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Nurses' and nursing assistants' emotional skills: A major determinant of motivation for patient education

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Abstract

Aims: To explore professionals' (i.e. nurses and nursing assistants) motivation for Patient Education according to their emotional skills.

Design: A cross-sectional study using a convenience sample of professionals completing self-reported questionnaires assessing their general emotional skills and their Patient-Education-related sense of competence, autonomy and relatedness, according to the theory of basic psychological needs.

Methods: Professionals from 27 French hospitals working in various departments completed paper and web-based questionnaires between January 2015 - May 2017. Mediation analyses were performed controlling for the already known variables associated with motivation for patient education.

Results: Usable questionnaires (N = 185) were analysed. Professionals' emotional skills were associated with their motivation for Therapeutic Patient Education both directly and indirectly (i.e. partial mediation) via a higher sense of competence in Patient Education. Among the covariates, professionals who had received a high-level training in Patient Education, those with a high recognition of their work in patient education and nurses (compared with nursing assistants) were the most motivated.

Conclusion: Professionals' emotional skills are the mainstay of their motivation for Patient Education. Training should aim to develop these skills so that professionals can manage their own emotions better (e.g. frustration when faced with non-motivated patients) and those of patients (e.g. discouragement) and thus effectively support patient self-management.

Impact: The study addressed nurses' and nursing assistants' motivation for patient education. Their emotional skills were directly and indirectly – via a higher sense of patient-education-related competence – associated with higher motivation. Training for professionals should therefore develop their emotional skills.

KEYWORDS
competence and relatedness, emotional skills, France, mediation analysis, motivation, nurses, patient education, psychological needs for autonomy, self-management support

1 | INTRODUCTION

In France, Therapeutic Patient Education (TPE) refers to programmes that help patients to acquire or maintain the skills they need to manage their life with a chronic disease in the best possible way (World Health Organization, 1998). TPE targets both self-care skills, such as preventing complications and life skills, such as managing emotions (French National Authority for Health, 2007). TPE programmes must comply with the requirements of national authorities. For example, they must be multidisciplinary, create and update an educational record for each patient and be carried out only by healthcare professionals who have received at least 40 hr of training in TPE. TPE programmes must also regularly provide national authorities with evidence of their effectiveness. Standalone educational activities, which are not structured within a full programme, are also possible but are not funded by health authorities. As explained in a recent review on the concept of self-management (Anekwe & Rahkovsky, 2018), TPE is very similar in nature to the self-management education programmes or patient education programmes found in other countries. All those programmes have in common patient-centric strategies to help patients deal with the challenges of chronic diseases: dealing with symptoms and disability, monitoring physical indicators, managing complex medication regimens, maintaining proper levels of nutrition, diet and exercise, adjusting to the psychological and social demands and engaging in effective interactions with healthcare providers. Examples of patient education programmes can be found on the website of the Self-Management Resource Center, a leading resource centre for patient education (Self-Management Resource Center, 2019).

Whatever its structure or designation by different countries, the beneficial effect of patient education has increasingly been demonstrated in meta-analyses carried out in many diseases. For example, patient education improved emotional well-being in breast cancer patients (Matsuda, Yamaoka, Tango, Matsuda, & Nishimoto, 2014), reduced emergency department visits and hospital admission in chronic obstructive pulmonary disease patients (Tan et al., 2012), decreased glycated haemoglobin and fasting blood glucose levels in type 2 diabetes patients (Steinsbekk, Rygg, Lisulo, Rise, & Fretheim, 2012) and reduced headache frequency and disability in adults with migraines (Kindelan-Calvo et al., 2014).A recent review also showed that TPE lowers health-related costs (Stenberg et al., 2018).

TPE is, therefore, importe for the health and quality of life of the increasing number of people living with chronic diseases (Anekwe & Rahkovsky, 2018). The involvement of nurses in TPE is highly expected (Alleyne, Hancock, & Hughes, 2011). TPE is an integral part of nursing duties as stipulated in the French Public Health Code. In practice, nurses manage virtually all aspects of TPE. To name a few examples, they assess patients' educational needs, facilitate most patient groups and individual interviews and are very often responsible for coordinating the health professionals involved in TPE programmes. However, in France, nurses' motivation and TPE implementation and sustainability in hospitals cannot be taken for granted (Fournier et al., 2014; Lelorain, Bachelet, Bertin, & Bourgoin, 2017). Moreover, the problem is not specific to France: in several countries and continents, TPE is not considered by nurses to be part of routine care but rather dependent on other work demands (Friberg, Granum, & Bergh, 2012) and only half of nurses give TPE a high priority in their daily work (Bergh, Persson, Karlsson, & Friberg, 2014). This is probably because TPE is a challenging task for nurses. Indeed, it requires both strong medical expertise and emotional skills to understand patients' concerns, alleviate their distress and facilitate patient groups towards empowerment. Usually, nurses are neither accustomed to nor comfortable with the latter emotional aspect (Adolfsson, Smide, Gregeby, Fernström, & Wikblad, 2004). Medical expertise can also be a challenge in TPE where patients sometimes ask detailed and advanced questions about illness and treatments. Nurses' motivation for TPE cannot therefore be taken for granted. Although less involved in TPE, nursing assistants are also sometimes asked to participate in TPE and encounter the same difficulties as those described for nurses.

1.1 | Background

To explore nurses' and nursing assistants' motivation for TPE, the psychological needs theory was chosen as the theoretical framework. This theory postulates that people find motivation and well-being in activities that meet the three universal and innate psychological needs for autonomy, competence and relatedness (Deci & Ryan, 2008; Ryan & Deci, 2000). According to this theory, self-motivation and mental health are enhanced when people feel they can make their own choices and decide freely how to do things (i.e. autonomy), when they feel competent in what they do (i.e. competence) and when they feel belongingness and connectedness with others (i.e. relatedness).

We expanded on this theoretical framework by adding another variable that we hypothesized could explain nurses' feelings of autonomy, competence and relatedness: their emotional skills. Better known by lay people as emotional intelligence, emotional skills refer to the ability to handle emotional information; more specifically, to identify, understand, express and regulate one's own emotions and those of others (Brasseur, Grégoire, Bourdu, & Mikolajczak, 2013). Emotional intelligence and emotional skills refer to the same construct (Mikolajczak, Quoidbach, Kotsou, & Nelis, 2014) but we prefer the use of the term *skills* rather than *intelligence*, the latter suggesting a rather static construct whereas research has demonstrated the reverse (Ilios Kotsou, 2011; Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009).

Emotional skills have been shown to be positively associated with nurses' motivation (Donoso, Demerouti, Garrosa Hernández, Moreno-Jiménez, & Carmona Cobo, 2015; Garrosa, Moreno-Jiménez, Rodríguez-Muñoz, & Rodríguez-Carvajal, 2011), professional development activities (Fujino, Tanaka, Yonemitsu, & Kawamoto, 2015) and even practice performance (Lee, Gu, & Kim, 2015; Rankin, 2013). For example, high emotional skills ensure perseverance even in the

case of a first failure (Agnoli, Pittarello, Hysenbelli, & Rubaltelli, 2015) and facilitate conflict resolution (Ceyda Başoğul & Gönül Özgür, 2016). All these data suggest that emotional skills could be associated with motivation for TPE both directly and indirectly, via a higher sense of autonomy, competence and relatedness in TPE.

2 | THE STUDY

2.1 | Aims

Since TPE is a challenging activity, which sometimes leads to a lack of motivation for carrying it out, the aim of the study was to explore nurses' and nursing assistants' motivation for TPE. The hypothesized model posited that nurses' and nursing assistants' emotional skills would explain their motivation for TPE, directly and indirectly through a higher sense of autonomy, competence and relatedness in TPE. To phrase it another way, we hypothesized that feelings of autonomy, competence and relatedness in TPE would mediate the relationship between nurses' and nursing assistants' emotional skills and their motivation for TPE.

2.2 | Design

This study was a cross-sectional survey using a convenience sample of hospital nurses and nursing assistants, recruited in various French hospitals, who completed questionnaires.

2.3 | Participants

Inclusion criteria to participate in the study were to be a nurse or a nursing assistant and to carry out TPE in a French hospital, whatever the chronic condition involved or their role in TPE; 185 questionnaires were analysed.

2.4 | Data collection

Participants were recruited from January 2015 - May 2017 in two ways:

- First, in the Lille Regional Teaching Hospital, the coordinators of all TPE programmes were informed of the study by the person responsible for all TPE activities in this hospital (MB). They were given the questionnaires to fill in and asked to distribute them to other nurses and nursing assistants involved in their TPE programme. Volunteers filled in the questionnaires and returned them to the research team in the prepaid envelope provided.
- Second, in other French hospitals, the person responsible for TPE was contacted by the research assistants. Their contact details were found via the networks of the authors (MB, NB) or on the Internet. On acceptance, the same procedure was applied: questionnaires were sent to them and returned to the research team in the prepaid envelopes provided or participants could fill in the questionnaire on the Internet via Google Forms. Of the 337 paper questionnaires distributed to the hospitals, 142 were exploitable giving a response rate of 42%. Forty-three additional questionnaires were completed on the Internet. In total, we collected 142 paper questionnaires and 43 web-based giving a total of 185 questionnaires.

2.5 | Ethical considerations

All participants gave their written informed consent to take part in the research and anonymity was guaranteed. Along with the consent form, an information sheet was provided explaining the aim of the study and highlighting that participation was voluntary. On acceptance, participants were asked to fill in the questionnaire alone. The study was reviewed and approved by the review board of the TPE Transversal Unit of the Regional Teaching Hospital of Lille (approval number 2016-UTEP quanti-V1).

2.6 | Validity, reliability and rigour

When possible, variables were assessed using validated questionnaires; when such questionnaires did not exist for our purposes, we based our assessment on validated questionnaires that were conceptually as close as possible to the concepts we wanted to target. Principal component and/or confirmatory factorial analyses were then carried out to check their psychometric properties.

2.7 | Covariates

Participants were asked to provide the following information about their situation: their age, gender, whether they were a nurse or a nursing assistant, their hospital and department, their level of training in TPE (no training, one day, 40 hr, 300 hr or other), how many years they had been carrying out TPE, how many hours they spent carrying out TPE per month and whether TPE was fully part of the care in their department (i.e. it was offered most patients) or whether it was only an ancillary activity to the care in the department (i.e. it only concerned a minority of patients). As recognition of work is known to be associated with motivation for work (e.g. AbuAlRub & Al-Zaru, 2008; Seitovirta, Vehviläinen-Julkunen, Mitronen, De, & Kvist, 2017), recognition of TPE-related work was also assessed. A validated scale assessing general recognition at work (Fall, 2015) was adapted to recognition of TPE work. Based on the psychometric validation of the original scale (Fall, 2015), we selected six items from the 12 original ones according to the strength of the loading of each original item on its factor along with its relevance to the TPE field. The original scale comprises three factors. Two items were selected from each original factor to respect the factorial structure of the scale. For the selected items, the adaptation consisted to replace the terms "department" or "team" or "work" by "TPE" at the end of the original items. We ended up with a six-item 5-point Likert scale with two items focusing on colleagues (e.g. "My colleagues acknowledge my

contribution to the proper functioning of TPE, two items on hierarchy (e.g. "My bosses encourage me in TPE") and two items on the available resources (e.g. "I have the necessary resources to work effectively in TPE: human resources, equipment, etc."). Cronbach's alpha was 0.75 for this scale. Confirmatory factor analyses revealed good fit indices for this unidimensional scale: χ^2/ ddl = 1.26 (must be < 5), RMSEA = 0.37, CI [0.000–0.099] (must be <0.080), CFI = 0.99 and GFI = 0.98 (the latter two must be >0.90). Except hospitals and departments, all the variables listed above were controlled for in the mediation analyses.

2.8 | The explanatory variable: participants' emotional skills

Participants' emotional skills, i.e. their ability to identify, express, understand and regulate their own emotions and those of others, were assessed using the validated Short-Profile of Emotional Competence (S-PEC) scale (Brasseur et al., 2013), a 20-item 5-point Likert scale providing a general score of emotional skills. Item examples are: "When I feel good, I can easily tell whether it is due to being proud of myself, happy or relaxed"; "I don't always understand why I respond in the way I do" (reversed); "It is easy for me to explain my feelings to others"; or "I find it difficult to handle my emotions" (reversed). Higher scores represent higher emotional skills. Cronbach's alpha was 0.74.

2.9 | The hypothesized mediators: the three psychological needs

Since there is currently no validated questionnaire for the assessment of nurses' feelings of autonomy, competence and relatedness in TPE, we adapted a validated questionnaire evaluating these three dimensions in a sports context (Gillet, Rosnet, & Vallerand, 2008) to the context of TPE. Items are presented in Table 1. Based on the psychometric validation of the original scale (Gillet et al., 2008), six items were selected from the 15 original ones according to the strength of the loading of each original item on its factor, along with its relevance to the TPE field. The original scale comprised three factors and we ensured that items of each factor were selected. For the six selected items, the adaptation consisted to replace the terms "sport" or "sports training" by "TPE" at the end of the original items. In addition to these six items, five other items have been designed by us to cover the specific needs of professionals in TPE based on previous knowledge of those needs (Lelorain et al., 2017).These five additional items bear on the necessary medical knowledge and pedagogic skills to carry out TPE (Table 1, item 2 and 3), on how nurses and nursing assistant felt comfortable with patients and colleagues in TPE (item 4), on the autonomy allowed by the hierarchy (item 9) and the opportunity to have nice contacts with colleagues in the TPE setting (item 11). Participants had to score on a 5-point Likert scale for each item. Higher scores indicated higher satisfaction with the need (e.g. higher satisfaction

TABLE 1 Principal component analysis of the scale tapping the three psychological needs

Components and loading items	Competence	Autonomy	Affiliation
Competence needs satisfaction (38.85% of variance)			
1. I feel competent in Therapeutic Patient Education (TPE)	**0.879**	−0.016	0
2. I have the necessary medical knowledge for TPE	**0.807**	−0.214	0.047
3. I have the necessary pedagogic skills for TPE (e.g. group facilitation, motivating patients)	**0.658**	0.229	−0.064
4. I feel comfortable with patients and colleagues in TPE	**0.568**	0.196	0.083
5. I feel I am doing well when I carry out TPE	**0.559**	0.112	−0.018
Autonomy needs satisfaction (12.49%)			
6. I generally feel free to express my ideas and opinions about TPE in my department	−0.22	**0.913**	−0.128
7. I can give my opinion about TPE in my department	0.067	**0.781**	0.036
8. I have the opportunity to be involved in decisions concerning TPE (whether it is about the content of the programme, sessions, organisation, etc.)	0.205	**0.626**	0.084
9. My hierarchy gives me enough autonomy in TPE work	−0.033	**0.557**	0.227
Affiliation needs satisfaction (9.71%)			
10. I really appreciate the colleagues with whom I interact in TPE (other healthcare professionals, physicians, coordinators of programmes, etc.)	−0.004	−0.022	**0.873**
11. In TPE, I have the opportunity to have nice contacts and interactions with other colleagues (whether they have the same profession as me or not)	0.024	0.049	**0.822**
% of variance explained by each dimension	38.5	12.1	10.3
Cronbach's alpha for each dimension	0.77	0.77	0.66

Bartlett's Test of Sphericity $p < .001$; KMO = 0.814; Total variance explained by the three components: 60.9%. In bold: loading ≥ .5 on the factor.
[Corrections added on 19 July 2019, after first online publication: The entire content of Table 1 has been updated in this version.]

with the need for competence). Principal component analysis was performed using components retained for an eigenvalue >1 with a check of scree plot and direct oblimin rotation. It showed a clear solution of three components corresponding to the three psychological needs (Table 1). Confirmatory factor analyses revealed satisfactory fit indices: χ^2/ ddl = 1.88 (must be <5), RMSEA = 0.69, CI [0.047–0.090] (must be <0.080), CFI = 0.94 and GFI = 0.93(the latter two must be >0.90).

2.10 | The variable to explain: participants' motivation for TPE

This was assessed using the following question: "Overall, how motivated are you about TPE?", for which participants rated their motivation on a large arrow ranging from 0, "totally unmotivated" -100, "totally motivated".

2.11 | Data analysis

Continuous variables were expressed as their mean ± *SD*. Categorical variables were presented as absolute numbers and percentages. With the exception of age (10% of missing data), missing data did not exceed 5% per variable. After checking that missing data were completely at random (Little's MCAR test with $p > 0.05$), they were replaced by series means or set at their mode for categorical ones.

Mediation analyses were performed using the PROCESS macro v3.0 for SPSS (Hayes, 2017) controlling for all covariates listed above in the "Covariates" section. After checking for multicollinearity between covariates, the covariate "hours of TPE-practice per month" was discarded because of its strong association with the type of received training in TPE $t(28) = -3.6$, $p < 0.001$. Training in TPE was recoded as "300-hr university degree" versus all other options as ANOVA with Tukey post hoc contrasts showed no differences in motivation between the different types of training with the exception of the 300-hr university degree.

To test the mediation effect, the total effect of emotional skills on motivation (Figure 1, path c) was first examined. Then, the direct effect (path c') was obtained taking into account the mediators in the regression model. If the direct effect is less than the total effect, the mediation is partial, which means that the effect of emotional skills on motivation runs both directly and indirectly via the mediators. If the direct effect is not significant ($p > 0.05$), the mediation is total, which means that the effect of emotional skills on motivation only runs through the mediators. Finally, indirect effects were examined as the products of coefficients (i.e. a1*b1, a2*b2, a3*b3) (Krause et al., 2010). The PROCESS macro v3 provides estimates of indirect effects and confidence intervals (CI) using a bootstrapping method set at 1,000 repetitions in our analyses. If the CI does not contain the value of 0, there is an indirect effect. The total indirect effect, i.e. the sum of the three indirect effects, and pairwise contrasts of indirect effects were

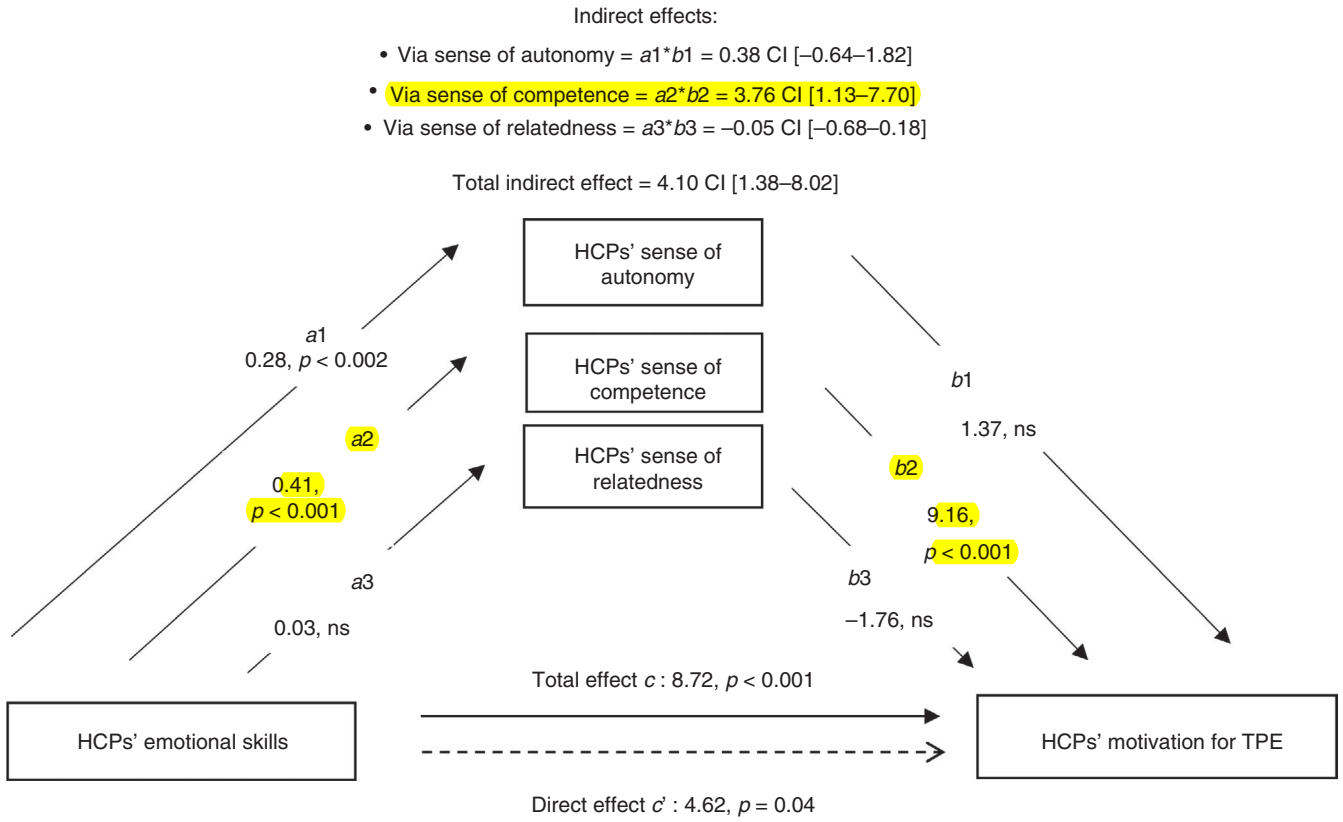

FIGURE 1 Theoretical model explaining healthcare professionals' motivation for TPE. Note. HCP, health care professionals; TPE, therapeutic patient education; ns, not significant; understand path coefficients are shown

TABLE 2 Sample characteristics

Characteristics	*N* (%)	mean (*SD*), [range]
Region of hospitals %		
North of France	154 (83)	
Other French regions	31 (17)	
City of hospital		
Lille	103 (55.7)	
Roubaix	11 (5.9)	
Arras	7 (3.8)	
Maubeuge	7 (3.8)	
Colmar	5 (2.7)	
Bar-Le-Duc	5 (2.7)	
Saint-Omer	4 (2.2)	
Calais	4 (2.2)	
Amiens	4 (2.2)	
18 other cities with fewer than three inclusions each	35 (18.8)	
Departments %		
Diabetes, endocrinology	43 (23)	
Cardiology	24 (13)	
Nephrology, haemodialysis	20 (11)	
Neurology	15 (8)	
Paediatrics (various)	11 (6)	
Obesity	11 (6)	
Rheumatology	7 (4)	
Internal medicine	4 (2)	
Gastroenterology	4 (2)	
12 departments with fewer than three inclusions each	22 (12)	
Missing data	24 (13)	
Professions %		
Nurse	168 (90.8)	
Nursing assistant	17 (9.2)	
HCP training in TPE %		
None	23 (12.4)	
TPE awareness day (1 day of training)	20 (10.8)	
TPE practitioner training (40 hr)	99 (53.5)	
TPE university degree (300 hr)	26 (14.1)	
Other	17 (9.0)	
Gender %		
Female	179 (96.8)	
Age		41.6 (8.8) [25–61]
Years of TPE practice		5.6 (4.6) [0.5–25]
Hours of TPE practice per month		44.9 (44.6) [1–151]
TPE fully integrated in patient care within the department[a] %		
Yes	143 (77.3)	
No	42 (22.7)	
Emotional skills		3.7 (0.5) [2.6–4.83]
Recognition of TPE-related work		3.5 (0.8) [1.0–4.8]
Sense of autonomy		4.1 (0.8) [1.5–5.0]
Sense of competence		3.8 (0.6) [2.6–5.0]
Sense of relatedness		4.4 (0.7) [2.0–5.0]
Motivation for TPE		81.5 (16.0) [20–100]

Abbreviation: TPE, Therapeutic Patient Education.
[a]TPE fully integrated in patient care means that TPE is probable for most patients; when this is not the case, TPE is rather a side activity for the department and its patients.

TABLE 3 Total effect of nurses' emotional skills on their motivation for TPE

	Coefficients	Standard error	*p*
Intercept	3.98	16.09	0.81
Age	0.09	0.14	0.53
Gender (women)	4.67	5.99	0.44
Years of TPE practice	−0.11	0.24	0.65
TPE fully integrated in care	−1.63	2.5	0.51
Profession (nurse)	7.73	3.65	0.04
300-hr university degree training in TPE	6.75	3.14	0.03
Recognition of TPE-related work	5.67	1.46	0.001
Emotional skills	8.72	2.15	0.001

Note: The total effect of emotional skills on motivation is computed through the linear regression of emotional skills on motivation controlling for the other covariates presented in the table (method: least squares with simultaneous entry of variables).
R^2 = 26%, F (8.0, 156.0) = 7.65, p < 0.001.

asked to compare the three indirect effects. A two-tailed type I error rate <0.05 was considered for statistical significance.

Before data collection, the sample size was estimated. Given that a total of 13 variables (covariates + emotional skills and psychological needs) were expected in our regression analyses and that approximately 10 patients are recommended per variable (Austin &

TABLE 4 Direct effect of nurses' emotional skills on their motivation for TPE

	Coefficients	Standard error	*p*
Intercept	11.32	15.68	0.47
Age	0.06	0.13	0.62
Gender (women)	3.39	5.74	0.55
Years of TPE practice	−0.19	0.23	0.40
TPE fully integrated in care	−2.21	2.43	0.36
Profession (nurse)	1.85	3.64	0.61
300-hr university degree training in TPE	4.89	3.01	0.11
Recognition of TPE-related work	2.89	1.80	0.11
Sense of autonomy	1.37	1.81	0.45
Sense of competence	9.16	2.11	0.0001
Sense of relatedness	−1.76	1.70	0.30
Emotional skills	4.62	2.21	0.04

Note: The direct effect of emotional skills on motivation is computed through the linear regression of emotional skills on motivation controlling for the other covariates presented in the table (method: least squares with simultaneous entry of variables).
R^2 = 35%, $F(11.0, 173.0) = 8.31$, $p < 0.001$.

TABLE 5 Indirect effects of nurses' emotional skills on their motivation for TPE and contrasts

	Effect	Boot standard error	Boot lower limit of CI	Boot upper limit of CI
Via sense of autonomy	0.38	0.61	−0.64	1.82
Via sense of competence	3.76	1.68	1.13	7.70
Via sense of relatedness	−0.06	0.20	−0.68	0.18
Total indirect effect	4.10	1.68	1.38	8.02
Contrasts				
Competence - Relatedness	3.82	1.69	1.14	7.83
Competence - Autonomy	3.38	1.89	0.22	7.70
Relatedness - Autonomy	−0.44	0.64	−2.00	0.64

Steyerberg, 2015), 130 patients were needed for the mediation analyses. As regards the principal component analysis, the same rule can apply but more is always better (Osborne & Costello, 2004) so that our goal was set at roughly 200 patients.

3 | RESULTS/FINDINGS

3.1 | Sample characteristics

Sample characteristics are given in Table 2. Participants were mostly female nurses (90.8% of nurses) who were quite involved in TPE (44.9 hr of practice monthly, high motivation for TPE), aged 41.6 years on average. The departments were representative of the usual TPE activity, which is often well developed in diabetology, cardiology and nephrology. Twenty-seven hospitals participated in the study, with more than 50% of inclusion in the Teaching Hospital of Lille.

3.2 | Mediation testing

The total effect of emotional skills on motivation is presented in Table 3 and Figure 1 (path c). Emotional skills were associated with motivation for TPE ($B = 8.72$, $p < 0.001$). Among covariates, being a nurse compared with being a nursing assistant, graduated from a 300-hr university degree in TPE and recognition of TPE-related work were associated with higher TPE motivation. With the introduction of the three mediators in the regression model, the effect of emotional skills (i.e. the direct effect, path c', Figure 1) decreased to 4.62, but was still significant, $p = 0.04$ (Table 4), suggesting a partial mediation. In this model (Table 4) none of the covariates was still significant. The total indirect effect (i.e. the sum of the three indirect effects) was 4.10 (standard error = 1.68), CI: [1.38–8.02]. As the CI did not contain zero, the total indirect effect was statistically significant. The details of the three indirect effects (paths a and b) are presented in Figure 1. Among these, only the one passing through a higher sense of competence was significant, 3.76 (*SE* = 1.68) CI [1.13–7.70]: higher emotional skills increased the sense of competence, which in turn increased motivation. Emotional skills also significantly increased the sense of autonomy, which still did not significantly increase motivation. Emotional skills did not significantly increase the sense of relatedness and the latter was not associated with motivation. Finally, the comparison of indirect effects (i.e. contrasts, Table 5) showed that the indirect effect via a higher sense of competence was significantly different from the two others, which were equivalent. It should be clear that the mediation pattern described above holds for both nurses and nursing assistants.

4 | DISCUSSION

This study examined whether nurses' and nursing assistants' motivation for TPE could be explained directly by their emotional skills and indirectly via the three psychological needs for autonomy, competence and relatedness (Deci & Ryan, 2008; Ryan & Deci, 2000). The results revealed a significant direct effect of nurses' and nursing assistants'

emotional skills on motivation and a significant indirect effect of emotional skills through a higher sense of competence, which in turn increased motivation. A recent Belgian study also found an effect of the sense of competence in TPE on nurses' behaviours in TPE, i.e. the fact that they carried out the expected actions for TPE education (Duprez, Beeckman, Verhaeghe, & Van Hecke, 2018). Accordingly, a sense of competence in TPE definitely seems to be associated with higher motivation and appropriate behaviours. However, our research expands on existing data by showing that the feeling of competence in TPE depends on nurses' and nursing assistants' general emotional skills. Emotional skills have already been linked to nurses' general professional competence (Heydari, Kareshki, & Armat, 2016) and our data show that this also applies to the specific context of TPE and also to nursing assistants. Thus, the fulcrum of motivation and sense of competence in TPE resides in nurses' and nursing assistants' general ability to handle their emotions and those of patients. This result supports previous findings showing that nurses' behaviours in TPE were more oriented towards assessing and advising, that is towards medical tasks, which they master, than towards collaborative goal-setting and emotional management (Duprez et al., 2018; Elissen et al., 2013; ter Maten-Speksnijder, Dwarswaard, Meurs, & van Staa, 2016; Westland et al., 2018) where they feel less competent (Nichols, Vallis, Boutette, Gall Casey, & Yu, 2018). Nevertheless, healthcare professionals recognize the great importance of addressing psychosocial issues for optimal TPE (Nichols et al., 2018), but still lack adequate and effective training for this (Duprez, Vandecasteele, Verhaeghe, Beeckman, & Van Hecke, 2017). Consequently, when patients lack motivation for self-management or do not have a realistic illness perception, nurses are not willing to provide them with TPE (Bos-Touwen, Trappenburg, Van Der Wulp, Schuurmans, & De Wit, 2017) because they do not know how to deal with these patient issues. Yet, addressing patient motivation and illness perception are clearly TPE tasks (World Health Organization, 1998), but which require emotional skills. Indeed, the clinical communication competences, which are needed to address these topics with patients, are linked to nurses' emotional skills (Zhu, Chen, Shi, Liang, & Liu, 2016).

Fortunately, emotional skills can be improved by specific training (Kahraman & Hicdurmaz, 2016; Taylor, Roberts, Smyth, & Tulloch, 2015) and by TPE-related training for professionals (Pétré, Gagnayre, De Andrade, Ziegler, & Guillaume, 2017). This explains why training was associated with higher nurses' and nursing assistants' motivation in our sample and with more appropriate behaviours in TPE in another report (Duprez et al., 2018).

Emotional skills were also related to more perceived autonomy regarding the design and organization of TPE but, contrary to our hypothesis, autonomy did not increase motivation. If the latter result was further confirmed, it would suggest that nurses and nursing assistants may find more motivation in the TPE activities per se (such as facilitating patient groups or individual interviews) than in designing, organizing and decision-making related to TPE. Accordingly, it would be more appropriate to ask them first the extent to which they would appreciate being involved in TPE-related decisions rather than assuming that it would promote motivation. On the other hand, it is probable that the sense of autonomy in carrying out TPE or not, which was not tapped by our measure, would be linked to TPE-related motivation. This hypothesis warrants further research. Lastly, in our study, emotional skills did not improve a sense of relatedness in TPE. This surprising result might be explained by the French setting of TPE, where collaborative work between TPE-professionals (nurses, physicians, psychologists, dieticians, etc.) is not always easy with conflictual situations sometimes arising (Lelorain et al., 2017). In this particular context, even high emotional skills may not be enough to obtain a sense of authentic relatedness.

Finally, among the included covariates, TPE-related recognition was associated with motivation corroborating previous data (Battistelli, Galletta, Vandenberghe, & Odoardi, 2016; Duprez et al., 2018). This highlights the importance of environmental factors, such as support from the hierarchy, in nurses' and nursing assistants' motivation. Still among the covariates, being a nurse was associated with higher TPE motivation compared with being a nursing assistant. Accordingly, a special attention should be paid to nursing assistants' needs in TPE so that they can feel comfortable carrying out TPE. Special training along with narrowed specific tasks in TPE could be thought for them to achieve a sense of competence and feel useful in TPE.

4.1 | Limitations

Some limitations of this study are important to factor in. First, motivation scores were high in our sample and further research is warranted on the nurses and nursing assistants with low motivation. Second, in spite of good psychometric properties, some of the questionnaires used were not validated. A formal validation of those questionnaires is thus required. Third, due to the cross-sectional design, causal relationships are excluded and diverse hypotheses are plausible. For example, it may be that TPE motivation leads to a developed sense of competence or even to better emotional skills. Indeed, as emotional skills are necessary for TPE effectiveness, motivated nurses and nursing assistants may try and develop their skills for TPE to work well. Finally, the generalizability of the results to other countries should be considered with caution. For example, TPE is very organized and constrained by the French authorities whereas in a more permissive and flexible organization, we might have found an effect of emotional skills on autonomy or the sense of relatedness.

5 | CONCLUSION

Emotional skills are already known to be important in nurses' motivation and clinical practice. This work expands on previous research by showing their importance in TPE motivation of nurses and in nursing assistants via an increased sense of competence. Therefore, TPE-training must reinforce the development of nurses' and nursing assistants' emotional skills, that is their abilities to manage their frustration when patients are not successful in self-management, to motivate them to self-manage and to negotiate shared goals with them according to their pace and possibilities. Emotional skills also enable continuing learning (Fujino et al., 2015), which is so important in TPE where medical

procedures and equipment are always evolving (e.g. new devices for diabetes self-care) and where the awareness of new theories and best practices are always necessary for an optimal patient-centred approach.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

AUTHOR CONTRIBUTIONS

SL, AB, VG, EW, MS, NB, MB made substantial contributions to the conception and design, or acquisition of data, or analysis and interpretation of data; SL, AB, VG, EW were involved in drafting the manuscript or revising it critically for important intellectual content; SL, AB, VG, EW, MS, NB, MB gave final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content; SL, AB, VG, EW, MS, NB, MB agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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REFERENCES

AbuAlRub, R. F., & Al-Zaru, I. M. (2008). Job stress, recognition, job performance and intention to stay at work among Jordanian hospital nurses. *Journal of Nursing Management*, *16*(3), 227–236. https://doi.org/10.1111/j.1365-2834.2007.00810.x

Adolfsson, E. T., Smide, B., Gregeby, E., Fernström, L., & Wikblad, K. (2004). Implementing empowerment group education in diabetes. *Patient Education and Counseling*, *53*(3), 319–324. https://doi.org/10.1016/j.pec.2003.07.009

Agnoli, S., Pittarello, A., Hysenbelli, D., & Rubaltelli, E. (2015). "Give, but give until it hurts": The modulatory role of trait emotional intelligence on the motivation to help. *PLoS ONE*, *10*(6), e0130704. https://doi.org/10.1371/journal.pone.0130704

Alleyne, G., Hancock, C., & Hughes, P. (2011). Chronic and non-communicable diseases: A critical challenge for nurses globally. *International Nursing Review*, *58*(3), 328–331. https://doi.org/10.1111/j.1466-7657.2011.00912.x

Anekwe, T. D., & Rahkovsky, I. (2018). Self-management: A comprehensive approach to management of chronic conditions. *American Journal of Public Health*, *108*(S6), S430–S436. https://doi.org/10.2105/AJPH.2014.302041r

Austin, P. C., & Steyerberg, E. W. (2015). The number of subjects per variable required in linear regression analyses. *Journal of Clinical Epidemiology*, *68*(6), 627–636. https://doi.org/10.1016/j.jclinepi.2014.12.014

Battistelli, A., Galletta, M., Vandenberghe, C., & Odoardi, C. (2016). Perceived organisational support, organisational commitment and self-competence among nurses: A study in two Italian hospitals. *Journal of Nursing Management*, *24*(1), E44–E53. https://doi.org/10.1111/jonm.12287

Bergh, A.-L., Persson, E., Karlsson, J., & Friberg, F. (2014). Registered nurses' perceptions of conditions for patient education–focusing on aspects of competence. *Scandinavian Journal of Caring Sciences*, *28*(3), 523–536. https://doi.org/10.1111/scs.12077

Bos-Touwen, I. D., Trappenburg, J. C. A., Van Der Wulp, I., Schuurmans, M. J., & De Wit, N. J. (2017). Patient factors that influence clinicians' decision making in self-management support: A clinical vignette study. *PLoS ONE*, *12*(2), e0171251, https://doi.org/10.1371/journal.pone.0171251

Brasseur, S., Grégoire, J., Bourdu, R., & Mikolajczak, M. (2013). The Profile of Emotional Competence (PEC): Development and validation of a self-reported measure that fits dimensions of emotional competence theory. *PLoS ONE*, *8*(5), e62635. https://doi.org/10.1371/journal.pone.0062635

Ceyda Başoğul, M., & Gönül Özgür, P. (2016). Role of emotional intelligence in conflict management strategies of nurses. *Asian Nursing Research*, *10*(3), 228–233. https://doi.org/10.1016/j.anr.2016.07.002

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology/Psychologie Canadienne*, *49*(1), 14–23. https://doi.org/10.1037/0708-5591.49.1.14

Donoso, L. M. B., Demerouti, E., Garrosa Hernández, E., Moreno-Jiménez, B., & Carmona Cobo, I. (2015). Positive benefits of caring on nurses' motivation and well-being: A diary study about the role of emotional regulation abilities at work. *International Journal of Nursing Studies*, *52*(4), 804–816. https://doi.org/10.1016/j.ijnurstu.2015.01.002

Duprez, V., Beeckman, D., Verhaeghe, S., & Van Hecke, A. (2018). Are person-related and socio-structural factors associated with nurses' self-management support behavior? A correlational study. *Patient Education and Counseling*, *101*(2), 276–284. https://doi.org/10.1016/j.pec.2017.08.011

Duprez, V., Vandecasteele, T., Verhaeghe, S., Beeckman, D., & Van Hecke, A. (2017). The effectiveness of interventions to enhance self-management support competencies in the nursing profession: A systematic review. *Journal of Advanced Nursing*, *73*(8), 1807–1824. https://doi.org/10.1111/jan.13249

Elissen, A., Nolte, E., Knai, C., Brunn, M., Chevreul, K., Conklin, A., … Vrijhoef, H. (2013). Is Europe putting theory into practice? A qualitative study of the level of self-management support in chronic care management approaches. *BMC Health Services Research*, *13*, 117. https://doi.org/10.1186/1472-6963-13-117

Fall, A. (2015). Reconnaissance au travail: Validation d'une échelle de mesure dans le contexte des entreprises [Recognition at work: Validation of a measuring scale in the context of companies]. *Revue Européenne De Psychologie Appliquée/European Review of Applied Psychology*, *65*(4), 189–203. https://doi.org/10.1016/j.erap.2015.07.001

Fournier, C., Gautier, A., Mosnier-Pudar, H., Druet, C., Fagot-Campagna, A., & Aujoulat, I. (2014). ENTRED 2007: Results of a French national survey on self-management education to people with diabetes…still a long way to go! *Education Thérapeutique Du Patient / Therapeutic Patient Education*, *6*(1), 10102. https://doi.org/10.1051/tpe/2014006

French National Authority for Health. (2007). Therapeutic patient education. Definition, goals and organization. Retrieved from http://www.has-sante.fr/portail/upload/docs/application/pdf/2008-12/therapeutic_patient_education_tpe_-_definition_goals_and_organisation_-_quick_reference_guide.pdf

Friberg, F., Granum, V., & Bergh, A.-L. (2012). Nurses' patient-education work: Conditional factors–an integrative review. *Journal of Nursing Management*, *20*(2), 170–186. https://doi.org/10.1111/j.1365-2834.2011.01367.x

Fujino, Y., Tanaka, M., Yonemitsu, Y., & Kawamoto, R. (2015). The relationship between characteristics of nursing performance and years

of experience in nurses with high emotional intelligence. *International Journal of Nursing Practice*, *21*(6), 876–881. https://doi.org/10.1111/ijn.12311

Garrosa, E., Moreno-Jiménez, B., Rodríguez-Muñoz, A., & Rodríguez-Carvajal, R. (2011). Role stress and personal resources in nursing: A cross-sectional study of burnout and engagement. *International Journal of Nursing Studies*, *48*(4), 479–489. https://doi.org/10.1016/j.ijnurstu.2010.08.004

Gillet, N., Rosnet, E., & Vallerand, R. J. (2008). Développement d'une échelle de satisfaction des besoins fondamentaux en contexte sportif [Development of a scale assessing the satisfaction with fundamental needs in a sports context]. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*, *40*(4), 230–237. https://doi.org/10.1037/a0013201

Hayes, A. F. (2017). *Introduction to mediation, moderation and conditional process analysis, Second Edition: A regression-based approach* (2nd ed.). The Guilford Press.

Heydari, A., Kareshki, H., & Armat, M. R. (2016). Is nurses' professional competence related to their personality and emotional intelligence? A cross-sectional study. *Journal of Caring Sciences*, *5*(2), 121–132. https://doi.org/10.15171/jcs.2016.013

Ilios Kotsou, D. N. (2011). Emotional plasticity: Conditions and effects of improving emotional competence in adulthood. *The Journal of Applied Psychology*, *96*(4), 827–839. https://doi.org/10.1037/a0023047

Kahraman, N., & Hicdurmaz, D. (2016). Identifying emotional intelligence skills of Turkish clinical nurses according to sociodemographic and professional variables. *Journal of Clinical Nursing*, *25*(7–8), 1006–1015. https://doi.org/10.1111/jocn.13122

Kindelan-Calvo, P., Gil-Martínez, A., Paris-Alemany, A., Pardo-Montero, J., Muñoz-García, D., Angulo-Díaz-Parreño, S., & La Touche, R. (2014). Effectiveness of therapeutic patient education for adults with migraine. A systematic review and meta-analysis of randomized controlled trials. *Pain Medicine*, *15*(9), 1619–1636. https://doi.org/10.1111/pme.12505

Krause, M. R., Serlin, R. C., Ward, S. E., Rony, R. Y. Z., Ezenwa, M. O., & Naab, F. (2010). Testing mediation in nursing research: Beyond Baron and Kenny. *Nursing Research*, *59*(4), 288–294. https://doi.org/10.1097/NNR.0b013e3181dd26b3

Lee, O. S., Gu, M. O., & Kim, M. J. (2015). Influence of critical thinking disposition and emotional intelligence on clinical competence in nursing students. *Journal of the Korea Academia-Industrial Cooperation Society*, *16*(1), 380–388. https://doi.org/10.1016/j.nedt.2016.09.011

Lelorain, S., Bachelet, A., Bertin, N., & Bourgoin, M. (2017). French healthcare professionals' perceived barriers to and motivation for therapeutic patient education: A qualitative study. *Nursing & Health Sciences*, *19*(3), 331–339. https://doi.org/10.1111/nhs.12350

Matsuda, A., Yamaoka, K., Tango, T., Matsuda, T., & Nishimoto, H. (2014). Effectiveness of psychoeducational support on quality of life in early-stage breast cancer patients: a systematic review and meta-analysis of randomized controlled trials. *Quality of Life Research*, *23*(1), 21–30. https://doi.org/10.1007/s11136-013-0460-3

Mikolajczak, M., Quoidbach, J., Kotsou, I., & Nelis, D. (2014). *Les compétences émotionnelles* [Emotional skills]. Paris: Dunod.

Nelis, D., Quoidbach, J., Mikolajczak, M., & Hansenne, M. (2009). Increasing emotional intelligence: (How) is it possible? *Personality and Individual Differences*, *47*(1), 36–41. https://doi.org/10.1016/j.paid.2009.01.046

Nichols, J., Vallis, M., Boutette, S., Gall Casey, C., & Yu, C. H. (2018). A Canadian cross-sectional survey on psychosocial supports for adults living with type 1 or 2 diabetes: Health-care providers' awareness, capacity and motivation. *Canadian Journal of Diabetes*, *42*(4), 389–394.e2. https://doi.org/10.1016/j.jcjd.2017.09.004

Osborne, J., & Costello, A. B. (2004). Sample size and subject to item ratio in principal components analysis. *Practical Assessment Research and Evaluation*, *9*(11). Retrieved from http://PAREonline.net/getvn.asp?v=9&n=11

Pétré, B., Gagnayre, R., De Andrade, V., Ziegler, O., & Guillaume, M. (2017). From therapeutic patient education principles to educative attitude: The perceptions of health care professionals - a pragmatic approach for defining competencies and resources. *Patient Preference and Adherence*, *11*, 603–617. https://doi.org/10.2147/PPA.S121892

Rankin, B. (2013). Emotional intelligence: Enhancing values-based practice and compassionate care in nursing. *Journal of Advanced Nursing*, *69*(12), 2717–2725. https://doi.org/10.1111/jan.12161

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *The American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037//0003-066x.55.1.68

Seitovirta, J., Vehviläinen-Julkunen, K., Mitronen, L., De, G., & Kvist, T. (2017). Attention to nurses' rewarding – an interview study of registered nurses working in primary and private healthcare in Finland. *Journal of Clinical Nursing*, *26*(7–8), 1042–1052. https://doi.org/10.1111/jocn.13459

Self-Management Resource Center. (2019). *Chronic Disease Self-Management (CDSMP)*. Retrieved from https://www.selfmanagementresource.com/programs/small-group/chronic-disease-self-management/

Steinsbekk, A., Rygg, L., Lisulo, M., Rise, M. B., & Fretheim, A. (2012). Group based diabetes self-management education compared to routine treatment for people with type 2 diabetes mellitus. A systematic review with meta-analysis. *BMC Health Services Research*, *12*, 213–213. https://doi.org/10.1186/1472-6963-12-213

Stenberg, U., Vågan, A., Flink, M., Lynggaard, V., Fredriksen, K., Westermann, K. F., & Gallefoss, F. (2018). Health economic evaluations of patient education interventions a scoping review of the literature. *Patient Education and Counseling*, *101*(6), 1006–1035. https://doi.org/10.1016/j.pec.2018.01.006

Tan, J.-Y., Chen, J.-X., Liu, X.-L., Zhang, Q., Zhang, X.-L., Mei, L.-J., & Lin, R. (2012). A Meta-Analysis on the Impact of Disease-Specific Education Programs on Health Outcomes for Patients with Chronic Obstructive Pulmonary Disease. *Geriatric Nursing*, *33*(4), 280–296. https://doi.org/10.1016/j.gerinurse.2012.03.001.

Taylor, B., Roberts, S., Smyth, T., & Tulloch, M. (2015). Nurse managers' strategies for feeling less drained by their work: An action research and reflection project for developing emotional intelligence. *Journal of Nursing Management*, *23*(7), 879–887. https://doi.org/10.1111/jonm.12229

ter Maten-Speksnijder, A. J., Dwarswaard, J., Meurs, P. L., & van Staa, A. (2016). Rhetoric or reality? What nurse practitioners do to provide self-management support in outpatient clinics: An ethnographic study. *Journal of Clinical Nursing*, *25*(21–22), 3219–3228. https://doi.org/10.1111/jocn.13345

Westland, H., Schroder, C. D., de Wit, J., Frings, J., Trappenburg, J. C. A., & Schuurmans, M. J. (2018). Self-management support in routine primary care by nurses. *British Journal of Health Psychology*, *23*(1), 88–107. https://doi.org/10.1111/bjhp.12276

World Health Organization. (1998). Therapeutic patient education. Continuing education programmes for health care providers in the field of prevention of chronic diseases. Retrieved from www.euro.who.int/__data/assets/pdf_file/0007/145294/E63674.pdf

Zhu, B., Chen, C.-R., Shi, Z.-Y., Liang, H.-X., & Liu, B. (2016). Mediating effect of self-efficacy in relationship between emotional intelligence and clinical communication competency of nurses. *International Journal of Nursing Sciences*, *3*(2), 162–168. https://doi.org/10.1016/j.ijnss.2016.04.003

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