

The promise of self-determination theory to study the therapist-client relationship in speech-language treatment

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Highlights

- An outline of the promise of Self-Determination Theory for speech-language therapy.
- Live observations of the motivating style of speech-language therapists.
- Speech-language therapists were high on autonomy-support and low on control.
- Interest in the therapy was fostered when the therapists were autonomy-supportive.
- Autonomy support was more often provided to younger clients (<12 years old).

Abstract

This study aims at examining the therapist-client relationship in speech-language treatment and its relationships with clients' motivation from the perspective of Self-Determination Theory (SDT). It adds to the current literature by relying on observations as well as client perceptions of the therapists' interaction style and by studying three different age groups of adults (>18 years old), adolescents (12–18 years old) as well as children (<12 years). Two convenience samples: 1) 42 Speech Language Therapists (SLPs; 95.2 % female) and 72 individuals with communication disorders (ICDs) (72.2 % female; >12 years old), and 2) 21 SLPs (100 % female) and 44 ICDs (50 % girls; <12 years) were recruited for this cross-sectional study. After engaging in a treatment session, ICDs responded to a set of validated questionnaires measuring the SLPs' motivating style, their need-based experiences and motivation towards the treatment. Moreover, each treatment session was observed. Both client-reported as well as observational measures show that SLPs more strongly evince an autonomy-supportive (i.e. motivating) when compared to a controlling (i.e. demotivating) style to the benefit of their clients' motivation. The display of empathy was the most frequently observed strategy. SLPs regularly provided rationales, choices, and opportunities for clients to experiment. However, these behaviors were more frequent in younger compared to older clients. With the younger clients, SLPs frequently used effort-contingent rewards, which is considered a controlling strategy in SDT. Results showed that motivational benefits may be expected if SLPs rely on an autonomy-supportive rather than a controlling style. This study provides a valuable starting point for an SDT-driven examination of the therapist-client relationship and ICD's motivation in the context of speech-language pathology.

Keywords: Autonomous motivation; Psychological needs; Motivating style; Reward

Abbreviations

SLP - speech-language pathologist

SDT - self-determination theory

ICD - individual with communication disorders

1. Introduction

Sam is a 7-year-old boy who needs to go to the speech-language pathologist on a weekly basis to improve the production of his r-sound. Although speech therapy is hard for him, he puts great effort into the treatment sessions. When questioning Sam, he enthusiastically tells us that he really enjoys being with his speech-language pathologist because she is great fun and boosts his self-confidence.

Speech-language pathologists (SLPs) who are dealing with a wide range of disorders related to speech production, fluency, language, cognition, voice, resonance, feeding, swallowing, and hearing ([American Speech-Language-Hearing Association, 2016](#)) are not only challenged to select the most effective treatment to help their clients to make progress (e.g. [Crosbie, Holm, & Dodd, 2005](#)). An equally important endeavour is to build a positive, meaningful, trusting and caring therapist-client relationship (e.g., [Ebert & Kohnert, 2010](#); [Fourie, 2009](#); [Fourie, Crowley, & Oliviera, 2011](#); [Plexico, Manning, & DiLollo, 2010](#)).

Up until today the study of therapist-client relationship, while highly promising, is still in its infancy. In this paper, we suggest that Self-Determination Theory (SDT; [Deci & Ryan, 1985](#)) provides a sound evidence-based theoretical framework that allows for a more systematic and finegrained examination of the characteristics and outcomes of the therapist-client relationship in speech and language treatment.

1.1. Self-Determination Theory: a need-based approach to the therapist-client relationship in speech language treatment

SDT is a widely-examined theory of human motivation and has been under development for more than 40 years ([Ryan & Deci, 2017](#)). Central to SDT is the identification of the three basic psychological needs for autonomy (i.e. sense of psychological freedom, being able to be yourself), competence (i.e. feeling confident and effective) and relatedness (i.e. feeling respected and cared for). Satisfaction of these three needs is fundamental to people's motivation, growth and development. In contrast, the frustration of these three psychological needs, which occurs when people feel pressured or controlled (i.e. autonomy frustration), incapable or insecure (i.e. competence frustration), and disrespected or ignored (i.e. relatedness frustration), hampers optimal motivation, growth and development. Parallel to the identification of these three fundamental needs, SDT has clear and empirically supported recommendations for therapists on how to interact with clients ([Sheldon, Joiner, & Williams, 2003](#); [Teixeira et al., 2020](#); [Williams, 2002](#) for an overview). More specifically, SDT outlines how an autonomy-supportive, structuring and warm style fosters needs satisfaction, while a controlling, chaotic and cold style are needs thwarting ([Ng et al., 2012](#); [Ryan, Patrick, Deci, & Williams, 2008](#)). [Fig. 1](#) provides a schematic overview of SDT's process model. As is evident from [Fig. 1](#), we focus in this first SDT-based study on two of the six dimensions, that is, autonomy support and control.

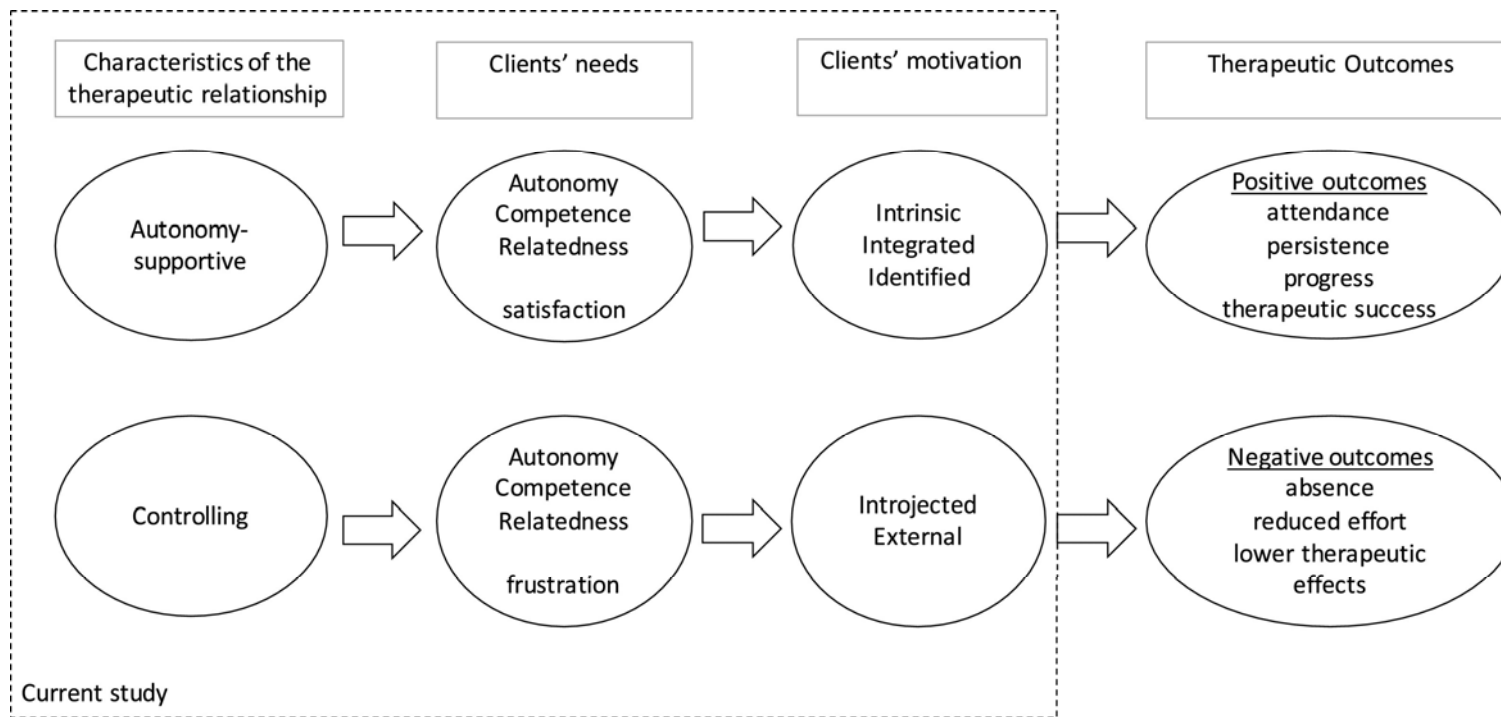


Fig. 1. Schematic overview of SDT's process model.

1.2. An autonomy-supportive or controlling treatment style

Autonomy-supportive therapists adopt a curious, receptive, flexible and open attitude, which allows them to better identify and empathize with their clients' interests, values, problems and preferences (Ng et al., 2012; Teixeira et al., 2020; Vansteenkiste & Sheldon, 2006). This basic attitude is evident in the way therapists interact with their clients during treatment and translates into six specific practices (see Table 1). First, when being autonomy-supportive, therapists actively try to identify their clients' interests (e.g. which colours they like, which games they enjoy), feelings and problems (e.g. how they feel about their disorder, which concrete problems they experience) and wishes (e.g. regarding their treatment) as to be able to nurture them (Pelletier, Tuson, & Haddad, 1997; Zuroff et al., 2007). Secondly, if clients express negative feelings or display resistance, autonomy-supportive therapists show understanding (Vansteenkiste & Sheldon, 2006). Thirdly, autonomy-supportive therapists offer a meaningful rationale for why hard exercises are relevant for real life (Ryan & Deci, 2017; Teixeira et al., 2020). Fourth, autonomy support involves starting from the developmental rhythm and pace (i.e. how fast they can make progress) and possibilities (e.g., the use of adapted language or visualization to explain procedures) of the client (Teixeira et al., 2020; Vansteenkiste & Sheldon, 2006). Fifth, autonomy-supportive therapists offer opportunities for clients to take initiative and include meaningful choices (Vansteenkiste & Sheldon, 2006; Williams, 2002). Sixth, autonomy-supportive therapists rely on inviting language (e.g. 'you can try to') to create an open and flexible atmosphere (Ryan, 1982; Teixeira et al., 2020).

SDT's theoretical focus on the importance of autonomy support is strikingly similar and fully compatible with many of the findings of recently conducted qualitative studies that explore the perspectives of SLP's (Ebert & Kohnert, 2010), as well as adults (Fourie, 2009; Plexico et al., 2010) and children (Fourie et al., 2011) with communication disorders (see Table 1). Ebert and Kohnert (2010) and Plexico et al. (2010) refer to the basic autonomy-supportive attitude when describing the importance of flexibility, displaying interest in the clients' overall life, and the willingness to change goals in response to clients' needs, as central aspects of the therapist-client relationship. In relation to the first characteristic of autonomy support (see Table 1), both SLPs and adults with communication disorders referred to SLPs who display sincere interest and really listen to their clients (Ebert & Kohnert, 2010; Fourie, 2009; Plexico et al., 2010). Children mentioned how important it was for them that their SLP nurtures their interests by providing fun activities and games (Fourie et al., 2011). SLPs and adults with communication disorders talked about SLPs who are understanding and compassionate (Table 1, characteristic 2), who are able to increase or explain the relevance of treatment for their real lives (Table 1, characteristic 3), and who provide helpful exercises and use simple and easy instructions (Table 1, characteristic 4) (Ebert & Kohnert, 2010; Fourie, 2009; Plexico et al., 2010). Likewise, children talked about the importance of minimizing power differentials (Table 1, characteristic 4) (Fourie et al., 2011). Finally, adults and children with communication disorders also valued SLPs who provide empowering activities and choices (Table 1, characteristic 5) and rely on non-threatening and non-punitive communication (Table 1, characteristic 6) (Fourie, 2009; Fourie et al., 2011; Plexico et al., 2010).

In contrast to an autonomy-supportive style, a controlling (i.e. demotivating) style involves more pressuring behaviour, where therapists impose their own frame of reference onto their clients, hereby ignoring their point of view and prescribing how they should think, behave or feel (e.g., Williams, 2002; see Table 1). Although studies on therapists' controlling styles are

Table 1. Description and Examples of the Basic Attitude and Characteristics of an Autonomy-supportive and Controlling Therapist-client Relationship.

	Description	Examples
Autonomy support Basic attitude	Curious, receptive, flexible and open towards clients' interests, values, problems and preferences	E.g. Willingness and flexibility to change treatment goals in response to the client needs (Ebert & Kohnert, 2010; Plexico et al., 2010) Identification: E.g. "which cartoons do you like to watch?"; E.g. the SLP displays genuine interest in the clients and the impact the disorder has on the clients' life (Plexico et al., 2010) Nurturing: E.g., "Let's imagine you are this super girl from television."
	Identifies and nurtures clients' interests, feelings, problems and wishes	E.g. "I understand this is hard for you"
Characteristics of an autonomy-supportive interaction	Understands and acknowledges negative feelings or resistance	E.g. the therapist provides a telephone role-play as the client indicated to experience problems when making phone calls (Fourie, 2009)
	Provides a meaningful rationale	E.g. the therapist uses simple language to explain conditions
	Attunes to the development stage/pace of the client	E.g. "which colour of pencil would you like to use?"
	Provides opportunities to take initiative and includes meaningful choices	E.g. "You can try to...", "You may want to..."
Controlling Basic attitude	Relies on inviting language	E.g. "We must make sure more progress is made by the end of the fourth treatment session, otherwise you should feel disappointed."
	Imposing own frame of reference onto the client, hereby ignoring their point of view and prescribing how they should think, behave, feel.	E.g. "If you succeed at this exercise, you receive a nice sticker."
	Effort-contingent rewards	E.g. "you must, you have to" E.g. "Come on! You're better than what you are showing me" (Plexico et al., 2010)
Characteristics of a controlling interaction	Demanding and pressuring language	E.g. "only providing praise when clients succeed in the exercises" E.g. "you should feel ashamed when you put only this amount of effort into your homework tasks" "E.g. "I felt under a microscope and judged every moment" (Plexico et al., 2010)
	Effort-contingent non-verbal appreciation	
	Appealing to feelings of guilt or shame	

scarce, studies in the field of parenting (Soenens & Vansteenkiste, 2010) and teaching (De Meyer, Soenens, Aelterman, De Bourdeaudhuij, & Haerens, 2016) revealed that two types of control can be discerned. When relying on an externally controlling style, the parent or teacher pressures the child by offering effort-contingent rewards or punishments (Deci, Koestner, & Ryan, 1999) or by using demanding and pressuring language (e.g. you must), (Assor, Kaplan, Kanat-Maymon, & Roth, 2005; Reeve & Jang, 2006). With an internally controlling style, parents or teachers pressure children in a subtler and less noticeable way (De Meyer et al., 2016; Soenens, Sierens, Vansteenkiste, Dochy, & Goossens, 2012). The parents' or teachers' verbal or non-verbal appreciation of the efforts is contingent upon the children's performance, and children receive more praise when they live up to adults' expectations. Internal control also refers to appeal to feelings of guilt or shame (e.g. *'I expect better of you than this'*).

In comparison to the wealth of studies on the consequences of an autonomy-supportive style, the impact of a controlling style has not received much attention in prior SDT-based work, and particularly not in the context of treatment. As an exception, Halvari et al. (2018) recently showed how conditional regard (i.e. one aspect of a controlling approach) was positively related to dental patients' experiences of need frustration and anxiety. Related to speech and language treatment, several of the components of a controlling approach were mentioned in interviews with adults and children with communication disorders when they reported on negative experiences with their SLP (Fourie, 2009; Fourie et al., 2011; Plexico et al., 2010). Adults with communication disorders talked about the basic attitude of a controlling style when referring to therapists who were only interested in what they (i.e. the therapists) wanted to do (Plexico et al., 2010). Both adults (Fourie, 2009; Plexico et al., 2010) and children (Fourie et al., 2011) mentioned dislike of being treated as something that needed to be fixed rather than as a person, and adults specifically talked about valuing a non-threatening, non-punitive approach. In contrast to SDT's theoretical assumptions and empirical grounding showing that the use of rewards undermines children's intrinsic motivation (i.e. inherent enjoyment and satisfaction) (Deci et al., 1999), the interviews with children suggest that children in speech and language treatment enjoy receiving rewards (Fourie et al., 2011).

1.3. A differentiated view on clients' motivation: intrinsic motivation and internalized extrinsic motivation

As depicted in Fig. 1, SDT's theoretical process model proposes that the therapist's style as either autonomy-supportive or controlling relates to clients' need-satisfaction or frustration, and in turn to clients' motivation. In SDT, a refined and differentiated view on clients' motivation is proposed (Deci & Ryan, 2000; Ryan & Deci, 2017; Vansteenkiste & Sheldon, 2006). More specifically, SDT distinguishes intrinsic motivation from different forms of extrinsic motivation (see Fig. 2).

Intrinsic motivation (depicted at the right of Fig. 2) is the most well recognized type of motivation and refers to clients who participate in the treatment because they experience it as inherently satisfying, interesting or enjoyable. For instance, a little girl with dyscalculia comes to the treatment because she enjoys the fun games. Because intrinsic motivation prompts clients to spontaneously and willingly put effort into the treatment, it is conceived as the most optimal and desirable form of motivation (Deci & Ryan, 2008). While the appealing

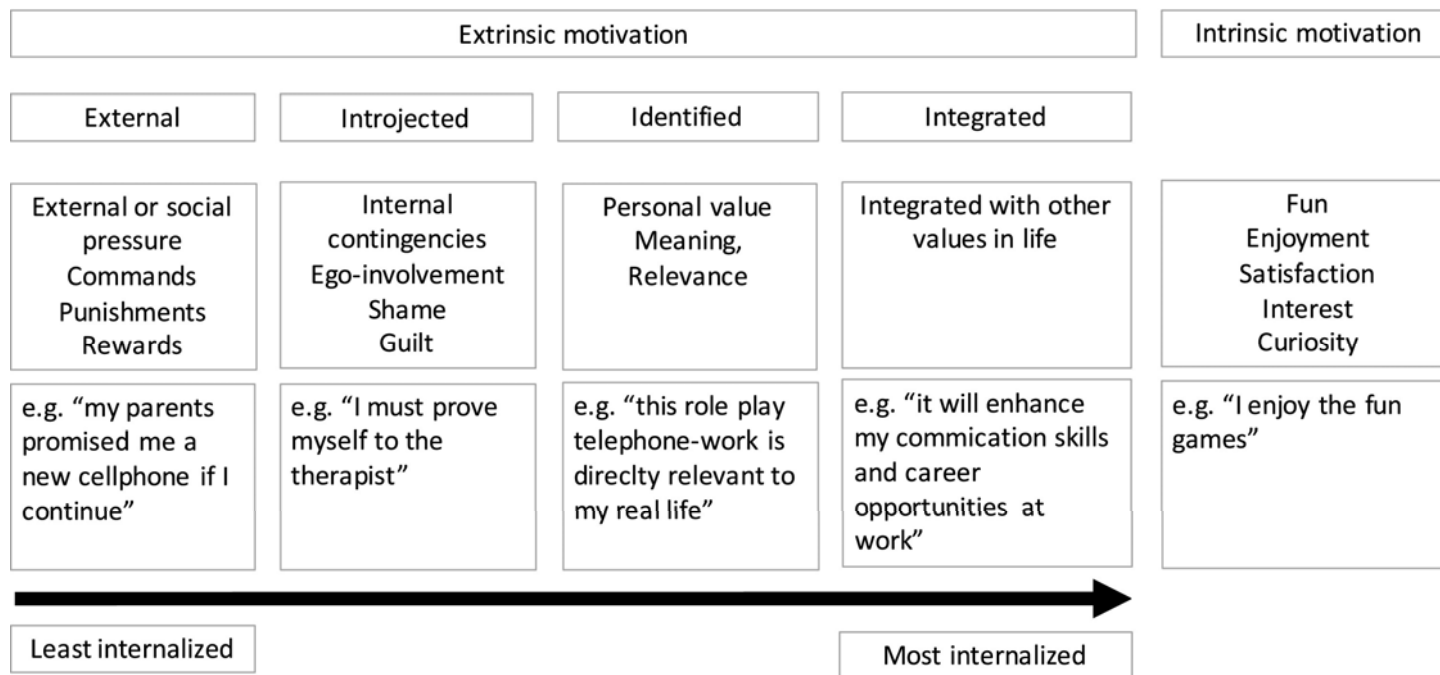


Fig. 2. Schematic representation of the four types of extrinsic motivation and intrinsic motivation according to SDT (Ryan & Deci, 2017).

nature of the activity itself is central to intrinsic motivation, in contrast, clients engage in the treatment to obtain an outcome that is separate from the content of the activities when they are extrinsically motivated. Extrinsic motivation is represented by four different motivational regulations (represented in Fig. 2) which differ in the degree to which the outcomes of the treatment have been internalized. Two of these motivational regulations (integrated regulation, identified regulation) are more internalized and therefore more volitional or autonomous in nature, while two other regulations are only partially internalized (i.e. introjected regulation) or are not internalized at all (i.e. external regulation), and are therefore more pressured or controlled in nature. Integrated regulation is the most internalized form of extrinsic motivation and occurs when clients integrate the outcome of treatment with their other values and interests in life (Vansteenkiste & Sheldon, 2006). For instance, an adult who stutters may realize how the outcomes of treatment will also benefit his other life goals and values. Integrated regulation may not be achieved very easily as it requires considerable awareness, self-understanding and maturity (Sheldon & Kasser, 2001). Identification is the second most internalized type of extrinsic motivation and refers to clients who engage in the treatment because they understand its personal value or importance. An example is an adult who has speech difficulties and understands how a role-play telephone exercise is meaningful for his personal functioning (Fourie, 2009). Identified regulation is highly relevant in the context of speech-language treatment, because it is virtually impossible to only provide exercises that are fun or purely interesting. If SLPs can help their clients truly understand and endorse the personal meaning and self-relevance of the activities during treatment, their clients will more willingly engage in the treatment, even if the exercises are hard and boring. Introjected regulation, the third form of extrinsic motivation, is only partially internalized, and refers to clients who are motivated by internal pressures or compulsions such as feelings of shame, guilt or pride (Vansteenkiste & Sheldon, 2006). For instance, a girl who lisps puts a lot of effort into the treatment because she would feel ashamed of herself if she would not. Finally, external regulation represents the least internalized form of extrinsic motivation and occurs when ICDs put effort into the treatment because they feel pressured to live up to the demands, wishes and expectations of important others (e.g. the therapist or their parents). For instance, a 12-year old boy with dyslexia puts a lot of effort into the treatment because his parents promised him a new cell phone when he successfully goes through a semester of treatment.

As is depicted in Fig. 1, clients' motivations are an essential part of SDT's process model which relates most closely to treatment outcomes. Intrinsic motivation as well as internalized forms of extrinsic motivation (i.e., integrated regulation, identified regulation) relate to a myriad of positive treatment outcomes in studies outside the field of speech-language treatment. These studies mentioned greater attendance (Halvari, Halvari, & Deci, 2018), greater involvement and retention (Ryan et al., 1995), greater well-being or mental health (Ng et al., 2012), greater intention to persist (Pelletier et al., 1997), greater progress (Koestner, Otis, Powers, Pelletier, & Gagnon, 2008) and better treatment effects (Zuroff et al., 2007; Zuroff, Koestner, Moskowitz, McBride, & Bagby, 2012). The least internalised types of extrinsic motivation (introjected regulation, external regulation), in contrast, positively relate to a host of negative outcomes. More specifically, anxiety (Ng et al., 2012), lower therapy attendance (Zeldman, Ryan, & Fiscella, 2004), lower intention to persist (Pelletier et al., 1997), and less optimal treatment responses (e.g. Zuroff et al., 2012) were mentioned in studies outside the context of speech-language treatment.

1.4. The present study

Gaining further insights into the characteristics of the therapist-client relationship in speech-language treatment would allow us to identify and exploit new information to maximize treatment effects. This study is intended as a first exploration of the therapist-client relationship in speech-language treatment from an SDT-perspective. The first aim of the current study is to examine the degree to which therapists rely on an autonomy-supportive and controlling style, based on observations as well as client-reports. A second aim is to examine whether SLPs use different motivating strategies to motivate adults and adolescents when compared to younger clients (e.g. use of games or tangible rewards with younger children, [Fourie et al., 2011](#)). A third aim involves examining relationships between autonomy-supportive and controlling characteristics of the therapist-client relationship and clients' need-based experiences and motivation towards the treatment. More specifically, we examine whether ICDs reported more autonomy and competence satisfaction, identified regulation and intrinsic motivation if their SLP relied on autonomy-supportive strategies. We examine, too, whether ICDs reported more autonomy and competence frustration, external regulation and introjected regulation, if their SLP relied on controlling strategies. Because full integration is relatively rare among children and adolescents, integrated regulation was not considered in the current study ([Niemiec et al., 2006](#); [Sebire, Jago, Fox, Edwards, & Thompson, 2013](#); [Sheldon & Kasser, 2001](#)).

In addressing these three main aims, we add to the current body of literature in three important ways. First, we rely on SDT to examine specific motivating (i.e. autonomy-supportive) and demotivating (i.e. controlling) characteristics of the therapist-client relationship and theory-derived motivational outcomes such as needs satisfaction and frustration and different motivational regulations (See [Fig. 2](#)). Secondly, earlier studies on the therapist-client relationship in speech language treatment predominantly relied on qualitative methods and self-reports ([Ebert & Kohnert, 2010](#); [Fourie, 2009](#); [Plexico et al., 2010](#)). Although both allow us to gain valuable insights into SLPs' or ICDs' perceptions, we move beyond client-reports in the current study by also including observational measures (see [Haerens et al., 2013](#) for an example in education), which permit the examination of whether perceptions trace back to concrete observable autonomy-supportive and controlling interactions. Finally, and thirdly, because children constitute an important, yet under-examined client group ([Fourie et al., 2011](#); [Ng et al., 2012](#)), we chose to simultaneously address our research questions in two convenience samples of SLPs and their clients. Because in developmental psychology ([Berk, 2014](#)) a distinction is generally made between middle childhood (under 12 years old), adolescents (12–18 years old) and adults (>18 years old), the first sample includes SLPs and adolescent and adult ICDs (>12 years old), and the second sample consists of SLPs and ICDs who were in their childhood (<12 years old).

2. Method

2.1. Participants and procedure

SLPs were contacted by telephone and asked whether they would be willing to participate in the current study. Telephone numbers were found on the internet by consulting the website of the Flemish Society for SLPs as well as individual SLPs' personal websites. We contacted 225 SLPs to obtain a sample of 42 SLPs (95.2 % female, N = 40) who participated with a client who was 12 years or older (i.e. Sample 1). Then, 105 SLPs were contacted to obtain a sample of 21 SLP's (all female) who participated with a client younger than 12 (i.e. Sample

2). All SLPs worked in a hospital or private practice clinic. If the SLP agreed to participate, an email providing a detailed explanation of the process of data gathering was sent. This email also included information about informed consent. Clients were recruited by the SLPs using convenience sampling based on the following inclusion criteria: to be a native speaker of Dutch, to be aged 12 years or older (Sample 1) or to be aged above 8 and under 12 years old (Sample 2), to have followed/follow regular education, to follow speech-language treatment provided by a licensed SLP, to be competent to complete a questionnaire individually with minimal help from the investigator, and not to have multiple disorders. Prior to data gathering, all SLPs, ICDs and parents (for ICDs under the age of 18) gave informed consent for their voluntary participation in the study. There were two sources of data: observations by two masters students in Speech, Language and Hearing Sciences and questionnaires completed by the participating ICDs. To conduct observations, one masters student attended and observed one treatment session per ICD. ICDs filled out the 55 item (51 in children under the age of 12) questionnaires under the guidance of a masters student at the end of the treatment session. Questionnaires were filled out in the absence of the SLP, and ICDs were informed that the information would not be shared with the SLP and would be treated confidentially. The Ethical Committee of Ghent University approved the study protocol (EC/2016/1444).

Ultimately, the first sample consisted of 72 ICDs (>12 years old; 72.2 % female, N = 52) of whom 65 provided consent to be observed. Most ICDs were adults (>18 years, 69.70 %, N = 50), while 30.6 % were between 12 and 18 years old (N = 22). ICDs suffered from voice disorders (30.6 %, N = 22), articulation disorders (15.3 %, N = 11), dyslexia (16.7 %, N = 12), neurological speech and/or language disorders (18.1 %, N = 13), hearing disorders (12.5 %, N = 9), or swallowing disorders (4.2 %, N = 3). Finally, two individuals engaged in voice treatment to change listener perceptions of their gender (2.8 %). The second sample consisted of 44 ICDs (50 % girls, 50 % boys) who were on average 9.57 (+ 1.30; range between 8 and 12) years old. Most of them had learning disorders (77.3 %, N = 34), while others suffered from language disorders (13.6 %, N = 6), voice disorders (4.5 %, N = 2), or articulation disorders (4.6 %, N = 2). All 44 ICDs and their parents provided consent to participate in the study and to be observed.

2.2. Measures

All questionnaires were administered in Dutch, the participants' native language. Unless mentioned otherwise, participants responded to the items on a 5-point Likert scale ranging from 1 (*not at all true for me*) to 5 (*very true for me*).

2.2.1. Clients' perceptions of the SLPs' engagement in autonomy support and control

To measure the SLP's engagement in autonomy support, we used a set of six items derived from the Teacher As Social Context Questionnaire (TASCQ; Belmont, Skinner, Wellborn, & Connell, 1988). The Dutch version of this questionnaire has previously been validated with secondary school students reporting on their teachers' teaching styles (Haerens et al., 2013). For the current study, items were slightly adapted to the context of speech-language treatment. To illustrate, for perceived autonomy support the item "During this class my teacher gave me a lot of choices about how to do the exercise" was changed into "During this treatment session the SLP gave me lots of choices about how to do the exercises". The full list of items is depicted in Table 2.

Table 2. Questionnaire items and observational items to measure the degree of autonomy support and control in the therapist-client relationship.

Autonomy support	Questionnaire items	Observations
1 Identifies and nurtures clients' interests, feelings, problems and wishes	"the SLP listened to my ideas" "the SLP listened to my opinion"	"the SLP tries to take the clients perspective, is empathic"
3 Understands and acknowledges negative feelings and resistance	"the SLP talked about how I can use the things we learned"	
4 Provides a meaningful rationale	"the SLP explained how what we were doing is important to me"	"the SLP provides the client with a rationale for why certain rules or exercises are important"
6 Attunes to the development stage/pace of the client		
7 Provides opportunities to take initiative and includes meaningful choices	"the SLP provided me with lots of choices about how I did the exercises" "the SLP gave me all kind of things to choose from regarding how I wanted to deal with the exercises"	"the SLP provides the clients with meaningful choices" "the SLP allows for the client to experiment and practice without intervening right away"
9 Relies on inviting language		
Control		
1 Effort-contingent rewards		"the SLP used rewards"
2 Demanding and pressuring language	"the SLP always told me what I had to do" "the SLP often criticized how I did things"	"the SLP used controlling language ("you have to, you must,....") "the SLP always told the client what to do, not leaving much room for the client to discover on their own."
4 Contingent non-verbal appreciation, providing more praise if client lives up to the expectations	"the SLP was less friendly with me if I did not see things his/her way" "the SLP clearly showed that I have hurt his/her feelings when I have failed to live up to their expectations" "the SLP always tried to change me" "the SLP made me feel guilty if I dissatisfied him/her"	
7 Appealing to feelings of guilt or shame	"the SLP was strict with me if I had disappointed him/her" "the SLP avoid talking with me when I had disappointed him/her"	

Two items from the Teacher As Social Context Questionnaire (TASCQ; Belmont et al., 1988) and seven items from the Psychologically Controlling Teaching scale (PCT; Soenens et al., 2012), two questionnaires that have been frequently used with secondary school students (e.g. De Meyer et al., 2014), were used to measure the SLPs' engagement controlling practices (9 items). These controlling items were slightly adapted to fit the treatment context. For example, the item *"During this class the teacher made me feel guilty when I dissatisfied him/her"* was replaced by *"During this treatment session, the SLP made me feel guilty when I dissatisfied him/her"*.

2.2.2. Experiences of need satisfaction and need frustration

ICDs' need-based experiences were measured with an adapted version of the Basic Psychological Need Scale and Need Frustration Scale (BPNSNF; Chen et al., 2015). This 24-item scale was validated in four samples from diverse cultural backgrounds (i.e., China, US, Peru, and Belgium) and has been translated into many languages (e.g. Cordeiro, Paixão, Lens, Lacante, & Luyckx, 2016) to be used in a wide range of settings (e.g. physical education, romantic relationships, people with chronic diseases) and with diverse populations including adults (Aelterman, Vansteenkiste, Van Keer, & Haerens, 2016) and children (e.g. van der Kaap-Deeder et al., 2015). For the present study, and similar to previous studies, this general needs satisfaction scale was slightly adjusted by adding the stem *"During the past treatment session"* and by slightly rewording some of the items to better reflect the specific context of speech-language treatment. To illustrate, the item *"I feel that my decisions reflect what I really want"* was changed into *"I felt that the exercises reflected what I really wanted to do"*. For the current study, we only included autonomy and competence needs satisfaction, and autonomy and competence needs frustration, because all three needs are generally highly inter-related. Particularly for the second sample of younger children, it was important to shorten the questionnaire to avoid response fatigue.

2.2.3. Motivational outcomes

For sample 1, motivation towards treatment (i.e., situational motivation) was assessed by means of an adapted version of the validated Behavioral Regulations in Physical Education Questionnaire (BRPEQ; Aelterman et al., 2012), a questionnaire that has been used to measure students' motivation towards physical education lessons. We used the stem *"I put effort into the treatment session because ..."*. This stem was followed by items reflecting intrinsic motivation (4 items; e.g., *"because I enjoyed this session"*), identified regulation (4 items, *"because I found this session personally meaningful"*), introjected regulation (4 items; *"because I had to prove myself"*), and external regulation (4 items, *"because otherwise I got criticized"*).

For sample 2, The Behavioral regulations in Exercise Questionnaire (Sebire et al., 2013) was used. We choose to apply this shorter 12-item questionnaire because it was previously validated for younger children, whereas this was not the case for the BRPEQ (Aelterman et al., 2012). We used the stem *"I put effort into the treatment session because ..."*. This stem was followed by items reflecting intrinsic motivation (3 items; e.g., *"because I enjoyed the treatment"*), identified regulation (3 items; *"because it is important for my further life"*), introjected regulation (3 items; *"because I would feel bad if I don't"*), and external regulation (3 items; *"because otherwise others would be dissatisfied"*).

2.2.4. Observations of SLPs' (de)motivating style

Two masters students, who were instructed by the first author on how to conduct the observations, coded the presence or absence of a list of four autonomy-supportive and three controlling behaviours, which are listed in [Table 2](#). When a behaviour was observed, they were asked to describe the situation and write down exactly what they observed. The list of observed behaviours was derived from a validated observation scheme that was developed to code videos of physical education lessons ([Haerens et al., 2013](#)). Yet, in the current study, due to privacy issues, no videos could be made. As such the coding was simplified to make live coding possible.

2.2.5. Plan of analysis

Because several questionnaires were used for the first time with clients in speech-language treatment we determined the factorial validity through a Confirmatory Factor Analysis (CFA) based on maximum likelihood estimation in *Mplus* ([Muthén & Muthén, 1998-2012](#)[Muthén & Muthén, 1998-2012](#)). According to [Hu and Bentler \(1999\)](#), combined cut-off values of 0.95 for CFI and close to 0.06 for RMSEA and 0.09 for SRMR indicate a good model fit. Cronbach's alphas were calculated to determine the internal consistency of the scales. A Cronbach's alpha between 0.70 and 0.95 was considered to represent a good internal consistency ([Terwee et al., 2007](#)). We considered values between 0.60 and 0.70 as reasonable.

To examine whether SLPs rely more strongly on an autonomy-supportive versus controlling styles, paired sample *t*-tests were used.

To examine prevalence rates of the observed motivating strategies, cross-tabs were used (see [Table 3](#), left side).

To investigate differences between three age groups (i.e., <12 years, 12–18 years and >18 years) in the total occurrence of the observed motivating styles (i.e. sum scores of all observed items) and ICDs self-reports, a MANOVA with Tukey post-hoc tests, was used (see [Table 4](#)). To examine age differences in the separate observed strategies, crosstabs (i.e. Chi-squared-analyses, see right side [Table 3](#)) were used.

To examine how the observations of the SLPs' motivating style as well as ICDs' perceptions relate to need-based experiences and motivational outcomes, we relied on Pearson correlations ([Table 3](#), [Table 4](#)).

Table 3. Observational data: Number of sessions in which the autonomy-supportive and controlling behaviours were observed in the Total Sample (left side of the Table), and Differences in Occurrences between the three age groups of adults (>18 years), adolescents (12-18 years), and children (<12 years old) (right side of the Table).

	Total sample (N = 109)		Sample 1				Sample 2		Differences between age groups	
			>18 years (N = 43)		12-18 years (N = 22)		<12 years old (N = 44)			
	Absent	Present	Absent	Present	Absent	Present	Absent	Present	$\chi^2(1)$	p
Autonomy support										
Empathy	1	108	1	42	0	22	0	44	1.55	.461
	1 %	99 %	2 %	98 %	0 %	100 %	0 %	100 %		
Meaningful rationale	17	92	6	37	8	14	3	41	9.87	.007
	16 %	84 %	14 %	86 %	36 %	64 %	7 %	93 %		
Providing choice	47	62	30	13	12	10	5	39	37.71	<.001
	43 %	57 %	70 %	30 %	55 %	45 %	11 %	89 %		
Experimenting	24	85	15	28	6	16	3	41	10.42	.005
	22 %	78 %	35 %	65 %	27 %	73 %	7 %	93 %		
Control										
Rewards	67	42	43	0	20	2	4	40	85.97	<.001
	62 %	38 %	100 %	0 %	91 %	9 %	9 %	91 %		
Controlling language	107	2	43	0	20	2	44	0	8.06	.018
	98 %	2	100 %	0 %	91 %	9 %	100 %	0 %		
Intervening	104	1	43	0	21	1	40	4	4.11	.128
	95 %	5 %	100 %	0 %	95 %	5 %	91 %	9 %		

Note. Observed item scores between 0 and 1; client-reported item scores between 1 and 5.

Table 4. Differences in Study Variables between three age groups of adults (>18 years), adolescents (12-18 years) and children (<12 years) based on observational data and perceptions of ICDs.

	Sample 1				Sample 2		<i>F</i>	<i>p</i>	η^2_p
	>18 years <i>N</i> = 43		12–18 years <i>N</i> = 22		<12 years <i>N</i> = 44				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Observational data									
Observed autonomy support	.60 _a	.29	.61 _a	.24	.92 _b	.16	22.48	<.001	.30
Observed control	.00 _a	.00	.08 _a	.20	.33 _b	.14	77.21	<.001	.59
Perceived autonomy support	4.18 _a	.59	4.20 _a	.62	4.20 _a	.58	.02	.984	.00
Perceptions of ICDs									
Perceived control	1.37 _a	.40	1.45 _a	.41	1.54 _a	.47	1.59	.209	.03
Autonomy satisfaction	4.24 _a	.61	3.94 _a	.58	3.33 _b	.92	16.57	<.001	.24
Competence satisfaction	4.00 _a	.72	3.76 _a	.58	4.03 _a	.82	1.08	.345	.02
Autonomy frustration	1.48 _a	.61	1.61 _a	.59	2.12 _b	.90	8.69	<.001	.14
Competence frustration	2.12 _a	.86	2.15 _a	.75	2.39 _a	1.01	1.10	.337	.02
Intrinsic motivation	4.16 _a	.71	4.18 _a	.66	3.92 _a	1.01	1.16	.316	.02
Identified regulation	4.67 _a	.48	4.33 _a	.76	4.51 _a	.65	2.34	.102	.04
Introjected regulation	2.58 _a	.97	2.33 _a	.80	2.98 _a	1.32	2.93	.058	.05
External regulation	1.59 _a	.85	1.44 _a	.48	2.52 _b	1.32	12.31	<.001	.19

Note. Observed item scores between 0 and 1; client-reported item scores between 1 and 5. Mean scores with a different subscript differ statistically from each other.

3. Results

3.1. Validation of questionnaires

3.1.1. Clients' perceptions of the SLPs' engagement in autonomy support and control

The CFA model with autonomy support as latent factor yielded a good fit, $\chi^2 (9) = 18.39, p = .031$; RMSEA = .10; CFI = .94; SRMR = .06 (Hu & Bentler, 1999), with all item loadings ranging between 0.26 ($p = 0.008$) and .85 ($p < 0.001$). Cronbach's alpha for perceived autonomy support was .74. Also the CFA model for perceived control yielded a good fit, $\chi^2 (27) = 28.86, p = .368$; RMSEA = .02; CFI = .99; SRMR = .04 (Hu & Bentler, 1999), with all item loadings ranging between -0.08 ($p = .450$) and .68 ($p < 0.001$). One item "*The SLP often interrupted me*" did not significantly load on the controlling scale and was therefore removed from further analyses. After removal of this item the model fit remained very good ($\chi^2 (20) = 28.19, p = .105$; RMSEA = .06; CFI = .91; SRMR = .05) with item loadings ranging between .29 ($p = .006$) and .68 ($p < .001$). Cronbach's alpha for perceived control was reasonable ($\alpha = .63$).

3.1.2. Experiences of need satisfaction and need frustration

As for need satisfaction and frustration, the expected 4-factor model with autonomy satisfaction, competence satisfaction, autonomy frustration and competence frustration as latent factors yielded an excellent fit, $\chi^2 (98) = 120.96, p = .058$; RMSEA = .05; CFI = .95; SRMR = .07 (Hu & Bentler, 1999). Cronbach's alphas were good with values of 0.73 for autonomy frustration, 0.75 for competence frustration, and 0.76 for competence as well as autonomy satisfaction.

3.1.3. Motivational outcomes

For the measure of motivation in the sample of clients of 12 years or older, the CFA including the expected 4-factor model with intrinsic motivation, identified regulation, introjected regulation and external regulation model yielded a poor fit, $\chi^2 (98) = 775.77, p < .001$; RMSEA = .31; CFI = .22; SRMR = .12 (Hu & Bentler, 1999). Particularly problematic were the introjected regulation items which had very low loadings on their latent scale (loading ranging between -0.28 and .01; all $p > 0.180$). Because a CFA including the three remaining motivational regulations (i.e. intrinsic motivation, identified regulation and external regulation) could not reach convergence, and the CFA based on maximum likelihood estimation in *Mplus* (Muthén & Muthén, 1998-2012) with intrinsic motivation and identified regulation as latent factors yielded excellent fit ($\chi^2 (19) = 30.77, p = .043$; RMSEA = .09; CFI = .91; SRMR = .07), we only retained the intrinsic motivation ($\alpha = .72$) and identified regulation ($\alpha = .63$) scale for further analyses. In addition, because of the low internal consistency of the intrinsic motivation scale, we removed one item "*Because the treatment was fun*", after which the Cronbach's alpha increased to a value of 0.79. Model fit without this item further improved ($\chi^2 (13) = 19.12, p = .119$; RMSEA = .08; CFI = .95; SRMR = .06) with all item loadings ranging between .59 and .78 (all $p < .001$).

As for the measure of motivation in the sample of children under the age of 12, the CFA including the expected 4-factor model with intrinsic motivation, identified regulation, introjected regulation and external regulation yielded moderate fit, $\chi^2 (48) = 99.61, p < .001$;

RMSEA = .16; CFI = .75; SRMR = .12 (Hu & Bentler, 1999) with all items significantly loading on their corresponding latent factor (all items loadings > 0.32, $p < .001$). Cronbach's alphas were moderate to good with values of .84 for intrinsic motivation and .83, and .65 for identified regulation. Because of the lower internal consistency of the introjected scale ($\alpha = .61$) we removed the item “because I want to show to others what I am capable of”, after which the Cronbach's alpha increased to a value of 0.74. Removal of this item slightly improved the model fit, $\chi^2(38) = 68.08, p = .002$; RMSEA = .13; CFI = .83; SRMR = .10 (Hu & Bentler, 1999).

3.2. To what degree do SLPs rely on an autonomy-supportive and controlling style, and which practices are used?

Paired sample t-tests were used to examine whether SLPs were relatively more autonomy-supportive when compared to controlling. Analyses on the observational data showed that SLPs in both samples were on average significantly more autonomy-supportive ($M_{>12} = 0.70$; $M_{under12} = 0.94$) than controlling ($M_{>12} = 0.03$; $M_{under12} = 0.12$) ($t_{>12} = 21.35, t_{under12} = 19.25, p < 0.001$). ICDs' reports showed similar results. ICDs perceived their SLP to be on average significantly more autonomy-supportive ($M_{>12} = 4.17$; $M_{under12} = 4.21$) than controlling ($M_{>12} = 1.39$; $M_{under12} = 1.53$) ($t_{>12} = 30.24, t_{under12} = 18.21, p < 0.001$).

The left side of Table 3 displays the occurrence of the observed motivating and demotivating behaviors in the total sample across all age groups based on the observations. As for the autonomy-supportive strategies, empathy was observed most frequently (in all but one session, 99 % of the observed sessions). It involved recognizing how hard the exercises are, or how hard it is to deal with the disorder, or recognizing that a little progress requires a lot of effort. It also included listening to the client and displaying interest in how they experience the treatment of their disorder. Rationales were provided in 84 % of the sessions, and mainly involved explaining the goal and importance of certain exercises in terms of the progress the client can make, or explaining why a treatment session did not follow the regular structure of a session. Regarding the provision of choice, which was observed in 57 % of the sessions, SLPs allowed their clients to choose which exercise they wanted to start with, how long they wanted to spend on certain exercises, whether they needed additional help or not, and which material they wanted to use (e.g. the colour of the pen, which game to play). SLPs also frequently provided opportunities to exercise independently, with this strategy observed in 78 % of the sessions. They allowed clients to independently complete exercises, and to identify and correct mistakes. When SLPs identified errors, they provided time for clients to self-identify and correct mistakes, and the SLPs allowed time for clients to reflect on their performance. Controlling strategies were seldomly observed.

3.3. Does the SLP's reliance on an autonomy-supportive and controlling style differ according to the clients' age group?

Table 4 presents average differences in the total scores for observed and perceived autonomy support and control between the three age groups (>18 years old clients, 12–18 years old and <12 years old). The data show that SLPs were generally less autonomy-supportive and less controlling with adult and adolescent clients when compared to younger clients.

Differences between the three age groups for each of the observed strategies separately are presented in the right side of Table 3. In terms of the observed autonomy-supportive behaviours, differences in occurrence across the three age groups were observed for the

provision of a rationale, the provision of choice and time to experiment. No differences were found for the display of empathy. The provision of a meaningful rationale was least frequently observed in sessions with adolescents (provided in 64 % of the sessions) when compared to in sessions with adults (86 %) or children (93 %). Choice and time to experiment was more frequently provided in sessions with children, when compared to sessions with adults or adolescents. In terms of controlling behaviours, significant differences were found for the use of contingent rewards and controlling language. Contingent rewards were more frequently observed in sessions with younger clients when compared to the other two age groups. In 91 % of the sessions with younger children the SLP gave a sticker, candy or stamp to the children or allowed them to choose a game by the end of the session. This strategy was used in only 9% of the sessions with adolescents and not at all with adults. Further, controlling language was significantly more frequently used in sessions with adolescents when compared to sessions with children and adults, where no such language was observed.

3.4. How does the motivating style of the SLP relate to clients' need-based experiences and motivational outcomes?

Given that [Table 4](#) revealed no differences in the outcomes between the group of 12–18 years and the group of >18 years, these two groups were taken together for parsimony reasons when examining associations with needs-based experiences and motivational outcomes.

[Table 5](#) shows the correlations between all variables in ICDs who are 12 years of age or older (under the diagonal) and ICDs who are under 12 years old (above the diagonal). Observed autonomy support positively related to intrinsic motivation in both samples. In the sample of younger clients (<12 years old), additional relationships between observed autonomy support and the motivational outcomes were found. When SLPs were observed to be more autonomy-supportive, their clients reported more competence satisfaction, less competence frustration, and more identified regulation.

Observed control did not display significant correlations with the motivational outcomes, except in older clients (>12 years old) who reported more competence frustration when their SLP was observed as more controlling.

As for client-reported autonomy support, significant positive relationships with autonomy and competence satisfaction, as well as intrinsic motivation, were found in both samples. Moreover, younger clients (<12 years old) reported less autonomy frustration and more identified regulation when they perceived their SLP as more autonomy-supportive. Client-reported control positively related to autonomy and competence frustration in both samples. Younger clients (<12 years old), also reported less identified regulation and more external regulation when they perceived their SLP as more controlling.

4. Discussion

The current study constitutes a first pass at examining the therapist-client relationship in speech-language therapy from an SDT-perspective through observations as well as client-reports.

Table 5. Correlations among the Study Variables for Clients Older than 12 years old (underneath the diagonal)/and Clients younger than 12 years old (above the diagonal) based on observational data and perceptions of ICDS.

N = 72/N = 44 for client-reported data N = 65/N = 44 for observations	1	2	3	4	5	6	7	8	9	10	11	12
Observed autonomy support	–	–.22	.21	–.24	.18	.53***	–.04	–.29*	.56***	.36*	–.05	–.18
Observed control	–.05	–	.08	.10	–.02	–.12	–.11	.03	.14	.06	–.06	.04
Perceived autonomy support	.36**	.15	–	–.65***	.58***	.36*	–.44**	–.10	.35*	.33*	–.11	–.29
Perceived control	–.13	.08	–.11	–	–.25	–.21	.50**	.40**	–.22	–.45**	.26	.36*
Autonomy satisfaction	.20	–.08	.62***	–.13	–	.36*	–.24	–.05	.13	.09	.06	.05
Competence satisfaction	.23	–.13	.35**	–.05	.44***	–	–.11	–.45**	.56***	.27	–.04	–.06
Autonomy frustration	.01	–.04	–.15	.37***	–.32**	–.14	–	.38*	–.18	–.02	.46**	.53***
Competence frustration	.09	.25*	.12	.24*	–.09	–.48***	.35**	–	–.38**	–.17	.25	.40**
Intrinsic motivation	.27*	–.19	.39***	–.07	.54***	.52***	–.09	–.10	–	.24	.02	–.27
Identified regulation	–.04	–.06	–.08	.04	–.08	.07	.13	–.03	–.06	–	.12	.05
Introjected regulation											–	.26
External regulation												–

Note. ***p < 0.001, ** p < 0.01, *p < 0.05.

5. SLPs' engagement in autonomy-supportive and controlling interactions during treatment

In the SLP literature (Ebert & Kohnert, 2010; Fourie, 2009; Plexico et al., 2010) as well as in the SDT-based literature (Ng et al., 2012; Teixeira et al., 2020; Vansteenkiste & Sheldon, 2006), researchers have highlighted the importance of a trustworthy, strong and positive therapist-client relationship characterized by mutual understanding between the therapist and the client for treatment success. It was therefore encouraging to find that an empathic stance was observed in almost every therapist-client session. This was evident when the SLP took the time to listen to the clients' interests, feelings and problems, and recognized how hard the exercises were and how hard it is to deal with the disorder. Also, rationales were regularly given, which involved explaining the goal and importance of certain exercises in terms of the progress the clients can make, explaining the relevance of the treatment for their daily life, or explaining why a treatment session did not follow the regular structure. Such information that helps clients to understand the purpose and function of the treatment, is both theoretically (Vansteenkiste et al., 2018) as well as in the eyes of ICDs (Fourie et al., 2011) one of the most important things therapists need to do. Most SLPs also allowed opportunities to choose (e.g. type of exercise, duration, whether they wanted help and choice of materials) and provided opportunities to exercise independently.

According to SDT, a therapist-client relationship is highly controlling when the SLPs impose their own agenda and frame of reference onto the client. Fortunately, findings of both the observations and client-reports indicate that SLPs only rarely rely on controlling strategies. The use of controlling language (i.e. you must, I expect you to,...) and intervening right away when clients struggle were almost never observed.

5.1. Do SLPs rely on different motivating strategies with clients of different ages?

Research specific to the therapist-client relationship in children is scarce (but see Fourie et al., 2011). In the current study, we examined whether there were differences in the degree to which the SLP was autonomy-supportive and controlling in three different age groups. Therapists were observed to be both more autonomy-supportive and more controlling with younger clients (<12 years old) when compared to adolescents (12–18 years old) and adults (>18 years old). These findings may suggest that SLPs offer less overt motivating strategies to older clients in general, because they assume that older clients already have more intrinsic or identified motivation. Rationales (i.e. meaningful explanations) were most often given to younger children. This is encouraging as children in the study of Fourie et al. (2011) sometimes reported not to understand the purpose of the treatment. Yet, also adults and adolescents value getting a rationale for why a certain technique or treatment is chosen (Fourie, 2009; Plexico et al., 2010). Perhaps some SLPs incorrectly assume that older clients already understand the meaning or value of the exercises offered so that less explanation is needed, an issue that warrants further examination. Also, choices and opportunities to work independently were more frequently observed in treatment sessions with younger clients (<12 years old) when compared to sessions with adolescents (12–18 years) and adults (>18 years).

In terms of controlling strategies, using demanding and pressuring language (e.g. you must) was more common in treatment sessions with adolescents when compared to sessions with children and adults, where this strategy did not occur. The use of performance or engagement contingent rewards were commonly embedded in treatment with younger children, yet to a far lesser extent with adolescents and not at all with adults. Specifically, when children had

put a lot of effort into the treatment session or performed well, they could choose a sticker, candy or game by the end of the session. Whether such use of tangible rewards is motivating has been heavily debated in the literature. An extensive and robust meta-analysis by Deci et al. (1999) showed that tangible rewards for activities that children find naturally interesting generally undermine intrinsic motivation, even if they are engagement contingent (i.e., offered for working on the target activity independent from the results) (Deci et al., 1999). Yet, the same meta-analysis (Deci et al., 1999) and more recent empirical studies (Joussemet, Koestner, Lekes, & Houliort, 2004) also revealed that the picture is a lot more complicated when rewards are used with uninteresting but important tasks, and when rewards are embedded in an autonomy-supportive climate, with studies showing neither positive nor negative effects of rewards. Because in prior qualitative studies children frequently mentioned they loved the stickers they receive from the SLP (Fourie et al., 2011), the use of rewards in speech-language treatment warrants further examination.

Finally regarding the differences between younger and older clients (both adolescents and adults), it was also interesting to see that younger clients participated in the treatment on a less voluntary basis (i.e. with lower levels of autonomy satisfaction and higher levels of autonomy frustration; see Table 4) when compared to older clients. With children, it is often the teacher, parents or the medical doctor who decided that treatment was needed, which may explain why they feel less volition during treatment (Bickman et al., 2004).

5.2. The motivational benefits of autonomy support

In the current study, we specifically focused on a range of motivational outcomes, which are known to be closely and positively related to treatment outcomes (see Fig. 1, Ng et al., 2012; Zuroff et al., 2012) such as intrinsic motivation and identified regulation. It was encouraging to find that most ICDs highly enjoyed and valued the treatment. Moreover, the observational data as well as the client-reports from both younger and older clients, consistently showed that ICDs find the treatment more interesting and enjoyed it more when their SLP was more autonomy-supportive. As such, if SLPs want to foster treatment enjoyment, they may want to rely more strongly on the autonomy-supportive strategies outlined in Table 1.

Yet, because not all treatment activities can be made fun or enjoyable, therapists are in many situations challenged to foster identified regulation (i.e. internalized extrinsic motivation) by clarifying the value or the importance of the treatment activities for clients' personal life goals and value needs (Ryan & Deci, 2017; Vansteenkiste & Sheldon, 2006; Vansteenkiste et al., 2018). Our data confirmed SDT's theoretical premises that when SLPs were more autonomy-supportive, their clients were more likely to fully endorse the value and personal meaning of the treatment. The positive relationship between autonomy support and identified regulation was consistently found, independent of whether SLPs' style was measured by means of observations or client-reports, yet only among younger ICDs.

Results further showed that when the SLPs were more autonomy-supportive, their clients felt more psychologically free and in charge of their trajectory (i.e. higher levels of autonomy satisfaction) and felt more effective and confident that they could improve their skills (i.e. high on competence satisfaction). Because many ICDs may enter treatment with elevated levels of competence frustration as many had a history of failure experiences (Adriaensens, Beyers, & Struyf, 2015; Noor & Musa, 2007; Terras, Thompson, & Minnis, 2009; Theunissen et al., 2014), and ICDs need to exercise on their weaknesses for several weeks or months when engaging in speech-language treatment, feelings of failure may pop up. As

such, it is crucially important to know that by being autonomy-supportive, SLPs not only foster autonomy satisfaction, but also help their clients to restore their competence.

5.3. The motivational drawbacks of a controlling style

When SLPs were perceived as more controlling, clients reported more feelings of pressure (i.e. autonomy frustration) and had more doubts about their capabilities (competence frustration) which is in line with theory and prior empirical work (Halvari et al., 2018; Ryan & Deci, 2017, see Fig. 1). Prior qualitative research with adults in treatment for stuttering showed that some of them even dropped-out from treatment, because they felt pressured and controlled by their SLP (Plexico et al., 2010).

Some additional relationships between a perceived controlling style and motivational outcomes were found in younger clients only. When the SLP was experienced as more controlling, these clients reported to be less identified and more externally regulated. As such, it appears that the least internalized form of extrinsic motivation (i.e. external regulation) is fostered, while the most internalized form of extrinsic motivation (i.e. identified regulation) is hampered when the SLP is experienced as more controlling. This means that with a more controlling SLP, clients put effort into the treatment because they try to live up to the demands, wishes and expectations of the therapist rather than because they truly understand the value of the outcomes of the treatment for themselves.

As for the observations of controlling practices, few relationships with motivational outcomes were found. Yet, because controlling practices were only rarely observed, we may not have had sufficient variance to find meaningful relationships.

5.4. Practical implications

The findings of the current study point towards the importance of the therapist-client relationship for clients' motivation. As such, SLPs are not only challenged to select the most effective treatment (e.g. Crosbie et al., 2005), an equally important endeavour is to guide their clients in a motivating way. SDT may provide a sound theoretical basis to more systematically address the importance of therapist-client relationship in graduate and professional training. Masters students, but also professional SLPs, could learn about SDT and use the observation schema presented in Table 1, Table 2 to self-assess the quality of their treatment styles. Future studies could gradually elaborate on the findings of the current study to further develop the coding system to also include relatedness-supportive and competence-supportive strategies. The recently developed classification system of autonomy-supportive, relatedness-supportive and competence-supportive behaviour change developed by Teixeira et al. (2020) could be highly inspirational in that respect.

Not only the observation schema, but also the client questionnaires used in the current study, can be used by SLPs to gain insight into the quality of clients' experiences during treatment. Specifically, SLPs could regularly and systematically ask their clients how they experience the treatment and whether and how the therapist's motivating approach can be improved.

5.5. Strengths, limitations and future directions

This study was intended as a first exploration of the therapist-client relationship in speech-language treatment from an SDT perspective. Results were positive in that SLPs were

observed to be highly autonomy-supportive and lowly controlling, which was also confirmed in their clients' reports. Yet some caution is warranted in generalizing the results and drawing overly positive conclusions. For the current study, we relied on convenience and relatively small samples of SLPs who willingly took part in the study. As such, the samples are unlikely to be representative for the total population of SLPs and their clients, which may have led to a more positive picture of how speech-language treatment is currently delivered.

Given the lack of studies in younger children (Ng et al., 2012) the inclusion of both adolescents and adults, as well as younger participants constitutes a novel part of the current study. To more systematically and thoroughly examine differences in approach according to the clients' age, it is recommended for future research to recruit older and younger clients for every SLP in the sample. Moreover, possible confounding factors such as SLPs' years of experience, how far into the treatment clients were, or which treatment approach was used need to be considered in future research as these factors matter in terms of the therapist-client relationship (e.g. Accurso & Garland, 2015). In future research, it would also be valuable to include a measure of the treatment success or progress made by the clients to go beyond the motivational outcomes.

Some additional methodological strengths and limitations of the current study need to be discussed. The addition of live observations of treatment sessions in addition to client-reports constitutes an important strength as it gave insight into what actually happened during the sessions. Yet, for ethical reasons, both SLPs and their clients were informed about the general purpose of the study, which may have led the SLPs to adopt a more motivating style. Furthermore, the observations of the controlling dimension was particularly problematic, as the selected behaviours were only seldom observed.

Moreover, observations were conducted by masters students who attended the treatment and coded it live. Although they were instructed by the first author on how to conduct the observations they did not receive extensive training so they may have missed or misinterpreted certain important interactions. Because we relied on live rather than video-coding to ensure client confidentiality, we could also not establish inter-rater reliability. We are thus unsure whether a more experienced researcher would have rated the treatment sessions in the same way. Despite these limitations, the observational data are promising as many of the correlations between observed autonomy support and motivational outcomes were in the expected direction, pointing towards its external and predictive validity. By observing real-life therapist-client interactions in larger samples, the observation schema used in the current study could be further refined and elaborated on (see Teixeira et al., 2020 for an overview). As for the client-reported measures, we derived from available questionnaires in the field of education which were not yet validated in the context of speech-language treatment. Based on CFA's and Cronbach's alpha analyses, we were forced to make some minor adaptations to the existing scales. For instance, the item "the SLP often interrupted me" did not significantly load on the controlling scale. This is interesting because in some treatment approaches interruption from the SLP may be indeed be highly warranted (e.g. errorless tasks).

To ensure that questionnaires were filled out accurately, we also choose to shorten the number of items included in the questionnaires. This precluded us from measuring SDT's third basic psychological need relatedness satisfaction and frustration, as well as amotivation (i.e. a lack of motivation). While factorial validity was confirmed for most of these questionnaires, the factorial validity of the motivational questionnaire was poor in the sample

of older clients. This led us to exclude introjected and external regulation from further analyses. Although the Behavioural Regulation in Exercise Questionnaire has been frequently applied in the context of health care and health promotion (Ng et al., 2012), other questionnaires that have been frequently used in relation to treatment may yield better results (e.g., the Treatment Self- Regulation Questionnaire; Ryan, Plant, & O'Malley, 1995).

Finally, in terms of the design of the study, the cross-sectional study does not permit causal inferences to be made. It would be interesting to replicate this study as a longitudinal study in which SLPs and clients are followed throughout the full treatment program.

6. Conclusion

The results presented in this study provide a valuable starting point for an SDT-driven examination of the therapist-client relationship and ICDs' motivation in the context of speech-language treatment. Despite the selective nature of the sample, it was encouraging to find that both client-reports and observational measures showed that SLPs generally strongly relied on an autonomy-supportive style, and tended to refrain from controlling practices. Results clearly point towards the motivational benefits of relying an autonomy-supportive style, and the drawbacks of a controlling style. The use of tangible rewards appeared a common practice when working with younger children, and its impact on ICDs' internalized motivation is to be examined in future research. Apart from focusing on autonomy support and control, future studies could also build on this line of work by including the dimensions of structure and relatedness-support as well as chaos and relatedness-thwarting to describe the therapist-client relationship in a more detailed and comprehensive way. Ultimately, if this program of research starts to grow, it could inform future intervention research in which SLPs in an intervention group are trained to effectively implement the most effective strategies.

CRedit authorship contribution statement

L. Haerens: Coconceptualization, Methodology, Writing - review & editing, Supervision, Research, Writing - original draft. **K. Bettens:** Data curation, Writing - review & editing, Project administration. **K. Van Lierde:** Coconceptualization, Methodology, Writing - review & editing, Supervision, Research. **N. Aelterman:** Supervision, Research, Formal analysis, Writing - review & editing, Writing - original draft.

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