

# Resources in vulnerable young adults: self-assessments during preventive consultation with their general practitioner in Denmark

Kirsten Schierup Freund<sup>1,\*</sup>, Ann Dorrit Guassora<sup>2</sup>, Trine Hegelund<sup>3</sup>,  
Lotte Hvas<sup>2</sup>, and Jørgen Lous<sup>4</sup>

<sup>1</sup>Center for General Practice, Aalborg University, Fyrkildevvej 7, DK-9200 Aalborg Ø, Denmark, <sup>2</sup>The Research Unit and Section of General Practice, Department of Public Health, University of Copenhagen, Ø. Farimagsgade 5, Ø, DK-1014 Copenhagen, Denmark, <sup>3</sup>Hovedgaden 43, DK-2970 Hoersholm, Denmark and <sup>4</sup>Research Unit of General Practice, Southern University, J. B. Winsløvs Vej 9A, DK-5000 Odense, Denmark

\*Corresponding author. E-mail: Kirsten.freund@dadlnet.dk  
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## Summary

Inequality in health is increasing. People with many problems often lack energy to improve well-being and reduce their problems. This study analyses how psycho-socially challenged younger (20- to 44-year-old) patients described their own resources to reach lifestyle goals or alter life circumstances. Within the context of a randomized controlled trial, Danish participants had two structured preventive person-centred consultations with their general practitioner. Consultations focused on well-being, salutogenesis, resources, barriers and support of autonomy. Using the qualitative method: Systematic Text Condensation, we made thematic cross-analysis of patients' goal-specific resource statements described at the first consultation. Of the 209 patients, 191 (91%) chose one or two goals for a better life next year; nearly all (179) could recall and describe which resources they would use to reach their goal. We categorized resource statements into (i) *personal constitution* as 'willpower' and 'tenacity'; (ii) *network*, e.g. family; (iii) *personal experience* with identical or similar problems. Some patients needed to *free up resources* by handling psychological problems before being able to focus on lifestyle goals. The study demonstrates that patients with particular psycho-social problems could describe essential resources in a structured, salutogenic, preventive consultation with their general practitioner. Reflecting intrinsic and extrinsic motivation, these resources reflected dimensions of essential health theories like sense of coherence, self-efficacy and self-determination theory. Increased awareness of these resources seems essential for vulnerable patients by improving psychological well-being and optimism, thereby facilitating health-related changes. This may be an important step to reducing inequality in health.

**Key words:** self-efficacy, salutogenesis, general practice, qualitative methods, well-being

## INTRODUCTION

Health inequality is prevalent in most societies, including the more affluent ones. This inequality affects socio-economically disadvantaged populations in particular (WHO and Commission on Social Determinants of Health, 2008). For many decades, healthcare systems have been aware of the inequitable distribution of their services, which is known as ‘the inverse care law’, i.e. the availability of good medical or social care tends to vary inversely with the needs of the population served (Tudor Hart, 1971; McLean *et al.*, 2015). Many studies have shown that engaging in a suite of four healthy behaviours (physical activity, eating healthy diet, drinking moderate amounts of alcohol and not smoking) delays all-cause mortality, including cardiovascular disease and cancer, by at least 10 years (Kvaavik *et al.*, 2010; Ford *et al.*, 2011). Other studies have linked psychological well-being, especially optimism, to lower risk of disease and all-cause mortality. This is also the case when potential confounders like sociodemographic characteristics, depression, health behaviours and health condition are taken into consideration (DuBois *et al.*, 2015; Kim *et al.*, 2017).

In Denmark almost all citizens are registered with a general practitioner (GP) for primary healthcare, which gives unlimited free use for treatment, but only limited possibility for preventive health consultations and only in relation to specific somatic circumstances—not general prevention.

The most socioeconomically disadvantaged and psycho-socially challenged citizens are more vulnerable to psycho-social and medical strains than less challenged citizens (Sundhedsstyrelsen, 2011; Grabovschi *et al.*, 2013). Well-being presupposes a balance between the requirements made, own priorities and available resources, i.e. both inner (e.g. physical and mental health) and outer (time, network, functional framework, economy) resources (Ryan and Deci, 2006). Focusing on this balance is a cornerstone in person-centred care (Starfield, 2011).

Helping patients become conscious about and to verbalize the pros and cons of actual and intended changed behaviour may help them achieve this balance. However this procedure is seldom used in consultations with the ‘unmotivated’ or ‘unsuccessful intenders’ (Hollnagel and Malterud, 2000; Hardcastle *et al.*, 2015). Still, by unearthing any resources that may be invested, well-being may be enhanced, and a change of behaviour accomplished. Helping disadvantaged citizens achieve this balance, we may draw on Antonovsky’s salutogenetic theory, which describes health as a movement on a continuum of ease and disease. In his research on ‘How

does a person move toward the healthy pole?’, Antonovsky describes *generalized resistance resources* (GRR) as characteristics fundamental to an individual or a group’s staying healthy despite stressors (Antonovsky, 1987; Mittelmark and Bull, 2013). GRR are, e.g. material goods, knowledge, intelligence, social network and support, personal constitution, ego identity, traditions and a preventive orientation. GRR are cornerstones in the development of a strong *sense of coherence* (SOC), which consists of the ability to feel coherence in life and to make life manageable, predictable and meaningful. SOC seems to be pivotal in developing coping strategies and avoiding and combatting a wide variety of stressors and thus prevent tension from being transformed to stress and disease. SOC is therefore a precondition for reducing vulnerability, enhancing well-being and staying healthy.

Understanding the complexity of coping strategies is fundamental to designing effective healthcare offers for vulnerable citizens. Addressing this challenge, a randomized controlled trial (RCT) in Danish general practice offered two well-prepared, structured, preventive health consultations to 20- to 44-year-old patients in whom screening revealed multiple psycho-social problems (Freund and Lous, 2002). This study was conducted from 1998 to 1999 by 28 GPs in the North Jutland Region, Denmark. The purpose of the RCT was to heighten vulnerable patients’ well-being and reduce their problems by furthering their ability to reach self-selected goals for change in lifestyle and living conditions. Postal 1-year follow-up demonstrated positive results of the intervention in the form of improved mental well-being (SF12) and fewer psycho-social problems (Freund and Lous, 2012). Furthermore a large majority of patients described positive experience with the health consultation, reflecting better self-efficacy (Soot *et al.*, 2018). Overweight patients, especially those with many problems, who wanted weight loss, achieved a mean weight loss of 4.7 kg (Lous and Freund, 2016).

In order to identify factors that may lie at the root of these positive 1-year results, we decided to study the patients’ statements. The present qualitative study analyses the self-assessed resources to reach self-selected goals stated by the patients at the end of their first consultation.

## MATERIALS

### Participants

All patients aged 20–44 years visiting their GP on project days were consecutively invited by the secretary to fill in a screening form (SQ-33) counting 33 questions about

lifestyle and psycho-social conditions. Patients not speaking Danish or with severe psychiatric or acute somatic illness were not invited. Those who had problems related to 7 or more of the 33 questions (30%,  $n = 625$ ) were defined as 'vulnerable' and invited to participate in the RCT. Those who accepted the invitation ( $n = 495$ ) completed a comprehensive questionnaire at home (Q1). They were subsequently randomized to control ( $n = 255$ ) or an intervention that included two preventive health consultations ( $n = 240$ ) with their own GP (Freund and Lous, 2012). This article reports data from the intervention group.

Vulnerability was related mainly to psychological, but also to social problems. The most frequent problems reported were: 'difficulty finding solutions to everyday problems', 'feeling of insecurity', 'poor self-rated health', 'no-one to confide in within the family' and 'extreme stress'. Participants with 'unemployment >6 months/1 year' were over-represented compared to the Danish background population; there was no over-representation of participants who were 'living alone', except for 'living alone with a child' (Freund and Lous, 2002).

All GPs in the county ( $n = 327$ ) were invited to participate. Twenty-eight GPs accepted the invitation and participated in 40 h of training. They were introduced to psycho-social theories, the importance of self-rated health, autonomy, the 'health resource/risk balance' and elements of motivational interviewing. GPs were instructed to respect autonomy and strengthen the patient's confidence in his or her own abilities and resources with a view to reaching one or maximum two self-selected goals out of one open and 14 predefined goals for lifestyle and life conditions.

Of the 209 patients, 91% ( $n = 191$ ) selected at least one goal and 72% ( $n = 150$ ) selected two goals. The self-selected goals were related mainly to weight change (28%), mental well-being (24%), partner relationship (20%), working situation (18%), smoking (16%) and exercise (12%) (Figure 1).

### Resource data

Data for this article stem from the *conversation questionnaire* completed by the patients during the first preventive consultation. This questionnaire explored goals, resources and barriers. The question analysed here was 'Which strong sides do you have that may help you reach your desired goal?'. Answers were restricted to two lines for each goal.

A total of 179 patients listed strengths related to one goal. Many of them listed strengths related to both goals. Only 7% listed no strengths (Figure 1). This

article reports on the 313 strengths registered by the 179 patients.

### Method of analysis

All notes concerning a patient's strengths were read individually and subsequently discussed and analysed by authors 1 and 3 using the qualitative method: Systematic Text Condensation, which is a descriptive and explorative method for thematic cross-case analysis of qualitative data suitable for the short statements in our study (Malterud, 2011, 2012). We used the four steps in the procedure: (i) reading total material from chaos to themes; (ii) identifying and sorting meaning units-from themes to codes; (iii) condensation from code to meaning; (iv) synthesizing from condensation to descriptions and concepts, which is presented in the 'Result' section using quotes.

## RESULTS

The analyses show that although they ticked off many psycho-social problems before inclusion, the patients were able to list substantial strengths at the consultation. Many stated different types of strengths. The qualitative analysis revealed three categories of resources and a need to free up resources to be able to make changes.

### Resources

- 1) *Personal constitution* was described by almost all patients.
- Other resources described were primarily:
- 2) *Network*.
- 3) *Personal experience*.

Some mentioned *need to free up resources* by dealing with a psycho-social problem before they could focus on their desired lifestyle goal.

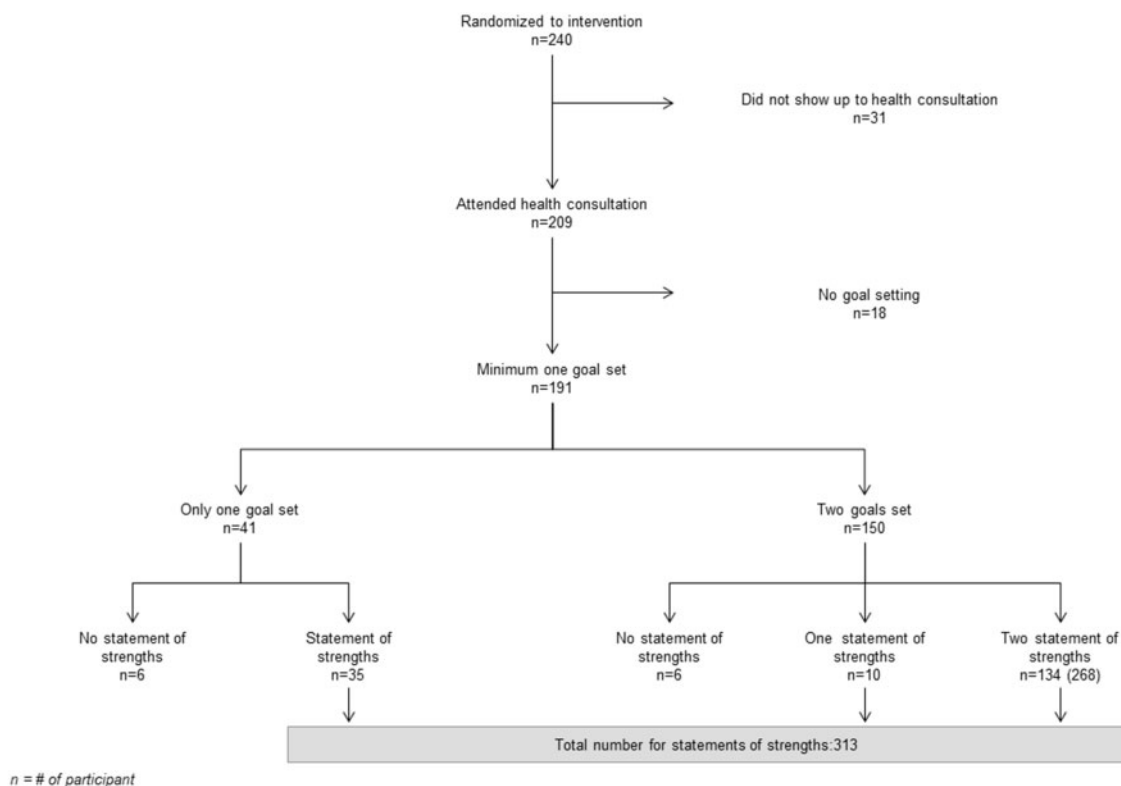
### Personal constitution

The most frequently used resource was *personal constitution*, which was captured in words like *willpower*, *tenacity*, *openminded*, *energetic* and *good humour*. By far the most frequently mentioned words were *willpower* and *tenacity*.

*Willpower* is the resource most frequently listed; often described as a *strong will* and *iron will*:

(3237) A 33-year-old divorced man with no children:  
*The will to change my lifestyle (have already started).*  
*Have good conversational relationship with ex-wife*

(3737) A 25-year-old married woman: *The will/motivation, support from friends.*



**Fig. 1:** Flowchart for goals and statements of strengths.

Like in these quotes, network was often mentioned in conjunction with willpower, most often family, but also work and GP:

(2935) A 31-year-old woman with no children: *‘Good family network, GP, the will’*.

(3237) The 33-year-old divorced man: *‘Willpower to take Antabuse and get help from my GP to improve my lifestyle’*.

In these quotes, the GP apparently is a part of the network that supports willpower.

In the following quote, the importance of external support is evident:

(3701) A 38-year-old married women with two small children wanted weight loss and a better partner relationship. As strengths she mentioned: *‘Will. I have great willpower if I get support from the ones who mean most to me.’*

*Tenacity* was mentioned approximately half as often as will and almost always unrelated to network or other external support, e.g.:

(2531) A 28-year-old unmarried man: *‘Tenacious. Capable of regaining driving license.’*

(2625) A 31-year-old divorced woman living with one child: *‘I’m tenacious, I can take care of myself.’*

(0809) A 42-year-old divorced woman with three children: *‘Tenacity, reach goals.’*

Personal constitution was sometimes *combined* as in this example:

(3507) A 23-year-old married woman with two children: *‘Will, tenacity and a strong character’*

### Network

Network was stated about half as often as willpower and often together with this.

*Family* was the most frequent network strength, e.g. backing and support. Some described how their family’s medical history was a comfortable background since their family had experience with handling, e.g. mental problems, including anxiety and depression. *‘There are several other cases in the family’*.

(0113) A 22-year-old single woman wanted to become more satisfied with herself, and she stated: *‘Support from home, backing.’*

(2935) A 31-year-old married man with two children wanted to improve psychologically by becoming better at showing his emotions. As strengths, he stated: *'Good family network, general practitioner, the will'*.

(3829) A 34-year-old woman wanted to stop smoking. As strengths she stated: *'Willpower and support from my family'*.

The family was also described as a basis for developing resources in general:

(3317) A 45-year-old divorced woman with three children whose goals were better use of her spare time and improvement of daily living for her family, stated: *'Awareness that a calm family life gives more resources'*.

Thus, family was used in different ways, such as source of moral support, knowledge base and source of ping-pong to improve psychologically, sometimes together with willpower and the GP.

*Partner relationship* was occasionally mentioned, e.g. as a space where the patients could discuss their problems and identify shared values, or as support in connection with dietary changes.

(1219) A 42-year-old married woman with two children who wanted better partner relationship and social network stated as strengths: *'Willpower, good relationship, common interests, talk about prioritizing'*.

*Work* was occasionally mentioned as a strength, most often stated neutrally as steady and good work, *'satisfied with job'*.

(1311) A 31-year-old married woman with two children whose goal was to change her work situation stated: *'Independent, trusted work, feel appreciated at work'*.

In this quote, work is described as a safe base which the patient mentioned as a resource in bringing about an improvement in her work situation.

*Friends* were rarely mentioned, and when so mostly in relation to support for changes related to exercise and smoking:

(0121) A 24-year-old single woman who wanted to do exercise and achieve weight loss mentioned: *'I want to lose weight; my friends go there'*.

(1433) An unmarried 28-year-old man who wanted to stop smoking: *'Only a few of my friends smoke'*.

Thus, in some statements, friends were used to mirror own behaviour and were solicited as a source of trust in the patient's own ability to improve health behaviour.

Family was the most frequently mentioned network resource. Still, 'no-one to confide in within the family

when problems arise' was one of the most frequent inclusion criteria for men as well as women.

### Personal experience

Personal experience was stated as a resource half as often as network and was often combined with tenacity. The most frequent statements described something the patients had *previously achieved* or with which they had *experience*. Experience was described in several ways; they had handled the same problem previously, or they were confident that in new situations they would draw on their experience with other problems. The most common goal was weight loss. Several patients stated, e.g. that they had previously lost 5–10 kg and mentioned this as a strength: *'Like to exercise. Have previously lost 10 kg.'* Others described how previous weight loss through exercise or activity made them feel better, both physically and emotionally, e.g. by reducing pain in the back, knees and loin or by improving their mood.

(2707) A 43-year-old married woman who wanted to lose weight on a permanent basis wrote as strengths: *'Tenacious. I have previously successfully lost weight, and I feel better mentally when I weigh less'*.

Personal experience could include positive as well as negative experiences as a resource:

(0209) A 43-year-old married woman wanted to do exercise and reduce her use of alcohol: *'I feel very much unease by drinking too often, and want to feel better both mentally and physically'*.

Frequently, two behavioural changes and strengths were linked, thereby reinforcing the positive process:

(1117) A 40-year-old divorced man had as goals to reduce his consumption of hashish and use his network. His strengths were: *'Tenacity. Experience from giving up alcohol'*. He wanted to rebuild his previous network and wrote that the strengths he would use were: *'Many interests. Like to help/be there for others'*.

He would use his *constitution*: tenacity and his *experience*, both in relation to abuse and using his interests in social relations.

Combination of resources were seen in many statements (Figure 2).

### Need to free up resources

*Other things need to be handled first*. Several patients stated that other things needed to be solved before they could reach a specific lifestyle goal. As an example of the complex nature of lifestyle changes, they stated a

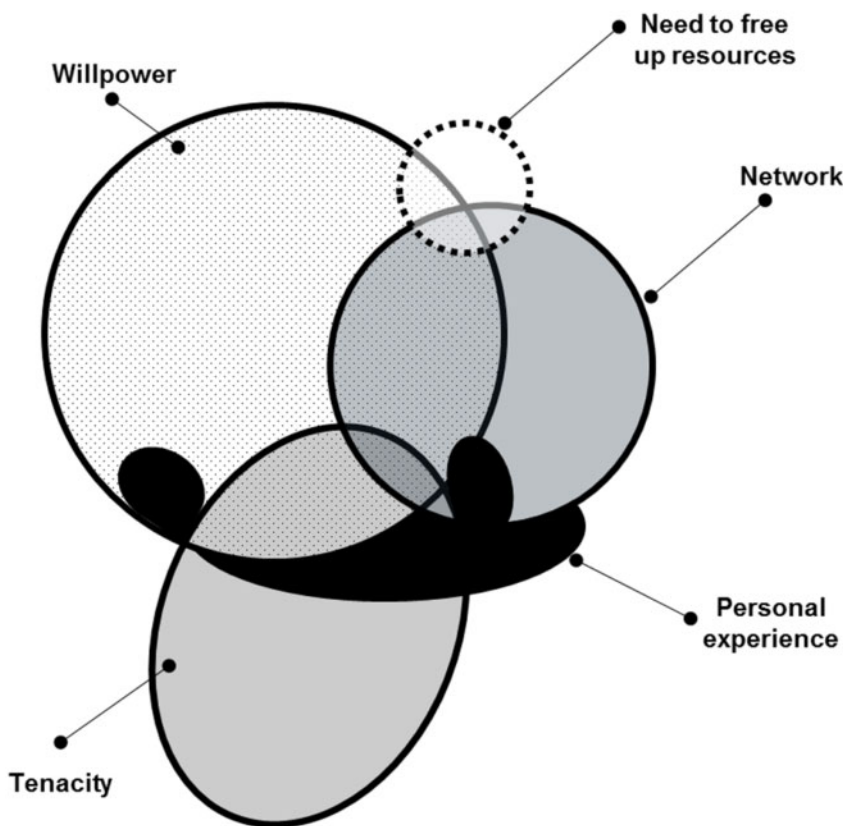


Fig. 2: Relation among resources.

need to build up resources by changing their mental condition before they could make a specific lifestyle change concerning, e.g., weight or substance abuse. This insight into their need to gradually build up and set free resources was primarily seen in the large group (21%) stating that improved mental well-being was one of their two goals, as seen in this statement:

(1207) A 38-year-old married woman who wanted to improve her mental well-being and lose weight. As strengths she stated: 'Willpower. Have today noticed that it takes a load off my back to talk about this (incest). Understand the importance of seeing a psychologist. Good understanding of diet, but probably need to wait until after the psychologist.'

She explained that she had benefitted from putting into words the fact that she has been exposed to incest. She now had the goal to get better mentally with the help of a psychologist. She had the will to lose weight and had a good dietary understanding. But setting her mental resources free was a prerequisite to achieving this goal.

For a participant who endured a poor mental and physical working environment, finding a new job was seen as a prerequisite to successfully overcoming substance abuse:

(1321) A 28-year-old woman with one child whose goals were to get a new job and stop drinking alcohol: 'Quit job due to poor mental and physical working environment'. As strengths she stated: 'Willpower and wish to change my life, stop drinking alcohol. I am receiving treatment. By changing the working situation, the reason for drinking beer/spirits is changed'.

Besides primarily describing willpower and wishes, she also described her confidence in her being able to mobilize the resources needed to stop her substance abuse by changing her working situation.

## DISCUSSION

### Main findings

Screening revealed that the 20–44-year-old patients attending general practice had many psycho-social

problems. However, during the initial, structured, preventive consultation with their GP, they could mention several strengths with respect to self-selected goals for living conditions and lifestyle.

Almost all described *personal constitution*, most frequently *willpower* and *tenacity*. They also often described how constitution could be used, primarily by soliciting current or future support from their *network* or drawing on previous *personal experience*. Other patients described how major problems needed to be dealt with *to free up resources* to reach a lifestyle goal. Awareness of a *need to free up resources* was seen mainly in the large group for whom improved mental well-being was one of their two goals.

### Strengths and weaknesses

The patients' statements are very dense as they were given only two lines to describe resources for each goal. People with many psycho-social problems often find it difficult to put their thoughts and considerations into words during healthcare encounters (Dixon-Woods et al., 2006; Verlinde et al., 2012). We therefore believe that they perceived the short form as manageable. Only 7% stated no strengths. Hence, it is considered a strength of the present study that insight was obtained into this vulnerable group of adults' own thoughts about their resources, and that statements had a high 'meaning density', even if the brevity of the answers hampers qualitative analysis compared with analysis of transcribed materials. The study design did not permit personal interview.

The GP was present throughout the entire 45–60 min. consultation, also when patients answered the final questionnaire. Regular meetings with the GPs revealed that they often needed to make the patients aware of any positive statements they had verbalized during the conversation; inversely, patients were immediately conscious of barriers to behavioural change. The GP hence played an important role in helping vulnerable patients focus on their potential personal resources by discussing ambivalence, strengths and barriers to achieving their goals. We do not know whether some statements were biased to please the GP. But the 1-year postal questionnaire showed fewer psycho-social problems, better SF-12 scores and enhanced self-efficacy (Freund and Lous, 2012; Soot et al., 2018).

### Discussion of results

The frequency with which vulnerable patients made statements about resources needed to obtain self-chosen goals was surprising. Vulnerable patients are usually

considered unmotivated to change health behaviour (Hardcastle et al., 2015). However, they were apparently aware of their resources at the consultation. The study cannot answer whether this was a new awareness or if it was just verbalized at the consultation. Still, the 1-year postal evaluation shows that the consultation revealed new thoughts and possibilities (Soot et al., 2018).

A *positive constitution* was stated by almost all patients; most often in the form of *willpower* and *tenacity*. Personal constitution and ego identity are a pivotal part of general resistance resources (GRR) and fundamental to staying healthy or improving. But as seen in the present study, this is not always enough. Personal constitution was often stated together with other resources (Figure 2).

Willpower was most often combined with network, and tenacity most often with personal experience. A few stated both will and tenacity.

*Network* was frequently mentioned alone or together with willpower. However, at the initial screening, patients had often ticked off that they had no family or friends in whom to confide. *Network* is an important GRR for staying healthy and reduce mortality risk (Holt-Lunstad et al., 2010). Having a social frame of reference, relatedness and security are essential to building identity, intrinsic motivation and self-esteem as well as to gathering the courage needed to evolve (Ryan and Deci, 2000); besides, these elements are also essential to psychological well-being, especially optimism, which has shown to reduce both disease and all-cause mortality (Kim et al., 2017). In the present study, network was described as a source of knowledge, reflection, safety and support; hence, network is essential to SOC.

*Personal experience* was by some described as a strength to achieving set goals, most often alone or combined with tenacity. Positive personal experience builds confidence that you can accomplish the same or something similar at a later point in time, especially when you are met with trust, support and continuity (Bandura, 1977, 2004). It is hence an important prerequisite to developing self-efficacy both in general and, specifically, in relation to self-selected goals as shown in the present study (Ghazi et al., 2018). The statements reflect that both positive and negative experience were used as resources. This confirms Antonovsky's theory, describing health as a movement on a continuum of ease and dis-ease. If you have the ability to assess and understand a situation, stressors will not produce permanent breakdown but in the longer term be salutogenic by strengthening SOC and psychological well-being (Mittelmark and Bull, 2013).

Statements indicating a ‘need to free up resources’ as ‘other things need to be handled first’ was made by patients with a mental problem as their highest priority. This bears out that limited resources lead to limited possibilities. Vulnerable patients apparently have several personal situations that must be resolved and basic needs that must be met before their resources may be freed up for behavioural change (Tay and Diener, 2011).

Autonomy support was essential to the study design and was facilitated by the patients’ self-completed questionnaire (Q1) which was used in the consultation. The importance of respect for autonomy, trust and support is in accordance with the self-determination theory (SDT), which describes factors that either facilitate or undermine intrinsic and extrinsic motivation (Ryan and Deci, 2000; Gillison *et al.*, 2019). SDT describes how acknowledgement of choice and feelings will enhance important intrinsic motivation because it gives people a stronger feeling of autonomy. Extrinsic pressure can reduce intrinsic motivation, as in risk-focused consultations. Thus, intrinsic motivation is reduced when the health professionals may take motivation for granted, even if the patient has essential unmet basic needs (Hardcastle *et al.*, 2015). The basic needs for competence, autonomy and relatedness must be met to support well-being, optimism and motivation (Farholm *et al.*, 2017).

The resources disclosed in the present study are in accordance with SOC, SDT and theory of self-efficacy. We find that the strengths stated bear testimony to optimism and faith in more positive well-being recently shown to lower the risk of disease and all-cause mortality (DuBois *et al.*, 2015; Kim *et al.*, 2017; Kubzansky *et al.*, 2018).

The present study population represents both deprived and non-deprived geographical areas. A study showed that patients in socioeconomically seriously deprived areas had more psycho-social and multimorbidity problems they wished to discuss; however, in these areas, the GPs had less time and were more stressed (Mercer *et al.*, 2007). Patients wanted relational continuity, genuine empathy and sufficient time in consultations. However, GPs’ ability to enable patients’ resources was related to the severity of deprivation and the GPs’ stress, empathy and time. Empathy and trust are necessary to feel free and be confident in own self-efficacy. Development of trust and self-efficacy takes time and requires continuity (Mercer *et al.*, 2007). Vulnerable patients and their GPs may profit from external interventions in the form of ‘social prescribing’ to support patients’ long-term self-efficacy. Social

prescribing has been promoted in the UK, but good methods have so far not been developed (Bickerdike *et al.*, 2017). Attendance to external interventions require high, individualized quality and good communication to create trust and motivation. This was accomplished in a study within cardiac rehabilitation with social differentiation, where more equality in adherence and attendance was achieved (Meillier *et al.*, 2012). These studies may indicate that the complexity of person-centred consultations may be reduced by making interventions more targeted and focused on individual resources to build up self-efficacy ‘seeing the big picture’ instead of undermining self-efficacy by focusing on risk behaviour.

### Recommendation for research and practice

The present study population of the vulnerable 30% of younger GP attenders is only rarely targeted by preventive offers. The psychometric properties of the SQ-33 have been assessed and 23 of the SQ-33 items, HSQ-23, were shown to possess adequate psychometric properties and responsiveness and can thus be used as an outcome measure in preventive intervention studies (Comins *et al.*, 2019).

The strengths outlined in this study reflect that resources to obtain self-selected goals for change can be verbalized when both the GP and the patient focus on the personal health balance. An important prerequisite for this is to create ‘food for thoughts’ within the context of a preventive person-centred consultation. Thus, both the framing and the time allocated to the consultation are important to allow both the patient and the GP to properly prepare for the consultation. For many years, health inequality has been rising. This situation may be ascribed in part to the ‘inverse care law’ and the healthcare system’s focus on risk tracing with little regard for individual priorities, resources and barriers, thus ignoring the complexity of motivation (Starfield *et al.*, 2005; Hardcastle *et al.*, 2015; McLean *et al.*, 2015).

We are not aware of any studies with the same focus on structure, autonomy and resources, which we find essential in prevention targeting younger adults with fundamental psycho-social problems. The Danish patient-list system supports a long-term GP–patient relationship. This basis for trust, support and continuity has turned out to be essential for general health across socioeconomic differences (Starfield *et al.*, 2005). However, the healthcare system needs to support further interventions targeting vulnerable patients. Future studies should address whether the HSQ-23 successfully identifies



patients who will benefit from preventive health consultations. And future studies should improve methods in every-day consultations to help reveal psycho-socially vulnerable patients' resources.

## CONCLUSION

Even psycho-socially vulnerable patients can verbalize confidence in their own constitution, network, personal experience and need of prioritizing when they are well prepared and met with trust and respect for their own wishes, and when GPs focus on patients' resources to reaching their goals. The education and the fee of GPs is so far not focused on person-centred salutogenic aspects of a consultation, but in this study the GPs received specific courses and fee to perform the preventive consultations to their vulnerable patients. Both the theoretical and empirical findings of the present study may support arguments for designing specific methods facilitating salutogenic aspects in preventive primary health consultations with vulnerable patients.

## AUTHORS' CONTRIBUTIONS

K.S.F. designed the randomized study and data-collection tools, recruited the GPs, arranged the courses, implemented the study with the GPs. She wrote the article, read the statements and performed the qualitative analyses, initially together with T.R. A.D.G. discussed, revised and supplied the article. J.L. designed the data-collection tools for RCT. L.H. and J.L. discussed and revised the article. All authors read and approved the final manuscript.

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## CONFLICT OF INTEREST STATEMENT

The authors declare that they have no competing interests.

## REFERENCES

- Antonovsky, A. (1987) *Unraveling the Mystery of Health: How People Manage Stress and Stay Well*. Jossey-Bass, San Francisco.
- Bandura, A. (1977) Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, **84**, 191–215.
- Bandura, A. (2004) Health promotion by social cognitive means. *Health Education & Behavior*, **31**, 143–164.
- Bickerdike, L., Booth, A., Wilson, P. M., Farley, K. and Wright, K. (2017) Social prescribing: less rhetoric and more reality. A systematic review of the evidence. *BMJ Open*, **7**, e013384.
- Comins, J. D., Freund, K. S., Christensen, K. B., Lous, J. and Brodersen, J. (2019) Validation of a health screening questionnaire for primary care using Rasch models. *Journal of Patient-Reported Outcomes*, **3**, 1–10.
- Dixon-Woods, M., Cavers, D., Agarwal, S., Annandale, E., Arthur, A., Harvey, J. et al. (2006) Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups. *BMC Medical Research Methodology*, **6**, 1–13.
- DuBois, C. M., Lopez, O. V., Beale, E. E., Healy, B. C., Boehm, J. K. and Huffman, J. C. (2015) Relationships between positive psychological constructs and health outcomes in patients with cardiovascular disease: a systematic review. *International Journal of Cardiology*, **195**, 265–280.
- Farholm, A., Halvari, H., Niemiec, C. P., Williams, G. C. and Deci, E. L. (2017) Changes in return to work among patients in vocational rehabilitation: a self-determination theory perspective. *Disability and Rehabilitation*, **39**, 2039–2046.
- Ford, E. S., Zhao, G., Tsai, J. and Li, C. (2011) Low-risk lifestyle behaviors and all-cause mortality: findings from the National Health and Nutrition Examination Survey III Mortality Study. *American Journal of Public Health*, **101**, 1922–1929.
- Freund, K. S. and Lous, J. (2002) [Potentially marginalized 20–44-years-olds in general practice. Who are they? The results of a questionnaire screening] Potentielt marginaliserede 20-44-årige i almen praksis. *Ugeskrift for Læger*, **164**, 5367–5372.
- Freund, K. S. and Lous, J. (2012) The effect of preventive consultations on young adults with psychosocial problems: a randomized trial. *Health Education Research*, **27**, 927–945.
- Ghazi, C., Nyland, J., Whaley, R., Rogers, T., Wera, J. and Henzman, C. (2018) Social cognitive or learning theory use to improve self-efficacy in musculoskeletal rehabilitation: a systematic review and meta-analysis. *Physiotherapy Theory and Practice*, **34**, 495–504.
- Gillison, F. B., Rouse, P., Standage, M., Sebire, S. J. and Ryan, R. M. (2019) A meta-analysis of techniques to promote motivation for health behaviour change from a self-determination theory perspective. *Health Psychology Review*, **13**, 110–130.

- Grabovschi, C., Loignon, C. and Fortin, M. (2013) Mapping the concept of vulnerability related to health care disparities: a scoping review. *BMC Health Services Research*, **13**, 1–11.
- Hardcastle, S. J., Hancox, J., Hattar, A., Maxwell-Smith, C., Thøgersen-Ntoumani, C. and Hagger, M. S. (2015) Motivating the unmotivated: how can health behavior be changed in those unwilling to change? *Frontiers in Psychology*, **6**, 1–4.
- Hollnagel, H. and Malterud, K. (2000) From risk factors to health resources in medical practice. *Medicine, Health Care, and Philosophy*, **3**, 257–264.
- Holt-Lunstad, J., Smith, T. B. and Layton, J. B. (2010) Social relationships and mortality risk: a meta-analytic review. *PLoS Medicine*, **7**, e1000316.
- Kim, E. S., Hagan, K. A., Grodstein, F., DeMeo, D. L., De Vivo, I. and Kubzansky, L. D. (2017) Optimism and cause-specific mortality: a prospective cohort study. *American Journal of Epidemiology*, **185**, 21–29.
- Kubzansky, L. D., Huffman, J. C., Boehm, J. K., Hernandez, R., Kim, E. S., Koga, H. K. *et al.* (2018) Positive psychological well-being and cardiovascular disease. *Journal of the American College of Cardiology*, **72**, 1382–1396.
- Kvaavik, E., Batty, G. D., Ursin, G., Huxley, R. and Gale, C. R. (2010) Influence of individual and combined health behaviors on total and cause-specific mortality in men and women: the United Kingdom health and lifestyle survey. *Archives of Internal Medicine*, **170**, 711–718.
- Lous, J. and Freund, K. S. (2016) Predictors of weight loss in young adults who are over-weight or obese and have psychosocial problems: a post hoc analysis. *BMC Family Practice*, **17**, 1–12.
- Malterud, K. (2011) *[Qualitative Methods in Medical Science] Kvalitative Metoder i Medisinsk Forskning: En Innføring*, 3. utgave. Universitetsforlaget, Oslo, Norway.
- Malterud, K. (2012) Systematic text condensation: a strategy for qualitative analysis. *Scandinavian Journal of Public Health*, **40**, 795–805.
- McLean, G., Guthrie, B., Mercer, S. W. and Watt, G. C. M. (2015) General practice funding underpins the persistence of the inverse care law: cross-sectional study in Scotland. *British Journal of General Practice*, **65**, e799–e805.
- Meillier, L. K., Nielsen, K. M., Larsen, F. B. and Larsen, M. L. (2012) Socially differentiated cardiac rehabilitation: can we improve referral, attendance and adherence among patients with first myocardial infarction? *Scandinavian Journal of Public Health*, **40**, 286–293.
- Mercer, S. W., Cawston, P. G. and Bikker, A. P. (2007) Quality in general practice consultations; a qualitative study of the views of patients living in an area of high socio-economic deprivation in Scotland. *BMC Family Practice*, **8**, 22.
- Mittelmark, M. B. and Bull, T. (2013) The salutogenic model of health in health promotion research. *Global Health Promotion*, **20**, 30–38.
- Ryan, R. and Deci, E. (2000) Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, **55**, 68–78.
- Ryan, R. M. and Deci, E. L. (2006) Self-regulation and the problem of human autonomy: does psychology need choice, self-determination, and will? *Journal of Personality*, **74**, 1557–1585.
- Soot, L., Freund, K. S., Lous, J., Vass, M. and Hvas, L. (2018) How younger adults with psychosocial problems experienced person-centered health consultations. *Patient Experience Journal*, **5**, 116–122.
- Starfield, B. (2011) Is patient-centered care the same as person-focused care? *The Permanente Journal*, **15**, 63–69.
- Starfield, B., Shi, L. and Macinko, J. (2005) Contribution of primary care to health systems and health. *The Milbank Quarterly*, **83**, 457–502.
- Sundhedsstyrelsen. (2011). *[Inequality in Health- Reasons and Efforts] Ulighed i Sundhed - Årsager Og Indsatser*. Sundhedsstyrelsen, Copenhagen, Denmark.
- Tay, L. and Diener, E. (2011) Needs and subjective well-being around the world. *Journal of Personality and Social Psychology*, **101**, 354–365.
- Tudor Hart, J. (1971) The inverse care law. *The Lancet*, **297**, 405–412.
- Verlinde, E., De Laender, N., De Maesschalck, S., Deveugele, M., Willems, S., Field, K. *et al.* (2012) The social gradient in doctor-patient communication. *International Journal for Equity in Health*, **11**, 12.
- WHO and Commission on Social Determinants of Health. (2008). Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health, Geneva, Switzerland.