Task shifting, interprofessional collaboration and education in oral health care

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CHAPTER 1

General introduction

Task shifting has resulted in major changes in the position of the dental hygiene occupation that has been gradually developing into a profession since its establishment by Dr. Alfred C. Fones in 1913. He opened the first school of dental hygiene in Connecticut after developing the concept of a prevention specialist that he referred to as a "dental hygienist" (Fones, 1929). These individuals were first licensed and allowed to practice in Connecticut, which was the first state to allow prophylaxis treatment by a dental hygienist. However, dentists in Connecticut were concerned that the duties given to dental hygienists would lead to additional expanded functions that could become a threat to the economic interests of dentists (Haaland, 1999). Therefore, the state of Connecticut included the regulation of dental hygienists as one part of the Dental Practice Act in 1915. Dentists in other American states followed the Connecticut model with the regulation of dental hygienists becoming part of their own dental practice acts. Since then, the occupation of the dental hygienist has been regulated by dentists in most countries (Johnson, 2009).

Task shifting or skill-mix change between dentists and dental hygienists is implemented all over the world (Johnson, 2009) and may create interprofessional tensions or even polarize the relationship between these two professions (e.g., Adams, 2004; Knevel, Gussy, Farmer & Karimi, 2017; Northcott et al., 2013; Ross & Turner, 2015). Polarization is the tendency of a group to make decisions that are more extreme than the initial viewpoints of its members and can result in conflicting views between professional groups (Aronson, 2010). Persuasive argumentation and social comparison processes contribute to group polarization (Isenberg, 1986). It is a social-psychological response to the perceived threat to an individual's interests, and a number of professionals perceive task shifting as a threat (Knevel et al., 2017). This polarization in professional groups can obstruct or limit task shifting and the utilization of the dental hygienist (Knevel et al., 2017; Kreindler et al., 2012).

It is normal that professions tend to protect their professional boundaries and that a professionalizing occupation such as the dental hygienist pursues a full professional status (Macdonald, 1995). An occupation is a profession when it has its own code of ethics, a single qualifying entry route and certification, a professional association, and monopolization of a particular market (Alvesson, 2000). The degree to which the latter characteristic applies to the dental hygienist primarily depends on national or state jurisdictions (Johnson, 2009). The protection of professional boundaries by a profession may complicate interprofessional collaboration as well as jeopardize patient safety and the provision of high quality patient care (Powell & Davies, 2012).

Interprofessional collaboration amongst professionals from different disciplines is a way to address fragmentation, discontinuity, and lack of receptiveness (Vliet Vlieland & Hazes, 1997). Health care fragmentation occurs when treatment is provided by single health care professionals and is not synchronized (Bodenheimer, Chen & Bennett, 2009). The problem

of discontinuity becomes visible in the culture, structure, and processes whereby the same patient is supported by different agencies in sometimes incompatible ways (Crawford, 2012). Communication between members of different professions, such as lack of receptiveness, can pose problems to patient safety (Tjia et al., 2009). The elimination of unhelpful boundary demarcations between professions and appropriate education and training are factors that promote the success of changing a skill-mix between professions (Sibbald, Shen & McBride, 2004). Even though task shifting could solve workforce shortages and other problems in the health care system (e.g., Brocklehurst & Macey, 2015; Crisp, 2011; Pereira, Bugalho, Bergstrom, Vaz, & Cotiro, 1996), the social-psychological impact of task shifting between dentists and dental hygienists is recognized but has not been thoroughly investigated (Bullock & Firmstone, 2011; Dyer & Robinson, 2008; Northcott et al., 2013). According to the World Dental Federation, "interprofessional collaboration and teamwork is increasingly recognized as a means of achieving higher quality care and enhancing the effectiveness and efficiency of services" (FDI, 2015).

1.1 Task shifting and requirements for its implementation

Task shifting is defined as the rational redistribution of tasks among health workforce teams (World Health Organization, 2008). As contemporary healthcare systems need to be reorganized because the demand exceeds available resources (e.g., Glick et al., 2012; Huang & Finegold, 2013; Kandelman et al., 2012), many governments confront these challenges by implementing task shifting policies as an alternative approach to the organization of health care (Johnson, 2009). These policies enable sharing professional tasks between the original profession and members of other or new occupations or professions with varying degrees of autonomy (Sibbald et al., 2004). It is not known to what degree attitudes among dentists and dental hygienists differ towards an extended scope of dental hygiene practice than from an independent practice.

Several studies of task shifting suggest that appropriately trained substitute professionals are able to deliver at least an equal quality of care (Laurant et al., 2009; Dennis et al., 2009; Laurant et al., 2005; Sibbald et al., 2004). Studies also provide evidence that it can increase efficiency (Bailit, Beazoglou, DeVitto, McGowan & Myne-Joslin, 2012; Richardson, 1999), increase access to services (Bailit et al. 2012; Sibbald, Laurant & Scott, 2006; Campbell, 1996), save costs by reducing training time (Bailit et al. 2012; Thomas et al., 1999), and reduce salary costs (Bailit et al. 2012; Dierick-van Daele et al., 2010; Laurant et al., 2005). Even though task shifting has become increasingly common in medical professions, according to the World Dental Federation, the dental profession has been lagging in this respect (FDI, 2015).

Successful task shifting requires favorable conditions in order to be effective. However, suboptimal conditions do not necessarily mean that task shifiting will not be successful. It means that the environment in which it is implemented is highly complex, and the right requirements for its effectiveness must be aligned (Brocklehurst & Macey, 2015). For instance,

incentives in remuneration systems influence the organization of inputs and production of outputs of dental teams (Brocklehurst et al., 2016). Certain financial incentives can obstruct collaboration and consequently influence treatment within oral health care organizations. Therefore, financial incentives and task shifting should be aligned and professional and social acceptability enhanced. Another example is the alignment of legal protection and liabilities related to task shifting (Colvin et al., 2013). An additional example is the influence of protectionism related to professional boundaries and the organizational environment on the reallocation of tasks which could plausibly hamper the cost-effectiveness of task shifting in practice (Niezen & Mathijssen, 2014). Established professions might try to prevent other professions from expanding their scope of practice and independent practice (e.g., Adams, 2004; Nancarrow & Borthwick, 2005; Norris, 2001; Northcott et al., 2013). These practices are both part of task shifting and can be affected by collaboration between dentists and dental hygienists (e.g., Hopcraft et al., 2008; Abelsen & Olsen, 2008; Northcott et al., 2013).

Interprofessional collaboration and task shifting are interconnected (Colvin et al., 2013), however, this relationship has not been thoroughly studied (Bullock & Firmstone, 2011; Capaciteitsorgaan, 2013). Dental hygienists have been underutilized in interprofessional collaboration, and the utilization that actually occurs has not been well studied (Swanson Jaecks, 2009). This underutilization could be explained by regulations that limit direct access to dental hygienists but also by the social and psychological impact of task shifting. This impact is reflected in the sometimes contradictory attitudes regarding this practice among dentists and dental hygienists (e.g., Blue et al., 2013; Catlett, 2016; Hopcraft et al., 2008). Attitudes towards task shifting are likely to be different depending on whether a profession is a giving or receiving party. Thus far, it is not known to what degree attitudes among dentists and dental hygienists differ regarding an extended scope of dental hygiene practice or those practices that are independent.

1.2 Motives to support or oppose task shifting

It is unclear what issues are considered by dentists and dental hygienists when supporting or opposing task shifting. Their goals can be different depending on their professional position (e.g., Abelsen & Olsen, 2008; Ross & Turner, 2015; Turner, Ross & Ibbetson, 2011). Their attitudes and considerations can both obstruct or enhance it. Attitudes are encouraged by motivation (Piipari, Watt, Jaakkola, Liukkonen, & Nurmi, 2009) while motivation reflects goals that are internal representations of desired states (Austin & Vancouver, 1996). Without positive attitudes towards task shifting, it will be less likely that practitioners will change behaviors that facilitate it in clinical practice (Tuckman, 1999). The absence of motivation will produce a similar outcome: task shifting will rarely be facilitated in clinical practice. Without motivation, goal-directed behavior is nonexistent (Austin & Vancouver, 1996).

Negative economic motives of dentists to obstruct task shifting might not be justified but are understandable. When dentists believe they might lose control over economic resources, they experience an existential threat. The professional position of dentists was perceived to be threatened by the introduction of the dental hygienist, according to dentists in Connecticut (Fones, 1929; Haaland, 1999).

Quality of care can be an argument for limiting task shifting to the dental hygienist. However, no clear evidence exists that dental hygienists are a threat to patient safety and are not competent enough to autonomously treat their own patients. Moreover, several studies provide evidence that dental hygienists are competent professionals (e.g., Brocklehurst et al., 2016; DeAngelis & Goral, 2000; Dyer et al., 2014; Macey et al., 2015; Macey, Glenny & Brocklehurst, 2016). It is likely that several issues are involved when considering supporting or opposing task shifting.

1.3 Expectations, self-image and occupational stereotypes

It is not clear to what degree self-image and occupational stereotypes of dentists and dental hygienists correspond with those of students before entering an interprofessional program. Supporting or opposing task shifting by dentists and dental hygienists could also be explained by role expectations which are sometimes based on a lack of knowledge among dentists with regard to changing the dental hygienist role (e.g., McComas & Inglehart, 2016; Moffat & Coates, 2011; Gillis & Parker, 1996; Knevel et al., 2017; Muroga, Tsuruta & Morio, 2015; Pervez, Kinney, Gwozdek, Farrell, & Inglehart, 2016). Dental hygiene is an emerging profession; however, occupational stereotypes change slowly (Lassonde & O'Brien, 2013; McLean & Kalin, 1994). In other words, some dentists still regard the dental hygienist as an auxiliary, which does not reflect the current and formal status of the dental hygienist in most countries. However, such perceptions do influence behavior and the willingness of dentists to share basic dental tasks. Stereotypes reflect expectations and beliefs about the characteristics of out-group members (Denmark, 2010; Fiske, 1998). Occupational stereotypes can also be based on gender (McLean & Kalin, 1994). The dental hygiene occupation is female-dominated while dentistry is male-dominated in most countries (e.g., Kitchener & Mertz, 2012; Luciak-Donsberger, 2003; Mariño, Barrow & Morgan, 2014). Gender stereotypes play a role in the social interaction between dentists and dental hygienists and can affect interprofessional collaboration (Inglehart, 2013). This becomes visible with status differences between men and women that are also related to the established order of the occupational status hierarchy within health care (Bell, Michalec & Arenson, 2014). Since the professional socialization of dental and dental hygiene students is often separate, mutual role expectations and occupational stereotypes among these students are sustained or can even be strengthened (Vanderbilt, Isringhausen & Bonwell, 2013).

The claim or disclaim, affirmation or disaffirmation of professional position, social characteristics, and gender can influence professional identities that guide professional behavior (Holmes, 2001; Hurd, 2010). Therefore, occupational stereotypes are more likely to continue to exist when uni-professional education is not complemented with interprofessional education (Freeth, Hammick, Reeves, Koppel, & Barr, 2005) and interfere with collaboration by impacting communication between groups (Barnes, Carpenter & Dickinson, 2000; Carpenter, 1995; Carpenter & Hewstone, 1996; Hean, MacLeod, Adams, & Humphris, 2006). Expectations regarding tasks, roles, and collaboration are learned by dentists and dental hygienists during their professional socialization which already occurs at the undergraduate level (Brim, 1968). The professional identity or self-image of students can be based on occupational stereotypes even before entering their future occupation (McLean & Kalin, 1994).

1.4 Socialization, identity, task distribution and collaboration

It is not clear whether facilitating professional identity formation related to interprofessionality could enhance interprofessional task distribution and improve interprofessional collaboration. Interprofessional programs during undergraduate training can facilitate socialization between members of two or more professions (Olson & Bialocerkowski, 2014). Professional socialization is a social learning process during which skills, attitudes, and behaviors related to their professional role are learned (Blue, Phillips, Born, & Lopez, 2011). This socialization begins already at the 'anticipatory socialization phase' (Scholarios, Lockyer & Johnson, 2003). During this phase, individuals select their career based on the attitudes and expectations regarding their occupation of choice. The most influential people for making a career choice among dental hygiene students are dental hygienists, dentists, and mothers (Monson & Cooper, 2009). The career choice of dental students is mostly influenced by parents, dentists, and family members in a medical or dental profession (Anbuselvan et al., 2013). Therefore, professional socialization of dental and dental hygiene students begins before they have even entered their undergraduate training. Before and during undergraduate training, they observe dentists, dental hygienists, and members of the teaching staff (e.g., Ashar & Ahmad, 2014; Masella, 2006; Monson & Cooper, 2009). Thus, students learn their professional identity not just by the formal content of a curriculum but also by the informal and implicit influences of the teaching staff. This is known as the 'hidden curriculum' (Hafferty, 1998; Hafferty & Franks, 1994). This curriculum is defined by Lempp & Seale (2004) as "the set of influences that function at the level of organizational structure and culture including, for example, implicit rules to survive the institution such as customs, rituals, and taken for granted aspects". The potential negative influence of the hidden curriculum on interprofessional collaboration is even greater when a curriculum does not provide opportunities to counter-balance this with interprofessional contact between students (Freeth et al., 2005). The contact hypothesis or intergroup contact theory of Allport (1954) has been described as one of the best strategies to employ to improve intergroup relationships (Brown & Hewstone, 2005; Wright, 2009). The premise of his theory states that interpersonal contact is an effective way to reduce prejudice

between members of different groups (Allport, 1954). For this reason, the intergroup contact theory is one of the most popular theories applied in interprofessional education (Hean & Dickinson, 2005).

Another popular theory in interprofessional education is the social identity theory (Pecukonis, 2014). This theory, introduced by Tajfel and Turner (1979), describes how individuals categorize people or groups as in-group or out-group through a social categorization process (Turner, 1987; Turner & Reynolds, 2010; Tajfel & Turner, 1979). A defined sense of professional identity is created by a reciprocal and reinforcing relationship between experiences of professional inclusivity and social exclusivity (Weaver et al., 2011). A second theory in the social identity approach is the identity theory (Owens, Robinson & Smith-Lovin, 2010; Stets & Burke, 2000). The identity theory has been applied much less in interprofessional education compared to the social identity theory, however, it can be considered as being complementary. These two theories have different approaches to the social self but are hardly ever cross-referenced and seem to occupy separate realities (Hogg, Terry & White, 1995; Owens et al., 2010; Stets & Burke, 2000). The identity theory describes how stable and internalized social identities are formed and how these identities guide behavior (Owens et al., 2010). Thus, the identity theory is focused on the intrapersonal level in which individuals have several social identities between which they choose depending on the social situation or context. This becomes visible in the phenomenon of "identity mobility" which is the shift between social identities depending on social context and the motives of the actor (e.g., Finn, Garner & Sawdon, 2010; Ginsburg, Regehr & Lingard, 2003; Lingard, Garwood, Szauter, & Stern, 2001).

Strong professional identities may perpetuate hierarchical disciplinary boundaries (e.g., Fitzgerald & Teal, 2004; Langendyk, Hegazi, Cowin, Johnson, & Wilson, 2015). For this reason, several authors suggest that the formation of an interpofessional identity will enhance interprofessional collaboration (e.g., Hammick, Freeth, Copperman, & Goodsman, 2009; Khalili et al., 2013; Langendyk et al., 2015). According to Hammick et al. (2009), an interprofessional identity consists of three components: knowledge with regard to appropriate professional actions, professional competence, and professional conduct (including appropriate attitudes and values). However, it is unclear whether it is separate from professional identity.

The construct of 'interprofessional identity' is relatively new, and it is not known whether this concerns a separate social identity or whether it is an integrated part of professional identity. According to the identity theory, an individual changes his identity preferences and corresponding behavior depending on a change in social context (Owens et al., 2010). If professional identity and interprofessional identity are separate and co-existing social identities, than one of them will be more salient than the other. Such salience hierarchy could interfere with effective professional performance. According to the social identity theory, a professional identity reflects a (psychological) distinctiveness between professional

in-groups and professional out-groups (Tajfel & Turner, 1979). Even though professional distinctiveness can frustrate interprofessional collaboration by drifting away from it, it also justifies interprofessional collaboration because of the complementary contributions of different disciplines. When there is no professional distinctiveness between different professions, there is no added value. Team members with no added value are redundant. It is for this reason that it is important to know the added value of others' professions (role, expertise, and competencies) and simultaneously shape one's own professional uniqueness as added value to the interprofessional team or alliance (Kasperski, 2000). Interprofessional collaboration facilitates a synergistic performance based on grouped knowledge and skills. Yet, the synergistic performance can be limited or even obstructed by intergroup processes. According to the paradox of Whittington (2003), professional identity seems to conflict with the principles of interprofessional collaboration because professional uniqueness contradicts the tendency to share with or be similar to other professions.

Profession-specific tasks are inherently related to role expectations and professional self-definition or professional identity (Caza & Creary, 2016; Chreim, Williams & Hinings, 2007; Hornby & Atkins 2000; Pirrie, Hamilton & Wilson, 1999). The manner in which individuals perceive their professional identity will influence their interpretations and actions in a work-related context (Chreim et al., 2007; Goodrick & Reay, 2011; Pratt, Rockmann & Kaufmann, 2006). In turn, a professional identity is constructed by social interaction (Bechky, 2011; Binder, 2007; Hallett et al., 2009). Thus, role expectations have a personal and interpersonal dimension (Ohlen & Segestebn, 1998). The interpersonal dimension becomes prominent in interactions between members of different professions. Interactions between dentists and dental hygienists can reflect a polarization caused by task shifting (Knevel et al., 2017), and occupational stereotypes change slowly (Beggs & Dolittle, 1993). This also includes stereotypical thoughts about scope of practice and corresponding competences. Perceptual differences regarding professional tasks and role expectations can enhance many uncertainties between and within professionals (Douglas & Ryman, 2003; Workman, 1996). When the formation of a professional identity that includes beliefs and commitment regarding interprofessional collaboration can be facilitated, it could also change perceptual differences regarding professional tasks and expectations. According to the World Dental Federation, interprofessional education must enable the oral health team to acquire a different mix of skills and competencies that are needed for interprofessional collaboration (FDI, 2015).

The purpose of this dissertation is to explore the social psychological impact of task shifting between dentists and dental hygienists and to develop and investigate the effect of an intervention that can enhance interprofessional task distribution and interprofessional collaboration by facilitating interprofessional team formation.

Overview of studies

The purpose of the study of Chapter 2 is to compare attitudes of dentists and dental hygienists regarding an extended scope and independent dental hygiene practice.

The purpose of the study of Chapter 3 is to explore the reasons for the opinions of dentists and dental hygienists regarding an extended scope of dental hygiene practice and to explore profession related explanatory factors.

The purpose of the study of Chapter 4 is to determine to what degree student perceptions of dentist and dental hygienist occupational stereotypes (assertiveness, dominance, and respectfulness) are different and to what degree they identify with these occupational stereotypes. Additionally, the relationship between gender and occupational stereotypes is investigated.

The purpose of the study of Chapter 5 is to investigate whether intergroup comparison of interprofessional interaction can change the relative dominance of one profession (professional position) and reduce interprofessional hierarchy in mixed profession groups.

The purpose of the study of Chapter 6 is to investigate the perceived scope of practice of dental and dental hygiene students. Furthermore, to determine whether distinguished interprofessional task distribution can change with an educational intervention comprising the combination of group-based performance feedback, intergroup comparison, and intergroup competition between mixed profession groups.

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