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Effect of nascent entrepreneurs' training on their stress: the role of gender and participants' interaction

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Abstract

Purpose – A career in entrepreneurship is stressful, especially during the start-up phase. Training programs for these nascent entrepreneurs are designed to improve entrepreneurial competencies and, more generally to generate learnings. Although learning outcomes can reduce stress, the conditions under which this can happen are not fully understood. The study looks particularly at the effect of learning, interaction with other participants and gender.

Design/methodology/approach – A six-month three-wave longitudinal study of 120 nascent entrepreneurs has been conducted to investigate the before-and-after effects of training on stress reduction. The training is specially designed to develop competencies, share knowledge about business creation and support the development of the project, not to reduce *per se* stress.

Findings – The training has no direct effect on stress levels. However, results indicate that interacting with others has a positive moderating effect on training as stress reduction, just as gender has. Specifically, women reduce their stress through training while men see theirs increasing. The authors conclude that breaking isolation through training is a relevant way to reduce entrepreneurial stress for nascent entrepreneurs.

Research limitations/implications – Training programs offer different ways to deliver the learning content (online, in cohorts, in the continuous entrance, etc.). The findings of this study suggest ensuring that the participants will have opportunities to interact with others as it reduces the stress on nascent entrepreneurs. Nevertheless, the authors cannot demonstrate that this has a long-term effect as our timeframe is limited to six months.

Originality/value – This research investigates the stress-reduction effect of training, which is not a common outcome studied related to training. This highlights the importance of looking at other more distal outcomes as nascent entrepreneurs may seek other peripheral outcomes from training, like seeking a sense of belonging or wanting to break isolation.

Keywords Training, Nascent entrepreneurs, Stress

Paper type Research paper



1. Introduction

The entrepreneurial adventure is full of challenges and difficulties that many entrepreneurs at the start-up stage fail to overcome (Byrne and Shepherd, 2015; Baldwin *et al.*, 2000). Therefore, it is not surprising that faced with these challenges and difficulties, many of them experience stress (Grant and Ferris, 2012; Grant, 2011), moments of doubt about their projects (Shepherd *et al.*, 2007; Valéau, 2007) and periods of isolation (Messegem and Sammut, 2010). A lack of competency is often singled out as the explanation for failures (Gaskill *et al.*, 1993; Cardon *et al.*, 2011). To address this shortcoming and to increase their chances of success, many nascent entrepreneurs (i.e. persons trying to start a business) turn to training programs and coaching (Fairlie and Holleran, 2012; Delanoë, 2013; Bakkali *et al.*, 2010), for the latter have benefits and impacts connected to forms of learning (Radu Lefebvre and Redien-Collot, 2013; Pitts, 2008; Wing Yan Man, 2007) that are chiefly cognitive and affective (St-Jean and Audet, 2012; Cope, 2005).

In the demanding context of starting a new business, there is no doubt that competencies are extremely important; however, the mental health of entrepreneurs is crucial to their use of competencies (Stephan, 2018). This means that stress management is one of the primordial needs of entrepreneurs (Uy *et al.*, 2013; Drnovšek *et al.*, 2010). While all entrepreneurs experience stress, studies still at the embryonic stage suggest that some manage it better than others (Drnovšek *et al.*, 2010; Ahmad and Salim, 2009; Akande, 1994). On one hand, studies point out that some individuals have a stronger innate capacity to deal with stress, for example having a high psychological capital (Hmieleski *et al.*, 2015; Baron *et al.*, 2016) or personality-related dimensions that reduce the stress (Wincent and Örtqvist, 2009). This suggests that some people are more adapted to become entrepreneurs and those who are less will quit this career (Baron *et al.*, 2016). On the other hand, other studies suggest that entrepreneurs can learn to cope with stress (Uy *et al.*, 2013) and perform behaviors that could lessen their stress level, for example seeking social support (Rahim, 1996; Xu *et al.*, 2020; Klyver *et al.*, 2018), which is among the strategies used to manage stress more effectively.

Although some training or program are specially designed to manage stress in individuals (Murphy, 1996; Karaca and Şişman, 2019) or entrepreneurs (Murnieks *et al.*, 2020; Palacios, 2020), this research aims to investigate the stress-reduction effect of a more “classical” knowledge and skill development training program. Entrepreneurial training, one of whose benefits is improved perceived self-efficacy (Newman *et al.*, 2019), may be a way to reduce the stress of nascent entrepreneurs (i.e. individuals in the process of creating a business). Learning can reduce stress because it increases the feeling of control over entrepreneurial tasks; and meeting other entrepreneurs who are experiencing similar pressures and strains can have the same effect. Cohort training, which is becoming increasingly popular among entrepreneurs, should have the same positive impact on their stress as it does on salaried workers’ stress (Viswesvaran *et al.*, 1999; Steinmetz *et al.*, 2020). However, although this premise seems plausible, researchers have yet to provide evidence that cohort training reduces the stress experienced by entrepreneurs.

This research investigates the Launching a Business (*Lancement d'une entreprise*) training program, specially designed for nascent entrepreneurs, open to all profiles and accessible at a very low cost (about a hundred dollars). The program is divided into six different modules intended to increase knowledge and develop competencies on these six different themes: Business project and training, IT tools, business plan structure, marketing and sales, resource planning and financial plan. The program offers a few hours of individualized coaching and a flexible schedule for participants. Although offering similar content, there are variations in the delivering method (by cohort or by continuous entrance, online or on-site, etc.), which changes the way nascent entrepreneurs will interact together in the training. Based on the theory of social learning (Bandura, 1977), we develop the hypothesis that programs of this type will reduce stress if significant learning is achieved and when meaningful interactions with other nascent entrepreneurs are made. In addition, considering the more marked effects of training in the development of women’s

entrepreneurial self-efficacy (Shinnar *et al.*, 2014, St-Jean *et al.*, 2021), we hypothesize that this training will have more marked effects on stress reduction in the latter. We have tested our hypotheses on a three-wave longitudinal database of 120 nascent entrepreneurs enrolled in the program.

This article is structured as follows. We begin by doing a literature review of work on stress and entrepreneurship to clarify the theoretical foundations that made it possible to construct the research hypotheses. We then specify the methodology used to test these hypotheses. After we have presented our results and discussed their implications, we conclude by examining the limitations of our study and by indicating some avenues for future research.

2. Stress and entrepreneurship

The concept of stress has several definitions, but it is generally agreed that stress is the physiological response of individuals when they exceed their personal resources in an unspecified situation (Lazarus and Launier, 1978). This means that it involves three factors: environmental sources of stress (called “stressors”), the response (usually called “tension”) of individuals exposed to these environmental pressures and the ways individuals manage stressors and their reaction to them (Ganster and Rosen, 2013). When people experience stress, they tend to opt for one of two main coping strategies. Some use active coping, also known as “approach coping,” “problem-focused coping” or “task-oriented coping” (Billings and Moos, 1981; Lazarus and Folkman, 1984), which can be broadly described as doing something to alter the stressful situation (either cognitively or behaviorally). Others choose avoidance coping, a type of emotion-focused coping strategy (Carver *et al.*, 1989; Lazarus and Folkman, 1984). The latter involves temporarily distancing oneself from the stressful situation, or temporarily disengaging in order to seek relief from the unpleasantness generated by the stressful situation (Holahan and Moos, 1987; Roth and Cohen, 1986; Sonnentag, 2012).

It is generally acknowledged that entrepreneurship is a stressful profession. The combination of long work hours, ambiguous roles and high levels of risk create a work context that is rife with stressors (Buttner, 1992; Grant and Ferris, 2012; Lechat and Torrès, 2017). However, although some studies have focused on the stress experienced by entrepreneurs, researchers have not made a concerted effort to investigate this theme and, most importantly, the results obtained have been far from convergent. There is a lack of robustness (Kariv, 2008), and there are competing theoretical assumptions and inconclusive empirical findings (Hessels *et al.*, 2017; Rauch *et al.*, 2018). While there is no consensus on the differences in the overall level of stress, there seems to be some agreement that the stress experienced by entrepreneurs is more related to their workload than to their role ambiguity or their use of skills (Oren, 2012). However, this may be only true for established entrepreneurs, as nascent and novice entrepreneurs may not have all the required skills and competencies to perform well in their new role as entrepreneurs.

Thus, most empirical studies have examined established small business owners and founders or self-employed persons. Very few studies have looked at nascent entrepreneurs, that is, entrepreneurs in the process of starting a business (Wennekers *et al.*, 2005). Moreover, until now, the literature has mainly focused on sources and types of stress and its effect on the entrepreneur (Lerman *et al.*, 2021), but it has not paid much attention to the question of how to reduce its effects in an entrepreneurial context (Sheehan and St-Jean, 2014; Wach *et al.*, 2021), especially for nascent entrepreneurs. Hence our interest in examining how the stress felt can be moderated by situations or activities that entrepreneurs can perform to manage their stress. Rauch *et al.* (2018) maintain that uncertainty and ambiguity are the nexus between stress and entrepreneurship and suggest that learning may be a lever to reduce stress: “Our review reveals that knowledge, learning, and information, as well as motivation and

habituation (the latter being also related to psychological capital), are critical factors when dealing with uncertainty and stress” (p. 351). There is also strong evidence that social support from supervisors and colleagues is a key source of employee well-being (Luchman and González-Morales, 2013), but this kind of social support is rarely available to nascent entrepreneurs, for they have no superiors and few if any, colleagues (co-entrepreneurs) (Stephan, 2018). However, one way for nascent entrepreneurs to learn and access social support may be through training programs.

Research is beginning to emerge on how entrepreneurs can reduce their stress despite being in a potentially stressful environment. Some studies show that having positive affect (a tendency to experience positive emotions) decreases the effects of stress, both objectively and subjectively (Cardon and Patel, 2015). Others show that active coping strategies to deal with stress have a positive impact on entrepreneur wellbeing (Uy *et al.*, 2013). However, although it may be true for established entrepreneurs, we do not know to what extent it applies to nascent entrepreneurs. Nascent entrepreneurs do not have an operational business, which makes the uncertainty much higher than for established entrepreneurs, not to mention that they may lack the skill and competencies, or more globally, the required resources to render the business perennial. Thus, their options to manage their stress may be more limited.

This research focuses on the impact of training for nascent entrepreneurs in its capacity to reduce stress in two distinct ways: from an improvement of (perceived) skills and from the social support of other entrepreneurs during the training program. We agree with Shepherd and Patzelt (2015) that more research is needed on how entrepreneurs experience stress and, in particular, on “why some entrepreneurs are able to avoid loneliness (and the subsequent negative health consequences), and others are not” (p.24). In our view, training may be an important way for entrepreneurs to reduce stress.

2.1 Training and stress management

Entrepreneurship training can provide multiple learning benefits, but not all persons acquire the same benefits from this type of training. For example, the propensity for risk, which is an important behavioral tendency of entrepreneurs (Rauch and Frese, 2007; Stewart and Roth, 2001), is likely to maximize the effect of a training program (Fairlie and Holleran, 2012). Training is known to have a positive impact on perceived self-efficacy (Bergman *et al.*, 2011; Newman *et al.*, 2019), although this impact depends on the structure of the training program and the approach adopted (Piperopoulos and Dimov, 2015).

Self-efficacy related to job tasks helps to reduce job stress and acts as a coping mechanism (Schwarzer and Hallum, 2008; Gonzalez *et al.*, 2017; Saleem and Shah, 2011) and more generally, self-efficacy can reduce the perceived stress (Schönfeld *et al.*, 2017). If we apply this logic to the context of entrepreneurship training, it is plausible to assume when individuals perceive training as having a positive impact on their preparedness for an entrepreneurial project, this will reduce their entrepreneurial stress. Learning through a training program for nascent entrepreneurs should make them feel they are in control of their project, and this should reduce the size and perception of stressors, switching from hindrance-stressor to challenge-stressors (ref. Lerman *et al.*, 2021). In fact, it has been shown that feeling competent and in control positively influences coping strategies for stress and reduces it as a result (Compas *et al.*, 1991; Aldwin, 1991; Steptoe and Poole, 2016). Attending a training program can be seen as an active coping strategy for reducing stress; moreover, training is considered to have a potentially positive impact (Uy *et al.*, 2013) on entrepreneurs.

Not all training is relevant or useful for entrepreneurs. Consequently, some may not help entrepreneurs develop skills, network and break their isolation during this critical period (Deakins, 1998). An experimental study on the impact of training nascent entrepreneurs demonstrates a short-term effect in accelerating the creation process, but little or no medium-

term effects (Fairlie *et al.*, 2015). Furthermore, the effect is observed only with certain people who probably have a personality more suited to this career (i.e. risk propensity) (Fairlie and Holleran, 2012). This suggests focusing on the moderators who could influence the effect of training to better understand the differentiated effect according to different profiles and contextual situations.

The training under investigation in this study has a “one-size-fits-all” approach in terms of training content delivered. There are six different modules, and everyone must go through each module regardless of their previous knowledge and experience if they want to advance in the training program. As such, there could be a huge discrepancy between nascent entrepreneurs in terms of learning as people with university diplomas specialized in entrepreneurship could take the training and learn not much and others without diplomas could learn much more. Thus, the level of education (as a proxy for human capital) could interfere with the training offered in providing different outcomes depending on their education.

However, the focus of this research is not the learning achieved *per se*, but rather the reduction of stress. In this perspective, the learning achieved then becomes a means of reducing stress. Indeed, the gap between the skills required to succeed in business and those possessed can lead to stress. Through the learning achieved in the training, nascent entrepreneurs should be more competent and therefore their stress should be reduced (Martin *et al.*, 2013). Thus, the learning achieved through training would be able to reduce stress by providing a feeling of adequate preparation to face the difficulties of creating and managing the business. Specifically, a nascent entrepreneur who perceives to have learned a lot in training should make the effect of training greater to reduce stress. Conversely, a person who does not perceive having learned from the training should see the effect of the training as being weaker in reducing stress by bringing on a feeling of unpreparedness. This leads to the following hypothesis:

H1. The perceived learning from the training will reduce nascent entrepreneurs' stress.

Social learning theory states that behaviors are learned from the environment through an observational learning process (Bandura, 1977). Specifically, peers influence behaviors through social reinforcement, modeling and cognitive processes. Having access to feedback and using social support are both generally seen as strategies for managing stress (Rahim, 1996). Studies on workplace stress show that social support reduces stress-related tension and positively affects the perception of stressors (Viswesvaran *et al.*, 1999). Social support is an exchange of resources that both the provider and the receiver consider necessary to the well-being of the receiver (Buunk, 1990). Coaching can be a way for nascent entrepreneurs to break their isolation (Messeghem and Sammut, 2010). By extension, it is plausible to assume that attending a training program with other nascent entrepreneurs who have similar experiences to one's own will break isolation and stimulate the social support of peers through interaction leading to a reduction in stress.

The positive effect of peer support during training has been highlighted previously (Nieminen and Hytti, 2016). It seems that learning environments offering a space both for socializing with peers and for sharing learning experiences with them tend to diminish feelings of isolation and loneliness, thus probably reducing stress for entrepreneurs (Zhang and Hamilton, 2010). Learning from peer group support, meeting others with the same problems, and being surrounded by like-minded people help sustain motivation in the lonely environment of self-employed entrepreneurship (Nieminen and Hytti, 2016) and, by the same token, should reduce stress. Consequently, we posit the following hypothesis:

H2. The interaction with other entrepreneurs from the training will reduce nascent entrepreneurs' stress.

2.2 Training, gender and stress

An impressive research carried out within the framework of the Global Entrepreneurship Monitor consortium among 110,689 adults from several countries shows that women have lower human capital levels (Cheraghi and Schøtt, 2015). In this context, the authors mention that training aimed at supporting business creation brings more benefits for women than for men. Globally, there are gender differences in entrepreneurship that are tending to diminish but are still persisting in recent years (Kelley *et al.*, 2017; Elam *et al.*, 2019). Several studies attempt to understand this difference (Mueller and Dato-on, 2013). Some point to the persistence of gender stereotypes in entrepreneurship that pervades many cultures and societies, by attributing entrepreneurship to men as an activity traditionally associated with them (Johnson *et al.*, 2018; Meyer *et al.*, 2017; Gupta *et al.*, 2014). The way women in business are treated is not identical to men, asking men to win and women not to lose (Balachandra *et al.*, 2019; Edelman *et al.*, 2018).

One of the consequences of this stereotyping phenomenon is that women generally feel less competent than men, regardless of their actual competence (Wilson *et al.*, 2007). This situation leads them to want to train and consequently, the training brings them positive effects in terms of their feeling of competence (self-efficacy) (St-Jean *et al.*, 2021, Nowiński *et al.*, 2019; Shinnar *et al.*, 2014; Dempsey and Jennings, 2014). These perceptual issues are likely, on the one hand, to lead women to feel less suited to entrepreneurship and therefore to be stressed about their choice to start a business. On the other hand, it suggests that the training they receive would probably have a greater effect on reducing their stress. This is in line with Kariv (2008) who shows that stress appraisal has gender differences and that social support appears to be effective for women in stress management strategies. Indeed, by reassuring themselves about their skills and through social learning mechanisms, they are likely to realize that they are suitable for entrepreneurship, developing their confidence and thus reducing their stress. Thus, this leads to the final hypothesis:

H3. Women will have a greater stress reduction from the training than men will have.

3. Methodology

3.1 Sample

Our study uses a quantitative research methodology based on a three-wave longitudinal data collection. A questionnaire was sent to nascent entrepreneurs who are currently in the creation process but whose company is not operational. These nascent entrepreneurs were asked to complete the questionnaire before they began a training program in Quebec, Canada, called *Lancement d'une entreprise* (Launching a Business). This training program is 330 h long and lasts on average 16 weeks (that is, between 11 and 22 weeks). It covers everything related to starting a business throughout six modules: Business project and training, IT tools, business plan structure, marketing and sales, resource planning and financial plan. At the end of the program, participants receive an Attestation of Vocational Specialization from the Quebec Ministry of Education. Quebec school boards have training centers and are in charge of administering the program and adapting the teaching methods to meet their clients' needs; however, they must respect the program parameters established by the Ministry. This means that the context in which the training is offered can vary slightly, but not significantly (i.e. the main thematic should be covered) and that the pedagogical activities are not always the same across the different centers. For example, some training centers offer periods of personalized coaching, whereas others do not. It is also important to note certain variations in the program structure. Some training centers offer continuous enrollment, whereas others organize closed cohorts so that learners evolve together throughout the program, with spaces and time periods made available for networking. It seems clear that there is likely to be more

interaction between participants when the program is structured around closed cohorts that have more opportunities to network together.

The training program officers report that every year approximately 4,000 persons register for and attend the program at the centers operated by the school boards. To recruit the participants for our study, we worked closely with almost all these centers, but not some of the biggest ones. The first questionnaire (T0) was distributed online and through email by personal invitation to persons who were enrolled in the training program, but who had not yet started it. Six months later (T1a), we did a follow-up of all the persons contacted. Since the training program varies between 11 and 22 weeks, doing the follow-up six months later ensured that all the participants had now completed the program. Above all to address training-related issues (T1b), a second follow-up questionnaire was sent two weeks later (third wave). A total of 120 persons agreed to answer the T0 and T1 a/b questions.

The sample is composed of 55% of women and the mean age is 39.36 years old (11.05 standard deviation). Most participants are White (76.8%) and 53.7% have a university degree. The strong majority (71.6%) have not received any money yet related to their business project and have no experience as a business owner (71.0%). Most of them work in a company while they develop their project and pursue their training (57.0%). A total of 34% receive employment insurance benefits. Half of the sample earns less than CAD\$40,000 annually as family income.

3.2 Measurements

Perceived stress (PSS-10) is used to assess the stress perception of the nascent entrepreneur. This concept initially developed by [Cohen et al. \(1983\)](#), was measured using the construct PSS-10 (e.g. "How often have you felt nervous or stressed?"), a construct originally presented in French by [Lesage et al. \(2012\)](#). The respondent has to remind how often s/he feels in this way in the last month, using a five-point scale ranging from 1-Never, to 5-Very often. The measure was used at T0 and T1a (Cronbach's alpha = 0.612).

The *Propensity for risk* is a measurement adapted from [Hung and Tangpong \(2010\)](#). It translated into three items (e.g. "I like to take risks, even if I can fail") and used a seven-point Likert scale (from 1-Strongly disagree to 7-Strongly agree) (Cronbach's alpha = 0.679). It was measured at T0. This scale has been translated into French by two independent translators, then the translation has been compared, and both translators reached a final agreement on the best version when they disagreed.

For the *Perceived learning from training*, we created a specific scale and was sent at wave T1b. We developed a list of nine items based on several unstructured interviews with entrepreneurs that terminated the program as well as with trainers, coaches and program coordinators involved in the research project. This scale started with an initial lead-in question to inquire about the impact that training had at different levels: "To what extent did the training program allow you to...". Examples of the items are: "... know your abilities and limitations as an entrepreneur" or "... improve your skills for starting a business". The complete list of items 1 is in [Appendix](#). For each item, the impact was measured using a nine-point slider scale. Cronbach's alpha is 0.894 and the single factorial solution explains 50.46% of the variance. We calculated the mean from all these items for the next analyses.

For *Interaction with other entrepreneurs*, we also created a specific scale for this study and collected it at wave T1b. This scale was developed by the research team to assess the satisfaction, usefulness, learning and encouragement related to their interactions with others participants in the training. The scale has four items, and an example of these items is "I am satisfied with the amount of interaction with the other participants in the training program". The complete list can be found in [Appendix 1](#). For each item, the degree of agreement was measured using a seven-point Likert scale. Cronbach's alpha is 0.912 and the single factorial

solution explains 73.47% of the variance. We calculated the mean from all these items for the next analyses.

3.3 Analysis

For the analysis, we used the general linear model (GLM) for repeated measures. This procedure calculates the inter-subjects and intra-subjects analyses for stress change before and after the training. We controlled for age and education because they are all regarded as influencing the entrepreneurial process, interaction with others, and stress. Our decision to control risk-taking was motivated by two important considerations. First, higher risk-taking can be associated with stress because a person taking risks is faced with potentially more stressful entrepreneurial situations than other persons. Second, propensity for risk is associated with the entrepreneurs who benefit the most from training programs (Fairlie and Holleran, 2012) and who are potentially the most suited for entrepreneurship (Rauch and Frese, 2007).

4. Results

Table 1 presents the averages, standard deviations and correlations of the variables in our study.

The inter-subjects analysis for stress change before and after the training shows that there is no significant variable that could explain a difference in stress level (Table 2).

The intra-subject analysis for stress change before and after the training shows that training would not reduce the stress by itself ($F = 0.292, p = 0.592, \eta^2 = 0.008$) (Table 3). Age does not influence the change in stress level induced by the training ($F = 0.736, p = 0.396, \eta^2 = 0.020$) nor does the education level ($F = 0.619, p = 0.436, \eta^2 = 0.016$). The propensity for risk has a positive moderating effect on the effect of training on stress reduction ($F = 5.331, p = 0.027, \eta^2 = 0.126$). It shows that nascent entrepreneurs with a low risk propensity will see their stress level diminish after the training while the individuals with a high risk propensity will see it slightly increase. Contrary to our expectation, the perception of learning from the training does not positively moderate the effect of the training on stress levels ($F = 0.786, p = 0.381, \eta^2 = 0.021$). This leads to rejecting H1. However, interaction with others during the training positively moderates the impact of training in reducing the stress ($F = 5.517, p = 0.024, \eta^2 = 0.130$). As shown in Figure 1, nascent entrepreneurs that had occasions to interact with others in the training see their stress decline while the others have their stress increase. This confirms H2. Finally, gender has a moderating effect to reduce the stress from the training ($F = 8.454, p = 0.006, \eta^2 = 0.186$). Figure 2 illustrates that women see their stress to decline after the training while men have their stress increase. This confirms H3.

	Avg.	S.D.	1	2	3	4	5	6	7
1-Age	39.36	11.05	1.00						
2-Gender	0.55	0.50	0.11	1.00					
3-Education	3.77	1.16	0.12	-0.22	1.00				
4-Prop. Risk	5.08	0.92	-0.27	0.24	-0.27	1.00			
5-Stress (T0)	3.36	0.39	0.10	0.05	0.10	-0.24	1.00		
6-Interaction	5.40	0.76	0.17	-0.09	0.13	-0.30	0.00	1.00	
7-Learning	6.89	1.34	-0.20	0.07	0.05	-0.25	-0.02	0.25	1.00
8-Stress (T1a)	3.30	0.39	-0.01	0.00	-0.09	0.11	0.43	0.04	-0.07

Note(s): ¹ Pearson Correlations ≤ -0.26 or $\geq 0.25 = p \leq 0.05$

Table 1. Averages, standard deviations, and correlations¹ of the variables

5. Discussion

This study sought to observe the effect of training aimed at nascent entrepreneurs on its potential effect to reduce entrepreneurial stress. In particular, it sought to see the effect of the perception of learning as well as interaction with other participants on stress reduction, in addition, to seeing the differentiated impact of gender on it. The results obtained do not demonstrate a direct effect of training on reducing stress over a period of six months, nor do they confirm the role of perceived learning in this respect (H1 rejected). However, they demonstrate that interaction with other participants has a positive moderating effect by attenuating the stress (H2 confirmed). More specifically, it is observed that nascent

Table 2.
Inter-subjects analysis
for Stress change

	<i>F</i>	Sig. (<i>p</i>)	Eta-squared (η^2)
Constant	32.909	0.000	0.471
Age	0.189	0.667	0.005
Gender ^a	0.772	0.385	0.020
Education	0.005	0.946	0.000
Propensity for risk	0.172	0.681	0.005
Interaction with others	3.075	0.088	0.077
Learning from training	0.000	0.994	0.000
N	44		

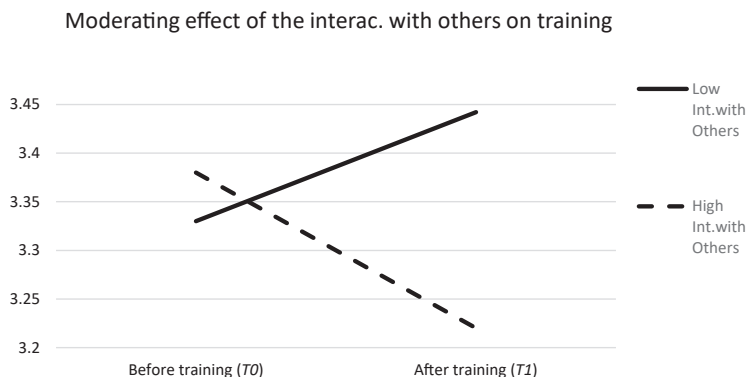
Note(s): ^a Male = 0; Female = 1

Table 3.
Intra-subjects analysis
for Stress change

	<i>F</i>	Sig. (<i>p</i>)	Eta-squared (η^2)
Training	0.292	0.592	0.008
Training * Age	0.736	0.396	0.020
Training * Gender ^a	8.454	0.006	0.186
Training * Education	0.619	0.436	0.016
Training * Propensity for risk	5.331	0.027	0.126
Training * Interaction with others	5.517	0.024	0.130
Training * Learning from training	0.786	0.381	0.021
N	44		

Note(s): ^a Male = 0; Female = 1

Figure 1.
Interaction between
training and the
interaction with others



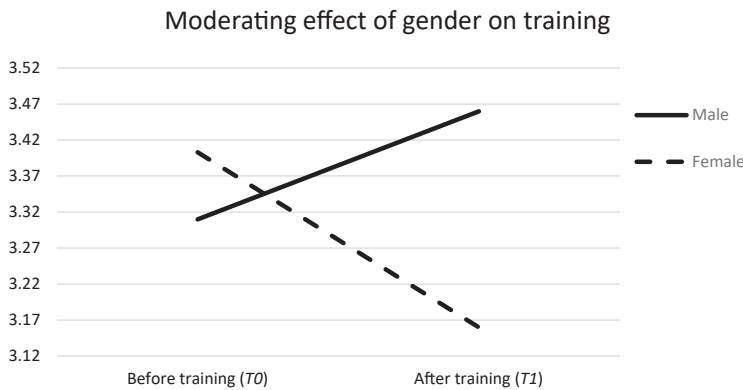


Figure 2.
Interaction between
training and gender

entrepreneurs who have few interactions with others will see their stress increasing at the end of the training, while those who have many interactions and exchanges with their cohort will see their stress declining. In addition, we observed a gendered effect of stress reduction by the training, where women see their stress decreasing while men see it increasing (H3 confirmed). Although this was not included in our hypothesis, we observed that risk propensity also has a marked effect. People with a low risk propensity see their stress greatly declining at the end of the training, while those with a high risk propensity see it slightly increasing. This result confirms the effect of risk propensity as a moderating effect of the impact of training for nascent entrepreneurs observed previously (Fairlie *et al.*, 2015; Fairlie and Holleran, 2012).

Our results neither show the effects of the perceived learning from the training program on the stress of entrepreneurs, nor a general effect to reduce stress. Firstly, we should recall that the training program was not designed to reduce stress, but to provide knowledge, skills development and competencies to nascent entrepreneurs. Secondly, although the measurement of perceived learning is useful for observing a potential effect of the training on the reduction of stress, it is possible that there is a mediating effect on entrepreneurial self-efficacy, which may, in turn, reduce stress. To put it differently, training probably improves entrepreneurial self-efficacy (St-Jean *et al.*, 2021; Maritz and Brown, 2013; Bergman *et al.*, 2011), which in turn, reduce stress (Schönfeld *et al.*, 2017; Peng *et al.*, 2015). This is one of the study's limitations. As noted by Nieminen and Hytti (2016), a training program can have different (positive or negative) outcomes, depending on the profile of the participants and their level of commitment to the entrepreneurial process. For example, Nieminen and Hytti (2016) observed that participants in their study who were exploring the possibility of an entrepreneurial career experienced positive outcomes from a training program, but those other participants, who were more committed to such a career, were afraid that their need for training would create the impression that they were less credible entrepreneurs.

This study contributes in several ways. Firstly, while previous work has focused on sources of stress (stressors), this one offers a new perspective by examining ways to reduce stress. Interaction with peers is important because it allows nascent entrepreneurs to realize that they are not alone in their situations. It makes them aware that others experience the same ambiguity and the same uncertainty in their entrepreneurial projects, and it allows them to benefit from the advice of others on how to manage stress in entrepreneurial contexts. This confirms that nascent entrepreneurs may need to obtain social support outside of their natural environment. Employees in an organization have colleagues or superiors who can help them break their isolation and manage their stress (Luchman and González-Morales, 2013). Yet it is important to emphasize that in the workplace, social support is not effective if

employees only seek it when tensions arise. To be effective, it has to be already present when tensions arise (Viswesvaran *et al.*, 1999). Therefore, it seems likely that feeling socially supported would also be beneficial to entrepreneurs who are in the process of starting up a business. Unlike employees in the workplace, entrepreneurs often lack colleagues to interact with and, they rarely receive psychosocial support. This may be even worse for nascent entrepreneurs, who the exception of entrepreneurial teams, are alone in the process. The participants in our study were able to experience interaction through a training program. But there are other types of resources that may allow nascent entrepreneurs to interact with others as a way of reducing stress. For example, many entrepreneurs now use Fab Labs (Fonrouge, 2018, 2019), and our results would suggest that because these co-working spaces allow entrepreneurs to interact both formally and informally, they may contribute to lowering their stress. In any case, their impact on the stress experienced by entrepreneurs should be investigated. Mentoring relationships may be another way for entrepreneurs to have access to interaction with others that helps reduce stress. Mentors have many functions, including a psychological one that involves making entrepreneurs feel more secure (St-Jean and Audet, 2012; St-Jean, 2011), which clearly suggests that they may help entrepreneurs lower their stress levels.

Secondly, this research contributes to shedding light on an important factor in the reduction of the stress experienced by nascent entrepreneurs. Very few studies focus on the mental health of entrepreneurs currently engaged in the start-up process and on concrete ways to intervene when they are confronted by mental health issues. Training nascent entrepreneurs and offering them coaching may be ways to break their isolation and reduce the psychological distress that they experience because of persistent entrepreneurial stress. This opens the door to research on the impact of spousal (Werbel and Danes, 2010) and family support (Powell and Eddleston, 2013) or on the impact of social capital more generally. But more importantly, this suggests further investigating of the health-related issues not only with established but also with nascent entrepreneurs. On a theoretical level, our results offer a new avenue for research on how to reduce entrepreneurial stress. In the context of actual training programs and coaching, instructors and practitioners intuitively engage with a group and encourage peer-to-peer sharing to support entrepreneurs in their project to start a business. The positive impacts of training, mentoring and other support activities have been studied (St-Jean and Audet, 2012; Delanoë, 2013; Levie *et al.*, 2014; Michaelides and Benus, 2012). However, to our knowledge, no research exists on the impact that training and its modalities (whether there is interaction with others, for example) have on stress. We have taken the first step in this direction, but our study only considers entrepreneurs who choose to do training. The effect of training on stress could be verified through a larger sample that included entrepreneurs who do not choose to do training. Despite our contribution, we cannot explain the exact mechanism allowing the training through interaction with others to reduce the stress. It is possible that entrepreneurs learn to cope effectively with stress in contact with other entrepreneurs (Uy *et al.*, 2013; Adomako, 2021; Soetanto, 2017). It is also possible that they change their perception of some entrepreneurial stressors, from initially perceiving them as hindrances, but learning to perceive them as challenging through the interaction with others (Lerman *et al.*, 2020, 2021). Further research would be required on that end.

Thirdly, this study contributes to demonstrating that gender has a differential effect on stress reduction through training. There are works that observe that women will have greater needs for support and training and that this support will have more marked effects than for men (Cheraghi and Schött, 2015). Also, previous work points out that the entrepreneurial self-efficacy of women is lower than that for men (St-Jean *et al.*, 2021; Dempsey and Jennings, 2014) because of gender stereotypes related to entrepreneurship as a career (Balachandra *et al.*, 2019; Edelman *et al.*, 2018; Gupta *et al.*, 2008, 2014). As a result, women seem to benefit more from the effect of training on this entrepreneurial self-efficacy. In line with this reasoning,

recent results show that mentoring can reduce entrepreneurial doubt for women entrepreneurs more than men (St-Jean and Jacquemin, 2022). However, the effect of training on the reduction of women's stress constitutes a new avenue of research that should be pursued. Indeed, a mediating effect of entrepreneurial self-efficacy can be imagined to explain stress reduction, but it remains to be demonstrated. Moreover, knowing that stressors can be perceived differently according to gender (Kariv, 2008), it would be necessary to verify the role of training in reducing specific stressors according to gender. While our work illustrates the effect of training for budding female entrepreneurs in reducing their stress, we cannot conclude on the potentially beneficial effect of training for established entrepreneurs. Further work is required in this regard, but this research contributes to paving the way. Also, although it was not hypothesized, we observed an increase in stress among male entrepreneurs. These results are interesting because they could be linked to the fact that men are naturally over-optimistic (Arabsheibani *et al.*, 2000), more confident in their abilities irrespectively of their real abilities (Liberatore and Wagner, 2022) and therefore, the training could help them inject realism into their project, which would increase their stress accordingly. Further research would be required on that end to better understand these dynamics.

6. Practical implications

Although imperfect, our results support the claim that it is important to provide entrepreneurs with effective ways to reduce the stress that they experience in the early phases of their business creation projects. Interaction with other entrepreneurs through cohort training is therefore advisable to help nascent entrepreneurs persevere in their business creation projects and especially to help them avoid health problems associated with stress. In practical terms, this confirms that it is important for nascent entrepreneurs to have access to peer-sharing spaces. At a time of widespread digitization and increasing possibilities for distance learning, our results raise a red flag, for they call for caution in the development of entrepreneurship training programs, especially those targeting nascent entrepreneurs who are concretely involved in the start-up process. They indicate the path that training programs and coaching should take to break the isolation of nascent entrepreneurs (Messeghem and Sammut, 2010) and reduce their stress. By highlighting the leverage of training programs, our results also show that researchers need to rethink the issue of coaching. Indeed, it is time for this issue to return to center stage (Barès and Chabaud, 2012).

7. Limitations

As limitations, we should first remember that the final data analysis relies on a very small number of retained cases ($n = 44$), which would likely reduce the statistical power. As we found significant effects of interacting with other entrepreneurs and gender, this does not seem to impact our analyses. However, we were not able to confirm our other hypothesis. Given this limitation, we may think that low statistical power could be in cause here. Secondly, the perceived stress scale (PSS-10) used had a low Cronbach's alpha for this research. This situation could also reduce the statistical power of the tests (Schmitt, 1996), therefore could have reduced the capacity to confirm the impact of the perception of learning in the training to reduce the stress. We should also consider that the scale focuses on perceived stress in general, not job stress or a more specific measure of perceived stress in entrepreneurship. This could also explain some non-significant results obtained here. Thirdly, we investigated the interaction with others in developing a new measure to capture this phenomenon. However, we could think of designing an experiment in which this

environment is controlled/manipulated by the researcher. For example, some training facilities do not have time or space to allow participants to interact, while others have. It may also be possible to include interactions as part of the pedagogy and compare those who had interactions with others. Finally, the final retained sample could not be representative of the people who received the training, nor be representative of the nascent entrepreneurs in Quebec or elsewhere. Further replications should be performed with a larger database.

8. Conclusion

Being an entrepreneur is a stressful journey. Unlike employees, nascent entrepreneurs cannot count on colleagues, superiors or organizational practices to help them reduce their stress and improve their well-being. This means that they must find social support elsewhere. In this study, we have sought to verify the impact of training on stress reduction by using a three-wave longitudinal analysis of data on nascent entrepreneurs who are enrolled in a training program. Our results show that interaction with other participants in a training program can reduce entrepreneurial stress but only through social interaction with the other participants. Therefore, our study helps to validate the effects of training on the mental health of entrepreneurs, particularly those who experience stress during the business start-up period. Moreover, exploring strategies to reduce stress goes beyond studies focusing uniquely on stressors. Even though training can have different positive outcomes for entrepreneurs who attempting to make their projects a success, it does not seem to have an impact on stress reduction, at least not directly. This research also contributes to showing the gendered effect of training on stress reduction. In fact, women benefit from the training positively to reduce their stress while men do not. Further research is required to develop a fuller understanding of the mechanism at play.

Notes

1. As the items were developed in French, they were translated into English for this manuscript's purposes.

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Appendix:

Perceived learning from training scale

To what extent did the training program allow you to [. . .]
(Slider with nine steps from 1-Not at all to 9-Totally)

- (1) Verify your entrepreneurial interests and your intention to launch a project
- (2) Know your abilities and limits as an entrepreneur
- (3) Improve your skills in starting a business (e.g. accounting, marketing, personnel management, etc.)
- (4) Obtain information related to entrepreneurship (e.g. laws, regulations, start-up steps, useful tools, etc.)
- (5) Improve your project and make it evolving
- (6) Have opinions on your project and be reassured about its feasibility
- (7) Break your isolation by meeting trainers and other entrepreneurs
- (8) Find partners, develop your network or obtain resources
- (9) Start your project faster

Interaction with other entrepreneurs scale

To what extent do you agree with the following statements:
(7-point Likert Scale from 1-Strongly disagree to 7-Strongly agree)

- (1) I am satisfied with the amount of interaction with other training participants

- (2) The interaction with the other participants of the training was useful for my project
- (3) The contact with the other participants encouraged me to continue my project
- (4) I learned a lot from the contact with the other participants in the training

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