay between resilience and meaning-making, thereby improving our ability to support adolescents in cultivating a resilient outlook on life.

Declarations

Conflict of interest The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Compliance with Ethical Standards This study was performed in line with the principles of the Declaration of Helsinki. Ethical procedures were granted by Istituto Toniolo di Studi Superiori©.

Informed Consent Informed consent has been obtained from participant before participation.

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