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To speak or not to speak in public: a non-randomized controlled trial regarding the effects of a public speaking program

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ABSTRACT

Public speaking has become an increasingly sought-after skill, which is why more and more people choose to get professionally trained. But is it possible for a public speaking program to have other effects, in addition to improved performance? The aim of this study is to discover the effects of a public speaking program on reducing social anxiety, public speaking anxiety and shame, and also on increasing self-efficacy. The sample (high-school and university students) consisted of 164 participants aged between 15 and 47 years, $M = 19.93$, $SD = 4.70$. There were 82 participants in the experimental group and 82 participants in the control group, and the instruments used were: Liebowitz's Scale for Social Anxiety (Liebowitz, 1987), Personal Report on Public Speaking Anxiety (McCroskey, 1970), General scale of self-efficacy (Schwarzer & Jerusalem, 1995), Cognitive Schema Questionnaire (Young, 2005). A test-retest design was approached, the participants completing the questionnaires one week apart from the others. The results indicate that a public speaking program is useful for reducing social anxiety and public speaking anxiety, with significant differences between the experimental and control groups. However, in terms of self-efficacy and shame, the results were not conclusive. Thus, even if there has been a decrease in shame and an increase in self-efficacy, it is not clear whether these changes can be attributed to the proposed program. This study can serve as the beginning of a program that can contribute to reducing the level of social anxiety and public speaking anxiety..

Keywords: *public speaking anxiety, social anxiety, shame, self-efficacy, public speaking program*

1. INTRODUCTION

Social anxiety

Social anxiety, also known as social phobia, is an anxiety disorder included in the Diagnostic and Statistical Manual of Mental Disorders. Often people, based on their common sense, confuse social anxiety with shyness. However, the main difference between the two is that the former is a pathological disorder, which affects multiple areas of one's life, and a professional treatment is necessary in order to regain proper functioning (Anderson & Harvey, 1988). Often socially anxious individuals need to socialize, but social interactions cause distress, so they avoid communicating (Poole et al., 2017; Stein & Stein, 2008). In Romania, socially anxious individuals are still dismissed as being "just shy". In Daniel David's *Psychology of the Romanian people* (2015), a cross-cultural comparison between an American and a Romanian sample showed that Romanians have higher scores in social anxiety denial.

Over the years, researchers started to look into the social anxiety etiology. While some of them take into consideration heredity (Stein et al., 2001), others consider inhibited temperament (Schwartz, Snidman și Kagan, 1999) or attachment style (Elizabeth, King & Ollendick, 2004). Evolutionary adepts insisted that socially anxious individuals create a social disadvantage for themselves with their visible signs of anxiety around people (Gilbert, 2001; Tooby & Cosmides, 1996).

So as to fully understand the way that social anxiety affects one's life, it's necessary to mention the main cerebral dysfunctions discovered using neuroimaging over the years. It is well known that social anxiety affects part of the limbic system, more precisely: amygdala and insula (Etkin & Wager, 2007; Hahn et al., 2011; Pejic et al., 2013). These two areas are associated with intense affective reactions, along with the onset of the automatism fight or flight. Not only amygdala has an abnormal activity. The ventrolateral prefrontal cortex dysfunctions also translate into incorrect interpretation of social stimuli as threatening (Guyer et al., 2008).

Over the years, various therapeutic methods have been addressed for those suffering from social anxiety. Possible treatments include: in vivo or virtual reality exposure therapy (Anderson, Rothbaum & Hodges, 2003; Andersson et al., 2012; Leichenring et al., 2013), progressive muscle relaxation (Cogle et al., 2020), social skills training (Beidel et al., 2014; Herbert et al., 2005; Olivares -Olivares, González & Olivares, 2019), meditation (Goldin, Ramel & Gross, 2009), psychodynamic therapy (Johansson et al., 2017) or cognitive-behavioral therapy (Hope et al., 2010). Medication can also be prescribed in order to reduce the symptoms associated with social anxiety. A meta-analysis from 2014 indicates 3 of the most effective drug treatments used for social anxiety: phenelzine, paroxetine and

venlafaxine (Davis, Smits & Hoffman, 2014). Although medication may seem like a desirable option, given the rapid relief of the symptoms, there are multiple disadvantages such as: risk of addiction or unwanted side effects (Davidson, 2004). In a meta-analysis from 2014, Mayo-Wilson and collaborators made a comparison of the most used treatments for social anxiety, the results obtained from individual cognitive-behavioral therapy being superior not only to other forms of psychological intervention, but also drug treatment. There are mixed results concerning the effect of a public speaking program on social anxiety: some authors support its effectiveness (Fremouw & Zitter, 1978; Herbert et al., 2005; Olivares-Olivares, Ortiz-González, Olivares, 2019), but agree that the results are modest compared to other more effective methods such as cognitive -behavioral therapy. However, a public speaking program is recommended as an adjuvant treatment, along with cognitive behavioral therapy in order to achieve the best evolution.

Public speaking anxiety

Public speaking is an irreplaceable skill in one's professional and academic life. However, more and more people exhibit the so-called "stage fright" when delivering a speech. Bippus and Daly (1999) explained stage fright using 9 factors: Humiliation, Preparation, Physical Appearance, Rigid Rules, Personality Traits, Audience Interest, Unfamiliar Role, Mistakes, and Negative Results. But when does fear of public speaking become pathological?

When an individual fears consistently the prospect of speaking in front of an audience and, moreover, avoids these situations, he may suffer from public speaking anxiety, although some authors prefer terms such as: performance anxiety or speech anxiety (Bodie, 2010). As for DSM-V, public speaking anxiety is included in the social phobias subgroup (American Psychiatric Association, 2013). However, there are many authors that consider them as 2 separate disorders, explaining that individuals with symptoms of public speaking anxiety develop their fear later, have stronger physiological responses and don't have a shy or inhibited behavior (Blöte et al., 2009; Bögels et al., 2010; Pull, 2012).

However, similar as social anxiety, individuals with public speaking anxiety have an abnormal cerebral activation: their limbic system, associated with emotional processing, is hyperactivated, while cortical areas responsible for cognitive processes, are less activated (Lorberbaum et al., 2004; Tillfors et al., 2002). Physiological markers can also indicate changes in physiological markers that indicate public speaking anxiety: heart beat (Behnke & Beatty, 1981; Croft et al., 2004; Zuardi et al., 2013) and skin conductivity (Carrillo et al., 2001). Furthermore, the

neuroendocrine system functions differently too: cortisol levels, known as the stress hormone, increase during speech (Westenberg et al., 2009).

As for possible lines of treatment, they can be psychological or pharmaceutical. Within psychological interventions, the best known are: cognitive-behavioral therapy (Fremouw & Zitter, 1978; Barrera et al., 2016), hypnotherapy (Schoenberger et al., 1997), in vivo or virtual reality exposure therapy (Harris, Kemmerling & North, 2002; Wallach et al., 2009; Safir et al., 2012), acceptance and commitment therapy (Hofmann et al., 2009), mindfulness (Schmertz, Masuda & Anderson, 2012) or relaxation techniques (Goldfried & Trier, 1974). Regarding drug treatment, Bögels and colleagues (2010) mention the usefulness of Beta-blockers. By analyzing the available treatment lines, a person suffering from public speaking anxiety can choose the area that suits them best.

However, a simple public speaking program can be useful not only as a training for a particular skill, but also for disinhibiting a certain behavior. Research to date indicates that a public speaking program reduces an individual's public speaking anxiety by providing the individual with sufficient information to respond appropriately to anxious stimuli (Burnley, Cross & Spanos, 1993; Herbein et al., 2018; John, 2009).

Shame

Shame is placed in the category of moral emotions (De Hooge et al., 2007). In a complex review of moral emotions, Haidt (2003) presents shame as arising from a violation of the inner principles of the individual and at the same time as being closely linked to the compulsion to seem perfect in front of others.

Regarding Romanians' perception of shame, Daniel David (2015) mentions it in *Psychology of the Romanian people*, a comparative cross-cultural analysis between Romanians and Americans. The results, which are ecologically significant and have a great effect size ($d = .83$), show that the level of shame/ shyness in women in Romania is higher than in the case of women in the USA. In men's case, the results are not statistically significant.

From an evolutionary point of view, shame, along with guilt and anxiety, is part of the emotional inhibitory family: their role is to reduce conflicts within the community and therefore to facilitate survival (Breggin, 2015). Fessler (2004) mentions another explanation: if a shameful situation becomes publicly known, the individual's interpersonal relationships are degraded and, thus, the chances of reproduction are limited. Although rudimentary in contemporary society, these explanations should be taken into account.

Shame is associated with a series of non-verbal indicators such as: looking down, drooping shoulders and a narrow chest. From an evolutionary point of view, these

nonverbal cues can be explained by a display of submission in a threatening context, in order to eliminate conflict and, therefore, danger (Keltner & Harker, 1998; Tracy & Matsumoto, 2008). Those who adopt nonverbal communication specific to shame indicate that they are aware of violating some norms, which reduces the possibility of being punished by fellow community members (Martens, Tracy & Shariff, 2012). When an individual indicates nonverbal signs of shame, he does so in order to avoid suffering negative consequences in the group to which he belongs. But how dangerous is it to feel shame? Studies show that individuals with high levels of shame adopt the same pattern of submissive behavior as in disorders such as social anxiety or depression (Cândeia & Szentagotai-Tatar, 2018; Gilbert, 2000). Moreover, from neurotransmitters point of view, shame has been associated with the so-called stress hormone: cortisol (Gruenewald et al., 2004).

Therefore, given its dangerous potential for individuals, interventions to reduce shame have been considered. Brené Brown (2006), the promoter of research about shame, especially among women, mentions a technique for increasing resilience to shame by: recognizing personal vulnerability, critical awareness, seeking help and understanding the language of shame.

There were no relevant studies to show whether there was any change in the level of shame after a public speaking program. However, as some researchers have concluded, individuals can feel ashamed during a public speaking experience (Herman, 2018). These two concepts can therefore be a starting point for developing programs to address not only public speaking anxiety but also shame associated with public speaking. As Brené Brown concludes her Ted Talk, "Shame is an epidemic" (TED, 2012). But can a public speaking program treat it?

Self-efficacy

Self-efficacy is a term introduced by Bandura in 1977. Self-efficacy refers, in fact, to a person's belief that the power to change the course of their life is in their own hands. Bandura mentions 4 ways to form self-efficacy: trial and error, social modeling, social persuasion and physical strength enhancing (Bandura, 2010). Moreover, self-efficacy is involved in four major areas of our lives: cognitive, emotional, motivational and selection. In fact, Bandura mentions an important characteristic of a person with a high level of self-efficacy: when he fails, he does not negatively reinforce that behavior, but blames it on chance or a simple mistake (Bandura, 1984).

As there may be confusion between self-efficacy and self-esteem, we will list the differences between the two constructs: while self-efficacy is rather a motivational process, self-esteem is rather an affective process (Chen, Gully & Eden, 2004) and, unlike self-esteem, which refers to

the general image of the self, self-efficacy refers to a specific behavior (Gardner & Pierce, 1998).

Self-efficacy is important in many areas of one's life. Academically, self-efficacy reduces progressively as academic requirements increase, so that in late adolescence and early youth the level of self-efficacy reaches the lowest level (Caprara et al., 2008; Multon, Brown & Lent, 1991; Talsma et al., 2018). Professionally, meta-analysis confirm an association between self-efficacy and: work performance (Stajkovic & Luthans, 1998) and work satisfaction (Judge & Bono, 2010). Furthermore, lack of self-efficacy is associated with health issues: reactions such as fatigue or stress are perceived as indicators of physical incapacity and therefore incorrectly perceived as a low level of self-efficacy (Holden, 1992; Zimmerman, 2000).

2. METHODOLOGY

Study design

The design of the study is quasi-experimental. Participants were not randomized to each of the two groups (experimental or control), but were free to choose whether or not to participate in the intervention program. The difference between the two groups was their participation in a public speaking program. The participants were assessed two times, one week apart.

Participants and procedure

The study involved 164 people aged between 15 and 47, $M = 19.93$, $SD = 4.70$, both female and male, recruited online using the "snowball" method. Thus, the sample used was one of convenience. Participants had to meet the following inclusion criteria: to be students (whether high school or university). Informed consent was necessary for the enrollment. For participants under the age of 18, prior informed consent was requested from parents or legal

Bandura mentions that self-efficacy does not have an impact on new behaviors, but may have an impact on the disinhibition of an already existing behavior (Bandura, 1977). For example, engaging in activities to develop self-efficacy may reduce the level of social anxiety or public speaking anxiety. Moreover, in his social learning theory, Bandura refers to the process by which the individual learns through observation. This process is called vicarious experience (Bandura & McClelland, 1977). Therefore, simply observing a proper public speaking model and internalizing the positive aspects of this demonstration can have an increased impact on self-efficacy and, later, on the individual's performance. Studies tend to confirm this theory: enrolling in a public speaking course has positive effects on self-efficacy (Jackson, 2002).

guardians. The participants had the option to choose whether or not to participate in the public speaking program, this being also the criterion of distribution in the experimental group or in the control group. Participants have been assessed two times: one week separating the two assessment sessions. Regarding the experimental group, the participants were firstly assessed one week before the public speaking program. The second assessment took place immediately after the public speaking program. At the first assessment there were a total of 257 participants. However, the drop out was significant before the second testing, so that in the end, 164 responses remained available for statistical processing, of which 82 in the control group and 82 in the experimental group.

The aim of the research was to identify whether there is an effect of a public speaking program on reducing social anxiety, public speaking anxiety and shame and also on increasing self-efficacy.

Table 1. *Participants and demographic data (N = 164)*

			M	SD
Group	Experimental	Control		
	82 (50%)	82 (50%)		
Gender	Masculine	Feminine		
	17 (10.4%)	147 (89.6%)		
Age	Min.	Max.		
	15	47	19.93	4.70
Education	High-school	University		
	64 (39%)	100 (61%)		

As can be observed in Table 1, there are an equal number of participants in the two groups. However, there are visible gender imbalances, with significantly more female respondents than male respondents. At the same time, an imbalance can be observed in terms of the level of education, so that more university students than high-school students participated.

The public speaking program

The program lasted about two hours and covered issues related to the whole process of delivering a speech. Participants received the login code the day before the training. They also received a reminder half an hour before the start of the training. The program started with a small "Let's get to know each other" game, in which participants were invited to introduce themselves and say something about themselves (related to studies, hobbies or passions etc.). Then, they were invited to log on to a separate site to express their opinion on the characteristics of: a good public speaker and a poor public speaker. This stage was followed by a lecture section, in which they were presented aspects related to the desirable content of a presentation or a speech: structure; delivery methods (along with their benefits or disadvantages); how a visual presentation can be used to our advantage; what to do when we forget the content of the speech or how we can proceed in case we lose the audience's attention. This dense informational section was followed by a review - to summarize the main points that we discussed previously. Later on, co-facilitation was addressed. In this section, active participation of the participants was encouraged. At the end, a section was dedicated to practical advice and, at the same time, to emotion regulation tips and tricks (through behavioral and cognitive modifications). The total duration of this program was about two hours. Several trainings have taken place, so that each training was attended by about 20 people. This way, it was possible for everyone's questions to be

addressed, for each participant to get involved and actively participate. Immediately after completing the training, participants received the post-test form.

Instruments

Social anxiety was measured using the Liebowitz Social Anxiety Scale (Liebowitz, 1987). The inventory was developed based on the DSM-III criteria, but remained one of the most widely used tools of social anxiety. It includes 24 items on the two subscales: performance anxiety and social anxiety, each of which is assigned 12 items. Examples of items are: "Entering a room when others are already seated" or "Calling someone you don't know very well".

Public Speaking Anxiety was measured using the Personal Report of Public Speaking Anxiety (McCroskey, 1970). The inventory includes 34 items. It is one of the most relevant inventories related to public speaking anxiety and is part of a cluster of four questionnaires related to communication difficulties. There was no prior translation into Romanian, which is why the items were translated for this research. The calculated Cronbach Alpha coefficient is .94. Examples of items are: " While preparing for giving a speech, I feel tense and nervous.." or " My heart beats very fast while I present a speech "

Self-efficacy was measured using the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995). Regarding the validity tests, the questionnaire was applied in 23 countries and the internal consistency index ranged from .76 to .90. The questionnaire consists of 10 items. Examples of items are: "I can always manage to solve difficult problems if I try hard enough." or "I can remain calm when facing difficulties because I can rely on my coping abilities".

Shame was measured as a subscale to the Cognitive Scheme Questionnaire (Young, 2005). The questionnaire contains 5 items and it represents only a section of a complex set of items meant to determine the underlying cognitive schemas of an individual.

3. RESULTS

Statistical data was analyzed using statistical programs: IBM SPSS 24 (IBM Corp, 2016) and Jamovi (The jamovi project, 2021).

The first assessment was important in terms of baseline: the experimental group was not significantly different from the control group. So as to understand if there is a significant difference between the 2 assessments, t-tests for paired samples were performed. As for the experimental group, results (as shown in Table 2) are significant ($p < .05$) for all of the variables, which means that there is a significant difference between the results in the pre-intervention

assessment and the post-intervention assessment. As for the effect size, it was measured using Cohen's d: while some of the effect sizes are larger (public speaking anxiety: $d = .67$ and social anxiety: $d = .48$), others are lower (shame: $d = .28$ and self-efficacy: $d = -.33$). However, as for the control group, results are significant ($< .05$) only for a single variable: public speaking anxiety (PSA) (and the effect size is considerably lower than the experimental group: $d = .32$).

Table 2. *T*-tests, means, standard deviation and effect size for social anxiety, public speaking anxiety, shame, and self-efficacy

Variable	Experimental group				Control group			
	Pre-test, M (SD)	Post-test, M (SD)	t	d (Cohen)	Pre-test, M (SD)	Post-test, M (SD)	t	d (Cohen)
Social anxiety	26.1 (15)	21.6 (15.3)	4.37**	.48	23.3 (16)	22.3 (17.2)	1.58	.17
PSA	112 (28.8)	110 (29.1)	6.09**	.67	109 (33.2)	105 (34.1)	2.88*	.32
Shame	10.9 (6.05)	9.85 (6.01)	2.58*	.28	10 (6.54)	10 (6.94)	-.04	-.01
Self-efficacy	31.2 (5.72)	32.4 (5.73)	-3.05**	-.33	32.4 (5.89)	32.5 (6.57)	-.21	-.02

Outcome measures

Univariate ANCOVA was performed for the second assessment values, while controlling the first assessment values. The results (as shown in Table 3) are significant ($p < .05$) only for social anxiety and public speaking anxiety. The effect sizes, however, are small: $\eta^2 = .07$ for public speaking anxiety and $\eta^2 = .04$ for social anxiety. Given this result, we

can observe that, although to a small extent, the hypothesis, according to which participation in the program has effects on reducing social anxiety and public speaking anxiety, is supported by the analyzed data. On the other hand, as for shame and self-efficacy, the results aren't significant ($p > .05$).

Table 3. *Univariate ANCOVA for social anxiety, public speaking anxiety, shame and self-efficacy*

	F(1,163)	p	η^2
Social anxiety	7.09	.01	.04
Public speaking anxiety	12.40	.01	.07
Shame	3.69	.06	.02
Self-efficacy	2.87	.09	.02

4. DISCUSSION

The ability to speak in public is becoming an increasing need. Whether academic speeches or professional presentations, public speaking is undoubtedly necessary. This is why people often resort to public speaking programs. But how effective are they actually? The main direction of the current research was to determine the effectiveness of a public speaking program in terms of: social anxiety, public speaking anxiety, shame and self-efficacy. Through the methodological approach, with an experimental group and a control group, we were able to highlight the benefits of a public speaking program, comparing the progress of each of the two groups.

The first objective was to determine the effect of a public speaking program on social anxiety. The paired-sample *t*-test for the experimental group indicates that there is a significant decrease in social anxiety after participating in the public speaking program ($p < .05$; $d = .48$). However, as for

the control group, the *t*-test for the control group was insignificant ($p > .05$), which indicates that there is no significant decrease in the level of social anxiety for those who did not benefit from the public speaking program. As for the univariate ANCOVA, the statistically significant effect size $\eta^2 = .04$ ($p < .05$) is small, but it is not negligible. The results are consistent with those of other studies in the literature: a public speaking program is effective, but its results are inferior to other programs. This is why such a program is recommended as an adjuvant to a classic treatment for social anxiety (Herbert et al., 2005). However, there are also authors who consider it to be a promising treatment (Bögels & Voncken, 2008). Although a public speaking program involves a high degree of social interaction and, at the same time, exposure for anxious stimuli, regardless of the nature of the program, it may not be enough. This is why some authors recommend it as an adjuvant and not as a main treatment. However, its effects are to be considered, given the consistent differences

between the participants in the experimental group and those in the control group.

The second objective was to determine the effect of a public speaking program on public speaking anxiety. The paired-sample t-test for the experimental group indicates that there is a significant decrease in social anxiety after participating in the public speaking program ($p < .05$; $d = .67$). A similar analysis was performed for the participants in the control group. The effect size ($d = .32$) is significant ($p < .05$), but it is considerably smaller than that of the participants in the experimental group. As for the univariate ANCOVA, the statistically significant effect size $\eta^2 = .07$ ($p < .05$) indicates that, although to a small extent, improvements in public speaking anxiety can be attributed to the public speaking program. Thus, in terms of the results obtained, the public speaking program seems a debilitating solution to improve the level of public speaking anxiety. The same results were obtained in other studies (Pribyl, Keaten & Sakamoto, 2001; Stewart, Broeckelman-Post & Rossheim, 2021). Moreover, the results are consistent with studies showing that anxiety can arise from a lack of knowledge to react in certain situations. Therefore, the simple instructional process serves as a useful intervention for reducing public speaking anxiety (Heimberg, 2002).

The third objective was to identify a decrease in the level of shame after participating in a public speaking program. The paired-sample t-test effect size for the experimental group ($d = .27$; $p < .05$) indicates that after the program is observed a decrease in the level of shame. However, the t-test for the control group was not statistically significant ($p > .05$), therefore, there were no significant changes among participants who did not participate in the program in terms of the level of shame. The results for the univariate ANCOVA were not statistically significant ($p > .05$). Therefore, corroborating the information obtained from all the statistical analysis, it cannot be concluded whether or not the public speaking program has significant effects in reducing shame. Thus, if such a decrease exists, it is not certain whether it can be attributed to the public speaking program. There have been no relevant studies regarding the relationship between shame and public speaking anxiety. Although shame is closely linked to social experiences, and public speaking is part of this category of experiences, there have been no studies to test shame in such conditions. On the other hand, considering that shame is often experienced during public speaking experiences and in social contexts in general, it should be addressed and investigated in future studies to determine not only its influence in public speaking contexts, but also the perspective of diminishing it through instructive procedures.

The fourth objective was to identify the effects of a public speaking program on increasing self-efficacy. The results of the paired-sample t-tests showed that, while the experimental group experiences an increase in self-efficacy

($p < .05$; $d = -.33$), the control group did not ($p > .05$; $d = -.01$). However, the results, derived from the univariate ANCOVA that was conducted, are not statistically significant ($p > .05$), thus we are reluctant to express a conclusion on how self-efficacy can be increased through a public speaking program. Nevertheless, in previously conducted research, the results showed that self-efficacy has increased significantly following a public speaking program. Studies focused on the self-efficacy of speaking a foreign language following a public speaking course (Maryam, Febriani & Kurnia, 2019; Paradewari, 2017) or on engineering students who obtained an increase in the level of self-efficacy following a public speaking course (Schoorman et al., 2008). Moreover, according to the principle of vicarious learning postulated by Bandura in 1977, simply witnessing a well-made discourse could serve as a future direction and increase the level of self-efficacy. Therefore, it is difficult to conclude whether or not a public speaking course can increase self-efficacy, as more studies are needed to obtain a clear answer. A possible explanation for the discrepant results of this research in contrast with other relevant studies is further discussed in the Limits section.

Practical implications

The practical implications of the current study implicate an optimistic prospect for public speaking. A two-hour public speaking program is a facile method to deliver useful information and, in addition to the obvious instructional benefits, it can have positive psychological effects. Social anxiety or public speaking anxiety are diagnosed late or remain undiagnosed throughout life. Such a program could have a prophylactic role, but also an intervention role, to control specific symptoms. The main benefit of such a program is that, when delivered, no training in psychotherapy is required. Moreover, this program is delivered in groups, which allows the dissemination of as much information as possible in a short period of time for as many people as possible. Therefore, the accessibility of the program is obvious and is an advantage for potential trainers. Another advantage is the short duration of this program which can be included in the school or university curriculum. In fact, our program was delivered online, which means that even online delivery can be useful when there are no resources, whether logistical or human, to access such a program in vivo.

Ideally, a public speaking program could become an optional course, held over an entire semester (in school or university). This way, the content can be more varied, more topics can be discussed, more practical activities can be included and more exposure to delivering a presentation in front of an audience can be experienced. Given the negative effects of social or public speaking anxiety on students and young adults, but also the ease of integrating a public speaking program in an academic context, as well as its

positive effects on people's intra- and inter-individual traits, such a program would be a solution worth considering.

Limitations and future directions

Self-reporting tools are always a limitation, given that there may be distortions of participants' subjective self-perception. To avoid the limitations of self-reporting tools, there has been research in which authors have chosen to measure behavioral reactions or behavioral observations. An example of this is the study conducted by Beidel et al. (2014), in which social anxiety was measured by identifying physiological reactions.

Another limitation is the lack of randomization, which avoids interpersonal differences between study participants. To compensate for the lack of randomization, statistical analyzes were performed, and no significant differences were found between the experimental group and the control group.

The fact that the public speaking program took place online may be a limitation, given that an in vivo intervention would have had a much more significant impact on participants, especially given the specifics of the program: public speaking.

Moreover, from the point of view of demographic data, inequalities can be observed in terms of participants. There are more female participants (89.6%) than male participants (10.4%). Thus, the low number of male participants was an impediment in conducting a comparative analysis by gender.

Group contamination can also be considered a limit. Participants in the two groups may interact, for reasons independent of the researchers, and participants in the control group may obtain insights that allow them to significantly change their scores in the second assessment. To avoid this effect, the visual presentation was not sent to the participants until the end of the data collection phase, in order to avoid its dissemination among the possible participants in the control group.

The questionnaires of shame and self-efficacy were general, the instruments being used in a wide range of contexts. However, the study focused on issues related to public speaking. Therefore, creating specific questionnaires for Shame and Self-efficacy about public speaking would have been preferred and would have more accurately captured the individual particularities of the participants as well as the benefits of the public speaking program itself. Other authors (Paradewari, 2017) chose this option, and the results were closer to their hypotheses.

Moreover, in this category it is worth mentioning possible limitations of the public speaking program. This was a two-hour introductory public speaking course. In other similar studies the course is conducted over several weeks (Colbeck, 2011; Pribyl, Keaten & Sakamoto, 2001). Also, in other programs there is a practice section which allows participants to give a speech in front of an audience,

exposing them to possibly-anxiogenic stimuli. Moreover, post-intervention testing may not be sufficient, which is why a follow-up test would have been desirable to assess the retention of the results.

In general, to test the effectiveness of a program in ameliorating the symptoms of pathology, it is necessary to include only participants with clinical symptoms. However, in our study, a cut-off score was not used to delimit participants with clinical scores from participants with medium or low scores. In future studies, an eligibility criterion may be taken into account, so that only participants who reached clinical scores can participate in the following stages.

In future directions of research, the effects of a public speaking program could be further studied. The public speaking program can be customized, both in terms of content and duration, in order to obtain the optimal version, which offers the best results. At the same time, questionnaires of shame or self-efficacy focused on public speaking, in order to obtain specific results, not general ones, could be considered. Moreover, a comparative study could be conducted to observe the differences depending on gender or level of education. In particular, the level of education could provide information relevant to the optimal age at which retention is best achieved in terms of the program. Thus, in future studies, the selection of approximately equal samples of pupils and students can be considered, in order to ascertain which of the two environments is more suitable for the public speaking program.

Personal contribution

This research is useful and unique for many reasons. First of all, from the known data, this is the first study to test the effectiveness of a public speaking program in reducing social anxiety or public speaking anxiety in a Romanian sample. On the other hand, there is not much research on the effectiveness of a public speaking program on reducing shame or increasing self-efficacy. Through this study, new research directions can be opened, as well as intervention or prevention programs for young adults and adolescents.

The main intention was to find a project that is easy to implement, that does not require complex knowledge or that is time consuming in order to implement a program with real efficiency and that can be put into practice. The importance of this area, as we understand it, lies in the following aspects: social anxiety and public speaking anxiety have the highest prevalence of all anxiety disorders, according to DSM-V. If a program can be widely applied, does not require a high level of training and can be adapted in the educational context (for example, in high school or university), then there may be taken into account the prospect of diminishing social anxiety or public speaking anxiety. Given the inconclusive results in terms of shame and self-efficacy, no assumptions will be made about these two constructs. Therefore, social

anxiety and public speaking anxiety could be alleviated through an easy-to-implement program.

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