



# Online nutrition counselling on weight loss

## Experiences of overweight and obese adults

Esther Weishaupt, Sandra Jent, Eveline Zbären, Karin Haas

### Abstract

New technologies offer promising approaches for weight loss. A newly-developed technology for online nutrition counselling enables counselling on weight loss via a mobile application. In a qualitative study 15 individual interviews were conducted with overweight and obese adults to investigate experiences with online nutrition counselling using this weight loss app. Data was evaluated using qualitative content analysis. The easy operation of the app facilitated integration of the online counselling into daily routines. The aspects especially appreciated were the regular contact with the dietitian, the timely feedback and the high level of flexibility. Limitations were seen in case of an increased need for discussion or in the case of complex topics. The further development of digital counselling competences can enable online nutrition counselling to be tailored even more specifically to the needs of patients.

**Keywords:** patient experience, online counselling, online nutrition counselling, overweight, mobile app

### Introduction

The increasing prevalence of overweight and obesity presents a major challenge all over the world [1]. In Switzerland overweight (30.8% and obesity (10.3%) in adults is also widespread and effective measures for prevention and therapy are needed [2]. New technologies offer promising approaches for weight loss. Studies show that interventions with internet-based technologies improve eating habits and effectively support weight loss [3, 4]. Technological developments are also enabling dietitians to expand the range of counselling offered with mobile applications (apps) and thus innovatively support behavioural change [5–7]. In the field of psychotherapy Internet-based interventions and online counselling are already widespread [8]. Internationally and particularly in Switzerland online nutrition counselling for behavioural change is still rarely offered [6]. In the literature various reasons are given: the limited availability of data on the long-term effects of Internet-based interventions, limited competence with digital applications or low availability of high quality apps suitable for the counselling process [4, 6, 9]. A new healthcare service provider (Oviva AG, CH-8852 Altendorf) has developed technology to provide nutrition counselling for weight loss. In a one-year pre/post pilot study in German-speaking Switzerland the efficacy and feasibility of online nutrition counselling using the Oviva app for weight loss was in-

### Citation

Weishaupt E, Jent S, Zbären E, Haas K: Online nutritional counselling on weight loss. Experiences of overweight and obese adults. *Ernahrungs Umschau* 2020; 67(6): 108–14.

This article is available online:

DOI: 10.4455/eu.2020.032

### Peer-Reviewed

Manuscript (original contribution) received: 05.08.2019

Revision accepted: 12.02.2020

### Corresponding author

Esther Weishaupt (MA)

Berner Fachhochschule

Murtenstrasse 10, 3008 Bern, Schweiz

esther.weishaupt@bfh.ch

investigated [9]. At the end of the intervention qualitative interviews were conducted with the study participants (overweight and obese adults) to record their experiences with online nutrition counselling and use of this app.

## Methodology

### Study design and sample

The one-year pre/post pilot study was approved by the Ethics Commission of the Canton of Zurich (KEK-ZH 2015-0358). A total of 43 adults with body mass indexes (BMI) of between 27 and 33 kg/m<sup>2</sup> were included. 36 participants completed the study. The intervention was divided into three phases. The frequency of contact in the intervention phases was standardised for this study (♦ Figure 1).

Information was exchanged with the dietitian in the form of text messages via a secure chat and counselling documents provided. Nutritional habits, food choices and eating rhythms were recorded by way of a photo-based food diary. Food quantities were estimated by the dietitian. Physical activity and weight could be entered by the patients themselves or monitored via devices connected by Bluetooth. The data collected was transferred in encrypted form to the electronic nutrition counselling documentation for analysis. Individual goals for behavioural change were established jointly based on personal data and regularly evaluated. The feedback and progression of the online counselling was tailored to the individual goals and needs of the participants. The app was provided free of charge for the participants' use. The overall structure of the intervention is shown in ♦ Figure 1. A detailed description of the intervention together with the inclusion and exclusion criteria have been published elsewhere [9].

### Data collection

The study participants were invited personally to take part in a qualitative process evaluation in the course of scheduling their final examination (Week 52). After conclusion of the one-year intervention, 15 interview guide-supported individual interviews were conducted between April 2017 and January 2018. Recruitment continued until the material became repetitive. The interview guide was developed using the SPSS method developed by Helfferich<sup>1</sup> [10] and included the topic areas experience of the online counselling and use of the app. The interview lasted 40–60 minutes. Audio recordings of the interviews were made using an Olympus Digital Voice Recorder. All interviews took place at the Centre for Obesity and Metabolic Medicine in Winterthur and were conducted wherever possible on the day of the final examination. The written, informed consent was given upon commencement of the intervention.

### Data evaluation

The interviews were transcribed on the basis of the rules of Dresing and Pehl and dialects translated into standard German as accurately as possible [11]. The analysis was done in accordance with the content-structured qualitative content analysis according to Kuckartz [12].

The data was evaluated using the software MAXQDA (version 2018). The category system was developed by deductive and inductive

<sup>1</sup> SPSS = collect, examine, sort, collate; a qualitative procedure developed by Cornelia Helfferich

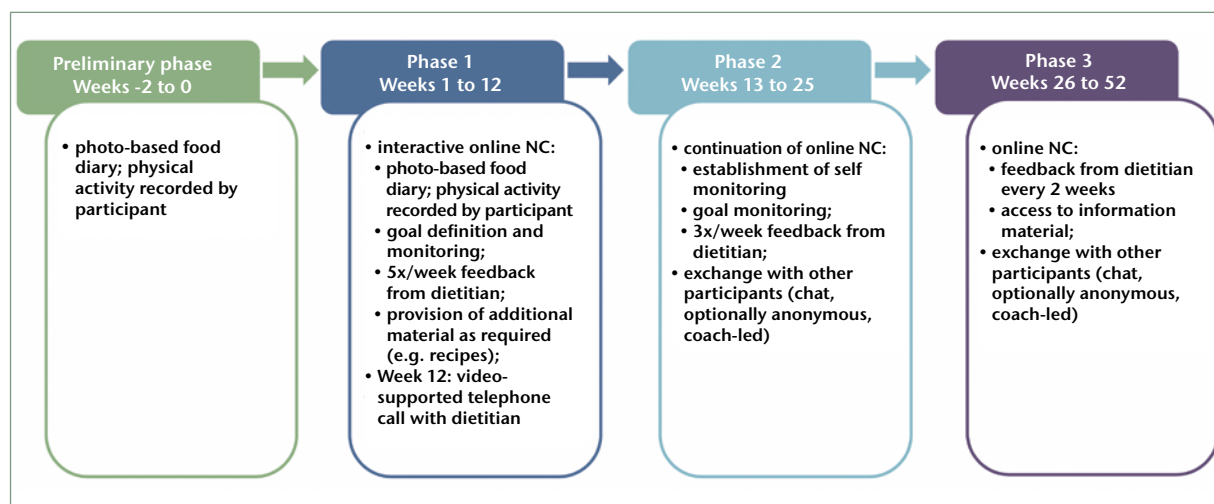


Fig. 1: Overall structure of the intervention  
online NC = online nutrition counselling

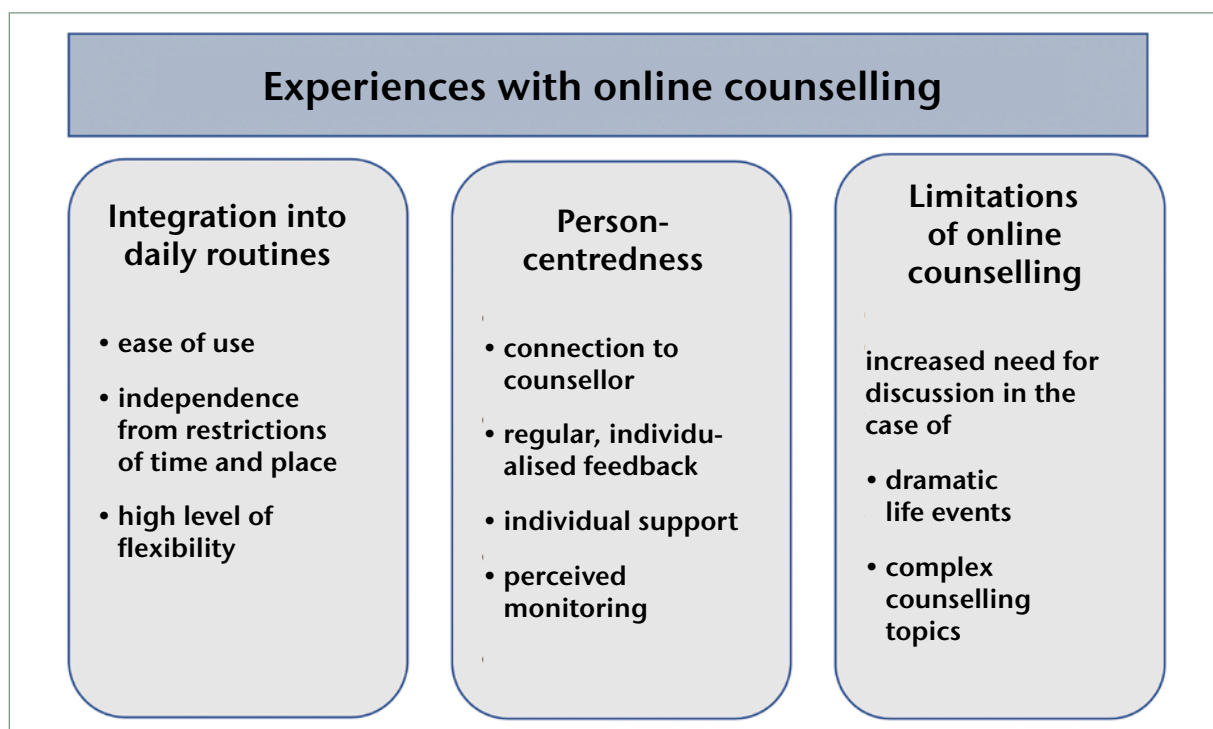


Fig. 2: Experiences with online counselling and use of the app

creation of main categories based on the interview guide and initiating text work. The first three transcripts were consensually coded and jointly discussed by the first two of the authors named above and the sub-categories inductively determined. Then the complete material was coded, evaluated based on categories and discussed as required.

## Results

### Characteristics

Interviews were conducted with 13 women and two men aged between 28–58 years (mean: 45 years) from in and around Winterthur. 11 of the participants were Swiss, 4 persons held citizenship of other countries (Germany, Austria, Italy). 8 persons had a tertiary education level according to the definition of the Swiss State Secretariat for Education, Research and Innovation [13], 7 persons had vocational qualifications and 1 person had completed the Matura<sup>2</sup> as the highest academic qualification.

The weight loss of the interview participants at the end of the intervention (after 12 months) was on average 4.4 kg (mean, equivalent to 5.9% of initial weight). As a result of the intervention, 14 of the interviewees lost weight. One person was not able to achieve any weight loss. The majority of the participants underwent the phases of the study as planned. Minor deviations from the intervention phases were possible.

The experiences of the interviewees with the online counselling can be divided into three main categories

1. Integration into daily routines
2. Person-centredness and
3. Limitations of online counselling (♦ Figure 2).

### Integration into daily routines

All the interviewees described the app as self-explanatory and easy to use. Entries hardly took any time and were easy to integrate into daily routines.

*“I think it’s a great idea that it is so much easier to integrate into daily routines.”* (P6: 69)

Particularly when compared to recording or even weighing food, the interviewees found taking photos of their meals very practical.

*“You don’t have to write anything down. It’s really easy to do. It doesn’t take much motivation because it is so easy.”* (P22: 107)

For individual interviewees the daily handling of the mobile phone and use of the app were initially unfamiliar and required an adjustment, as this example shows:

*“I realised that I was just not used to working with this [mobile phone] every day.”* (P23: 18)

After an acclimatisation period, having their mobile phone with them all the time and using the app also came naturally.

In addition, all interviewees appreciated the high level of flexibility in the communication and the fact that they were independent of any restrictions as to time and place. They did not have to keep fixed appointments and could decide for themselves when to ask questions and read replies.

<sup>2</sup> equivalent to the German *Abitur* [school-leaving qualification for access to higher education]



*"I really enjoyed the fact that I didn't have to be in a certain place at a certain time. That was a great relief for me. And [it also] considerably (...) increased my motivation."* (P5: 71)

### Person-centredness

Most interviewees stated that they could sense a person behind this app. They felt that someone was there who was supporting them and of whom they could ask questions. This made them feel a connection which was considered helpful, particularly in the early stages.

*"I found it very motivating that I always had that connection, that I could always ask something."* (P23: 54)

Another motivating element was the timely feedback.

*"You are always getting this feedback. It's as though someone is always there."* (P8: 3)

Some participants described it as difficult to know whether they were implementing the recommendations correctly. Therefore, they evaluated feedback related to their own eating habits as particularly helpful, since this increased their awareness of their own eating habits.

*"I think that is effectively the most important value to increase my awareness. If I become aware then I can change something in my life."* (P19: 15)

Most interviewees felt that they received individual and supportive advice, if their information needs were identified, their personal nutrition problems recognised and solutions found which were feasible and tailored to their situation.

*"I find that the problems you have are so individual and that is the advantage of this counselling. It really does start you off wherever you happen to be."* (P6: 35)

*"She was always asking me what else do you want to know or what should we have a look at together. I thought that was good."* (P1: 142)

The feedback was greatly appreciated. Negative experiences with the online counselling were therefore described in this context. Feedback which did not correspond to personal needs had a negative influence on behaviour, satisfaction and motivation.

*"At some stage I just started no longer documenting things because I didn't get the kind of feedback I was expecting."* (P19: 3)

Only a few interviewees expressed this negative experience. The content of feedback did not always correspond to expectations, did not come at the required time or at the frequency expected. Two persons therefore changed their dietitian in the initial phase. Some interviewees stated that they needed a certain amount of monitoring to change their behaviour.

*"Control is extremely important to me. In the past I have done things and realised: as soon as someone is checking up on me, then it works better."* (P1: 120)

The direct contact effectively enabled the dietitian to directly monitor implementation of the measures discussed. Participants perceived this feedback on their own behaviour as a supportive form of control.

### Limits of online counselling

Individual respondents also recognised limitations to the online counselling, for example in the case of an increased need for discussion after a dramatic life event or discussion of complex topics.

*"You have to write a lot and sometimes in this situation a real talk can be more helpful. It is more direct because she can ask questions in response and I can ask questions too. It is just easier in terms of communication."* (P3: 85)

*"My problem in the evenings, we discovered, is more of a psychological one. A reward for the day with food and here I noticed that this counselling was lacking."* (P6: 15)

In such situations these participants did not find the online counselling was the right format and would have preferred personal contact. As an alternative option in the course of this intervention a change of communication channel to the form of an oral exchange via Skype was made possible or additional psychological counselling discussed.

## Discussion

In this study overweight and obese persons described the one-year online counselling for weight loss predominantly positive. The interviewees appreciated the regular contact, the high level of flexibility in the communication and the timely, individual feedback, particularly with regard to their own eating habits.

In this study the app's ease of use and the flexible communication independent of time or place restrictions facilitated integration of the online counselling into daily routines. Mobile technologies enable constant support and facilitate the integration of a weight loss programme into a busy daily routine [8, 14, 15]. The ease of use of the app is an important basic precondition for use and acceptance. Digital tools must be user friendly, visually appealing and simple to navigate [14, 16]. Thanks to the ability to communicate regardless of time and place, mobile technology responds to the needs of patients for greater flexibility [14]. Preliminary study results show that the app investigated in this study can offer effective support for long-term behavioural changes and weight loss [9].

A person-centred counselling approach takes account of individual needs, preferences and values and is preferred by a majority of the patients [17]. Like the interviewees, patients in face-to-face nutrition counselling also reported that the identification and understanding of individual expectations, goals and needs are important for a positive counselling experience [18, 19]. The results of this study



underline that it is possible to apply a person-centred approach in online counselling. However, the experiences of patients with face-to-face nutrition counselling do show that there can be differences between what patients really need and what the dietitian recognises [19]. In this and other studies, unfulfilled expectations of counselling led to a reduction in satisfaction and adherence [20, 21]. The establishment of a good counselling relationship is therefore central in both face-to-face nutrition counselling and online counselling [20, 22].

Although in text-based communication non-verbal signals are lacking, results from psychotherapy indicate that the therapeutic relationship in online therapy is comparable to that in direct personal psychotherapy [8, 22]. The counselling relationship must be established at the start of the counselling and constantly maintained. It is advisable here to evaluate the counselling relationship specifically, since therapists often assess this differently to their patients [23]. In this study unfulfilled expectations, particularly in respect to the timing, frequency or content of feedback, affected the counselling relationship. It is the task of the dietitian to recognise problems and work on the counselling relationship. If establishment is not successful, a change of dietitian can be considered – as occurred in this study [24]. An important role in behavioural change is attributed to individualised feedback, as these results underline. Individualised feedback is based on personal information [25], which increases the relevance of the information, cognitive processing and attentiveness [26]. Current evidence suggests that individualised feedback, even when computer-generated, is more effective in changing behaviour than generic information [27, 28]. In order to encourage motivation for behavioural change, feedback should be not only individualised but also formulated to be positive, encouraging and non-judgemental [14]. In this study the feedback was not generated by computer on the basis of algorithms but rather personally formulated and sent by a dietitian. The dietitian was responsible for formulating the content of the feedback so as to be relevant to the personal situation and for adjusting the timing and frequency to individual needs.

**In comparison to computer-generated feedback the dietitian in an online counselling session can use his/her knowledge of the personal situation more intensively to formulate feedback that is person-centred and achieve a higher level of individualisation.**

The participants in this study appreciated the regular contact and timely feedback. Feedback motivates, enables recognition of progress in dietary changes and helps with changing eating habits [14, 15, 29]. There was appreciation among participants for the flexibility enabling them to decide for themselves when to ask questions and read answers. This time delay in the counselling process can encourage self-observation and increase awareness, since both parties have time to reflect and react [8, 30].

The results of this study indicate that the frequency and timing of feedback messages did not always correspond to the individual needs of participants. The frequency with which persons wish to receive feedback messages can vary enormously, and change over time [31]. Particularly the high frequency in the first three months requires a high level of availability on the part of the

service provider, which also brings the risk of unrealistic expectations on the part of patients [32]. In the course of this study messages were sent and received by dietitians during standard working hours. Support during evenings and weekends was not provided. In the case of complex counselling topics or an increased need for discussion in specific life situations, the results of this study were that an oral exchange via Skype was considered easier and more direct.

**Synchronous communication channels such as an audio or video conference represent a useful addition if text-based communication is not sufficient.**

Surveys in the field of psychological health show that persons with psychological and emotional problems prefer face-to-face interaction over treatments via the Internet, but that telephone services are also considered an attractive treatment option [33, 34]. It should be established however whether the limits of online counselling experienced here occurred as a result of the communication channel or whether there were therapy topics which were outside the field of the dietitian. Moreover, there is also the possibility of combining online counselling with face-to-face consultations in order to be able to react more flexibly to the individual needs of patients.

### Strengths and limitations of the study

One strength of this study is that the partly structured interviews generated extensive qualitative data related to online counselling for weight loss from the patient perspective. The results are not generally applicable, but helpful for the further development of digital counselling practices and specifically for the counselling of overweight adults. Limitations are the small number of participants and the high number of female subjects. More male participants, persons who did not complete the study or who did not lose weight could have shown other interesting aspects of experiences with online counselling. But these persons were no longer available to interview. On the other hand it was possible to incorporate the views of persons who had little experience of mobile phones. The online counselling was carried out by three different dietitians. It cannot be excluded that personal counselling style influenced the motivation for behavioural change and the success achieved.





## Conclusions

Online nutrition counselling represents a suitable supplement to face-to-face counselling and offers greater flexibility due to the independence from restrictions of time and place. The user-friendliness of the app as well as the subjective perception of the counselling and communication skills of the dietitian influence patient experiences of online counselling. In order to further develop online nutrition counselling, there is a particular need for research into text-based communication, the establishment and design of a counselling relationship and preferences for communication frequency, and the intensity and nature of feedback messages. This would enable a differentiated analysis of the potential of online nutrition counselling and enable greater tailoring to patient needs in their digital living environments.

### Conflict of interest

The study was co-financed by Innosuisse-Schweiz (Project #17236.2 PFLS-LS) and the provider of the app, Oviva AG, CH-8852 Altendorf. Oviva financed the clinical investigations that were performed, which were not however a component of this evaluation. For performance of the online counselling for this study dietitians were engaged who also worked for Oviva. The activities of the dietitians within the context of this study were however remunerated by Innosuisse-Schweiz. The authors of this publication were not financed by Oviva and there is no conflict of interest.

Esther Weishaupt, MA<sup>1,2</sup>

Sandra Jent, MHumNutr<sup>1,3</sup>

Eveline Zbären, BSc<sup>1,4</sup>

Dr. rer. nat. Karin Haas<sup>1,5</sup>

<sup>1</sup> Berner Fachhochschule  
Murtenstr. 10, 3008 Bern, Schweiz

<sup>2</sup> esther.weishaupt@bfh.ch

<sup>3</sup> sandra.jent@bfh.ch

<sup>4</sup> eveline.zbaeren@bluewin.ch

<sup>5</sup> karin.haas@bfh.ch

## References

1. Ng M, Fleming T, Robinson M, et al.: Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the global burden of disease study 2013. *The Lancet* 2014; 384(9945): 766–81.
2. Eichholzer M, Richard A, Stoffel-Kurt N, et al.: Körpergewicht in der Schweiz: aktuelle Daten und Vergleiche mit früheren Jahren. *Schweizerische Gesundheitsbefragung* 2012.
3. Liu F, Kong X, Cao J, et al.: Mobile phone intervention and weight loss among overweight and obese adults: a meta-analysis of randomized controlled trials. *Am J Epidemiol* 2015; 181(5): 337–48.
4. Afshin A, Babalola D, Mclean M, et al.: Information technology and lifestyle: a systematic evaluation of internet and mobile interventions for improving diet, physical activity, obesity, tobacco, and alcohol use. *J Am Heart Assoc* 2016; 5(9).
5. Chen J, Gemming L, Hanning R, Allman-Farinelli M: Smartphone apps and the nutrition care process: current perspectives and future considerations. *Patient Educ Couns* 2018; 101(4): 750–7.
6. Chen J, Loeffers J, Bauman A, Hanning R, Allman-Farinelli M: The use of smartphone health apps and other mobile health (mHealth) technologies in dietetic practice: a three country study. *J Hum Nutr Diet* 2017; 30(4): 439–52.
7. Stein K: Remote nutrition counseling: Considerations in a new channel for client communication. *J Acad Nutr Diet* 2015; 115(10): 1561–76.
8. Richards D, Viganó N: Online counseling: a narrative and critical review of the literature. *J Clin Psychol* 2013; 69(9): 994–1011.
9. Haas K, Hayoz S, Maurer-Wiesner S: Effectiveness and feasibility of remote counselling by dietitians for overweight and obese adults: pilot study. *JMIR Mhealth Uhealth* 2019; 7(4): e12289.
10. Helfferich C: *Die Qualität qualitativer Daten*. Wiesbaden: VS Verlag für Sozialwissenschaften 2011, 178–189.
11. Dresing T, Pehl T: *Praxisbuch Interview, Transkription & Analyse: Anleitungen und Regelsysteme für qualitative Forschung*. 6th ed. Marburg: audiotranskription.de 2015, 17–23.
12. Kuckartz U: *Qualitative Inhaltsanalyse: Methoden, Praxis, Computerunterstützung*. 3rd ed. Weinheim und Basel: Belt Juvena 2016, 55–122.
13. Staatssekretariat für Bildung, Forschung und Innovation: *Berufsbildung in der Schweiz: Fakten und Zahlen*, Bern. 2019. [www.sbf.admin.ch/sbf/de/home/bildung/bildungsraum-schweiz/bildungssystem-schweiz.html](http://www.sbf.admin.ch/sbf/de/home/bildung/bildungsraum-schweiz/bildungssystem-schweiz.html) (last accessed on 19 February 2020)
14. Fukuoka Y, Kamitani E, Bonnet K, Lindgren T: Real-time social support through a mobile virtual community to improve healthy behavior in overweight and sedentary adults: a focus group analysis. *J Med Internet Res* 2011; 13(3): e49.
15. Khaylis A, Viaslas T, Bergstrom J, Gore-Felton C: A review of efficacious technology-based weight-loss interventions: five key components. *Telemed J E Health* 2010; 16(9): 931–8.
16. Kruse CS, Argueta DA, Lopez L, Nair A: Patient and provider attitudes toward the use of patient portals for the management of chronic disease: a systematic review. *J Med Internet Res* 2015; 17(2): e40.
17. Kitson A, Marshall A, Bassett K, Zeitz K: What are the core elements of patient-centred care? A narrative review and synthesis of the literature from health policy, medicine and nursing. *J Adv Nurs* 2013; 69(1): 4–15.
18. Sladdin I, Chaboyer W, Ball L: Patients' perceptions and experiences of patient-centred care in dietetic consultations. *J Hum Nutr Diet* 2018; 31(2): 188–96.
19. Hancock REE, Bonner G, Hollingdale R, Madden AM: 'If you listen to me properly, I feel good': a qualitative examination of patient experiences of dietetic consultations. *J Hum Nutr Diet* 2012; 25(3): 275–84.
20. Bell RA, Kravitz RL, Thom D, Krupat E, Azari R: Unmet expectations for care and the patient-physician relationship. *J Gen Intern Med* 2002; 17(11): 817–24.
21. Ralston JD, Revere D, Robins LS, Goldberg HI: Patients'



- experience with a diabetes support programme based on an interactive electronic medical record: qualitative study. *BMJ* 2004; 328(7449): 1159.
22. Sucala M, Schnur JB, Constantino MJ, Miller SJ, Brackman EH, Montgomery GH: The therapeutic relationship in e-therapy for mental health: a systematic review. *J Med Internet Res* 2012; 14(4): e110.
  23. Norcross JC: The therapeutic relationship. In: Duncan BL, Miller SD, Wampold BE (eds.): *The heart and soul of change: delivering what works in therapy*, 2nd ed. Washington, D.C: American Psychological Association 2010; 113–142.
  24. Bargmann S, Robinson B: *Feedback-Informed Clinical Work: The basics*. 2012. <https://store.scottdmiller.com/collections/fit-manuals> (last accessed on 19 February 2020)
  25. DiClemente CC, Marinilli AS, Singh M, Bellino LE: The role of feedback in the process of health behavior change. *Am J Health Behav* 2001; 25(3): 217–27.
  26. Hawkins RP, Kreuter M, Resnicow K, Fishbein M, Dijkstra A: Understanding tailoring in communicating about health. *Health Educ Res* 2008; 23(3): 454–66.
  27. Eyles HC, Mhurchu CN: Does tailoring make a difference? A systematic review of the long-term effectiveness of tailored nutrition education for adults. *Nutr Rev* 2009; 67(8): 464–80.
  28. Brug J, Oenema A, Campbell M: Past, present, and future of computer-tailored nutrition education. *Am J Clin Nutr* 2003; 77(4 Suppl): 1028S–1034S.
  29. Ambeba EJ, Ye L, Sereika SM, et al.: The use of mHealth to deliver tailored messages reduces reported energy and fat intake. *J Cardiovasc Nurs* 2015; 30(1): 35–43.
  30. Brandt CJ, Søgaard GI, Clemensen J, Søndergaard J, Nielsen JB: Determinants of successful eHealth coaching for consumer lifestyle changes: qualitative interview study among health care professionals. *J Med Internet Res* 2018; 20(7): e237.
  31. Gerber BS, Stolley MR, Thompson AL, Sharp LK, Fitzgibbon ML: Mobile phone text messaging to promote healthy behaviors and weight loss maintenance: a feasibility study. *Health Informatics J* 2009; 15(1): 17–25.
  32. Donaldson EL, Fallows S, Morris M: A text message based weight management intervention for overweight adults. *J Hum Nutr Diet* 2014; 27 Suppl 2: 90–7.
  33. Batterham PJ, Calear AL: Preferences for Internet-Based Mental Health Interventions in an adult online sample: findings from an online community survey. *JMIR Ment Health* 2017; 4(2): e26.
  34. Mohr DC, Siddique J, Ho J, Duffecy J, Jin L, Fokuo JK: Interest in behavioral and psychological treatments delivered face-to-face, by telephone, and by internet. *Ann Behav Med* 2010; 40(1): 89–98.

DOI: 10.4455/eu.2020.032