

Communication self-efficacy in optometry: the mediating role of mindfulness

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Received April 20, 2016, accepted October 27, 2016

Keywords: Optometrists, communication self-efficacy, mindfulness, empathy, patient-centred care

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Abstract

The aim of this study was to examine the relationship between optometry students' communication self-efficacy and their level of mindfulness and empathy. The study had a cross-sectional design. The sample included qualified optometrists in their first year of the Masters' degree programme. The students reported level of communication self-efficacy, empathy and mindfulness by responding to three questionnaires: Ammentorp's Clear-Cut Communication with Patients, Jefferson Scale of Empathy, and Mindful Attention Awareness Scale. Thirty-three students participated. The communication self-efficacy sum score was 111 (95% CI 106 to 116), the empathy sum score was 107 (95% CI 103 to 111) and the mindfulness sum score was 52 (95% CI 103 to 111). There was a significant positive correlation between communication self-efficacy and mindfulness ($r = 0.295, n = 29, p = 0.029$), but not between communication self-efficacy and empathy. Mindfulness correlates with communication self-efficacy. Mindfulness could therefore be important in training communication skills and could contribute to the effect of communication skills training. Most optometrists provide services in a retail setting, linking person-centred communication and care, evidence-based medicine, product technology and customer service. Further studies should explore how communication self-efficacy, explicit and tacit knowledge, empathy, mindfulness, emotional intelligence, patient satisfaction and customer service relate to communication and patient-centred care.

Sammendrag

Formålet med studien var å undersøke sammenhengen mellom optometristudenters kommunikasjons self-efficacy (mestringstro) og deres grad av mindfulness (oppmerksomt nærvær) og empati. Studien hadde et tverrsnitt design. Utvalget inkluderte autoriserte optikere i første år av mastergradsprogrammet i optometri og synsvitenskap. Studentene rapporterte grad av kommunikasjonsmestringstro, empati og oppmerksomt nærvær ved å svare på tre spørreskjema: Ammentorp's Klar tale med pasienterne, Jefferson Scale of Empathy, og Mindful Attention Awareness Scale. Trettitue studenter deltok. Kommunikasjonsmestringstro skår var 111 (95% CI 106 til 116), empati skår 107 (95% CI 103 til 111) og oppmerksomt nærvær skår 52 (95% CI 103 til 111). Det var en signifikant positiv korrelasjon mellom kommunikasjonsmestringstro og oppmerksomt nærvær ($r = 0.295, n = 29, p = 0.029$), men ikke mellom kommunikasjonsmestringstro og empati. Oppmerk-

somt nærvær korrelerer med kommunikasjonsmestringstro. Oppmerksomt nærvær kan derfor være viktig ved trening av kommunikasjonsferdigheter og kan bidra til effekt av kommunikasjonstrening. De fleste optikere tilbyr sine helsetjenester i detaljhandel, og knytter sammen person-orientert kommunikasjon og helsearbeid, kunnskaps-basert medisin, produktteknologi og kundeservice. Nye studier bør undersøke hvordan kommunikasjonsmestringstro, formell og taus kunnskap, empati, oppmerksomt nærvær, emosjonell intelligens, pasienttilfredshet og kundeservice er relatert til kommunikasjon og person-orientert helsearbeid.

Introduction

Regular vision care is important to assure and maintain good vision for as long as possible. Vision declines because of age-related changes, ocular disease and complications of systemic disease. In addition, a number of people have reduced vision because of uncorrected refractive errors (Buch et al., 2004; Cedrone et al., 2009; Sjøstrand, Laatikainen, Hirvela, Popovic, & Jonsson, 2011; Sundling, 2011). Vision loss negatively affects activities of daily living, quality of life and general health, and is related to increased risk of falls and negative emotions (El-Gasim, Munoz, West, & Scott, 2013; Freeman, Munoz, Rubin, & West, 2007; Renaud & Bedard, 2013; Tsai et al., 2003; Zhang et al., 2013).

In Norway, optometrists constitute the largest profession in vision care. In a population of 5 million people optometrists perform more than 1 million eye examinations each year (Rise, Arnestad, & Saetrom, 2000). The eye exam includes medical history and assessment of visual function and ocular health, and the optometrists provide vision care and collaborate with other health care professions on vision and eye care (Sundling et al., 2007; 2008). Although communication is a cornerstone in health care, patient-optometrist communication skills training is not part of the curriculum of the optometry education in Norway, like for most optometry educations in the world. The communication skills courses focus on interview- and affective skills (Brandenburg & Pesudovs, 2014; Kaplan, 1978; Levine, 1979) and on skills related to patient outcome (Howard & Ehrlich, 1998; Thompson, Collins, & Hearn, 1990; Wallis, 1992). However, well-designed curricula and explicit communication skills teaching in optometric education are lacking (Gross, Block, Engstrom, & Donahue, 2008; Spafford, Schryer, & Creutz, 2008).

To achieve high quality and person-centred health care, communication is essential (Eide & Eide, 2007). The medical interview is an important part of the eye examination, including three functions: building an effective relationship, assessing and understanding the patient's problems, and collaborating for management (Cole & Bird, 2014). The COMHOME study defines person-centred communication as a set of skills and traits of the health care provider that facilitates person-centred care, and include verbal, paraverbal and non-verbal communication, empathy, mindfulness and emotional intelligence (Hafskjold et al., 2015). In vision care, person-centred communication is essential to understand the patients' visual needs and to provide patient education allowing for consumer empowerment, patient involvement and shared decision making on vision correction and management of vision and ocular health, for instance choice of vision correction, adherence to contact lens wear regimen and referral for cataract surgery. In medical education and clinical practice, several models describe person-centred communication and communication skills training, like the Calgary-

Cambridge model (Kurtz, Silverman, Benson, & Draper, 2003), and the Four Habits model (Fossli Jensen et al., 2011; Krupat, Frankel, Stein, & Irish, 2006).

In this study, we define person-centred communication as self-reported communication self-efficacy. Self-efficacy describes a person's belief that they can successfully make the actions required to produce a certain result, the strength of belief in own success is likely to affect whether people try to achieve the result (Bandura, 1977). We propose that communication self-efficacy relates to personal attributes of mindfulness and empathy. Mindfulness informs all types of professionally relevant knowledge, both formal knowledge and knowledge learned during practice and observation, including facts, personal experiences, processes and competence. Empathic communication encourages patient trust, mutual understanding, medication adherence, social support and self-efficacy (Street, Makoul, Arora, & Epstein, 2009). Mindful practice gives the practitioner tools to promote patient care by facilitating compassion, presence, insight and technical competence; "Mindful practitioners have an ability to observe the observed while observing the observer in the consulting room", like musicians who perform and listen at the same time adjust their performance (Epstein, 1999). Health care providers who score high on mindfulness show more person-centred communication and have more satisfied patients (Beach et al., 2013; Krasner, Epstein, Beckman, & et al., 2009).

To the best of our knowledge, there are no studies on person-centred communication in optometric practice. This may reflect the limited academic focus on person-centred communication in optometry. The aim of this study is to provide knowledge about the relationship between optometry students' communication self-efficacy and their level of mindfulness. The knowledge will provide information for developing postgraduate communication training in optometry.

Methods

The study has a descriptive, cross-sectional design. The target population was postgraduate optometry students at the Institute of optometry and visual science (IOVS), Faculty of Health Science (FHS), Buskerud and Vestfold University College (BVUC). The sample population included qualified optometrists in the first year ($n = 37$) of the Masters' degree programme in optometry and visual science.

Data were collected during a pilot seminar on communication. The students were asked to report on their communication self-efficacy, empathy and mindfulness by three valid questionnaires: Ammentorp "Clear-Cut Communication with Patients" ("Klar tale med patienterne - Spørgeskema 1 til klinisk personale", 2012), Jefferson Scale of Empathy (Hojat et al., 2002; Hojat, Mangione, Nasca, Gonnella, & Magee, 2005), and Mindful Attention Awareness Scale (Brown & Ryan, 2003).

The "Clear-Cut Communication with Patients" questionnaire scores communication self-efficacy in terms of experienced accomplishment in different aspects of clinical communication. The questionnaire has 16 items covering aspects related to general dialogue with patients and relatives and to the medical interview in terms of building an effective relationship, assessing and understanding the patient's problems and collaborating for management (Cole & Bird, 2014). The questionnaire scores self-efficacy on a 10-point Likert-scale, where 10 = very sure to succeed. The questionnaire was translated from Danish to Norwegian independently by two native Norwegian-speaking researchers and back translated from Norwegian to Danish independently by two native Danish-speaking researchers. None of the questionnaire items were modified after back translation. At present, there are no published papers on norm data or cut-off values for the questionnaire (Ammentorp, personal communi-

cation).

The Jefferson Scale of Empathy measures empathy in patient-care situations. Empathy was scored based on level of agreement with 20 statements on a 7-point Likert scale, ranging from 1 = strongly disagree to 7 = strongly agree. The scale contains three underlying components of "perspective taking", "compassionate care" and "standing in a patient's shoes". For analysis of total empathy score we reversed the scores of questionnaire items 1, 3, 6, 7, 8, 11, 12, 14, 18 and 19. This allows higher scores to represent higher degrees of empathy. The sum score ranges from 20 to 140. The internal reliability of the score is good (Cronbach's $\alpha \approx 0.80$). The higher the score is, the more empathic. In physicians, the mean score is 117, (top score 129, middle score 111–129 and bottom score < 111) (Hojat et al., 2005). We used the Norwegian translation of the Jefferson Scale of Empathy (de Vibe, 2014).

The Mindful Attention Awareness Scale measures a unique quality of consciousness that is associated with self-awareness and that differentiates mindful practitioners from others. Mindfulness was scored based on level of agreement with 15 statements, using a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. Since the items on Mindful Attention Awareness Scale reflect lack of mindfulness, we reversed the score of all items to allow a high mindfulness score to represent a high degree of mindfulness. The sum score ranges from 15 to 75. We used the Norwegian translation of the Mindful Attention Awareness Scale (Dundas, Vollestad, Binder, & Sivertsen, 2013; Verplanken, Friberg, Wang, Trafimow, & Woolf, 2007). The scale of the Norwegian translation differs from the original (Brown & Ryan, 2003) which has a 6-point Likert scale, where 1 = almost always and 6 = almost never. The Norwegian translation of the Mindful Attention Awareness Scale has shown acceptable internal reliability (Cronbach's $\alpha = 0.82$) and a mean score of 41.3 (Dundas et al., 2013).

The study followed the tenets of the Declaration of Helsinki for research involving humans. The Norwegian Social Science Data Services (NSD) approved the data collection. The participants received information about the study both orally and in writing. All participants gave informed consent to take part in the study. Data collection took place in April 2014.

IBM SPSS Statistics 22 was used for data analysis. Frequency and summation tables describe the communication self-efficacy, empathy and mindfulness. In addition to overall communication self-efficacy score, we analysed communication self-efficacy for medical dialogue in the clinical encounter by grouping items in the questionnaire related to building an effective relationship, assessing and understanding the patient's problems and collaborating for management (Cole & Bird, 2014). Further, communication self-efficacy for daily dialogue with patients and relatives was analysed by grouping items related to managing emotional and angry patients/relatives, breaking bad news, administering time and involving patients/relatives in decisions. The scores for communication self-efficacy for medical dialogue and for daily dialogue were defined as the sum score of the included items divided by the number of included items. Internal reliability of the scales was analysed using Cronbach's α , the relationship between communication self-efficacy and empathy and mindfulness using Kendall's tau and multiple linear regression analysis, and the difference between communication self-efficacy in the daily dialogue and medical dialogue using t -test. A p -value < 0.05 was regarded statistically significant.

Results

In total 33 postgraduate students (89% of all students) participated in the study, 27 (82%) were female. The mean age of the participants was 28 years, ranging from 23–53 years. All par-

ticipants were authorised optometrists and all were combining the master's degree education with part- or full-time work as optometrists in commercial optometric practice. The *communication self-efficacy sum* score was 111 (95% CI 106 to 116), ranging from 84 to 147. The mean scores for individual items are shown in Table 1. The internal consistency of the scale was good, Cronbach's $\alpha = 0.83$.

Table 1: *Optometrists' mean communication self-efficacy score (95% CI) as reported by the "Clear-cut communication with patients" questionnaire.*

Sum score communication self-efficacy	Score	95% CI
	111	(106 to 116)
Daily dialogue with patients and relatives*	6.4	(6.0 to 6.8)
Item 1 Managing emotional patients/relatives	6.8	(6.2 to 7.3)
Item 2 Managing angry patients/relatives	5.6	(4.9 to 6.3)
Item 3 Breaking bad news to patients/relatives	6.3	(5.7 to 6.9)
Item 4 Administering time with patients/relatives	6.3	(5.6 to 6.9)
Item 5 Involving patients/relatives in decisions	7.3	(6.8 to 7.9)
Medical dialogue in the clinical encounter*	7.2	(6.9 to 7.5)
Building an effective relationship		
Item 8 Encouraging patients to explain and disclose problems/concerns	7.4	(6.8 to 8.0)
Item 9 Encouraging patients to express thoughts and emotions	6.8	(6.2 to 7.3)
Item 11 Non-verbal behaviour	7.5	(6.9 to 8.1)
Item 12 Empathy	7.5	(6.9 to 8.1)
Assessing and understanding the patient's problems		
Item 6 Identifying what is important to the patient	7.6	(7.1 to 8.0)
Item 7 Making a plan for the encounter	7.1	(6.6 to 7.7)
Item 10 Structuring the dialogue	6.9	(6.3 to 7.5)
Collaborating for management		
Item 13 Identifying patient knowledge to tailor patient information	6.7	(6.2 to 7.2)
Item 14 Making sure that the patient has understood the information	7.1	(6.6 to 7.6)
Item 15 Shared-decision making	7.5	(7.0 to 8.1)
Item 16 Closing the dialogue and making sure patient questions are answered	7.6	(7.1 to 8.1)

Note: CCC; "Clear-cut communication with patients" questionnaire. * t -test < 0.05.

The score on Jefferson Scale of Empathy ranged from 77–124 with a mean sum score of 107 (95% CI 103 to 111), Table 2. The score on the Mindful Attention Awareness Scale ranged from 33–69 with a mean sum score of 52 (95% CI 103 to 111), Table 3. The internal consistency of both scales was acceptable, Cronbach's $\alpha = 0.6$ and Cronbach's $\alpha = 0.78$, respectively.

There was a significant moderate positive correlation between communication self-efficacy sum score and mindfulness sum score ($r = 0.295, n = 29, p = 0.029$), but not between communication self-efficacy and empathy ($r = -0.003, n = 28, p = 0.984$). We performed a multiple linear regression to predict communication self-efficacy sum score based on mindfulness score (MAAS) adjusting for gender and age. The correlation between communication self-efficacy sum score and mindfulness remained significant and unchanged. Gender and age did not correlate with communication self-efficacy. A simple linear regression equation was found ($F(3, 25) = 3.876, p = 0.021$), with explained variance (R^2) of 0.317. Participants' predicted general communication self-efficacy was equal to $55.293 + 0.807(\text{MAAS})$. The communication self-efficacy score increased 0.807 for each unit of increase in the mindfulness score.

Discussion

In our study, only mindfulness was correlated with communication self-efficacy. Communication self-efficacy does not necessarily reflect clinical performance (Gulbrandsen, Jensen, Finset, & Blanch-Hartigan, 2013). However, communication training can improve communication self-efficacy (Nørgaard, Ammentorp, Ohm Kyvik, & Kofoed, 2012). Improvement in physicians' communication self-efficacy following communica-

tion training is accurately associated with improved communication performance (Gulbrandsen et al., 2013). We found that mindfulness positively correlates with optometrists' communication self-efficacy. This is an indicator of belief in one's own person-centred communication skills. Our findings compliment a study of Beach et al. who found mindfulness to be associated with more person-centred communication in terms of more rapport building among physicians, nurse practitioners and physician assistants (Beach et al., 2013). As we did not observe optometrist-patient communication and there are no observational studies on person-centred communication in optometric practice, comparison between mindfulness and actual clinical communication between optometrist and other health-care professions could not be made.

Table 2: *Optometrist's empathy score (95% CI) rated by the "Jefferson Scale of Empathy".*

Item	Statement	Score	95% CI
1	My understanding of how my patients and their families feel does not influence medical or surgical treatment	3.2	(2.5 to 3.9)
2	My patients feel better when I understand their feelings	6.1	(5.8 to 6.5)
3	It is difficult for me to view things from my patients' perspectives	2.8	(2.2 to 3.4)
4	I consider understanding my patients' body language as important as verbal communication in caregiver-patient relationships	5.6	(5.1 to 6.1)
5	I have a good sense of humour that I think contributes to a better clinical outcome	4.8	(4.3 to 5.3)
6	Because people are different, it is difficult for me to see things from my patients' perspectives	2.7	(2.1 to 3.3)
7	I try not to pay attention to my patients' emotions in history taking or in asking about their physical health	2.5	(1.8 to 3.2)
8	Attentiveness to my patients' personal experiences does not influence treatment outcomes	3.0	(2.3 to 3.6)
9	I try to imagine myself in my patients' shoes when providing care to them	5.5	(5.0 to 5.9)
10	My patients value my understanding of their feelings which is therapeutic in its own right	5.7	(5.4 to 6.1)
11	Patients' illnesses can be cured only by medical or surgical treatment; therefore, emotional ties to my patients do not have a significant influence on medical or surgical outcomes	2.2	(1.6 to 2.9)
12	Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints	2.5	(1.9 to 3.1)
13	I try to understand what is going on in my patients' minds by paying attention to their non-verbal cues and body language	4.7	(4.1 to 5.3)
14	I believe that emotion has no place in the treatment of medical illness	1.6	(1.2 to 1.9)
15	Empathy is a therapeutic skill without which success in treatment is limited	5.5	(4.9 to 6.1)
16	An important component of the relationship with my patients is my understanding of their emotional status, as well as that of their families	5.1	(4.4 to 5.7)
17	I try to think like my patients in order to render better care	4.6	(4.1 to 5.1)
18	I do not allow myself to be influenced by strong personal bonds between my patients and their family members	4.4	(3.9 to 4.9)
19	I do not enjoy reading non-medical literature or the arts	1.8	(1.3 to 2.3)
20	I believe that empathy is an important therapeutic factor in medical or surgical treatment	5.8	(5.4 to 6.2)
Total score		107	(103 to 111)

The communication self-efficacy for medical interview was significantly higher than the communication self-efficacy for general communication with patients and relatives. This may reflect the nature of optometric practice. Most optometrists provide their services in a retail setting. In retail the customers define excellent service, and their feedback drives change (Sanders, 1997). This may explain why optometrists have a

higher communication self-efficacy for the medical interview. Building an effective relationship, assessing and understanding the vision needs and collaborating for management are essential to provide person-centred vision care, but this also defines excellent customer service. Steiger and Balog propose that a customer service approach has a role in health care in terms of patient-centred care (Steiger & Balog, 2010). However, some would argue that this might be poor for empathy, and that customer service focuses on the business, not the person. Most optometric practices merge customer service philosophy and patient-centred care. Two parallel points of customer service philosophy and patient-centred care are particularly relevant to optometric practice, as exemplified by Steiger and Balog (Steiger & Balog, 2010). Good communication skills are required as “Customers define excellent service” and “Caregivers must listen to the patients to determine how to best meet their needs”, this is essential in providing optimal optical correction for specific visual tasks, such as driving, reading, school, work, sports and play. Further, in terms of outcome and economy, “What is best for the customers is best for the organization” and “Higher levels of patient satisfaction lead to better care outcomes and positive financial results”. This applies indeed to vision care in Norway as vision care must be initiated and paid for by the patient. In a yearly customer satisfaction survey by BI Norwegian Business School (2016), the four international optometry chains included, representing both economy and expensive retail, all score high on customer satisfaction (77–77%) and loyalty (79–80%). Satisfied patients are a practice builder, optometric practices are likely to achieve high patient satisfaction by merging person-centred care and customer-service.

Table 3: Mindfulness score (95% CI) rated by the “Mindful Attention Awareness Scale” questionnaire†.

Item	Statement	All students Score	95% CI
1	I could be experiencing some emotion and not be conscious of it until sometime later	3.4	(3.0 to 3.9)
2	I break or spill things because of carelessness, not paying attention, or thinking of something else	3.4	(3.0 to 3.9)
3	I find it difficult to stay focused on what's happening in the present	3.8	(3.5 to 4.1)
4	I tend to walk quickly to get where I'm going without paying attention to what I experience along the way	3.1	(2.6 to 3.5)
5	I tend not to notice feelings of physical tension or discomfort until they really grab my attention	3.0	(2.6 to 3.5)
6	I forget a person's name almost as soon as I've been told it for the first time	4.2	(3.8 to 4.5)
7	It seems I am “running on automatic,” without much awareness of what I'm doing	3.3	(3.0 to 3.5)
8	I rush through activities without being really attentive to them	3.7	(3.3 to 4.0)
9	I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there	3.4	(3.0 to 3.7)
10	I do jobs or tasks automatically, without being aware of what I'm doing	3.7	(3.4 to 4.0)
11	I find myself listening to someone with one ear, doing something else at the same time	2.7	(2.2 to 3.1)
12	I drive places on “automatic pilot” and then wonder why I went there	3.9	(3.5 to 4.4)
13	I find myself preoccupied with the future or the past	3.3	(2.8 to 3.7)
14	I find myself doing things without paying attention.	3.4	(3.0 to 3.8)
15	I snack without being aware that I'm eating	4.2	(3.9 to 4.6)
Total score		52	49 to 55

Note: †Reversed scale 1-5, where 1 = strongly agree and 5 = strongly disagree

People with higher degree of self-efficacy, belief in own skill, are more likely to try to achieve an outcome (Bandura, 1977). Therefore, optometrists who score highly on person-centred communication self-efficacy may be more likely to aim to be person-centred in their communication with patients. Mind-

fulness may act as a logical addition to reflective practice, informing both formal knowledge and knowledge learned during practice and observation (Epstein, 1999). Future studies should assess optometrists' clinical practice and communication skills with regard to mindfulness, as well as the relationship between communication self-efficacy and actual clinical performance. Knowledge from these studies will be applied to develop and implement communication skills training as part of the curriculum in the optometry education in Norway. Communication skills training has a stronger effect when targeting specific clinical areas and focusing on specific skills (Parry, 2008), therefore knowledge of actual clinical communication in optometric practice is essential to develop communication skills training specific to optometry.

In physician-patient interaction, there is a positive relationship between empathic communication and better diagnostic and clinical outcomes, patient satisfaction and adherence (Derksen, Bensing, & Lagro-Janssen, 2013). Attitude, competency and behaviour define empathy. Further, empathic competency includes both empathic skills and communication skills, as well as skills in building a trusting relationship (Derksen et al., 2013). We propose that optometrists who score high on empathy may be more person-centred in their communication, and may have a better understanding of patients' concerns and an increased wish to help. Future studies should also assess optometrists' clinical performance, as well as patient satisfaction, with regard to empathic competency.

The optometrists in our study scored higher on mindfulness than Norwegian university students (Dundas et al., 2013) and achieved similar scores to clinicians (physicians, nurse practitioners and physician assistants) in HIV care (Beach et al., 2013). The sum score for empathy among optometrists was lower than that found among physicians (Hojat et al., 2005), the mean score of 111 versus 117 (top score > 117 versus > 129, middle score 101–117 versus 111–129, and bottom score < 101 versus < 111). This may reflect that physicians have more knowledge about, and training in communications skills, which is not yet part of the optometry education. However, the degree of empathy could also be related to the work setting, as most optometrists work in a technology-based setting. In the medical profession, there is a significant difference in empathy between physicians in people-oriented and technology oriented specialties. This difference does not necessarily reflect lack of empathy, but merely the degree of empathy demanded for the specialty (Hojat et al., 2002).

There are some limitations to this study. The number of participating students was limited and may not be representative of all optometry students. The optometrists participating in the study are postgraduate students and may not be representative of the general optometrist population in Norway. Communication self-efficacy may not correspond with actual clinical performance. Based on our study we cannot infer whether optometrists are person-centred in the way they communicate. Further, even if a unique facet of mindfulness, self-awareness, correlates with communication self-efficacy, we do not know whether this accounts for clinical performance. Therefore, clinical studies on person-centred communication and care in optometric practice need to be undertaken.

This study provides knowledge of communication self-efficacy in health care professionals providing health care in a retail setting. Mindfulness appears to be a predictor of communication self-efficacy. It may therefore be important to include mindfulness into communication skills training. Further studies will explore how communication self-efficacy, explicit and tacit knowledge, empathy, mindfulness, emotional intelligence, patient satisfaction, and customer service are related to clinical communication and patient-centred care in optometric

practice.

Acknowledgement

The research was funded by The Research Council of Norway (project number: 226537) and the University College of South-east Norway.

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