

Reallocations in Acne Healthcare: Exploring the Possible Roles and Added Value of Non-physicians by a Mixed-Methods Study Design

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Abstract

Background A highly promoted opportunity for optimizing healthcare services is to expand the role of non-physician care providers by care reallocation. Reallocating care from physicians to non-physicians can play an important role in solving systemic healthcare problems such as care delays, hospital overcrowding, long waiting lists, high work pressure and expanding healthcare costs. Dermatological healthcare services, such as the acne care provision, are well suited for exploring the opportunities for care reallocation as many different types of care professionals are involved in the care process. In the Netherlands, acne care is mainly delivered by general practitioners and dermatologists. The Dutch healthcare system also recognizes non-physician care providers, among which dermal therapists and beauticians are the most common professions. However, the role and added value of non-physicians is still unclear. The present study aimed to explore the possibilities for reallocating care to non-physicians and identify drivers for and barriers to reallocation.

Methods A mixed-method design was used combining quantitative and qualitative data. 224 questionnaires were completed and 24 semi-structured interviews were conducted.

Results A broad spectrum of non-physician tasks and responsibilities were delineated. Interviewed physicians considered acne as a low-complexity skin condition which made them willing to explore the possibilities for reallocating. A majority of all interviewees saw a key role for non-physicians in counselling and supporting patients during treatment, which they considered an important role for increasing patients' adherence to proposed treatment regimes, contributing to successful clinical outcome. Also, the amount of time non-physicians spend on patients was experienced as driver for reallocation. Legislation and regulations, uncertainties about the extent of scientific evidence and proper protocols use within the non-physician clinical practice were experienced as barriers influencing the possibilities for reallocation.

Conclusion Delineated roles and drivers demonstrate there is room and potential for reallocation between physicians and non-physicians within acne healthcare, when barriers are adequately addressed.

Introduction

Like many other healthcare systems globally, the Dutch system deals with increasing demands for its services and a chronic shortage of healthcare workers. It therefore seeks new opportunities for delivering effective, accessible, and patient-satisfying healthcare.(1, 2) A highly promoted opportunity for optimizing healthcare services is to expand the role of non-physician care providers by care reallocation.(3, 4) Reallocating care to non-physician care providers can play an important role in solving systemic healthcare problems such as care delays, hospital overcrowding, long waiting lists, high work pressure experienced by physicians, and expanding healthcare costs. Care reallocation can be defined as delegation, substitution, or complementation of (low intensity) tasks that do not require the knowledge and skills of a physician.(1–3, 5)

Dermatological healthcare services, such as the acne care provision, are well suited for exploring the opportunities for care reallocation as many types of care professionals are involved in the care process. In the Netherlands, acne care is mainly delivered by general practitioners and dermatologists, who provide several (primarily pharmacological) treatment modalities.(6–9) The Dutch healthcare system also recognizes non-physician care providers, among which dermal therapists(10) and beauticians are the most common professions (characteristics of both non-physician professions can be found in Table 1). Advanced nurses, nurse practitioners, and physician assistants also provide non-physician acne care. However, despite the recognition of multiple physician and non-physician care professionals the acne healthcare in the Netherlands is fragmented and lacks a shared care environment, working alignments or streamlined referral pathways and care reallocation is not yet been sufficiently deployed. In order to reallocate tasks between physicians and non-physicians shifts within the organization of the acne healthcare are required. However, the role and added value of non-physicians in this context is still unclear.

The aim of this study is to examine the perspectives of representatives of four professions that provide acne care: dermatologists, GPs, dermal therapists, and beauticians. Based on their perspectives, this study explores the possibilities for reallocating care. Furthermore, it identifies the drivers for and barriers to reallocation.

Table 1
Characteristics of the non-physician acne professions dermal therapists and beauticians

	Dermal therapists	Beauticians
Educational level*	Higher Vocational Education NLQF/EQF level 6 (Bachelor degree)	Vocational Education NLQF/EQF level 3/4
BIG-registered profession	Yes	No
Working domain	Medical or cosmetology	Cosmetology or wellness
Pharmacotherapeutical education in curriculum	Yes	No

NLQF/EQF: Dutch National Qualifications Framework/ European Qualifications Framework.(17)

*For both dermal therapist and level 4 beauticians, acne care is incorporated into the educational curriculum. Level 3 beauticians have the opportunity to specialize themselves as acne specialist after completing the initial beauty school. Beauticians are obligated to follow a professional competence refresher training every 3 years.

Materials And Methods

Study approach

A mixed method study-approach with triangulation of quantitative and qualitative data was used.(6) This study is reported according to the Standards for Reporting Qualitative Research.(7)

Sampling strategy

Respondent recruitment took place through a digital questionnaire placed on the websites of Dutch societies for dermatology and professional skin care (ANBOS NVH, NVDV) and GP networks. The questionnaire consisted of three questions involving (i) which activities and treatment modalities were performed by the care providers; (ii) referral patterns; and (iii) a question to gauge the respondents willingness and availability to participate in an interview. Those willing to participate in an interview left their names and email addresses on the digital questionnaire and were contacted by the principal researcher (FV). To ensure a sampling representation of all types of care providers, genders, work settings, and geographic locations, a purposive sampling method was applied in which the interviewees were purposefully selected based on their characteristics.

Data collection methods

Between December 2017 and March 2019, data from the questionnaires were collected and interviews were held with the representatives of the professions providing acne care. The interviews took place in different settings according to the personal preferences of the interviewee (e.g., hospital, clinic, healthcare centre, beauty centre, or interviewee's home). In two cases, interviews were conducted by telephone. Semi-structured interviews were based on a set of predefined topics compiled from the literature and guidelines and revised by all co-authors. For this study, the following topics were covered: provided treatment modalities and activities; collaboration with other care providers; knowledge of the content and efficacy of treatment modalities delivered by other care providers; referral pathways; possibilities for task substitution; possibilities for integrated care; supervision and management; needs and wishes of future acne healthcare; and factors influencing the quality and accessibility of acne care. All interviews were conducted by the principal researcher, who audio recorded the interviews and subsequently composed memos. The principal researcher and two research assistants transcribed the interviews verbatim according to the guidelines of a transcription protocol.(8) Finally, the transcripts were entered into the software program ATLAS.ti 8 to facilitate data management and analysis.

Data analysis

The questionnaires were analysed using SPSS version 25, which enabled the frequencies and percentages of applied treatment modalities to be calculated. Based on the insights obtained from the questionnaires, the interview data were analysed according to the principles of a qualitative survey approach, which is a research methodology used to describe the diversity within a study population.(9) Following this approach made it possible to deepen the questionnaire-based data to a meaningful level of care providers' perspectives, behaviours, and attitudes. All transcripts were coded, starting with open coding, then axial coding, and finally selective coding, leading to the creation of two key themes. The sub-themes and key themes were discussed and revised with all authors.

Ethics approval for study protocols involving human participants

All methods were carried out in accordance with the regulations of the Medical Ethics Committee of the Radboud medical centre Nijmegen, the Netherlands, which approved the study protocol (registration number 2017–3915) and declared that the study did not fall within the scope of the Dutch Medical Research Involving Human Subjects Act. To ensure the anonymity of the participating care providers, names were replaced with pseudonyms.

Results

In total, 224 non-physicians (176 beauticians and 48 dermal therapists) and 336 physicians (239 GPs and 97 dermatologists) completed the questionnaire. Since the main goal of the study was to delineate the possible roles and added values of non-physicians – rather than the treatment modalities, tasks, and responsibilities of physicians, which we assume are already known – we analysed the treatment modalities from both physicians and non-physicians, however present only the data from the non-physician questionnaires (Table 2). Furthermore, a total of 24 semi-structured, in-depth interviews were conducted with 12 physicians and 12 non-physicians (Table 3). Two key-themes emerged from the interview data: (i) definition of the role of non-physicians and possibilities for care reallocation (ii) drivers for and barriers to possible reallocation. Illustrative quotes for key-themes listed in Table 4.

Table 2
Treatment modalities, tasks and responsibilities

	Dermal therapists		Beauticians	
	N(48)	%	N(176)	%
Chemical peel	48	100	131	74.4
Light/laser therapy	16	33.3	28	15.9
(Micro)dermabrasion	18	37.5	59	33.5
Microneedling	29	60.4	3	1.7
(Mechanical)lesion removal	47	97.9	175	99.4
Counselling and support	43	89.6	150	85.2
Taking a medical history	IR	IR	IR	IR
Performing skin examination	IR	IR	IR	IR
Determining non-physician working diagnosis	IR	IR	IR	IR
Communication with other care providers	IR	IR	IR	IR
Evaluating effects/efficiency of care	IR	IR	IR	IR
Referral towards:	39	81.3	104	59.1
Dermatologist	33	68.8	110	62.5
GP	-	-	30	17.0
Dermal therapist	5	10.4	-	-
Beautician	3	6.3	10	5.7
Never				
Other tasks	25	52,1	20	11.4
IR: tasks emerged from interview results				

Table 3
Characteristics of the interviewed acne care providers

Type of care provider	Pseudonym	Gender	Years of experience	Work setting
Dermatologist	D1	Female	12	Independent treatment centre
	D2	Female	10	General hospital
	D3	Female	25	Academic medical centre
	D4	Male	16	General hospital
	D5	Male	30	Academic medical centre
	D6	Male	7	Academic medical centre
General Practitioner	GP1	Male	36	Partnership practice
	GP2	Male	5	Practitioner within 4 different practices
	GP3	Female	34	Partnership practice
	GP4	Male	22	Practice owner
	GP5	Male	12	Practice owner
	GP6	Female	2	Group practice
Dermal therapist	DT1	Female	11	Practice owner
	DT2	Female	14	Practice owner
	DT3	Female	38	Practice owner
	DT4	Female	10	Practice owner
	DT5	Female	7	Practice owner
	DT6	Female	13	Practice owner
Beautician	B1	Female	35	Practice owner
	B2	Female	15	Practice owner
	B3	Female	26	Practice owner
	B4	Female	20	Practice owner
	B5	Female	31	Practice owner
	B6	Female	20	Practice owner
Dermatologists (D), general practitioners (GP), dermal therapists (DT), beauticians (B)				

Table 4
Illustrative quotes for Key-themes

Key-theme 1: Definition of the role of non-physicians and possibilities for care reallocation	
Subthemes	Illustrative quotes
Applied treatment modalities	<i>"... We are able to offer acne patients manual lesion removal, always combined with a chemical peel, which we select based on the clinical signs. We have glycolic acid, salicylic acid, Jessner's solution, trichloroacetic acid and phenols. We also treat people with microdermabrasion and different types of laser... With this extensive variation of treatment options we are able to deliver care that is tailored to the patients' needs.."(DT2)</i>
	<i>"... We measure patients' skin, using a skin analysing-device. We measure moisture, sebum, PH-value, redness and pigmentation in every new patient and after every 3 months"(B4)</i>
	<i>"...First we counsel patients on skin physiology, using a skin poster. I notice that hardly any of the patients are sufficiently informed on this matter... We also pay attention to skin picking, psychological factors and the different types of drugs that are available. I witness my patients getting more and more empowered to understand the meaning of acne, its treatment and proper drug use..."(DT1)</i>
Key theme 2; Drivers and barriers	
Drivers	<i>Interviewer: "...and what is your vision on their role into acne care?" Respondent: "... Well I have 10 minutes consultation time to spend on a patient... However, proper drug use, instructions, life style coaching... I don't think I have enough time for that, let alone the knowledge..."(GP5)</i>
	<i>"...I suppose acne is per definition suitable for outsourcing, especially the first treatment steps, such as topical medication and consultation... Until systemic medication is required because then the GP should take over again..."(GP2)</i>
Barriers	<i>"... This morning, I consulted the GP from downstairs regarding a patient with a persistent type of acne and asked her for medical support... The GP was open for suggestions due to the fact that she didn't exactly know what to prescribe herself... Last week, I had a similar situation in which the GP called me and asked me if I recommended a local or systemic antibiotic..."(DT5)</i>
	<i>Respondent: "In the past, dermal therapists used to refer patients directly to me. Nowadays, patients first have to visit a GP. No matter how much you desire your patients to be referred to a dermatologist, if the GP decides otherwise, the patient is not being referred to a dermatologist. I regret this, in a sense this refrains patients for optimal therapy.."(D5)</i>
	<i>"... The present system, which consists of registering and documenting monthly check-ups, forces us dermatologists to spend a large amount of time behind the computer, at the expense of patient time..." D2)</i>
	<i>Interviewer: "...Are there any tasks that you might want to delegate in order to relieve some work pressure? Respondent: "... Yes, however it requires education and training to recognize the different types of acne. I rather leave this up to a care provider possessing a medical Higher Vocational Education background..."(GP4)</i>
Dermatologists (D), general practitioners (GP), dermal therapists (DT), beauticians (B)	

Definition of the role of non-physicians and possibilities for care reallocation

Both the interviews and the questionnaires demonstrate a wide spectrum of treatment modalities that are applied by non-physicians for which they are broadly educated to perform. The most commonly applied treatment modalities are chemical peels, laser- and light-based therapies, micro-needling, (micro-) dermabrasion, and (mechanical) lesion removal. The frequencies with which treatment modalities are performed are shown in Table 2. Non-physicians said they applied these treatment modalities to reduce inflammatory and non-inflammatory lesions or acne scars. Treatments were applied either as monotherapy, in combination with conventional therapies delivered by physicians, or as maintenance therapy for more persistent or chronic types of acne for which long-term therapy was required.

As well as utilizing physical treatments, the dermal therapists and beauticians participating in the study also revealed familiarity with and confidence carrying out other tasks, including taking a medical history, performing a skin examination, determining a non-physician working diagnosis (although non-physicians are not authorized to make a medical diagnosis, they are permitted to screen and identify different types of clinical signs of acne and formulate a proper working diagnosis), communicating with other care providers, referring patients, and evaluating and reporting on efficiency of care. Nineteen interviewees from all four disciplines delineated a key role for non-physicians in counselling and supporting patients during treatment, which they considered an important role for increasing patients' adherence to proposed treatment regimes, contributing to successful clinical outcomes. Examples of counselling and support mentioned by the non-physicians are explaining the definition of the skin condition, including the key pathogenic factors that play a role in the development of acne; the management of appropriate drug use as prescribed by GPs and dermatologists; the risk of possible side-effects; and the minimal time to experience clinical effects. Other examples of counselling and support given by the non-physicians included responding to the patient's need for advice on over-the-counter products; sun protection; diet; rebutting myths; and raising awareness about psychological issues.

Drivers for and barriers to care reallocation

Drivers

With an average of 30 minutes to 1 hour per patient, compared to an average consultation time of 10 minutes for GPs and dermatologists, non-physicians have a considerable amount of time to spend with patients, according to the respondents. Furthermore, 6 of the 12 interviewed dermatologists and GPs considered acne a low-complexity skin condition compared to other skin condition. This made them willing to explore the possibilities for reallocating acne-related healthcare services to non-physicians, especially when it could reduce their own workload.

Barriers

Interviewees from all four professions explicitly mentioned legislation and regulations as predominant barriers for care reallocation. The Individual Healthcare Professionals Act (Dutch: BIG Act), which requires

that all medical procedures with a high risk of complications be carried out independently by experts,(10) was found to be a barrier by the interviewed beauticians, who felt hampered by their changing roles in light and laser practice. The BIG Act was also considered a barrier by interviewed dermal therapists (legally not authorized to prescribe medication), who felt sufficiently competent to determine the type of medication required to achieve an optimal clinical outcome, because their educational curriculum includes pharmacotherapeutical topics in detail. Two interviewed dermal therapists envisioned prescribing (topical) medication under the supervision of a physician. Four of the dermal therapists said that they did not intend to take the place of a physician and translated this barrier into making suggestions to GPs regarding the preferred type of (topical) medication.

The questionnaire results indicated that dermal therapists and beauticians frequently refer their patients to dermatologists (Table 2). This appears to contradict the Dutch Health Insurance Act, which indirectly prevents non-physicians from making referrals to secondary care providers by requiring a referral letter from a GP (gatekeeper of care). When asked about this issue, the non-physicians said that they often recommended that their patients visit a dermatologist, but they felt hindered by this law. Furthermore, according to five of the six interviewed dermatologists, the large amount of legislation and regulations related to the prescribing and dispensing of isotretinoin, such as the required monthly pregnancy tests in women of childbearing age, made isotretinoin-treatment severely time-consuming. However, the administrative load, which in many dermatology departments is undertaken by trained nurses or nurse practitioners, prompted the dermatologists to explore possibilities for reallocating tasks to non-physicians.

Finally, although acne was considered a low-complexity skin condition, some GPs and dermatologists felt uncertain about reallocation due to the extent to which scientific evidence was translated into non-physician clinical practice and the way in which non-physician care was based on proper use of protocols and guidelines. Concerning reallocation to non-physicians, 7 of the 12 physicians interviewed specifically expressed their preference for cooperating with non-physicians who possess a medical-educational background with demonstrable knowledge in the subject of acne.

Discussion

This study explored a wide range of roles and responsibilities in acne care and provided a broader understanding of the possibilities for reallocating care to non-physicians. The study also examined several drivers and barriers that may affect these possibilities reallocation. Although an ideal situation would include evidence-based standardized patient pathways and predefined roles and responsibilities for each care provider, matching the type and severity of the patient's condition, a first and necessary step was to delineate the possible roles and added value of non-physicians in care reallocation, as we showed in our study.

When tasks are rearranged in clinical practice, some questions may arise; for example, to what extent are non-pharmacological treatment modalities effective and safe, and how do they relate to conventional

pharmacological treatment modalities? Although well-designed studies evaluating the effectiveness of non-pharmacological interventions are lacking, circumstantial evidence suggests that the efficacy of these types of therapy are promising.(11–13) In addition, Waldman et al. (2017) reported an expert consensus on the safety of non-pharmacological treatment modalities in the setting of isotretinoin use. The authors concluded that the use of combination therapies has the potential to improve treatment by producing better and faster outcomes, higher patient satisfaction, and closer adherence to therapy.(14) Other studies support these findings, stating that, due to the multifactorial nature of acne pathogenesis, neither topical nor systemic antibiotics should be used as monotherapy for acne treatment.(15)

The present study demonstrated that both dermal therapists and beauticians have a wide range of tasks and responsibilities that may be considered potentially suitable for acne care reallocation. However, this study also illustrated a distinction between the two types of non-physician professions, which underlines the complexity of addressing dermal therapists and beauticians under the common denominator of non-physicians. Although these differences may affect the possibilities and interpretation of reallocation, this study clarified the differences and similarities so that physicians can make well-informed decisions about reallocating acne care to non-physicians.

Furthermore, this study demonstrated that legislative boundaries are a predominant barrier for exploring reallocations of acne care to non-physicians. These findings are in line with other studies that investigated the deployment of nurse practitioners and physician assistants to the healthcare system. Although the content of the professions of nurse practitioners and physician assistants differ from those of dermal therapists and beauticians, the example of legislative boundaries hampering the optimal deployment of non-physicians is relevant to all four professions.(5, 6, 16)

Based on the priorities set by the Dutch Ministry of Health, Welfare, and Sports to optimize the deployment of non-physicians to deliver effective, accessible, and patient-satisfying healthcare while reducing healthcare costs, it is recommended by the authors of this study to re-evaluate current legislation concerning acne care provision. In particular, the restrictions on reserved procedures as described in the Individual Healthcare Professionals Act and the obstacles that the Health Insurance Act places between non-physicians and dermatologists are worth reassessing.

Although many of the interviewed GPs and dermatologists considered acne a low-complexity skin condition and were receptive to exploring opportunities for task-reallocation to dermal therapists and beauticians, some held a certain degree of reluctance in doing so and expressed their preference for cooperating with non-physicians who possess a medical-educational background with demonstrable knowledge in the expert field of acne. These findings are in line with wider global discussions about whether health workers with lower levels of training can safely deliver key interventions, as stated in a WHO report on task-shifting opportunities.(2) For many dermatologists, this often resulted in the decision to use advanced nurses or nurse practitioners from their own dermatology departments who were, in most cases, trained by the dermatologist themselves. However, to adapt to national or international

developments with respect to new opportunities in delivering (cost)effective and accessible healthcare, it is recommended to further investigate the added value of non-physicians in general acne care.

An important strength of this study is that it is comprehensive, covering all four main (Dutch) professions in the area of acne healthcare and thus capturing a broad understanding of the role and added value of non-physicians in acne care. A limitation is that it was not designed to reach data saturation. However, we did provide a clearer understanding of the role and added value of non-physicians within the acne healthcare system. In addition, we are also aware of the danger of extrapolating the findings to the entire acne healthcare system. However, the use of a mixed-methods approach, with triangulation of qualitative with qualitative-data gathered valuable information in order to enhance generalizability of data. Furthermore, this study focuses on the care provision for acne patients in the Dutch healthcare system, which may raise the question of the generalizability of our findings to similar systems in other countries. However, our results can be interpreted as an illustrative example for other countries, where the interpretation of non-physician profiles may slightly differ, although the problems may be similar. Another limitation is the wording of the competence question in the questionnaire, which possibly narrowed the view of dermal therapists and beauticians and may have led them to refrain from mentioning other tasks and responsibilities than those predetermined in the questionnaire. Nevertheless, these other tasks and responsibilities did emerge in the interviews, which allowed us to extend the list of possible tasks and responsibilities non-physicians have to offer. Furthermore, by conducting interviews solely with female dermal therapists and beauticians, we may have introduced some gender bias into the study. Although we used a purposive sampling method to ensure a balanced representation of all types of care providers, an equal gender representation was not achieved. This was probably due to the fact that the population of dermal therapists and beauticians is approximately 95% female.

Finally, this study was not designed to assess the cost-effectiveness of non-physicians in the acne healthcare system. Investigating the added value of reallocation by performing a cost–utility analysis is therefore recommended.

Conclusion

This study has delineated a wide range of non-physician tasks and responsibilities as potential opportunities in reallocating care. Exploring these opportunities may help in the search for new ways to deliver effective, accessible, and patient-satisfying healthcare, as opted by many (international) healthcare services. There is no “one size fits all” approach in reallocating care and evidence-based standardized pathways and predefined roles and responsibilities per care provider, matching each type of acne severity are still lacking. The authors recommend further investigation of the practicability of reallocating care to non-physicians within real clinical practice, as these non-physician professions may not yet be sufficiently deployed.

Abbreviations

D Dermatologists

GP General practitioner

DT Dermal therapists

B Beauticians

IR Interview results

Declarations

Ethics approval for study protocols involving human participants

All methods were carried out in accordance with the regulations of the Medical Ethics Committee of the Radboud medical centre Nijmegen, the Netherlands, which approved the study protocol (registration number 2017-3915) and declared that the study did not fall within the scope of the Dutch Medical Research Involving Human Subjects Act. To ensure the anonymity of the participating care providers, names were replaced with pseudonyms.

Consent for publication

Verbal and written informed consent was obtained regarding publishing respondents' data.

Consent to participate

Verbal and written informed consent was obtained prior to the interviews.

Availability of data and materials

The datasets used and/or analysed in the current study are available from the corresponding author on reasonable request

Conflict of interest

Femke de Vries, Marlies Welbie, Esther Tjin, Rieke Driessen and Peter van de Kerkhof declare that they have no conflict of interest.

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Authors contribution

FV, MW, ET, RD and PK contributed to the study conception and design. Data collection were conducted by FV. FV and MW performed the first data analysis creating initial topics and key-themes. All initial topics and key themes were discussed and revised with ET, RD and PK, contributing to the final key themes. The first draft of the manuscript was written by FV and all authors (MW, ET, RD and PK) commented on previous versions of the manuscript. FV, MW, ET, RD and PK read and approved the final manuscript. PK supervised the project.

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References

- (1) Laurant M, van der Biezen M, Wijers N, Watananirun K, Kontopantelis E, van Vught AJ. Nurses as substitutes for doctors in primary care. *Cochrane Database of Systematic Reviews* 2018(7).
- (2) World Health Organization. WHO recommendations: optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting. : World Health Organization; 2012.
- (3) Zorguitgaven RTB. Naar beter betaalbare zorg. Den Haag: Taskforce Beheersing Zorguitgaven 2012.
- (4) Elwood TW. Patchwork of scope-of-practice regulations prevent allied health professionals from fully participating in patient care. *Health Aff* 2013;32(11):1985-1989.
- (5) Niezen MG, Mathijssen JJ. Reframing professional boundaries in healthcare: a systematic review of facilitators and barriers to task reallocation from the domain of medicine to the nursing domain. *Health Policy* 2014;117(2):151-169.
- (6) DP DB, van Eijk-Hustings Y, Bessems-Beks M, Essers B, Dirksen C, Vrijhoef H. A national mixed methods evaluation of the effects of removing legal barriers to full practice authority of Dutch Nurse Practitioners and Physician Assistants. *BIG issues* 2018:79.
- (7) O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med* 2014 Sep;89(9):1245-1251.
- (8) Mazeland HJ. Inleiding in de conversatieanalyse. : Coutinho; 2003.
- (9) The logic of qualitative survey research and its position in the field of social research methods. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*; 2010.

- (10) Ministerie van Volksgezondheid, Welzijn en Sport. Centraal Informatiepunt Beroepen Gezondheidszorg (CIBG). Available at: <https://www.bigregister.nl/registratie/nederlands-diploma-registreren/wet-en-regelgeving>. Accessed May, 2019.
- (11) Barbaric J, Abbott R, Posadzki P, Car M, Gunn L, Layton A, et al. Light therapies for acne: abridged Cochrane systematic review including GRADE assessments. *Br J Dermatol* 2018;178(1):61-75.
- (12) De Vries F, Meulendijks A, Driessen R, van Dooren A, Tjin E, van de Kerkhof P. The efficacy and safety of non-pharmacological therapies for the treatment of acne vulgaris: A systematic review and best-evidence synthesis. *Journal of the European Academy of Dermatology and Venereology* 2018;32(7):1195-1203.
- (13) Dréno B, Fischer T, Perosino E, Poli F, Viera M, Rendon M, et al. Expert opinion: efficacy of superficial chemical peels in active acne management—what can we learn from the literature today? Evidence-based recommendations. *Journal of the European Academy of Dermatology and Venereology* 2011;25(6):695-704.
- (14) Waldman A, Bolotin D, Arndt KA, Dover JS, Geronemus RG, Chapas A, et al. ASDS Guidelines Task Force: consensus recommendations regarding the safety of lasers, dermabrasion, chemical peels, energy devices, and skin surgery during and after isotretinoin use. *Dermatologic Surgery* 2017;43(10):1249-1262.
- (15) Thiboutot DM, Dréno B, Abanmi A, Alexis AF, Araviiskaia E, Cabal MIB, et al. Practical management of acne for clinicians: An international consensus from the Global Alliance to Improve Outcomes in Acne. *J Am Acad Dermatol* 2018;78(2):S1-S23. e1.
- (16) Zwijnenberg NC, Bours GJ. Nurse practitioners and physician assistants in Dutch hospitals: their role, extent of substitution and facilitators and barriers experienced in the reallocation of tasks. *J Adv Nurs* 2012;68(6):1235-1246.
- (17) Sanden Kvd, Smit W, Dashorst M. The referencing document of the Dutch national qualification framework to the European qualification framework. Brussels: European Commission 2012.