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Personal Skills for Optimal Identity Development: A Person-Centered Approach in Italian Late-Adolescents

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Abstract: The present study examined the association between identity statuses and some competences such as creativity, personal growth initiative and agency, which can actually be considered as resources for the development of optimal identity in our de-standardized society (personal skills for optimal identity development, PSID). Participants were 250 adolescents (118 males and 132 females) attending the last two years of various high schools in Italy. We used five self-report measures of identity development, agency, creativity, and personal growth initiative, and specific psychosocial correlates (anxiety, depression and well-being) to examine the association between identity, PSID and both well- and ill-being. Based on a person-centered approach, five typologies were obtained in order to describe the differentiated interplay between identity and PSID. Our findings suggested that late adolescents showing medium/high levels of PSID seem to be more advanced in their identity definition; as a result, they show positive psycho-social functioning, supporting the hypothesis that PSID can allow the acquisition of optimal identity. Suggestions for developing interventions to foster personal resources in this age group are discussed.

Keywords: identity statuses, person-centered approach, creativity, agency

Developing a strong sense of identity synthesis, i.e., 'knowing who I am' (Erikson, 1968), makes individuals confident in their capacities and abilities (Schwartz et al., 2015), well-adjusted and directed by their meaning in life (Steger et al., 2013). Not knowing 'who I am' (identity confusion; Schwartz et al., 2015), on the contrary, renders individuals vulnerable to ill-being (Kroger & Marcia, 2011) and negative psycho-social outcomes (Schwartz et al., 2015). Thus, acquiring optimal identity development is a key element for the individual well-being.

Traditional literature (Erikson, 1968) has linked the identity formation process to adolescents' psycho-social development, posing identity achievement as a transitional step to adulthood. However, in order to achieve identity, the contemporary world requires more flexible and more individualized personal skills from young people than in the past (Côté & Levine, 2002, 2016; Schulenberg & Schoon, 2012). Indeed, the weakening of post-industrial societies in terms of welfare (Ranci, 2010) and the loss of traditional markers of passage in the transition to adulthood in particular and in the life span in general have produced a de-standardization of life trajectories (du Bois-Reymond & Chisholm, 2006). Thus, to define themselves, adolescents and late adolescents currently have to identify a personal life trajectory (du Bois-Reymond & Chisholm, 2006; Sica et al., 2014), cope with complex contextual factors (Côté et al., 2016) and be open to change in their life-plans and life conditions (Sica et al., 2016). In this scenario, helping young people to overcome identity confusion is an important aim for developmental psychologists and it requires the identification of resources to support optimal identity development in late adolescents.

Hence, the objective of our study is to identify personal resources useful for optimal identity and congruent with the requests for agency and flexibility that the new destandardized trajectories of development require today.

Our idea, in fact, is that the process of building identity in today's young people is an open process which needs

continuous exchanges with the evaluation of the real world. These, in turn, involve the use by the young person not only of the processes of exploration and commitment that we already know, but also considerable capacity of renewal, malleability and flexibility. These abilities allow, in fact, to build and modify oneself in a continuous process, while maintaining a sense of self that does not derive so much from being always similar to oneself or faithfully consistent with one's own commitments, but rather from creative skills, from a tendency to continue along one's life path with confidence and desire for growth and by an active way of responding to the needs of the contest. All these skills, together, go to configure, in the model that we propose with this study, a set of useful resources for the positive development of the person. And this is because they constitute for the individual a sort of meta-skills (Hendry & Kloep, 2002), which are not related to specific tasks that the young person has to face from time to time in his/her development path, but transversal and superordinate skills that allow them to tackle any task at any time. For this reason we define this set of resources as Personal Skills for Optimal Identity Development (from here we refer to them overall as personal skills for identity development, PSID).

For some of these resources (agency, personal growth initiatives) there is already a consolidated literature identifying them as useful for the development of identity. Creativity, on the other hand, despite being a complex construct of wide scientific debate, has only occasionally been associated with identity and then (as will be detailed below) in terms of personality traits or as a creative activity. Yet, in our opinion, the processes employed in creative thinking have a lot to do with the processes of identity formation and with the transversal ability to analyze, understand and deal with the challenges that the social context poses to young people. We therefore believe that creative thinking can be considered a resource in all respects capable of supporting the development of optimal identity and that, in association with agentive skills and personal growth initiatives, it can give an extra boost to identity development in young people.

In order to provide this model with empirical support, the present study aims to test whether young people with active identity statuses are characterized by a specific set of personal resources – emotional-divergent aspect of creativity (a capacity to investigate elements and ideas, a tendency to look for new alternatives and solutions to problems), personal growth initiative (active and intentional engagement in the process of personal goals), and agency (an individual active response to social crises). Thus, by adopting a person-centered approach, our study explores the hypothesis that late adolescents who are able to manage complexity, explore alternatives, design a life-project and change this project because of external factors might be better equipped to achieve their identity definition.

The Importance of Identity for Individual Development

Although identity formation should be seen as a process that proceeds along the entire path of individual development (Woodward, 2003), it has invariably been posited as the primary psychosocial task of adolescence. Erikson (1968) linked the task of defining one's identity to adolescence in general, identifying the acquisition of identity with entry into adulthood. Currently, the concept of adolescence is more articulated and complex, identifying periods with different focuses (e.g., early adolescence, adolescence, late adolescence). As will be deduced from the following descriptions, the moment of identity acquisition has gradually been postponed as far as becoming a developmental task typical of late adolescence, when many choices, with a strong cultural and contextual matrix, must be made (for example, with the end of high school late adolescents have to decide whether to continue their studies or not, which faculty to go for, whether to live with their parents or on their own, etc.).

Specifically, Erikson (1968) defined identity as a "direct perception of one's own consistency and continuity over time" (p. 18) as well as the possibility to secure identity achievement. On the contrary, identity diffusion characterizes people as being confused when thinking about their goals, occupations, and identity. Thus, defining and consolidating identity (Schwartz et al., 2010) may take the form of a true and genuine developmental challenge (Hendry & Kloep, 2002) associated with specific difficulties pertaining to making and identifying with a set of life commitments (Luyckx et al., 2006), and perceiving oneself as an adult supported by a validating adult community (Côté, 1996, 2002; Luyckx et al., 2008b; Schwartz et al., 2010).

Ever since Marcia's original formulations, identity theorists have further refined the basic concepts of exploration and commitment (e.g., Bosma & Kunnen, 2001). The original conceptualization of exploration (Marcia, 1966), the degree to which adolescents search for different alternatives with respect to their goals, values, and convictions before making commitments, was subsequently defined as 'exploration in breadth' (Meeus, 1996). Alongside the latter, Meeus et al. (2002) have identified a second kind of exploration (exploration in depth), that entails an in-depth evaluation of one's current and already existing commitments and choices. Changes and in-depth analyses were also made of the concept of *commitment*, which was defined by Marcia (1966) as the degree to which adolescents make choices about important issues relevant to their identity. Bosma (1992) argued that, apart from the degree to which one has made identity commitments (i.e., commitment making), the extent to which adolescents identify with and feel certain about their choices or commitments is an important component of identity formation (i.e., identification with commitment).

More recently, Luyckx et al. (2006) have implemented an integrative approach combining the two types of exploration (i.e., exploration in breadth and exploration in depth) and the two types of commitment (i.e., commitment making and identification with commitment) into a single model. Studies have extended this four-dimensional model to include a fifth identity dimension defining an identity exploration process characterized by hesitation, indecisiveness, and flawed decision-making (ruminative exploration; Luyckx et al., 2008; Trapnell & Campbell, 1999).

The consideration of multiple forms of commitment and exploration, based on person-centered and data-driven classification methods, has also produced additional variants of Marcia's original identity statuses (e.g., Crocetti et al., 2008a; Luyckx et al., 2005; Luyckx et al., 2008; Meeus et al., 2010). Specifically, through the use of cluster analysis on the five dimensions proposed by Luyckx et al. (2008), six identity statuses in Belgian (Luyckx et al., 2008), Dutch (Meeus et al., 2011), and Italian (Crocetti et al., 2011) youth were identified. Three of these statuses (achievement, foreclosure, and moratorium) resembled Marcia's original statuses, while three were new: two more forms of diffusion - carefree diffusion (low on all the five identity processes) and diffused diffusion (high on ruminative exploration) – and an undifferentiated cluster (moderate scores on all the identity dimensions).

Studies on identity status change during adolescence and young adulthood have been meta-analytically reviewed by Kroger et al. (2010). These authors found a prevalence of identity stability, with 49% of individuals remaining in the same identity status across a two-time interval. Among individuals who shifted from one status to another, identity progressions were more common than identity regressions. Meeus et al. (2010) described a similar tendency in a five-wave longitudinal study: 63% of the adolescents remained in the same identity status across the five waves, and those exhibiting identity shifts primarily reported identity progressions (i.e., the number of diffusions, moratoriums and searching moratoriums decreased, whereas the representation of the high-commitment statuses increased).

This leads us to believe that the definition of identity can be considered something adaptive that provides the individual with well-being and that maintains a certain stability over time, despite being a dynamic process that takes place throughout the life span. Yet, at the end of adolescence, only a limited number of individuals have achieved a firm sense of identity after a period of active exploration (Kroger, 2007). Recent research has consistently shown that late adolescents are mostly still on the way to identity synthesis (Crocetti et al., 2012). Let's see why.

Defining Identity in the Italian Context

In today's advanced post-capitalist globalized society with its educational and occupational uncertainty, it is now more complex than it was in the past for late adolescents to define and consolidate identity in acquiring adult roles (Havighurst, 1953). Many factors contribute to the observed changes in late modern western societies. The first of these is the cited de-standardization of trajectories from adolescence to adulthood (Larson, 2011). Today, young people are required to "navigate" in the adult world and to internalize complex, confusing contradictions and heterogeneity (du Bois-Reymond & Chisholm, 2006). It has also been remarked that "liquid modernity" implies a more flexible life organization (Bauman, 1998; Giddens, 1991). For these reasons, identity may therefore be understood as a process that is prolonged but also open and characterized by heterogeneous/multiple paths (patchwork identity; Kraus, 2007). Thus, the ability to resolve both an identity crisis (Erikson, 1968) and a conflict between identity synthesis and confusion of roles seems to require new flexible skills (such as creativity, agency, and personal growth initiative in our model) that could support this navigation in a liquid society.

In this study, we untangled links between identity and individual resources in the Italian context, because contextual factors linked to both economic and sociocultural dimensions directly affect the processes of identity formation. In this respect, Italy is one of the Southern European countries where young people's possibilities to develop identity are strongly threatened by the current socio-economic situation (Leccardi, 2005; Crocetti et al., 2012). The main problems affecting Southern European youth include high rates of unemployment, a large number of youth being "Not in Education, Employment, or Training" (NEET; Bynner & Parson, 2002), widespread job precariousness (e.g., Cortini et al., 2011), and a deep-rooted crisis of confidence in institutions (e.g., Pharr & Putnam, 2000). Furthermore, Italian young people, even after concluding their prolonged programs of study, have been found to experience additional periods of instability, insecurity, and economic uncertainty (Berton et al., 2009). As a result, when compared to their Northern European peers, Italian youth show a postponement of identity achievement (Crocetti et al., 2012). Another study has highlighted the adaptive role of identity diffusion, which support people in not-defining identity in favor of a flexible approach to self-definition according to the unpredictable socio-economic context (Sica et al., 2014).

Consequently, the questions are: how can we define the characteristics of an optimal development of identity for late adolescents? Do we have the possibility to support it by enhancing some individual resources?

Personal Skills for Identity Development (PSID): the Emotional-Divergent Aspect of Creativity, Agency, Personal Growth Initiative

A number of studies have been conducted to examine variables that contribute to and facilitate optimal identity development. Previous research has focused on determinants such as personality traits (Klimstra et al., 2012; Luyckx et al., 2006) and coping strategies (Luyckx et al., 2012). Few studies have been carried out to examine variables such as creativity (Sica et al., 2017), agency and per-

sonal growth initiative (Luyckx & Robitschek, 2014). These three are the variables chosen as resources for identity in the current study, because they have been identified, separately, as adaptive resources useful for the individual psycho-social functioning, especially in social contexts that require strong flexibility and autonomy, as specified below.

The emotional-divergent aspect of creativity as resource. Creativity is a complex construct, investigated over the last few decades from many points of view (e.g., process, product, person; see Williams et al., 2016). However, despite its complexity, the various authors converge on some assumptions. Creativity could be defined as the ability to generate ideas, insights and solutions that are original, flexible (Amabile, 1996; Sternberg, & Lubart, 1996), and effective (Runco, & Jaeger, 2012); the creative outputs result from cognitive flexibility (flexible and divergent ways of thinking) and cognitive persistence (persistent and systematic ways of thinking; for a review, see Dietrich & Kanso, 2010).

In addition to the described cognitive aspects, creativity also implies emotional factors primarily related to creative personality dimensions (Houtz & Krug, 1995; Sternberg, 2006; Treffinger et al., 1983). To sum up, as defined by Williams model (1980, 1994), four creativity factors refer to the cognitive-divergent aspect of creativity and four to the emotional-divergent aspect of creativity. The emotional factors refer to the main characteristics of personality: 1) *curiosity* (the capacity to investigate elements and ideas. finding new and not always direct and obvious connections); 2) complexity (the tendency to look for new alternatives and solutions to problems, to restore order out of chaos); 3) *imagination* (the ability to visualize mental images); 4) risk-taking (the inclination to act under unstructured conditions and to defend one's own ideas). Indeed, this study refers to these.

All of the cognitive abilities related to creativity develop during adolescence: more specifically, adolescence is the period when fluency and flexibility develop with distinct trajectories for divergent thinking and insight (Kleibeuker et al., 2013); middle adolescence is the period of explorative thinking (Johnson & Wilbrecht, 2011). Starting from this evidence, a line of research has focused on the possible contribution of creativity to self/identity definition. Thus, creativity was considered either as a component or a domain of identity (creative identity; Dollinger et al., 2004), or as a resource in terms of positive self-definition and support for identity achievement (Barbot, 2008; Barbot & Heuser, 2017; Barbot & Lubart, 2012; Sica et al., 2017).

The relationship between the emotional aspects of creativity and the process of constructing identity in adolescence is, however, still little investigated (Sica et al., 2017), despite the fact that creative individuals are remarkable for their ability to adapt to almost any situation and to make do with whatever is at hand to reach their goals (Csikszentmihalyi, 1996) and the fact that creativity could be considered a potent predictor of social problem-solving (Ogoemek, 2011) and an "inherent latent power" present in each person (Baran et al., 2011).

Agency as resource. Literature describes agency as an active individual response to social crises:

"the active response requires that individuals are involved in their own personal growth by undertaking more difficult developmental tasks and social/ occupational attainment patterns, particularly during adolescence and young adulthood. In other words, because the social-organizational problems of latemodern societies identified above translate to deficient guiding structures, more successful active adaptations in these contexts are likely to involve agentic dispositions and behavior that lead individuals to explore their potential, build personal strengths, and sustain some sense of direction and meaning" (Côté, 1997, pp. 577-578).

More specifically, agency in Côté's (1997) conceptualization is conceived as being composed of four interrelated features: 1) self-esteem as a feature of agency, consisting of self-love, self-acceptance and sufficiency (Côté, 1997; 2002); 2) purpose in life, concerning the short term and long term purposes of the individual in his/her life (Côté, 1997; 2002); 3) self-efficacy, regarding the sense of responsibility for one's own life and the belief that one is in control of their own decisions and is responsible for their outcomes, as well as the confidence that one will be able to overcome the obstacles impeding their progress (Côté & Levine, 2002), and 4) internal locus of control, on the basis of which individuals believe that they are the cause of their own behavior (Côté, 1997; 2002).

This conceptualization adopted in our study emerges from the Identity Capital Model (ICM; Côté, 1997, 2016), which has proven useful for understanding how young people develop and use the resources necessary for functioning more effectively in late-modern societal contexts that are relatively unstructured, such as in the increasingly prolonged transitions through educational systems and their loose connections with employment (Côté, 2002). Indeed, Côté (2000) identified two individualized responses to current de-structured social life: a passive one defined as "default individualization," in which young people approach their life-course according to circumstances and impulse, and an active response defined as "developmental individualization." The latter requires that individuals are involved in their own personal growth in a personally agentic way. In other words, the ICM proposes that individuals can compensate for the instability and relatively anomic contexts of late-modern society by proactively engaging in identitywork that culminates in certain identity capital acquisitions.

Personal Growth Initiative as resource. Robitschek (1998) has conceptualized personal growth initiative as the process of change intentionally developed by individuals or, in other words, as the active and intentional involvement of the individual in their personal growth process. Intentional-

ity is a key element in this process because it refers to both the cognitive and behavioral aspects of individual involvement in their development as a person. At the same time, it emphasizes its role as a personal resource for promoting intentional personal changes (Weigold et al., 2013). According to Robitschek et al. (2012), personal growth initiative is comprised of four dimensions: two cognitive (*readiness for change* and *planfulness*) and two behavioral (*using resources* and *intentional behavior*). The two cognitive dimensions refer to the ability to create situations with the potential to promote personal growth and the ability to organize strategies to facilitate growth. The two behavioral dimensions refer to the disposition and motivation to achieve goals for personal change and to the use of personal and external resources in the promotion of personal growth.

According to this conceptualization, personal growth initiative has been found to be related to psychological well-being (Ayub & Iqbal, 2012), a number of external variables (such as self-esteem, self-efficacy, life satisfaction, etc.; for a systematic review see de Freitas et al., 2016), and with identity formation processes (Luyckx & Robitschek, 2014). The latter study reveals that all components of personal growth predict different commitment and exploration processes, with planfulness as the most consistent predictor.

Psychosocial functioning

Psychosocial functioning has been used to refer to people's ability to perform the tasks of their daily living, and to engage in activities satisfying for themselves and for others (Mehta, Mitta & Swami, 2014). This study used different measures as indicators of psychosocial functioning: eudaimonic well-being has been chosen as indicator of positive functioning, while anxiety and depressive symptoms have been chosen as negative indicators of psychosocial functioning.

Well-being is a construct that has been widely used as a subjective indicator of quality of life. High levels of well-being have been associated with life satisfaction, optimism, physical health and self-esteem (Steca et al., 2002). Higher well-being has been also considered as a desirable outcome for developmental and clinical interventions (Flinchbaugh et al., 2009). We chose eudaimonic wellbeing as a positive psychosocial dimension, considering its specificity for optimal identity development (Waterman, 2011). Eudaimonic wellbeing is defined as the quality of life derived from the development of a person's best potentials and their application in the fulfilment of personally expressive, self-concordant goals (Sheldon, 2002; Waterman, 1990a, 2008).

The Present Study

The present study examined the association between identity statuses and PSID among Italian late-adolescents, with a view to exploring the hypothesis that the emotionaldivergent aspect of creativity, agency and personal growth initiative could support late adolescents in their tasks of understanding and defining themselves and their role in their surrounding society.

The study had four main research objectives: (1) to group the subjects according to the scores reported in the identity processes, thus identifying the identity statuses characterizing the late-adolescents in our study; (2) to verify the characteristics of the subjects belonging to each group (classified in each identity status) in terms of PSID; (3) to verify the psychosocial functioning of the subjects belonging to each identity state; and finally, (4) to describe the overall empirical profiles that emerged. In so doing, firstly we tested whether the six identity statuses emerged in previous studies conducted with Italian adolescent samples (e.g. Crocetti et al., 2011) could be extracted in our sample. In light of the prior cluster-analytic identity research (e.g., Crocetti et al., 2008; Luyckx et al., 2005), we expected that 5-6 profiles would emerge. In accordance with the literature, we examined identity development in post-modern society and we expected that only a small number of late adolescents would be in the identity achievement status, whilst the majority of them would be in the moratorium/diffusion status (Aleni Sestito & Sica, 2010; Sica et al., 2013).

Secondly, in order to investigate the relations between identity statuses, PSID and psychosocial functioning, we examined the profile of youth in different identity statuses in terms of agency (Mizokami et al., 2016; Crocetti et al., 2012; Sica et al., 2017), personal growth initiative (Luyckx & Robitsheck, 2014), emotional-divergent aspect of creativity (Sica et al., 2017), eudaimonic well-being and anxiety/depressive symptoms.

Thus, we chose to consider both correlates investigated in previous studies (personal growth initiative and agency) to guarantee comparability of results, as well as new correlates (the emotional-divergent aspect of creativity). Specifically, as regard to personal growth and agency, we hypothesized that profiles resembling the achieved status would be characterized by high levels of agency (Mizokami et al., 2016; Crocetti et al., 2012; Sica et al., 2017) and personal growth initiative (Luyckx & Robitsheck, 2014); at the same time, we hypothesized that the reverse would be true of profiles which resembled the diffused status.

With reference to the emotional-divergent aspect of creativity, we expected that profiles resembling active identity statuses (achievement, searching moratorium) would be characterized by high levels on creativity dimensions, while late adolescents with low scores on creativity dimensions could be in a more static identity status (diffusion, early closure).

Subsequently, we aimed to explore the association between identity statuses and psychosocial functioning (positive and negative), namely eudaimonic wellbeing (Waterman et al., 2010) and anxiety/depression symptoms. Based on previous studies (Crocetti et al., 2008, Crocetti et al., 2012), we expected that individuals in the achievement status would display positive psychosocial functioning, whereas individuals in diffusion status would display negative psychosocial functioning, and individuals in searching moratorium status would display both positive and negative psychosocial functioning.

We generally expected that:

- Young people who have completed their path of identity construction, or are on the way to doing so using creativity, agency and personal growth initiative, are open to negotiate and renegotiate their identity, to project themselves into the future with self-confidence, know how to imagine and take risks, and have the ability to follow the internal drive for their own development and change; in other words, they are expected to "tend towards" their optimal identity. We also expected that these subjects are satisfied with themselves and are not characterized by perceptions of anxiety or distress.
- Young people who have not carried out work of exploring their own identity, but have directly undertaken commitments, may be characterized by agency and a sense of initiative, but probably by little creativity (at least in the dimensions of risk-taking and imagination), and from a mostly positive psychosocial functioning.
- Young people who do not engage in selfconstruction work are also not very creative, not very agitative and with little personal initiative and therefore less satisfied with themselves and more prone to depression or anxiety.

Method

Participants and procedure

A total of 250 late adolescents (118 males and 132 females), aged 16-19 ($M_{age} = 16.5$; $SD_{age} = .75$), attending the last two years of various high schools in a large Italian city (Naples), took part in this study. The socioeconomic context of the town is characterized by weak industrial development, high levels of male and female unemployment (Census, 2011) and the strong presence of organized crime (Di Gennaro, 2009). We used a convenience sampling using as inclusion criteria the attendance of the last two years of high school, with no exclusion criteria. Before undertaking the study, permission to administer anonymous self-report questionnaires was obtained from their high school principals. Parental consent was obtained for adolescents below the age of 18. Participants were informed about the purpose of the study. The students attended different paths of high school: specifically, 29% attended a lyceum (i.e., high-level secondary schools that prepare students for university studies); 26.5% attended a technical school; 44.5% attended a vocational school. The measures were administered during class time; two researchers familiar with the survey attended classes to assist the respondents with questions about the survey. Participation in the study was voluntary, anonymity was guaranteed and the respondents did not receive payment for their participation. Completion time was between 20 and 40 minutes. Of the total number of respondents, 90% completed the questionnaire. The ethical implications of the current research were consistent with the Ethical Code of the University of Naples Federico II (available at *https://www.unina.it/documents/11958/14188058/DR_2425 1107%20CODICE%20ETICO.pdf*).

Measures

Identity statuses. The Italian version (Crocetti et al., 2011) of the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008) was used to assess the five identity processes (commitment making, identification with commitment, exploration in breadth, exploration in depth, ruminative exploration) to identify identity statuses. The DIDS is among the most widely used questionnaires to measure identity. The DIDS includes 25 items (5 items for each identity dimension) with a response scale ranging from 1 (completely disagree) to 5 (completely agree). Sample items read: "I have decided on the direction I want to pursue in my life" (commitment making), "I sense that the direction I want to take in my life will really suit me" (identification with commitment), "I regularly think over a number of different plans for the future" (exploration in breadth), "I regularly talk with other people about the plans for the future I have made for myself" (exploration in depth), and "It is hard for me to stop thinking about the direction I want to pursue in my life" (ruminative exploration). Cronbach's alphas were .90, .85, .71, .70, and .79 respectively.

Emotional-divergent aspect of creativity. In order to assess the affective-feeling behavioral components of creativity (Curiosity, Complexity, Imagination, and Risk Taking) we used the Italian version of the Test of Creative Personality (TPC; Williams, 1994), which constitutes one of the two parts of the Test of Divergent Feeling (TCD; Williams 1980, 1994). This test has been widely used in the Italian school context with different age samples (De Caroli, 2009; De Caroli & Sagone, 2010) and with Italian early adolescents (Sica et al., 2017). The TPC evaluates the four described dimensions and a unique index of creativity (overall creativity); it consists of 50 statements against which respondents evaluate themselves on a 5-point scale (always true, always false, partially true, partially false, I don't know). Sample items are: "Generally, I ask a question when I don't know anything" (curiosity); "I like ideas which are different from others" (complexity); "When I'm reading a newspaper or watching TV, I like to pretend to be one of the protagonists" (imagination); "I like experiencing new things to see what will happen" (risk-taking). Cronbach's alpha ranged from .73 to .85.

Agency. The MAPS20, short version of 96-item Multi-Measure Agentic Personality Scale (MAPS; Côté, 1997), was used to assess agency. The MAPS20 consists of 20 items, with four 5-item subscales and with different response scaling for each subscale, measuring: Self-esteem (e.g., "I have a low opinion on myself"), Purpose in Life (e.g., "My personal existence is very meaningful and purposeful"), Internal Locus of Control (e.g., "What happens to me is my own doing"), and Ego-Strength (e.g., "I have a lot of willpower"). The MAPS20 was translated into Italian using the translation/back-translation procedure. A pilot study with 50 subjects resulted in a number of linguistic adjustments upon which the final Italian version is based. These adjustments concerned progressive clarification of the items to make them immediately understandable to respondents and unambiguous. 332 Italian late-adolescents and emerging adults (160 males and 172 females), attending the last year of high school and the first year of three different university faculties (45% psychology, 38% sociology and 27 % law) in a large Italian city (Naples), took part in the validation study. In order to verify the goodness of fit of the model, wherein the four manifest factors represent the theoretical latent factor of personal agency, we relied on various indices: the Normed Fit Index (NFI; Tucker & Lewis, 1973; Bentler et al., 1980); the Comparative Fit Index (CFI; Bentler, 1990) that should exceed .90 and preferably .95; SRMR (Hu & Bentler, 1998) that should be equal or less than .05; and the IFI (Hu & Bentler, 1999). In addition to these, we considered the chi-square index that should be as small as possible; the Root-Mean-Square Error of Approximation (RMSEA; Steiger & Lind, 1980; Steiger, 1989) that should equal or be less than .08; and the Goodness of Fit Index (GFI; Jöreskog & Sörbom, 1985). The model's indices of goodness of fit were all satisfactory (GFI = .93; CFI = .96; NFI = .92; IFI = .96; SRMR = .054; RMSEA = .052). The internal consistency of each subscale was evaluated using Cronbach's alphas, which were: .56 for Self-Esteem, .73 for Purpose in life, .67 for Internal Locus of Control, .63 for Ego Strength. The Cronbach's alpha inclusive of all 20 items was .73, confirming that the full version of the MAPS20 should be used as an overall indicator of the personal agency. Thus, in this study, we referred to the overall scale of agency.

Personal Growth Initiative. The Personal Growth Initiative Scale-II (PGIS-II; Robitschek et al., 2012) was used to assess readiness for change (4 items), planfulness (5 items), using resources (3 items), and intentional behavior (4 items). Each item was responded to on a 6-point rating scale, ranging from 0 (strongly disagree) to 5 (strongly agree). Sample items include "I can tell when I am ready to make specific changes in myself" (readiness for change), "I set realistic goals for what I want to change about myself" (planfulness), "I ask for help when I try to change myself" (using resources), and "I take every opportunity to grow as it comes up" (intentional behavior). The Italian translation (Aleni Sestito et al., 2018) was used. The model's indices of goodness of fit were all satisfactory (NFI:0.949; NNFI:0.968; CFI:0.978; GFI:0.967; RMSEA:0.042) and good reliability was found for the three scales. Cronbach's alphas were .74, .87, .83, and .79, respectively.

Psychosocial functioning. The Questionnaire for Eudaimonic Well-Being (QEWB; Waterman et al., 2010) was used to assess eudaimonic wellbeing. The QEWB includes 21 items with a response scale ranging from 0 (strongly disagree) to 4 (strongly agree). Sample items read: "I believe I have discovered who I really am" and "When I engage in activities that involve my best potential, I have this sense of really being alive". Cronbach's alpha was .87.

Depressive symptoms were measured using an Italian version of a Depressive Symptom Subscale (Dell'Erba, 1999) adapted from the SCL-90 (Derogatis, 1983). It includes 13 items rated on a 3-point scale ranging from 0 (not at all) to 2 (very often). A sample item is: "Have you been feeling run-down and out of sorts?" Cronbach's alpha measured .94. Anxiety was measured using the Italian version of an Anxiety Symptom Subscale (Dell'Erba, 1999) adapted from the SCL-90 (Derogatis, 1983). It comprises 13 items rated on a 3-point scale ranging from 0 (not at all) to 2 (very often). A sample item is: "Have you been feeling nervous and strung up?". Cronbach's alpha was .93.

Analytic Procedure

To explore our hypotheses, we used a person-centered approach suitable for the study of identity, as young people's patterns of scores on the five identity processes (dimensions) as determined at a single point in time are often used to derive typologies of identity. "Such typologies are clear instances of a person-centered approach, because individuals are grouped together based on similarities in the configuration of scores on the underlying dimensions" (Luyckx et al., 2008, p. 598).

We therefore implemented the analytical procedure widely established in the literature on identity states (e.g., Luyckx et al, 2005; 2006; Morsumbul et al., 2016). Identity clusters were identified through a two-stage clustering procedure, and the exploration of related dimensions was done by Multivariate Analysis of Variance (MANOVAs) using identity clusters as an independent variable.

Results

Creating Identity Statuses

We used a two-stage clustering procedure, following Gore's (2000) approach, to create identity status clusters. We used the IBM - SPSS Statistics (release 24) for all analyses. In the first step, a hierarchical cluster analysis was conducted on *z*-scores of commitment making, identification with commitment, in-depth exploration, in-breadth exploration, and ruminative exploration using Ward's method based on squared Euclidian distances to individuate the optimal number of classes. In the second step, initial cluster centers of the best retained class-solution were used as non-random starting points in an iterative *k*-means clustering, which yielded the final

classification.

We compared cluster solutions with four, five, and six clusters on the basis of three criteria, namely the theoretical meaningfulness of each cluster, parsimony, and explanatory power (i.e., the cluster solution had to explain approximately 50% of the variance in each of the identity dimensions; Milligan & Cooper, 1985). On the basis of these criteria, we retained a five-cluster solution as the most acceptable. Indeed, solutions with fewer numbers of clusters failed to extract theoretically meaningful identity statuses and explained little variance, whereas solutions with a higher number of clusters violated the principle of parsimony, because they included clusters that represented only slight variations of previous clusters.

This five-cluster solution explained 60% of the variance in commitment making, 53% of the variance in identification with commitment, 46% of the variance in in-depth exploration, 59% of the variance in in-breadth exploration, and 46% of the variance in ruminative exploration.

We investigated the replicability of this cluster solution adding a second sample of the same size (N = 267 late adolescents; 118 males and 150 females; aged 18 -20, mean= 19.7; SD= 8.46) by rerunning the cluster analysis for the total sample and for each of the two sub-samples obtained by randomly dividing the total sample by 50% and calculating the degree of correspondence (i.e., the proportion of participants in the total sample being assigned to the clusters, compared to the proportions of both sub-samples). The kappa coefficients (Cohen, 1960) for both sub-samples were very good (Landis & Koch, 1977) .81 and .89, respectively. Thus, we used the clusters obtained in the first sample in all further analyses.

Figure 1 presents the final solution. The undifferentiated cluster (N = 80; 32.8%) was composed of individuals with relatively moderate scores on all identity dimensions; Achievement (N = 40; 17.20%) consisted of individuals scoring high on commitment making, identification with commitment, exploration in breadth and exploration in depth, and a moderate score on ruminative exploration; the Searching Moratorium cluster (N = 72; 29.57%) was composed of individuals with middle-high scores on all the dimensions; Troubled diffusion (N = 35; 14.52%) consisted of individuals scoring low on all dimensions except for high scores on ruminative exploration and moderate scores on exploration in breadth; finally, Carefree diffusion (N = 14; 5.91%) was composed of late-adolescents who scored low on all dimensions.

Figure 1

Z scores for commitment making, identification with commitment, in-depth exploration, in-breadth exploration, ruminative exploration for the five clusters.



Profiles of the identity status cluster: PSID

To examine the profile of youth in different identity statuses, we conducted a series of Multivariate Analyses of Variance (MANOVAs) with emotional-divergent aspects of creativity (i.e., risk taking, complexity, curiosity, imagination), agency, personal growth initiative (i.e., readiness for change, planfulness, using resources, intentional behaviour) and positive/ negative psychosocial functioning (i.e., eudaimonic well-being, anxiety, depression) as dependent variables, and the identity clusters (undifferentiated vs. achievement vs. searching moratorium vs. troubled diffusion vs. carefree diffusion) as independent variable. In this way, we could test the main effect of identity statuses on the dependent variables. In order to determine the differences among the identity clusters, we conducted post-hoc analyses by means of the Tukey test.

Emotional-divergent aspect of creativity. At the multivariate level, findings indicated two significant effects of identity statuses on curiosity [F(4, 243) = 2.66; p < .005, $\eta^2 = 0.056$] and complexity [F(4, 243) = 3.30; p < .05, $\eta^2 = 0.0689$]. Tukey post hoc comparisons (see Table 1) showed that individuals in the troubled diffusion scored higher on curiosity and complexity, followed by their undifferentiated peers; individuals in the achievement status sored lowest in both creativity's dimensions.

Agency. At the multivariate level, findings indicated significant effect of identity statuses on agency $[F(4, 243) = 2.78; p < .05, \eta^2 = 0.058)$. Tukey post hoc comparisons (see Table 1) showed that individuals in the achieved and searching moratorium statuses higher on agency, followed by their undifferentiated and troubled disused peers; individuals in the carefree diffusion status sored lowest.

Personal Growth Initiative. At the multivariate level, findings indicated significant effect of identity statuses on readiness for change [F(4, 243) = 3.82; p < .001, $\eta^2 = 0.078$], planfulness [F(4, 243) = 6.67; p < .001, $\eta^2 = 0.128$], and intentional behavior [F(4, 243) = 6.75; p < .001, $\eta^2 = 0.130$]. Tukey post hoc comparisons (see Table 1) showed that individuals in the searching moratorium status scored higher on readiness for change; individuals in both troubled and carefree diffusions scored lower. Individuals in achievement and searching moratorium statuses scored highest on planfulness and intentional behaviour, whereas individuals in both diffusion clusters scored lowest.

Positive/Negative Psychosocial Functioning

At the multivariate level, findings indicated significant effects of identity statuses for anxiety $[F(4, 243) = 4.09; p < .001, \eta^2 = 0.083]$; depressive symptoms $[F(4, 243) = 7.41; p < .001, \eta^2 = 0.141]$ and eudaimonic wellbeing $[F(4, 243) = 2.66; p < .05, \eta^2 = 0.056)$. Tukey post hoc comparisons (see Table 1) showed that individuals in the searching mor-

atorium and achievement statuses scored higher on eudaimonic well-being than their diffused peers; individuals in both troubled and diffused diffusions scored highest on both anxiety and depression; and individuals in undifferentiated status showed lowest on anxiety.

Finally, to summarize and describe the profiles of identity status and PSID we labelled these descriptive profiles as: Positive Undifferentiation (Undifferentiated identity status); Stable Achievement (Achievement identity status); Ambivalent Searching moratorium (searching moratorium identity status); Creative and negative Troubled diffusion (troubled diffusion identity status); Internalized Carefree diffusion (carefree diffusion identity status).

Discussion

This contribution was designed to shed light on the personal resources that enable people to define optimal identity development, a key element for individual wellbeing, by focusing on the difficult identity formation process that late adolescents experience in contemporary society. The general aim of the study was to explore the hypothesis that resources such as the emotional-divergent aspect of creativity, personal growth initiative and agency, which we have labelled Personal Skills for Identity Development (PSID), can actually be considered as resources for optimal identity development in cultural contexts requiring more flexible and more individualized life trajectories from young people now in comparison with the past, such as the Italian one.

In order to address this issue, we explored the identity statuses in Italian late adolescents and the interplay between them and the PSID, following four steps: First, we identified the identity statuses of late adolescents. Second, we explored the characteristics of the subjects belonging to each group in terms of emotional-divergent aspect of creativity, agency and personal growth initiative. Third, we studied the psychosocial functioning of the subjects belonging to each identity status. And fourth, we described the overall empirical profiles that emerged.

Our findings reveal the presence of a relationship between identity and PSID and describe differences in terms of the skills involved in the identity formation process (creativity, agency, personal growth or a combination of them) with positive/negative psychosocial functioning correlates. In addition, the results confirm the hypothesis that PSID can facilitate the identity formation process in late adolescents. Specifically, these results will be discussed pursuing two aims: (1) the identity statuses of Italian late adolescents; (2) the identification of PSID profiles describing the different interplay between identity statuses, PSID combinations and positive/negative psychosocial functioning dimensions.

Table 1

Means of emotional-divergent aspect of creativity, agency, personal growth initiative and positive/ negative psychosocial functioning for the five identity status clusters.

Identity status	Undifferentiated	Achievement	Searching moratorium	Troubled diffusion	Carefree diffusion	F-value	η^2
Emotional-divergent aspect of creativity							
Risk-taking	2.09	1.91 ^d	2.04	2.10 ^{be}	2.01 ^d	1.68	.04
Complexity	2.01	1.80	1.86	2.08 ^{be}	1.92	3.30*	.07
Curiosity	2.02	1.81 ^{cde}	1.96 ^b	2.09 ^b	2.06 ^b	2.66**	.06
Imagination	2.11 ^b	2.01ª	2.05	2.08	2.05	0.35*	.01
Agency	3.01 °	3.03°	3.02°	3.00 ^e	2.66 ^{abcd}	2.78*	.06
Personal Growth Initiative							
Readiness for change	4.40	4.48	4.59 ^{de}	3.96 °	3.81°	3.82***	.08
Planfulness	4.30 ^d	4.53 ^{de}	4.51 ^{de}	0.81 ^{abc}	0.84 ^{bc}	6.67***	.13
Using resources	3.62	3.91	3.79	3.33	3.88	1.47	.03
Intentional behavior	4.60 ^e	4.87 ^{de}	4.89 ^{de}	4.26 ^{bc}	3.73 ^{abc}	6.75***	.13
Psychosocial functioning							
Eudaimonic well-being	2.69	2.69	2.71°	2.65°	2.65°	2.66	.06*
Anxiety	1.70 ^{cde}	1.82 ^e	2.03ª	2.20 ª	2.18ª	4.09***	.08
Depression	1.99	1.96 ^{de}	2.08	2.18 ^b	2.27 ^b	7.41**	.14

Note. *p < .05. **p < .01. ***p < .00. A cluster mean is significantly different from another mean if they have different superscripts. A mean without a superscript is not significantly different from any other mean. Response scales: emotional-divergent aspect of creativity (0-4); personal growth (0-5); eudaimonic wellbeing (0-4); anxiety and depression (1-3).

Identity Formation in Italian Late Adolescents: Do People Define their Identity Better During Late Adolescence than During Young Adulthood?

Our results indicate the presence of a five-identity status model (i.e., undifferentiated, achievement, searching moratorium, troubled diffusion, and carefree diffusion). Unlike the six-status model drawn in previous studies (Crocetti, Luyckx, Scrignaro, & Sica, 2011; Verschueren, Rassart, Claes, Moons, & Luyckx, 2017), the foreclosure status was not seen in our sample of Italian late adolescents. The majority of them were more often classified in the Undifferentiated status (32.8%), followed by the Searching moratorium status (29.57%). The late adolescents classified in the Achievement status accounted for only 17.20%. Globally, according to the literature, the distribution of the late adolescents in the identity statuses identified show that, at the end of high school, a small number of them have defined their identity and are in a state of identity synthesis, while the majority are fully involved in identity exploration processes in terms of searching moratorium and diffusion statuses. However, compared to the young Italian adults' identity statuses that emerged from previous research papers (Sica et al., 2016), the late adolescents in our study seem to be more involved in identity formation processes and less confused than their older counterparts. Thus, this result could point to the hypothesis that identity crises in the Italian context could emerge later in individual development, not during adolescence and late adolescence, but in a second step when reconsideration processes are activated by actual and external factors.

As for the effect size (Scholte et al., 2005) with respect to commitment making and identification with commitment, we found large effect sizes in the achievement and searching moratorium statuses, medium effect sizes in the carefree diffusion and undifferentiated statuses, and a small effect size in the troubled diffusion status. With respect to in-breadth exploration, we found medium effect sizes in the undifferentiated, troubled diffusion and carefree diffusion statuses, and small effect sizes in the achievement and searching moratorium statuses. With respect to in-depth exploration, we found large effect sizes in the achievement and searching moratorium, and small effect sizes in the troubled diffusion and carefree diffusion statuses. Finally, with respect to ruminative exploration, we found large effect sizes in the troubled diffusion status, moderate effect sizes in the undifferentiated status, and small effect size in the achievement and searching moratorium statuses.

Can Creativity, Agency and Personal Growth Initiative Really be Considered PSID?

Our study aimed to identify resources for identity formation in late adolescents, assuming that dimensions of creativity, agency and personal growth initiative, found separately in previous important studies for identity development, could actually be defined as a specific set of re-

sources suitable for late-modern societies, mainly in contexts with difficult socio-economic conditions as the Italian one. Overall, the results of this study confirm that hypothesis and also describe a more complex and differentiated picture than expected. In general terms, we identified three types of connections: First, the link between agency and personal growth initiative that allow late adolescents to commit or search for commitment to their identity. Second, the link between agency and creativity supporting late adolescents in identity exploration processes in both positive and negative functioning. And third, the link between low/lack of agency, creativity and personal growth and negative psychosocial functioning. The first connection confirms the close relationship between personal growth initiative and identity processes; its role as "determinant of identity formation" has already been highlighted by Luyckx and Robitschek (2014, 978). The second and the third support the complex and ambivalent role of creativity, which could be a resource, but only under certain conditions. Curiosity and imagination might not exert a positive role on identity when the other creativity dimensions do not accompany them (Sica et al., 2017).

These three types of connections are derived from identified data-driven profiles: Positive Un-differentiation, Stable Achievement, Ambivalent Searching Moratorium, Creative and Negative Troubled Diffusion, and Internalized Carefree Diffusion. Positive Un-differentiation describes late adolescents who do not yet have a clear idea of who they are, but who have a number of resources such as curiosity, imagination, risk-taking and agency that enable them not to be depressed or anxious but to feel reasonably happy. Stable Achievement describes late adolescents who have behavioral resources of personal growth initiative; they show agency skills, but they do not show curiosity, imagination or risk-taking, which overall could help them to be ready for change. The stability of their commitments allows them to feel happy but, at the same time, to feel some anxiety or depression. The Ambivalent Searching Moratorium profiles described late adolescents' full involvement in their identity research, readiness for change, and some degree of behavioral components of personal growth initiative, but with medium-low creativity. This open identity process gave them ambivalent psycho-social functioning. The late adolescents described by the Creative and negative Troubled Diffusion showed curiosity, risk-taking and complexity, but not personal growth initiative. Jointly, they showed negative psycho-social functioning. However, the higher negative functioning characterized late adolescents with Internalized Carefree Diffusion, which had neither agency nor personal growth initiative, and only partial curiosity and capacity to use resources.

In other words, we describe a configuration of possible resources for adolescents' identity formation based on active engagement in new behaviors, even assuming the risk of change and personal choices.

Limitations and Suggestions for Future Research

Before discussing the implications, we should note that this study has a number of limitations that need to be considered in future research. Firstly, the study focuses on one group of late adolescents, therefore longitudinal research is needed to support a more specific set of conclusions around identity development. In addition, these are cross-sectional data which prevent us from drawing causal conclusions. Secondly, all the measures used were self-reported, and therefore the data may be influenced by a reporting bias (acquiescence, positivity bias, social desirability). Furthermore, the nature of the explored constructs, positively connoted, could affect the results, as all of them capture some aspects of positive functioning. Related to this, the fact that could highlight conceptual overlaps between items belonging to agency and self-esteem and aspects of identity formation may lead to fallacies. Thirdly, the PSID proposal is based on Italian data and therefore requires a crosscultural comparison to be generalized.

In order to remedy this limitation, future research could use: a mixed approach to data collection (quantitative and qualitative) (Seginer, 2009; Sica, 2009); a longitudinal design to grasp changing in the identity formation processes and the associated PSID during the life course; the comparison/interaction with variables that lead to negative patterns, such as identity distress, risk behaviors, low socioeconomic conditions; the use of a new measure that avoid conceptual overlaps and effectively address the PSID construct; a cross-cultural perspective to validate the PSID as culture free resources for optimal identity.

Finally, a note about creativity as a PSID resource. Even though creativity is increasingly being recognized as a necessary skill for the 21st century, mainly for economic revitalization and applications of diverse abilities gaining public interest (Tepper & Kuh, 2011), more attention needs to be paid to creativity in relation to individual identity formation processes. Indeed, creativity could be a skill for defining identity in our societies, but it could also involve curiosity, imagination, complexity and risk-taking collectively. Otherwise, where only curiosity and imagination are involved, it could give shape to a kind of "negative creativity" (Kapoor, 2015), one that does not drive young people to make choices and commit themselves in selected directions. Thus, on the basis of the above effectiveness-related evidence and according to Sica et al. (2017), we intend to expand the application outcomes by pursuing the prospect that creativity skills could be critical elements for identity formation in contemporary late adolescents.

Study Implications and Take-Home Message

Despite these limitations, our current findings have many important conceptual and practical implications. Indeed, this study supports the importance of agency, personal growth initiative and creativity for identity development in

late adolescence. Furthermore, the identification of five differentiated typologies (Positive Un-differentiation, Stable Achievement, Ambivalent Searching Moratorium, Creative and Negative Troubled Diffusion, Internalized Carefree Diffusion) suggest specific implications for interventions of optimal identity support. Indeed, late adolescents showing medium/high levels of PSID seem to be more advanced in their identity definition and jointly they show positive psycho-social functioning (Positive Un-differentiation and Stable Achievement). On the other hand, late adolescents who did not have PSID seem to be involved in identity diffusion with anxiety and depressive symptoms. In the middle, late adolescents who have been found to have some of the PSIDs, but not all of them, also show open identity formation processes and ambivalent psycho-social functioning.

In Figure 2 we tried to model possible intervention areas starting from the descriptive framework provided by our research results. Obviously, these are indications that are appropriate to our group of participants; however, they could provide food for thought that can be generalized with further studies. Thus, we have indicated in the right box the resources to boost for each subjects' profile for which research and intervention programs can be implemented. Specifically, we suggest that, in order to support the definition of an optimal identity using PSID, it would be appropriate to intervene in the following areas: for Internalized carefree diffusion, the PSID must be stimulated in its entirety in order to activate exploration processes, selfunderstanding, discovery of one's own possibilities and ability to find new solutions to problems that can facilitate reduction in internalizing attitudes; for Creative and Negative Troubled Diffusion, an intervention aimed at enhancing personal growth initiative should be implemented, activating a work of self-understanding and self-actualization that, in turn, leads to the definition of identity; in the case of those in the Ambivalent Searching Moratorium cluster, a combined support strategy of creative complexity and agency could promote conscious and flexible processes of selection and acquisition of commitments. We reiterate that this is a research-intervention agenda that will require adequate experimentation, for which this study provides project guidelines.

In conclusion, one element is important as a take-home message. Creativity, agency and personal growth initiative seem to be actual resources to manage identity confusion in the Italian context. Their presence, in fact, characterizes late-adolescents who show positive psychosocial functioning as well as dynamic and committed identity statuses. This seems to comfort us in the possibility to identify specific resources supporting late adolescents in the identity formation process with adaptive and positive outcomes (tending towards optimal identity). At least in the Italian context and, presumably, in contexts with the same characteristics of socio-economic transformation.



Suggestion for interventions: connection between Profiles and dimensions to be supported



Descriptive profiles

Compliance with ethical standards

The authors declare that the current research was conducted according to ethical standards. Specifically, the authors declare that: (1) They have no conflicts of interest concerning this article. (2) Before undertaking the study, permission to administer anonymous self-report questionnaires was obtained from the principals of the high schools. Informed consent was used with all participants and for adolescents below the age of 18, parental consent was obtained. Participation in the study was voluntary and anonymity was guaranteed. (3) The ethical implications of the current research were consistent with the Ethical Code of the University of Naples Federico II (available at https://www.unina.it/documents/11958/14188058/DR 2425 1107%20CODICE%20ETICO.pdf).

Author contributions

LSS and LAS designed the study and organized the data collection. LAS participated in the data collection. LSS drafted the first version of the manuscript and carried out the statistical analyses. Both the authors were actively involved in revising the manuscript. All authors also read and approved the final manuscript.

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