The Lifestyle Check: Improving Employee Well-Being at the University of Twente

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Abstract

Objective

People with high well-being face challenges effectively and have success in multiple areas of life, including work. This makes it important for employers to manage the well-being of their staff. The aim of this study was to create a lifestyle check (LSC) for employees at the University of Twente (UT) that can measure well-being and be utilized by the UT's lifestyle coaches.

Method

This was done by finding existing constructs regarding relevant topics, measuring the psychometrics of the resulting LSC through t-tests and Cronbach's Alpha, and measuring the acceptance of the LSC's target group with UTAUT.

Results

All four measures had adequate reliability except for pain and the validity was only acceptable for smoking because no adequately similar reference populations were available for the others. The UTAUT factors had no significant effect on the acceptance of the LSC but the feedback was positive.

Conclusions

Though the validity could not be reliably verified, the reliability of most LSC constructs is acceptable and the feedback of the target audience was largely positive. Despite that there is still room for improvement, it can be said that the new LSC is a successful first step in development.

Introduction

Well-being is a state of positive mental health characterized by a high quality of life and the absence of mental disorders (Marsch et al., 2020; González-Rico et al., 2020). More specifically, it is related to satisfaction with life, depression, anxiety, and self-esteem (González-Rico et al., 2020). Well-being is thus related to mental health, but mental health is also affected by physical health (Daniels et al., 2021). For example, although causation is not proven yet, pain is correlated with anxiety and depression (Lu et al., 2023). Moreover, sleeping problems often lead to burnout (Tesfaye, 2022). People with high well-being tend to face challenges effectively and have success in multiple areas of life, including work (González-Rico et al., 2020).

In an employment context, the definition of well-being is slightly more specific. It is conceptualized as a positive state of mind characterized by dedication and concentration at work (González-Rico et al., 2020). Since work is a crucial component of life, employment well-being also affects general well-being (González-Rico et al., 2020). Moreover, employees with low well-being often experience low productivity and higher absenteeism (Carolan et al., 2017). The health of employees thus greatly affects their organization and is of high importance for organizations.

However, employers run into three issues when trying to take care of employee well-being (Kessler et al., 2004). First, they can only obtain reliable data through annual, time-consuming individual physical health check-ups. Second, even if they do have this data, it is difficult to obtain good data on the impact of potential health problems on workplace productivity or the effect of health. Third, they often can't estimate the impact of changes in health on the workplace (Kessler et al., 2004). Screenings are thus not only costly but also have measurement flaws.

A less costly solution for this could be to primarily use self-reports rather than individual check-ups to measure well-being. One existing self-report on workplace well-being is the Health and Work Performance Questionnaire (HPQ), which assesses employee health and how it affects work performance (Kessler et al., 2004). The HPQ measures absenteeism and presenteeism. Absenteeism, here, refers to the hours of work that were missed and presenteeism is bad performance at work. It also measures critical incidents, which can be related to successes as well as failures and work-related accidents. Lastly, it looks at both the mental and physical health of employees. It is a highly valid scale, but the reliability is hard to verify because work performance changes over time and it is nearly impossible to assess

whether differences in measurement are due tof o context or unreliability, so there is merit in creating a new workplace well-being measure (Kessler et al., 2004).

One working environment that warrants extra attention is the university. University staff have both high skills and high education and their job is demanding both physically and mentally (Liu et al., 2023). They have to better society, not just by progressing science but also by educating students. Therefore, their health is important for culture and economy (Liu et al., 2023). It is thus important for universities to take care of the well-being of their employees. The University of Twente (UT) offers a lifestyle check (LSC) to assess the well-being of employees as a voluntary service on demand. It can be used to assess well-being on an individual level to treat existing well-being problems. They have many resources for staff, such as physiotherapy, but to make efficient use of these interventions, it is necessary to know who needs them (Well-being for employees, n.d.). However, the current questionnaire is not scientifically based nor assessed on psychometrics. Therefore, the aim of this study is to create a questionnaire that can measure the well-being of UT employees.

To conceptualize well-being, its most important facets need to be identified first. It has already become clear that both physical and mental health influence well-being (Daniels et al., 2021). This means that we need to identify well-being facets, both regarding mental and physical health, that could influence work performance. This also includes behaviours that can lead to future health risks. These could be both specific to the workplace and universal, as long as they are identified with university employees in mind. Stress, depression, anxiety, and burnout are common mental health problems that affect well-being and can be prevented and treated in the workplace (Carolan et al., 2017; González-Rico et al., 2020). Burnout can be considered a problem specific to the workplace, while anxiety and depression are universal problems that do not necessarily have to be related to work and stress belongs to both. Physical health includes physical activity, sleep, pain, alcohol, and smoking, which are all problems not specific to the workplace. It is, therefore, sensible to include them in the questionnaire. This report will focus on anxiety, burnout, sleep, pain, and smoking, which will all be discussed in turn.[1]

Anxiety is among the most common and the most debilitating mental health disorders (Shevlin et al., 2022). It is a vague, pervasive fear often accompanied by bodily symptoms, such as increased heart rate and blood pressure (Nguyen et al., 2022). It can lead to health conditions like stomach ulcers and cardiovascular disease. It is a normal reaction to danger

[1] This LSC questionnaire is created in collaboration and the constructs are divided over two people. Therefore, only half of the constructs are covered here and Fastenrath (2023) will cover the rest.

but can become maladaptive if the feeling is present for longer periods or in the absence of danger (Nguyen et al., 2022). It is also a widely reported mental problem among university staff and leads to great productivity loss (Liu et al., 2023). This makes it a crucial addition to the LSC.

Burnout is emotional, mental, and physical exhaustion caused by long-term stress and emotional strain (Kovács et al., 2023). About 30% of university staff suffer from it (Zavgorodnii et al., 2020). It leads to a lack of engagement at work (González-Rico et al., 2020). Engagement, in this context, is a state of mind characterized by dedication and concentration in the workplace (González-Rico et al., 2020). Therefore, burnout is detrimental to work productivity and needs to be included in the LSC.

Sleeping problems have a 32.1% prevalence among adults (Kerkhof, 2017). These problems can pertain to the quality, quantity, timing, and duration of sleep (Tesfaye, 2022). Lack of sleep can lead to poor health, higher healthcare cost, higher use of healthcare resources, absenteeism, and a higher risk of other mental health issues. Especially burnout (Tesfaye, 2022). So lack of sleep lowers workplace productivity both directly and indirectly. This makes it an important subject to include in the LSC.

Although there are no statistics on the prevalence of pain in Dutch university employees specifically, it will most likely compare to that of office workers, namely, 34% (Burdorf et al., 1993). Pain leads to productivity loss at work (Liu et al., 2023). It is often associated with musculoskeletal disorder (MSD; Dong et al., 2022). MSD is caused by static postures in which people have to be in the same position for prolonged periods of time, causing forced load on muscles and tendons. Considering that university staff often have a sedentary lifestyle, they are likely to experience pain related to MSD (Dong et al., 2022; Tabanfar et al., 2022). Productivity loss related to MSD alone is already up to 240 billion euros in Europe (Dong et al., 2022). But pain and other types of physical discomfort such as nausea and fatigue can also lead to disruption to daily life (Davey, 2021). It is thus important to pay attention to somatic complaints in the LSC.

Employees who smoke often take more and longer breaks (Clarke et al., 1997). This can not only lead to productivity loss but also conflict because of the increased workload for non-smokers (Clarke et al., 1997). Premature death and the health problems caused by smoking lead to lower economic output and thus productivity loss at work (Sendall et al., 2021). This is especially the case with tobacco smoking (McNeil et al., 2021). Vape smoking is also very unhealthy but to a lower extent than tobacco smoking and some smokers choose

to start using vape instead of tobacco as a means of quitting (McNeil et al., 2021). The problems caused by smoking warrant its inclusion in the LSC.

Anxiety, burnout, sleeping problems, pain, and smoking have been identified as issues regarding both facets of well-being and risk factors, and these need to be incorporated into the LSC. However, the success of a self-report measure of work-related well-being for university empolyees is also dependent on its acceptance of the target group (Rombouts et al., 2022). One model that exists to aid eHealth technology developers with this is the CeHRes Roadmap (Nijland, 2011). The CeHRes Roadmap has five phases. The first is contextual inquiry, in which the development team should aim to understand the intended audience and the strengths and weaknesses of the healthcare procedure currently in place. We have made an inventory of the strengths and weaknesses in the preceding sections. Second, the value specification, in which the values of the stakeholders must be translated into the requirements of the product. In our case, the stakeholders are the HR team, the lifestyle coaches, and the UT employees. In the third phase, design, we develop a prototype of the technology based on the requirements made in phase two. Phase four, operationalization, exists of placing the technology into practice. Lastly, in phase five, the summative evaluation, the technology is evaluated based on user interaction and its effectiveness. This design process is not linear but iterative, which means formative evaluations take place in every phase (Nijland, 2011).

The CeHRes Roadmap is a good guideline for creating target group acceptance but to measure acceptance, the intention of the target group to use it needs to be operationalized (Greenhalgh et al., 2017). One way to measure the acceptance of a workplace intervention is through the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2012). UTAUT has four constructs that influence the intention to use an intervention. The first, *performance expectancy*, relates to the perceived benefits of using the intervention. *Effort expectancy* is the perceived ease of use of the intervention. *Social influence* is the extent to which users believe that significant others want them to use the intervention. Lastly, *facilitating conditions* refer to the resources and available support to use the intervention. The intention to use the technology that is determined by these factors influences the degree to which people actually use it (Venkatesh et al., 2012). In order of prediction, *Performance expectancy* is the strongest, then *effort expectancy*, then *social influence*, and *facilitating conditions* is last (Venkatesh et al., 2003). Next to these determinants, sociodemographic factors can influence the acceptance of an instrument, such as age, education, financial status, and migration background (Rombouts et al., 2022).

There are several things that need to be kept in mind when considering the UTAUT determinants as relevant to the UT personnel's acceptance of the LSC. One is that they may not support the topics included. They could perceive a topic as irrelevant to lifestyle and well-being, or too sensitive, which could affect both the employees' *performance expectancy* and *effort expectancy*. If there is a component in the questionnaire that employees perceive to be unbeneficial, they will not trust that the questionnaire will help them. Moreover, it would add extra items that they perceive as useless, making the questionnaire longer than it should be and thus more difficult to use. Indeed, one important principle when creating a survey is to keep it as short as possible so that participants will not lose interest along the way (Siedlecki, 2019). Considering that the LSC is for their personal benefit, people may be willing to invest more time in it. However, we should still be cautious to not make the effort needed to complete the questionnaire outweigh the benefits because that can be an obstacle for people to engage in health-enhancing behaviour (Norman et al., 2015).

One way to gatekeep the amount of topics included in the LSC to preserve the *effort expectancy* of the UT staff, is to see how they score on the LSC constructs. If employees score high on a particular construct, it would justify the inclusion of the topic in the LSC. It could also be helpful for comparing the scores of the UT with similar populations to assess the validity of the LSC. Moreover, the UT would benefit from knowing the participant's scores as an estimate of the need for follow-up interventions.

Another important factor is item quality. The objective quality of the pre-existing constructs we use is already verified. However, the subjective quality from the perspective of the stakeholders may be incongruent considering that objective and subjective assessments are often different (Ruggeri et al., 2005). Although there is currently no evidence that this also applies to survey items, it may be important because it is directly related to the perceived benefits of the questionnaire. A low-quality questionnaire will not be perceived as helpful, thus lowering the target group's *performance expectancy*.

Another issue related to the perceived benefits of the questionnaire is privacy. When people give up sensitive information, they perceive a power imbalance and that will make them feel uncomfortable (Maze, 2023). This would be especially problematic in the workplace because employees often navigate power dynamics by withholding certain information about themselves from their supervisor to feel less vulnerable (Kovič & McMahon, 2023). An invasion of their privacy would take their power of withholding information away from them and could make the drawbacks of doing an LSC outweigh the benefits, which means their anonymity is vital for their acceptance of the LSC.

One demographic barrier to the acceptance of a health technology can be age (Sauchelli et al., 2023). The older the users are, the less likely they are to use technology. However, its negative effect can be modified by education and experience, and considering the users are employees of a technical university, it can be assumed that they are high on both characteristics (Sauchelli et al., 2023). What further complicates the effect of age is that it could also have a positive effect on the acceptance of the LSC questionnaire. People get more health problems as they get older and having more health problems can raise the benefits of the LSC, further raising the motivation of using it (Idler & Cartwright, 2018). Thus, this effect is worth looking into.

However, apart from the clients, the lifestyle coaches will be using the LSC as a conversational tool with their clients and, therefore, their acceptance is important as well. Moreover, the measured constructs should align with the expertise of the lifestyle coaches because it is futile to measure a particular health problem if the lifestyle coaches cannot help their clients with it. The success of the LSC thus relies on the acceptance of both the lifestyle coaches and the employees.

From this information, it follows that the LSC needs to be comprised of mental and physical health topics both specific and universal to the workplace. The questionnaire should also have good psychometrics and be accepted by both UT employees and lifestyle coaches. Regarding UT staff's acceptance of the LSC, three topics are of interest. First, they need to support the topics included. Second, they should be secure that their personal data is safe. Lastly, they should perceive the items as being of high quality. The effect of age on the acceptance of the LSC should be looked into. Moreover, to compare the UT employees to similar populations to measure validity and give the UT a proper overview of what facilities are necessary to enhance employee well-being the total scores should also be reported.
This leads to the following research questions:

1. What are suitable measures to include in the UT LSC intake questionnaire for physical and mental lifestyle behaviours both specific to the workplace and universal?
2. What is the psychometric quality of the measures included in the LSC, and can constructs be further optimized?
- How do UT staff score on the LSC constructs in comparison to similar populations?
3. Is the new LSC instrument appreciated and accepted by UT staff/lifestyle coaches based on their support on topics included, privacy issues and the subjective quality of items?
4. does the participants' age affect the degree of acceptance of the LSC?

Methods

Participants

This study was based on a sample of 103 employees from the UT (Mage = 43.8 SDage = 12.6; 63% female, 35% male). The sample included academic staff as well as support management staff. They were recruited from two departments of the social sciences faculty using convenience sampling. This research was approved by the BMS Ethics Committee of the university under code 230259, and every participant signed informed consent before participating.

Materials

The questionnaire was comprised of already existing constructs measuring the components detailed above. They were put together in Qualtrics (XM, 2022) to be administered. The choice of constructs was based on several criteria:

- They had to be liable for general use or specifically made for employees.
- The reliability and validity had to be acceptable at the minimum, though above-acceptable reliability and validity were preferred.
- They needed to have a small number of items to safeguard the length of the LSC.
- They had to be open access
- Since the majority of staff were Dutch, a Dutch version should be available.
- Norm scores had to be available because the UT wanted to look at how the well-being of the staff as a collective changes over time.

The first four criteria were general to questionnaire creation, the fifth was for the convenience of employees and the last criterion was based on the wishes of HR. The chosen constructs will be discussed below.

The Hospital Anxiety and Depression Scale (HADS) was a sum scale that measured anxiety (and depression) (Spinhoven et al., 1997). This is a 14-item questionnaire of which half measure anxiety and half measure depression about a one-week period. The questions are based on a four-point Likert Scale and higher scores indicate a higher level of symptoms. Most items range from “not at all” to “very often”. For example, the item “I get sudden feelings of panic:”. The answering options are scored from 0-3, where “very often indeed” is scored as 3. But some of the items are reverse-scored, such as “I can sit at ease and feel relaxed”, with the answering options “Definitely” (0), “Usually” (1), “Not Often” (2) and “Not at all” (3). The cut-off values identify normal, abnormal and borderline cases. This

makes the scale easy to interpret and suitable for preventive use. Though this scale was originally meant for somatic outpatients in the hospital, it has a Cronbach's Alpha of .84 for the general population aged 18-65 years, which is high reliability, and was thus suitable for the study's population (Spinhoven et al., 1997).

For burnout, the Mini Oldenburg Burnout Inventory (MOLBI) was used. This sum scale has 10 items and two subscales, namely, exhaustion and disengagement (Mészáros et al., 2020). Exhaustion is work-related tiredness, both physically and emotionally, e.g. "there are days when I feel tired before I arrive at work". Disengagement refers to low motivation in work and depersonalization, e.g. "it happens more and more often that I talk about my work in a negative way". It uses a four-point Likert Scale that ranges from "strongly agree" to "strongly disagree" and is scored 1-4. However, some items are reverse-scored. Higher scores indicate a higher level of burnout but the lack of cut-off scores make it difficult to classify burnout in terms of problematic and non-problematic cases. The questions are not tied to a specific time period. The correlation between the subscales is moderate, although disengagement has a lot more explanatory power than exhaustion (Mészáros et al., 2020). That makes the validity acceptable. It also has a Cronbach's alpha of .806, which is high reliability (Kovács et al., 2023).

The Pittsburgh Sleep Quality Index (PSQI) was chosen to quantify sleeping quality. It contains nineteen self-report questions and five questions rated by a roommate or bed partner, but these are not counted in the total score, so they were omitted (Buysse et al., 1989). The questions were asked about the past month. The scale has seven components: subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. This construct uses open as well as closed questions. An example of an open item is "During the past month, when have you usually gone to bed at night?". This question is compared with the time the person usually goes to bed to calculate the time spent in bed, and that is compared with the time spent on sleeping to calculate sleep efficiency. An example of a closed question would be "During the past month, how would you rate your sleep quality overall?". The closed questions all have a four-point Likert Scale scored from 0-3 and the answering options range from "Not during the past month" to "Three or more times a week". More details on how the global scores should be calculated can be found in Appendix A. The PSQI has a Cronbach's Alpha of .83, which is high reliability. The validity is also high because it is able to distinguish between poor sleepers and a control group. This difference is best identified with a cut-off score of >5 indicating low quality of sleep (Manzar et al., 2015). Though the scale has not yet been validated among the target

group, one study in which the sample mostly comprised of higher-educated participants yielded favourable results (João et al., 2017). Moreover, using it as a screening measure to identify good sleepers and poor sleepers is one of its primary purposes, which fits the goal of the LSC (Buysse et al., 1989).

To measure pain, the somatization scale of the SCL-90 was used. The SCL-90 is a 90-item questionnaire that measures various constructs, including somatization (Holi, 2003). The somatization scale has twelve items about a one-week period, e.g. "How much were you bothered by the following symptoms over the past seven days including today?". The SCL uses a five-point Likert Scale ranging from "not at all" to "extremely", scoring 0 to 4 with higher scores indicating a higher level of symptoms (Holi, 2003). It has been validated among the general population and can thus be used among university staff (Roskin & Dasberg, 1983). The Cronbach's Alpha ranges from .77 to .90, which is optimal reliability (Holi, 2003). The somatization scale is valid because enough studies identified it in factor analysis (Holi, 2003). The norms have seven levels from very low to very high. The detailed level of scoring enables this construct to not distinguish between cases non-cases, and borderline cases, which makes it suitable for early detection.

For smoking, the first and last questions were custom-made based on the literature review. As aforementioned, vaping is not as unhealthy as smoking tobacco and some people use the vape as a means to quit smoking (McNeil et al., 2021). The first question was a pre-selecting item that distinguishes between non-smokers, smokers, and vapers, and was asked about a period of 30 days. The last one measured quitting intention. There was no questionnaire about smoking that looks at both tobacco and vaping, so we had to use two separate ones. Thus, for tobacco, the Heaviness of Smoking Index (HSI) was used (John et al., 2004). This questionnaire consisted of two items extracted from the Fagerström Test for Nicotine Dependence (FTND) and measured tobacco-seeking behaviour with a four-point Likert Scale scored from 0 to 3 with higher scores indicating a higher level of health risk. These items were "How many cigarettes do you consume each day?" and "How soon after you wake up do you smoke your first cigarette?". Cronbach's Alpha was .55 at the lowest and .74 at the highest over 14 studies, so the reliability is low to moderate (Meneses-Gaya et al., 2009). This is not surprising because Cronbach's Alpha is known to be less suitable for measuring reliability for a low number of items (Moran, 2021). The sensitivity and specificity at a cut-off score of four is adequate in indicating nicotine dependence, which makes the validity acceptable (Meneses-Gaya et al., 2009).

For vaping, the Electronic Cigarette Survey (ECS) was used, but only the items about how many days the participant vaped and how many times each day because we were interested in the average daily consumption. These are open questions that use a 28-day time period, and higher scores indicate a higher health risk. There is no cut-off score. There were no psychometric properties available for the ECS and those of the HSI are not ideal, but this is acceptable because smoking and vaping are health risk factors at any level in which a person engages in these behaviours. Therefore, it is most crucial to know whether UT employees smoke or not and the level of consumption is less important. Therefore, the psychometric properties didn't need to be held to a very high standard.

Unfortunately, the condition of having norm scores could not be met for burnout and smoking. This was not a problem for smoking. Burnout, however, was a much more complex construct, so it was crucial to have norm scores. The MOLBI was the only burnout scale with open access, but perhaps the scores taken from this study could also serve as a norm for the lifestyle coaches on the condition that the sample does not have disproportionally high levels of burnout.

The questionnaire ended with evaluative questions to measure the participant's satisfaction with the LSC questionnaire, including a relevant selection from UTAUT (Rombouts et al., 2022). We used the questions about *performance expectancy*, *effort expectancy*, and most questions regarding *facilitating conditions*. Two items were used for *performance expectancy*. For example: "The LSC will help assess my current lifestyle.". The scores could range from 2-10. For *effort expectancy*, three items were used. An example would be "The LSC is understandable". The scores could range from 3-15. Lastly, for the *facilitating conditions*, there were two items and an example item is "I have the knowledge necessary to use the LSC". The scores could range from 2-10. Thus, in total, the scores of the UTAUT factors could range from 7-35.

The *social influence* component was left out because the interest of the evaluative component is with how the questionnaire itself can be improved, and *social influence* is not informative on that. For *effort expectancy*, the item "The questionnaire was easy to follow" was left out because it was too similar to the item "The questionnaire was easy to fill in". For the *facilitating conditions*, the item about the LSC's compatibility with other websites and apps on the participant's computer was left out because the pre-test will not be using the same software as the final product so it would be futile. The item "I have the resources (like a computer, internet, Wi-Fi) necessary to use the LSC" was also left out because their

participation in this study is already an indication that employees have the resources necessary to use the LSC.

We also added custom-made questions that fitted the interest of the study. For example, the item "The length of the questionnaire was appropriate" was added based on our concern that the questionnaire could end up becoming too long. All questions were coded 1-n depending on the Likert Scale and most of the answering options ranged from "Strongly disagree" to "Strongly agree". Some items were reverse-coded. For example, *the LSC was annoying to fill in* was worded negatively so the agreement with this item would be negative feedback. Higher scores indicated higher acceptance of the LSC. The scores on the custom-made items could range from 3-15. Thus, the total score range of the evaluative questions made up of the custom-made items and the UTAUT factors could range from 10-50.

Among the custom-made questions, there were also some that needed elaboration in case the participant gave a particular answer. For example, if a participant chose "Disagree" or "Strongly disagree" on the item *Did the LSC questionnaire cover all the topics that you think are important for measuring lifestyle?* it would be important to know what topics they missed. Therefore, a textbox was added to these answering options.

To understand any differences in acceptance of the questionnaire between groups, demographic questions were added. These were clearly separated from the rest of the questionnaire to avoid confusion because they were not meant to be part of the actual LSC. We asked questions regarding age, gender identity, nationality, and type of contract. Age was a text box in which participants could fill in numbers. For gender identity, participants had the choice between three options: *male*, *female* and *other/prefer not to say*. Nationality was coded as *Dutch* and *other*. The type of contract was coded as *permanent* and *temporary*.

Procedure

The HR department and the Topvorm Paramedical Center were important stakeholders in this project and were, therefore, informed every step of the way in accordance with the steps of the CeHRes Roadmap. We discussed their expectations during an introductory meeting. Then, a literature search was conducted to see what components well-being is comprised of. Based on this literature search, HR was informed about our decisions regarding component inclusion. With their approval, we then searched for potential constructs based on the aforementioned criteria. After that, a draft questionnaire was shown to HR, which was then changed based on their feedback until they were satisfied. These changes are discussed in

the next section. Lastly, a small group of employees was asked to walk through the survey to identify any last issues regarding survey flow and usability. Once the questionnaire was ready to launch, we sent a message with a link to the service portal newsfeed of the UT employees. The people that responded then signed their informed consent, filled the survey out online, and were included in the analysis.

Changes to the LSC based on stakeholder requirements

Based on the feedback received from HR, the questions regarding anxiety were left out. They wanted the LSC to be more focused on positive mental health than negative mental health because they believed focusing on what is going well in their lifestyle would be more encouraging for the employees. Moreover, some questions of the SCL-90 somatization scale were removed because they were not indicative of a physical ailment that the lifestyle coaches have expertise in.

Data analysis

To measure the reliability of the LSC, Cronbach's Alpha was reported for each construct. S*moking* was an exception because those questions were comprised of two constructs, and Cronbach's Alpha is only suitable for one construct. The raw alpha is the most reliable estimate when the scale has the same response format for all items because it is based on item correlation, whereas the standardized alpha works better when the items have a different response format because it is based on item covariance (Yu, n.d.). Therefore, the raw alpha was reported for burnout and pain, and the standardized alpha for sleep.

For the validity, we compared the mean score of each construct to a reference population with the help of one-sample t-tests and binomial tests. For burnout, the comparative score we used was 4.7 from Knapp et al. (2022). For sleep, this was the global score of 6.8 from Lemola et al. (2021). The prevalence of tobacco smokers was compared to the percentage of 8.2 and .9 for vaping both found by NET (2021). Lastly, for pain the mean score (of the raw scores, not the z-scores) of 16.7 from the healthy control group of Ruis et al. (2014) was used. One-sample t-tests were used for all constructs except for smoking and vaping, for which binomial t-tests were used because they were compared to a percentage instead of a mean score. Since the mean scores of the constructs are not just reported for the purpose of the t-tests but also for the UT to get an overview of the well-being of their employees, the scores will also be reported by demographics to identify any groups that are particularly at risk for problems related to mental well-being.

For the closed evaluative questions, a multiple regression analysis was conducted to assess which factors contribute to the participant's acceptance of the LSC. The item *Would you be interested in completing a lifestyle-check in the future (the whole process, including the physical tests and conversation with the lifestyle coach, not just the questionnaire)?* represented the participants' acceptance of the LSC questionnaire and was thus the dependent variable. The independent variables were the UTAUT and the custom-made evaluative items. This is the same way a lot of other studies have calculated the acceptance of a health technology (Mahande & Malago, 2019; Wills et al., 2008; Saputra et al., 2021). All items related to a single factor were grouped together as one independent variable. The custom-made items were also included as stand-alone factors. A bivariate analysis was used for each separate independent variable first to determine if an effect was present. If a factor was insignificant but the single items had an effect, these were still included in the analysis. To find out if the employees' acceptance of the LSC questionnaire is dependent on their age, a linear regression analysis was used with age as the independent variable and the answers to the aforementioned item as the dependent variable. Age, as an independent variable, was numeric in this instance. The open evaluative questions were analysed qualitatively to incorporate the participants' personal feedback on the lifestyle questionnaire. They were coded inductively using Atlas.ti.

Though social desirability bias is not as prevalent in anonymous questionnaires as in face-to-face interviews, self-deception and identity definition can still influence the results (Larson, 2018). To safeguard against such biases, a couple of more objective measures were employed as well. Missing values were reported because the participants were told that they could leave any question they found too personal open, so it could help identify whether any specific questions were too privacy-sensitive. Qualtrics also has timer items installed that will record how much time a participant spent on a particular page, so these were also added to each component to determine if any sections took significantly longer than others. Lastly, survey dropouts could give an indication of whether the LSC was too long.

Results

Out of 125 respondents, 22 dropped out. The participants' demographic characteristics can be found in Table 1. No variables had missing values of a percentage of 10 or higher.

Table 1

Demographic characteristics of the sample population

Characteristic	n	%
Age		
Young (22-43)	52	5.48
Old (44-66)	50	48.54
Gender		
Female	78	65
Male	40	33.3
Other	2	1.6
Nationality		
Dutch	101	84.9
Other	18	15.1
Contract		
Permanent	96	77.4
Temporary	24	19.4
Occupation		
Academic	36	64.5
Support	80	29

Reliability

Cronbach's Alpa was computed for all four constructs. The reliability of the MOLBI was good (10 items; $\alpha = .86$). The PSQI was acceptable (19 items; $\alpha = .74$). The somatization scale (SCL-90) was questionable (7 items; $\alpha = .68$).

Participant scores

The PSQI has a score range of 0-21 and actual scores ranged from 0-16 ($M = 6.14$, $SD = 3.31$). Using the cut-off score of >5, 44.2% of the respondents are bad sleepers. The burnout scores ranged from 0 to 7.2 ($M = 4.19$, $SD = 1.03$). 54.37% of participants score above the mean. The somatization scale of the SCL-90 has a score range of -4 to 4 and participant scores ranged from 1-3 ($M = 1.64$, $SD = .53$) This means that they fall into the categories of above-average (47%), high (13.8%), average (9.26%), and very high pain symptoms (2.78%). The mean scores per demographic group for these three constructs can be found in Table 4.

Of 107 respondents, 11.58% (n = 11) smoked tobacco and one participant vaped. Nobody both smoked and vaped. For tobacco smokers, dependence scores could range from 0 to 6 and actual scores ranged from 0-5. Only two tobacco smokers scored high on dependence (those scores being 4 and 5), and 63.63% intended to quit. The one person who vaped engaged in it two times once in 28 days and did not want to quit. The percentages per demographic group for smoking tobacco can be found in Table 5.

Table 4

Construct scores per demographic group

Characteristic	PSQI global score		MOLBI Total score		SCL-90 somatization	
	M	SD	M	SD	M	SD
Age						
Young (22-43)	5.84	3.46	4.3	1.14	1.77	.6
Old (44-65)	5.72	3.28	4.09	.9	1.5	.4
Gender						
Female	5.68	3.49	3.46	1.84	1.71	.56
Male	5.86	3.10	3.82	1.55	1.5	.47
Other	7.5	3.54	0*	0	1.43	.2
Nationality						
Dutch	5.8	3.49	3.42	1.76	1.56	.43
Other	5.55	2.53	4.44	1.46	1.94	.74
Contract						
Permanent	5.72	3.25	3.54	1.73	1.59	.5
Temporary	6	3.75	3.74	1.83	1.81	.63
Occupation						
Academic	7.09	3.2	4.39	1.47	1.82	.45
Support	5.18	3.25	3.39	1.63	1.55	.64

Note. The PSQI scores are calculated from 112, the MOLBI from 103 and the SCL from 108 respondents

*Nobody who identified as non-binary filled in the MOLBI

Table 5

Tobacco smoking percentages per demographic group

Characteristic	Smoking			
	Prevalence		Quitting intention	
	n	%	n	%
Age				
Young (22-43)	8	15.38	6	75
Old (44-66)	3	6	1	33.33
Gender				
Female	8	1.25	4	50
Male	3	7.5	0	0
Other	0	0	0	0
Nationality				
Dutch	7	6.9	4	57.1
Other	4	22.22	3	75
Contract				
Permanent	9	9.38	6	66.67
Temporary	2	2.5	1	50
Occupation				
Academic	4	11.11	3	75
Support	7	8.75	4	57.1

Score comparisons

To compare the participant scores to a reference population, t-tests were used. The results of the one-sample t-tests can be found in Table 2. The MOLBI score was significantly lower than the reference population ($p = <.01$). Thus, UT staff have a lower level of burnout than the reference population. The PSQI score was significantly lower than the reference group ($p = <.01$), indicating better sleep quality in the UT sample. The pain score was significantly lower than the reference population ($p = <.01$). Therefore, UT staff experience less pain than the reference group.

The results of the binomial t-tests can be found in Table 3. Out of 107 participants, 11.58% were smokers. The test did not provide significant evidence against the null hypothesis that the true probability of success is equal to .082 ($p = .38$). There was only one

person in the sample who vaped (.009%). The test did not provide significant evidence against the null hypothesis that the true probability of success is equal to .01 (p = .62). The null hypothesis is thus accepted. This means that our sample has the same number of smokers and vapers as the reference populations.

Table 2

One-sample T-test results per construct

Construct	Reference score	M	SD	T (df)	P
Sleep	6.8	5.78	3.34	-3.2 (111)	<.01
Pain	16.7	11.66	6.18	-9.07 (123)	<.01
Burnout	4.7	3.58	1.75	-7 (118)	<.01

Note. The sources of the reference scores, in order, are Lemola et al. (2021), Ruis et al. (2014), and Knapp et al. (2022)

Table 3

Binominal T-test results per construct

Construct	Reference score	%	P
Smoking	8.2%	1.2%	.38
Vaping	.9%	.9%	.62

Note. Both reference scores were taken from NET (2021)

Acceptance

Regression analyses

A multiple regression analysis predicted the intention of using the LSC based on *performance expectancy, effort expectancy, facilitating conditions*, and other influences. First, the factors were screened with a bivariate regression. They will each be discussed in turn. The items on *performance expectancy* were excluded from the analysis. This construct had two items: *The LSC questionnaire will help assess my current lifestyle* and *The LSC questionnaire motivates me to improve my current lifestyle.* They could not be used as a single factor due to

weak correlation (B* = .253) and they also weren't eligible as single items (B* = .067, p > .1; B* = .127, p > .1).

Effort expectancy had three items: *the LSC questionnaire is understandable*, *the LSC questionnaire is easy to fill in*, and *the LSC questionnaire is annoying to fill in.* To determine its eligibility, Cronbach's Alpha was computed, and it was below standard (3 items; α = .57). Without the third item, the alpha was good (2 items; α = .80). Thus, the first two items were taken together as *effort expectancy*.

For the *facilitating conditions*, there were two items, namely, *I have the know-how necessary to complete the lifestyle questionnaire* and *I know who to contact if I have questions or difficulties filling in the lifestyle questionnaire*. The correlation between the two variables was insignificant (B* = .249, p > .1), but both items were eligible as individual factors and thus taken up in the analysis (B* = .19, p < .1; B* = .197, p < .1).

There were three other items. These were the questions about privacy, length of the LSC and missing topics. Cronbach's Alpha was computed to determine their eligibility. The Alpha was .32 and could not be improved upon item deletion. Analysing the items separately revealed that only the item about the length of the LSC could be included (B* = .19, p < .1). The items about privacy and missing topics were not eligible for the multiple regression (B* = .09, p > .1; B* = -.17, p > .1).

In the end, four factors were used in the multiple regression analysis as independent variables: effort expectancy; the two items representing facilitating conditions: *I have the know-how necessary to complete the lifestyle questionnaire*, *I know who to contact if I have questions or difficulties filling in the lifestyle questionnaire;* and *The length of the LSC questionnaire was...* None of these factors were found to contribute significantly to the intention of using the LSC. The results of the multiple regression analysis can be found in Table 6. The degrees of freedom was 88 and the F statistic 2.02.

Table 6

Results of the multiple regression analysis

Factor	Estimate	P
Effort expectancy	-.04	.7
Know-how	.11	.18
Know who to contact	.06	.23

Length of the questionnaire	.26	.14

A linear regression analysis was conducted to investigate whether age influenced the acceptance of the LSC. The independent variable age was not found to contribute to the model significantly (B* = .0047, SE = .0056, p = .4). Thus, age did not influence the acceptance of the LSC.

Closed questions

The 94 participants available for the evaluative part had positive views on the LSC overall. UTAUT factor scores ranged from 7-35, with actual scores ranging from 20-34 (M = 27.8, SD = 3.15). Including custom-made questions, scores ranged from 10-50, with actual scores ranging from 27-48 (M = 39.3, SD = 4.3). Table 7 provides a detailed distribution of responses for a comprehensive overview of LSC acceptance.

Performance expectancy scores ranged from 2-10, with participant scores ranging from 3-10 (M = 6.87, SD = 1.39). While 74.5% of participants believed the LSC would assess their current lifestyle, only 28.3% thought it would improve their lifestyle. *Effort expectancy* scores were positive, ranging from 3-15, with actual scores ranging from 8-15 (M = 12.8, SD = 1.84). 89.3% of participants found the LSC easy to fill in, 1.6% considered it annoying, and 9.4% found it understandable. Regarding *facilitating conditions*, 92.6% of participants had the necessary knowledge to answer the questions, and 62.7% knew who to contact for assistance. However, 1.4% were unsure about the latter. Scores for this factor ranged from 2-10, matching the participant score range (M = 8.1, SD = 1.74).

For the remaining factors in Table 8, scores ranged from 3-15, with participant scores ranging from 6-15 (M = 11.51, SD = 4.3). Notable findings include 88.3% of participants wanting to see the results, mixed opinions on the need for an opt-out option, and 21.2% expressing privacy concerns. Additionally, 86.2% of employees found the questionnaire length appropriate, while 27.7% believed topics were missing. 86.2% did not notice differences between components, while 12.7% did. 86.1% of respondents were already familiar with the LSC, and 52.1% had used it in the past. Finally, 57.4% of participants expressed willingness to complete the LSC themselves.

Table 7

Score distribution on the UTAUT items

Construct	Item	Strongly agree		Somewhat agree		Neither agree nor disagree		Somewhat disagree		Strongly disagree	
		n	%	n	%	n	%	n	%	n	%
Performance expectancy	Help asses current lifestyle	15	16	55	58.5	17	18	7	7.4	0	0
	Will motivate to improve my lifestyle	5	5.3	23	24.5	44	46.8	15	16	7	7.4
Effort expectancy	Is easy to fill in	49	52.1	35	37.2	10	1.6	0	0	0	0
	Is annoying to fill in	1	1	9	9.6	19	2.2	30	32	35	37.2
	Is understandable	54	57.4	31	33	7	7.4	1	1	1	1
Facilitating conditions	I have the know-how	59	62.8	28	29.8	3	32	2	2	2	2
	I know who to contact	32	34	27	28.7	9	9.6	19	2	7	7.4

Table 8

Score distribution on other factors

Item	Strongly agree		Somewhat agree		Neither agree nor disagree		Somewhat disagree		Strongly disagree	
	n	%	n	%	n	%	n	%	n	%
Allow to see results	55	58.5	28	29.8	5	5.3	5	5.3	0	0
More explicit opt-out options	10	1.6	20	21.2	28	29.8	20	21.2	15	16

Questions are too privacy-sensitive	3	3.2	17	18	24	25.5	16	17	34	36.2
LSC covered all topics	3	3.2	40	42.5	24	25.5	23	24.5	3	3.2

	Much too short		Too short		Appropriate		Too long		Much too long	
	n	%	n	%	n	%	n	%	n	%
Length of the questionnaire	0	0	1	1	81	86.2	11	11.7	1	1

	No , I never heard of this		Yes, but I did not use it myself		Yes, I have already used it	
	n	%	n	%	n	%
Awareness of the possibility of doing a LSC	13	13.8	32	34	49	52.1

	No		Somewhat interested		Yes	
	n	%	n	%	n	%
Interest in completing a lifestyle-check	14	14.9	26	27.7	54	57.4

Open questions

Based on the participants' answers to the open feedback questions, the following codes were found: *difficulty answering questions, missing topics, overrepresented topics, privacy issues, technical issues*, and *limitations of the questionnaire*. The quotations belonging to them can be found in Appendix B. The number of quotations per code can be seen in Table 9. The codes will be detailed below:

Table 9

Number of quotations per code

Code		Frequency	Signature quote
Missing topics	Social life	9	'next to that, it may be useful to add some questions regarding someone's social environment: does someone have friends, enough social activities, the feeling that they have people they can rely on, etc?'
	Other physical topics	8	'no questions about menopause or surgery.'
	Mental health	6	'mental aspects may be underrepresented.'
	Total	**20**	
Validity	Explanation required	11	'Also there are other questions that require a bit of explanation. For example, when I leave my work I have energy for leisure but then when I arrive home and I have to take care of my child for some hours I feel exhausted'
	Timeframe too short	2	'Next to that, the questions about the past seven days are a very short time period. If that period was not representative the answers will not give a good account of my lifestyle.'
	Total	**13**	
Privacy issues	Medical condition	7	'Not used to being asked medical conditions by not necessary means'
	Drug use	4	'alcohol use can be sensitive.'
	Other	4	'a lot of these questions relate to topics I would rather speak with the lifestyle coach about in person rather than fill it in here. It is not very clear how the data is kept anonymous.'

	Total	**13**	
Technical issues	Items	6	‘the questions about alcohol consumption are multiple choice and the ones on nutrition are open. They are the same question but the answering options are different.’
	Text	4	‘the font type and size could change from page to page’
	Total	**10**	
Problems with existing components	Underrepresented topics	6	‘I missed direct questions related to work/life balance. Think of informal care.’
	Overrepresented topics	3	‘less about sleep patterns. It could be shorter’
	Lack of positively framed questions	1	‘In general, the questions about thoughts/feelings and work are formulated quite negatively. I miss some questions that are more positive.’
	Total	**10**	
Difficulty answering questions		**4**	‘difficult to answer how many steps I take because I don’t keep track of it. Same with amount of sleep, sitting, etc.’

Missing topics.

Missing topics referred to desired topics that were not included. The units of analysis mostly applied to the participants’ explanation of their answer on the closed item on whether the LSC covered all topics important to lifestyle. If they chose *Somewhat disagree* (24.5%) or *Strongly disagree* (3.2%), they were asked to elaborate, and their answers were quoted under *missing topics*. This code had 20 quotations and three subcodes related to topics that were mentioned frequently: *social life, other physical topics,* and *mental health*. Participants wanted to see more questions regarding *social life*. One participant said: ‘next to that, it may be useful to add some questions regarding someone’s social environment: does someone have friends, enough social activities, the feeling that they have people they can rely on, etc?’. This subcode had 9 quotations. They also mentioned topics regarding physical health. One topic that was mentioned often, in particular, was menopause: ‘no questions about menopause or

surgery'. Other topics included hobbies, life situation, and informal care: 'life situation, my sleep is influenced by taking care of a young baby'. This subcode had 8 quotations. The participants also wanted more topics regarding *mental health*. There were 6 quotations under this subcode, for example: 'mental aspects may be underrepresented'.

Validity.

Validity referred to the participants' concerns that the questionnaire would give an incorrect impression of their lifestyle and applied to units of analysis where these were mentioned. It had 13 quotations and two subcodes: *explanation required* and *timeframe too short*. *Explanation required* captured the participants' want to provide an explanation for their answers and the lack of opportunity to do so. One participant said their exhaustion after work is dependent on whether they also have to take care of their child: 'Also there are other questions that require a bit of explanation. For example ,when I leave my work I have energy for leisure but then when I arrive home and I have to take care of my child for some hours I feel exhausted'. This subcode had 11 quotations. *Timeframe too short* indicated participants' concerns that the specified timeframe did not represent their usual lifestyle. For example, for the questions regarding physical activity: 'Next to that, the questions about the past seven days are a very short time period. If that period was not representative the answers will not give a good account of my lifestyle'. this subcode had 2 quotations.

Privacy issues.

Privacy issues captured participants' concerns about data leakage and identification. It applied to units of analysis under the closed item on whether the questions of the LSC were too privacy-sensitive. If a participant answered *Somewhat agree* (18%) or *Strongly agree* (3.2%) their explanation was taken up in the analysis. This code had 13 quotations and three subcodes that related to specific topics of concern, namely, *medical condition*, *drug use,* and *other*. Some participants found the questions regarding their medical condition evasive: 'I think the questions about mental health, alcohol and drugs are privacy-sensitive. I trust that the UT will handle my privacy well but it still feels uncomfortable answering questions about this via my employer'. There was also a person who didn't seem to mind being asked whether they used medication but didn't want to share which kind they used: 'writing down the kind of medication is privacy-sensitive'. There were 7 quotations under *medical condition*. People also found questions about alcohol and drug use privacy-sensitive. For example: 'Alcohol

used, drugs used and/or medication used can be sensitive subjects'. This subcode had 4 quotations. The *other* subcode indicated privacy concerns that were not mentioned frequently or not related to a specific topic. For example, one person did not like being asked about their age: 'question about age'. Most people under this code did not have concerns about a specific topic but wondered about anonymization in general, for example: 'a lot of these questions relate to topics I would rather speak with the lifestyle coach about in person rather than filling it in here. It is not very clear how the data is kept anonymous'. This subcode had 4 quotations.

Technical issues.

Technical issues related to any issues with how the questions were converted into survey items, and how the items were arranged. It mostly applied to the item about any strange differences between the components of the LSC if the participant answered yes. This code had 10 quotations and two subcodes: *items* and *text. Items* referred to issues with the items. A lot of quotations under this subcode were about issues with Likert Scales. For example, one person said: 'Sometimes it says 'somewhat agree' and other times it only says 'agree''. Others were related to the survey flow or strange differences between the components, for example: 'the questions about alcohol use don't flow well. If you say you only drink once a month, then I feel like some questions shouldn't be there, but I don't quite remember which ones'. *Items* had 6 quotations. The subcode *text* encompassed problems regarding the text. For example, some participants mentioned that the font size was not the same everywhere: 'the font type and size could change from page to page'. Another participant said that they could not read the hyperlinks because of their colour: 'yellow is hard to read'. This subcode had 4 quotations.

Problems with existing components.

Problems with existing components referred to dissatisfaction with the existing components of the LSC and applied to such units of analysis where this was expressed. This code had 10 quotations and three subcodes: *underrepresented topics, overrepresented topics* and *lack of positively-framed questions*. *Underrepresented topics* referred to any topics which needed more questions according to the participants. For example: 'I missed direct questions related to work/life balance. Think of informal care.' This subcode had 6 quotations. *Overrepresented topics* referred to any topics which they would like to see fewer questions of. One person mentioned alcohol: 'less about alcohol'. The others mentioned sleep: 'less about sleep patterns. It could be shorter'. There were 3 quotations to this subcode. *Lack of*

positively-framed questions reflected participants' belief that the LSC focused too much on negative aspects of their lifestyle. This subcode had only one quotation: ‘In general, the questions about thoughts/feelings and work are formulated quite negatively. I miss some questions that are more positive.’

Difficulty answering questions.

Difficulty answering questions referred to any issues that participants had while trying to answer particular items and applied to units of analysis where this was expressed. All 4 quotations mentioned that they did not track their steps and could not answer the question about their daily step count: ‘difficult to answer how many steps I take because I don’t keep track of it. Same with amount of sleep, sitting, etc.’

Discussion

The LSC is a voluntary service for UT employees that provides lifestyle advice. The aim of this study was to create a questionnaire measuring well-being in four areas (sleep, smoking, pain, and burnout) and guide lifestyle coaches. This was done by finding existing constructs, assessing psychometric properties, participant scores on the LSC constructs and the acceptance of the LSC, and examining acceptance levels across age groups. Overall, the LSC shows potential as a well-being measure, though improvements are needed. Reliability was high, except for the pain scale. Validity could not be reliably verified, except for smoking and vaping. Acceptance among the target audience was high, with minor criticisms. Age did not influence the intention to use the LSC, contrary to expectations. These findings and their implications will be discussed further below.

T-test scores

The UT population scores for the LSC components were calculated for three reasons: to assess psychometric properties, estimate eligibility for follow-up interventions, and justify component inclusion. These aims will be discussed in turn. Validity analysis showed that sleep, pain, and burnout had lower population means compared to the reference group, indicating low validity. Only smoking and vaping had the same mean as the reference group, suggesting higher validity. However, due to the lack of closely matched reference populations, the results may not be reliable. Reliability was acceptable for all scales except the pain scale, likely due to item deletion prioritizing utility for lifestyle coaches as described in the methods section.

For pain and sleep, a significant proportion of participants are eligible for follow-up interventions, with high levels of pain symptoms and a high percentage of bad sleepers. This is remarkable as higher education is usually associated with better sleep (Kerkhof, 2017). The prevalence of pain also exceeds expectations, although musculoskeletal pain is highly prevalent among sedentary workers (Dong et al., 2022; Burdorf et al., 1993). This is potentially due to the bidirectional relationship between pain and sleep disturbances. Pain can cause neurobiological stress that influences sleep disturbances and sleep deprivation can worsen pain symptoms by changing how pain is processed in the brain (Kundermann et al., 2004). Burnout assessment is difficult due to a lack of validated cut-off scores and unreliable reference population data from the COVID-19 pandemic (Knapp et al., 2022). However, the majority score above the sample mean, suggesting a need for follow-up interventions. For smoking, the need for follow-up interventions is small. Over half of the smokers desired to quit, but the sample did not have many smokers.

Regarding the justification of topic inclusion, pain, sleep, and burnout are justified because of the need for follow-up interventions. Smoking, while having a smaller proportion in the sample, warrants inclusion in the LSC due to the desire to quit among over half of the smokers and the difficulty of quitting individually necessitating easy access to resources (De Ruijter et al., 2021). However, it's important to consider social desirability bias for sensitive topics like smoking, which may affect the actual percentage of intended quitters (Larson, 2018).

Acceptance of the LSC by the UT staff

The UTAUT factors did not significantly contribute to the intention to use the LSC, contrasting with findings from previous studies where UTAUT explained a significant portion of variance for the intention to use technology (Venkatesh et al., 2012). This discrepancy may be due to the deletion of UTAUT items. Although the omission of factors like *price value* was justified since the LSC is free, *social influence* may have been underestimated, as theories like the Theory of Planned Behavior highlight the impact of social norms on individual attitudes (Sommer, 2011). However, given that social influence is typically a weak predictor in UTAUT, it is more likely that the results are influenced by item deletion (Venkatesh et al., 2003). It is thus recommended to retain as many original items as possible in future studies.

The custom-added items were also insignificant. They may have an indirect rather than a direct effect on the intention to use the questionnaire, meaning they may be determinants of UTAUT factors, which, in turn, contribute to acceptance. For example, questionnaires are

kept short to maintain participant interest, which aligns with the principle that longer questionnaires require more effort, and the requirement of effort is associated with *effort expectancy* (Venkatesh et al., 2012; Siedlecki, 2019). However, further research is needed to establish these connections.

Surprisingly, the age of participants had no effect on LSC acceptance, contrary to expectations based on declining health with age (Idler & Cartwright, 2018). One possible explanation could be readability issues caused by font size, as smaller font sizes and unreadable hyperlinks can hinder accessibility for an older audience (Hou et al., 2022). This may have negated the anticipated positive relationship.

Despite the limited explanatory power of evaluative questions, analysing participant feedback remains valuable. The acceptance of the LSC among UT staff appears high, as the majority expressed interest in future LSC participation. Notably, most participants had already undergone an LSC themselves, which was expected due to selective attention and familiarity bias (Ellis & Miller, 2021). Thus, those aware of the LSC were more likely to participate, particularly in the behavioural departments where the survey was administered due to the premise of the LSC fitting their line of expertise. Their prior knowledge made their feedback more informed and less prone to misunderstanding. However, this could also introduce positive bias because assessing the clarity of the LSC's goals would require feedback from individuals unfamiliar with the service.

The response to UTAUT items was generally positive, except for the question regarding the LSC questionnaire's impact on improving lifestyle. This is surprising because completing the questionnaire should increase awareness of behaviours and identify areas that warrant lifestyle changes (Velicer et al., 1998). One possible explanation is that participants did not perceive the questionnaire alone as motivating for lifestyle improvement. The questionnaire primarily serves as a descriptive tool for lifestyle coaches rather than a direct motivator. Participants, particularly those who had previous LSC experiences, understood that the consultation with a lifestyle coach focused more on lifestyle change than the questionnaire. This is supported by the more positive response to the item assessing the LSC's usefulness in evaluating the participant's current lifestyle, which aligns more with its purpose. Additionally, awareness of the benefits of change does not always lead to action due to remaining awareness of the potential drawbacks of change hindering decision-making capacity (Velicer et al., 1998). The wording of a question can influence participants' interpretation, which may be a factor here as well (Schaeffer & Dykema, 2011). Clarifying the question to "Filling in

this questionnaire motivated me to improve my lifestyle" would emphasize that it pertains specifically to the LSC questionnaire and not the entire LSC service.

Three influences on acceptance were not related to UTAUT: support for topics, privacy concerns, and subjective item quality. These will each be discussed in turn. UT employees demonstrated high support for the topics included in the LSC, with only a small minority expressing concerns about the length of the sleeping and alcohol components. No participants wished to exclude any topics, although some felt that certain topics, particularly social life, were missing. Social life has been shown to positively impact workplace productivity, highlighting its potential relevance (Rieker et al., 2022). However, adding new topics may be difficult because the majority already considered the LSC to be balanced in length, with some perceiving it as too long. Furthermore, dropouts are often due to survey length, suggesting that 22 more participants were already dissatisfied (Matzat et al., 2009).

Apart from the suggestions made by UT staff, there were topics identified in the literature search that were not included in the LSC. Self-esteem and satisfaction with life are important aspects of well-being (González-Rico et al., 2020). However, low self-esteem is not commonly addressed in an employment context and is not highly prevalent among adults, so it was excluded (Ogihara & Kusumi, 2020). Currently, there is no indication of a need for its inclusion.

Satisfaction with life was excluded in favour of constructs that were more preventive in nature, in line with the purpose of the LSC. However, it is strongly correlated with work productivity and could have provided a more balanced perspective on mental health, as it is framed in a positive manner compared to other constructs (Ogihara & Kusumi, 2020). Given that both the lifestyle coaches and a UT employee disliked the negative framing of the LSC, the potential inclusion of life satisfaction may be worth considering.

The majority of UT staff expressed no privacy concerns regarding the LSC, and missing values were not prevalent. Any remaining missing values were intentional, as participants were reminded to answer if they had left an item open, but no item stands out as problematic. This conclusion is supported by the responses to the evaluative questions. However, participants who did mention privacy concerns often expressed reluctance to share their medical condition in the general questions. General privacy concerns were also raised, with some participants expressing distrust regarding the anonymity aspect of the LSC due to uncertainty about how their answers were anonymized. This may be influenced by power dynamics in the workplace, as employees often withhold certain personal information to mitigate vulnerability (Kovič & McMahon, 2023). Maintaining anonymity is of particular

interest to employees, especially when it comes to medical conditions because disabled employees are perceived as more costly and less productive, making them less desirable to hire (Lamb et al., 2006). Additionally, staff with medical conditions are more likely to be targeted for workplace bullying (Fattori et al., 2015).

Regarding item quality, a minority of participants raised concerns. The main issue was participants' lack of trust in the validity of the LSC. They feared that their answers might create a misinterpretation of their lifestyle and desired to provide explanations for certain responses. One limitation of survey research is the inability to probe and gain a better understanding of participants' answers (Nielsen Norman Group [NNG], 2023). Survey items typically consist of simple scale ratings or multiple-choice selections, lacking the opportunity for participants to provide context for their choices (NNG, 2023). Participants may be aware of this limitation and feel frustrated that their personal circumstances are not adequately conveyed.

The evaluative analysis incorporated both objective and subjective measures. Subjective measures included employee self-reports, while objective measures encompassed missing values, dropouts, and timers (though the timers malfunctioned due to technical issues). However, the missing values did not provide different results from the self-reports, indicating their redundancy. This is likely due to the nature of subjective bias in surveys, where self-deception and identity-building tend to be more prevalent than social desirability bias (Larson, 2018). Privacy concerns are often not considered personal and not likely to fall under these biases. However, survey dropouts offered valuable insights into the questionnaire length as anticipated. Dropouts do not reach the evaluative questions and cannot provide explicit feedback on the questionnaire's length. Therefore, it is recommended to consider survey dropouts for assessing questionnaire length, while missing values can be disregarded.

Limitations and recommendations

There are several limitations to this study. First, stakeholder management could have been improved by involving employees in the beginning stage of the process, as intended by the CeHReS Roadmap, and conducting structured meetings with HR to avoid miscommunication (Nijland, 2011). Conducting interviews with all stakeholders, including employees, is recommended for future studies.

Secondly, the sample predominantly consisted of volunteers from two behavioral science departments, limiting the diversity of perspectives. Feedback on the LSC from other departments and faculties may have been missed. Generalizability of the results to the entire

UT is uncertain, and more departments should be included in future studies. Additionally, academic staff were underrepresented in the sample, further affecting generalizability.

Another limitation is the lack of norm scores available for the MOLBI, making it difficult to assess changes in burnout levels over time. Obtaining norm scores for the MOLBI in future research is advised. The pain scale and UTAUT factors showed questionable reliability due to item deletion, casting doubt on the results. It is suggested to explore alternative pain measurement scales aligned with the expertise of lifestyle coaches and to include more original UTAUT factors. Technical issues prevented the measurement of the time participants spent filling in the LSC using timers. Qualtrics only enables translation for questions that survey respondents can see, and since timers are invisible to the participants, we were not able to translate them. However, not translating an item causes an error that omits it from the survey entirely. Consideration of alternative platforms to Qualtrics is recommended for future studies. Quantitative data analysis was limited by the availability of a good reference population, with smoking being the only construct with a reliable reference population. Further research into well-being among Dutch university employee populations is recommended.

Moreover, demographic factors beyond age, such as migration background and financial status, could also influence acceptance of the LSC but we did not look into migration background because of time constraints and we did not collect data on financial status. Future research should explore the influence of all relevant demographic factors on LSC acceptance. Future research should also explore demographic differences in LSC construct scores to identify disparities between groups and inform well-being policies. Academic staff appear to have more sleeping problems and suffer from burnout more than support staff, and non-Dutch people also had higher burnout scores according to the results, but these differences were not tested because it was outside the scope of this study

Lastly, the interpretation of participants' responses in the text boxes was challenging without the ability to seek clarification, allowing room for misinterpretation. Moreover, though no participants wanted to leave out one of the existing components entirely, we also didn’t ask them about it directly. This could have influenced the outcome of the evaluation. Directly asking participants about potential problematic components should be added to the evaluative part in future studies.

Despite these limitations, the new LSC represents a positive step towards a scientifically accurate questionnaire. While validity could not be reliably established, most

constructs demonstrated reliability, with only the pain scale requiring revision. Overall, the intended users responded positively, and further improvements to the LSC are expected (see Appendix C). The aim is for the UT to become a better workplace with happier and more productive employees with the help of the revised LSC.

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Appendix A: scoring instructions of the PSQI:

The Pittsburgh Sleep Quality Index (PSQI) contains 19 self-rated questions and 5 questions rated by the bed partner or roommate (if one is available). Only self-rated questions are included in the scoring. The 19 self-rated items are combined to form seven "component" scores, each of which has a range of 0-3 points. In all cases, a score of "0" indicates no difficulty, while a score of "3" indicates severe difficulty. The seven component scores are then added to yield one "global" score, with a range of 0-21 points, "0" indicating no difficulty and "21" indicating severe difficulties in all areas.

Scoring proceeds as follows:

Component 1: Subjective sleep quality

Examine question #6, and assign scores as follows:

Response	Component 1 score
"Very good"	0
"Fairly good"	1
"Fairly bad"	2
"Very bad"	3

Component 1 score: _____

Component 2: Sleep latency

1. Examine question #2, and assign scores as follows:

Response	Score
≤ 15 minutes	0
16-30 minutes	1
31-60 minutes	2
> 60 minutes	3

Question #2 score: _____

2. Examine question #5a, and assign scores as follows:

Response	Score
Not during the past month	0
Less than once a week	1
Once or twice a week	2
Three or more times a week	3

Question #5a score: _____

3. Add #2 score and #5a score

Sum of #2 and #5a: _____

4. Assign component 2 score as follows:

Sum of #2 and #5a	Component 2 score
0	0
1-2	1
3-4	2
5-6	3

Component 2 score: _____

Component 3: Sleep duration

Examine question #4, and assign scores as follows:

Response	Component 3 score
> 7 hours	0
6-7 hours	1
5-6 hours	2
< 5 hours	3

Component 3 score: _____

Component 4: Habitual sleep efficiency

(1) Write the number of hours slept (question # 4) here: _____

(2) Calculate the number of hours spent in bed:

Getting up time (question # 3): _____

− Bedtime (question # 1): _____

Number of hours spent in bed: _____

(3) Calculate habitual sleep efficiency as follows:

(Number of hours slept/Number of hours spent in bed) × 100 = Habitual sleep efficiency (%)

(_____/_____) × 100 = _____%

(4) Assign component 4 score as follows:

Habitual sleep efficiency %	Component 4 score
> 85%	0
75-84%	1
65-74%	2
< 65%	3

Component 4 score: _____

Component 5: Sleep disturbances

(1) Examine questions # 5b-5j, and assign scores for *each* question as follows:

Response	Score
Not during the past month	0
Less than once a week	1
Once or twice a week	2
Three or more times a week	3

#5b score _____

c score _____

d score _____

e score _____

f score _____

g score _____

h score _____

i score _____

j score _____

(2) Add the scores for questions # 5b-5j:

Sum of # 5b-5j: _____

(3) Assign component 5 score as follows:

Sum of # 5b-5j	Component 5 score
0	0
1-9	1
10-18	2
19-27	3

Component 5 score: _____

Component 6: Use of sleeping medication

Examine question # 7 and assign scores as follows:

Response	Component 6 score
Not during the past month	0
Less than once a week	1
Once or twice a week	2
Three or more times a week	3

Component 6 score: _____

Component 7: Daytime dysfunction

(1) Examine question # 8, and assign scores as follows:

Response	Score
Never	0
Once or twice	1
Once or twice each week	2
Three or more times each week	3

Question # 8 score: _____

(2) Examine question # 9, and assign scores as follows:

Response	Score
No problem at all	0
Only a very slight problem	1
Somewhat of a problem	2
A very big problem	3

Question # 9 score: _____

(3) Add the scores for question # 8 and # 9:

Sum of #8 and #9: _____

(4) Assign component 7 score as follows:

Sum of # 8 and #9	Component 7 score
0	0
1-2	1
3-4	2
5-6	3

Component 7 score: _____

Global PSQI Score

Add the seven component scores together:

Global PSQI Score: _____

Appendix B: quotations per code:

Missing topics:

Social life

I think you can ask more about family, relationships, lifestyle, hours per week hobbies, work, etc.

I think is not asking anything at all about your social life. it doesn't ask too much about feelings or moods.

daarnaast zou het misschien nog zinvol zijn wat vragen over iemands sociale omgeving toe te voegen: heeft iemand vrienden, genoeg sociale activiteiten, het gevoel mensen in de omgeving te hebben bij wie diegene terecht kan, etc?
next to that, it may be useful to add some questions regarding someone's social environment: does someone have friends, enough social activities, the feeling that they have people they can rely on, etc?

Doesn't cover social relaitonships

social network would be a good addition

Maybe add more questions about the screen time and work pressure

Sociale situatie (eenzaamheid etc.).
Social situation (loneliness etc.)

I am missing questions about "mantelzorg" and social safety net.

Wellicht iets uitbreiden met sociaal
Maybe elaborate with social

Other physical topics

leefsituatie, mijn slapen is vertekend door zorg voor een jonge baby
life situation, my sleep is influenced by taking care of a young baby

I think you can ask more about family, relationships, lifestyle, hours per week hobbies, work, etc.

I think is not asking anything at all about your social life. it doesn't ask too much about feelings or moods.

misschien is het nog een idee om hartkloppingen te vragen? of overgang bij vrouwen?
Maybe it is also an idea to ask about palpitations? Or menopause for women?

Misschien ook gewicht en lengte,
Maybe also weight and length

I am missing questions about "mantelzorg" and social safety net.

allergieën, intolleranties, lichamelijke beperkingen etc worden niet meegenomen
allergies, intolerances, physical disabilities etc. are not taken into account

No questions about menopause or surgery

Mental health:
Er is weinig over mentale gezondheid
There is little about mental health

Mentale aspecten zijn misschien onderbelicht
mental aspects may be underrepresented

Misschien is het ook goed om de mate van gezond voelen, gelukkig voelen, opgewekt kunnen zijn, genieten kunnen e.d. aan de orde te laten komen.
Maybe it is also good to look at the degree of feeling healthy, happy, being able to be cheerful, enjoyment, etc.

Mentale welbevinden
Mental wellbeing

mental health

Iets meer context bij mentale toestand.
A bit more context for mental state

Validity:

Explanation required:

De vragen over alcoholcomsumptie heb ik ingevuld op basis van de laatste 10 maanden. In juni vorig jaar ben ik (vrijwel0 gestopt met alcohol. daarvoor dronk ik wel regelmatig (en soms ook vaak en meer dan gezond is).
Dat komt niet terug in de vragenlijst.
I filled in the questions about alcohol consumption on the basis of the last 10 months. In June last year I (virtually) stopped with alcohol. Before that, I did drink regularly (and sometimes also often and more than what is healthy).
This is not taken into account in the questionnaire.

Also there are other questions that require a bit of explanation. For example when I leave my work I have energy for leisure but then when I arrive home and I have to take care of my child for some hours I feel exhausted

Medicijnen voor slapen: ik slik altijd hooikoortstabletten daarvoor. Ik vind dit soort vragen altijd irritant om in te vullen omdat je vaak iets wilt toelichten wat niet kan, zoals voorgaande.
Medication for sleeping: I always take hay fever pills for that. I always find these types of questions annoying to fill in because you often want to explain something and you can't, like the aforementioned example.

Er is geen optie om aan te geven of in te zien of een bepaalde 'stijl' structureel (zorgwekkend) of incidenteel (wordt weer beter?)is.
There is not an option to indicate whether a certain 'style' is structural (concerning) or incidental (gets better)

Op zich logisch dat naar de afgelopen maand of afgelopen week gekeken wordt, maar bij het invullen zou het wel goed zijn om hier en daar iets te kunnen toelichten: cijfers zijn wel heel plat soms

It's pretty logical that you look at last month or the past week but when filling it in it would be nice to have the ability to explain further: numbers can be quite misleading

Vragen zijn soms suggestief. "Hoe vaak kunt u goed omgaan met irritaties". Dat impliceert dat er irritaties zijn.
Stel dat er geen irritaties zijn, dan is het antwoord dus nul, maar ik vermoed dat dit vertaald wordt als kan de repondent niet goed omgaan met irritaties. Dus u moet eerst vaststellen of daar sprake van is
The questions are quite suggestive sometimes. "How often can you manage irritations". That implies that there are irritations.
Imagine if there weren't any irritations. Then the answer would be 0, but I expect this will get translated as the respondent can't manage irritations well. So you first have to ascertain that there are irritations

Tevens wordt er gevraagd bij slapen of ik last heb van mijn rug. Toevallig ben ik vorige week door mijn rug gegaan, normaal gesproken heb ik geen rugklachten.
it was asked whether I had back pains during the sleeping questions. By coincidence, I hurt my back last week. I normally don't have back pains.

niets over karakter van intensieve en matige inspanning. Sporten met vrienden geeft een ander resultaat dan mantelzorg.
Nothing about character of rigorous and moderate activity. Exercising with friends gives a whole other result than informal care.

The dietary questions do not consider vegan/vegetarians

De vraag over pijn, zo heb ik regelmatig spierpijn, maar dit is het gevolg van krachttraining. Ik vermoed dat deze 'pijn' jullie conclusie verstoren :)
The question about pain. I have regular soreness of muscle, but this is the result of weight training. I expect that this 'pain' will distort your conclusion :)

af en toe een mogelijkheid bieden om wat toelichting te geven.
Sometimes give the opportunity to give an explanation

Timeframe too short

I think that by looking at my answers you will get a bad impression of who I am, but I answered my questions according to the time frame you asked.

Daarnaast zijn de vragen over de afgelopen 7 dagen een erg korte periode. Als dat een periode is geweest die niet representatief is dan geven de antwoorden weinig inzicht over de leefstijl.
Next to that, the questions about the past seven days are a very short time period. If that period was not representative the answers will not give a good account of my lifestyle

Privacy issues

Medical condition

Not used to being asked medical conditions by not necessary means

Ik vind de vragen over mentale gezondheid, alcohol en drugs prvacy gevoelig. Ik heb groot vertrouwen in hoe de UT omgaat met privacy, maar toch voelt het ongemakkelijk om hierover vragen te beantwoorden bij mijn werkgever
I think the questions about mental health, alcohol and drugs are privacy-sensitive. I trust that the UT will handle my privacy well but it still feels uncomfortable answering questions about this via my employer

vragen naar medicijn gebruik
questions about medication use

soort medicatie gebruik noteren is privacy gevoelig
writing down the kind of medication is privacy-sensitive

vraag over onderliggende ziekte en type medicijnen.
Question about underlying illness and type of medication

Drank gebruikt, drugs gebruik, en/of medicatie gebruik kunnen gevoelige onderwerpen zijn
Alcohol use, drug use and/or medication use can be sensitive subjects

medicatiegebruik en ziektes
Medication use and ilness

Drug use

Ik vind de vragen over mentale gezondheid, alcohol en drugs prvacy gevoelig. Ik heb groot vertrouwen in hoe de UT omgaat met privacy, maar toch voelt het ongemakkelijk om hierover vragen te beantwoorden bij mijn werkgever

I think the questions about mental health, alcohol and drugs are privacy-sensitive. I trust that the UT will handle my privacy well but it still feels uncomfortable answering questions about this via my employer

drankgebruik kan gevoelig liggen

Alcohol use can be sensitive

drugs used

Drank gebruikt, drugs gebruik, en/of medicatie gebruik kunnen gevoelige onderwerpen zijn

Alcohol used, drugs used and/or medication used can be sensitive subjects

Other

vraag leeftijd

question about age

people might not want to fill in things that have a negative judgment

Veel van deze vragen zou ik liever persoonlijk bespreken met een lifestyle coach ipv hier invullen. Het is niet goed duidelijk op welke manier ervoor gezorgd wordt dat de gegevens anoniem blijven.

a lot of these questions relate to topics I would rather speak with the lifestyle coach about in person rather than filling it in here. It is not very clear how the data is kept anonymous

Als het maar anoniem is, dat vraag je je toch altijd af he

I just hope it is anonymous. That's something you always question, isn't it?

Problems with existing components:

Overrepresented topics

Minder over alcohol
Less about alcohol

Te veel vragen over je slaappatroon.
Too many questions about your sleeping pattern

Minder over het slaappatroon. Dat kan korter.
Less questions about the sleeping pattern. That could be shortened

Underrepresented topics
Ik miste gerichte vragen m.b.t. de werk/privebalans. Denk aan mantelzorg
I missed direct questions related to work/life balance. Think of informal care.

Meal times and calorific intake, are very important for lifestyle

De balans werk-prive heb ik er niet zo uitgehaald
I didn't really see the work/life balance

Meer vragen over de werk-privebalans. Ik mis vragen als; heb je behoefte aan ondersteuning op het gebied van; voeding - lichamelijke (pijn) en/of psychische klachten. Welke hulpmiddelen zet je prive al in, naast evt. medicijn gebruik?
More questions about work/life balance. I miss questions such as; do you need support regarding nutrition – physical (pain) and/or psychological complaints. Which resources do you already use in private, next to eventual medication use?

But I think there are important questions missing for example: how many times you have missed lunch time because you have meetings during lunch hours. How many times you have to work after coming home of during weekends. And there are other things that I can be asked like you feel your life style is improving or just getting worst.

meer over suiker en suikerverslaving
more about sugar and sugar addiction

Lack of positively framed questions

Over het algemeen zijn de stellingen over gedachten/gevoelens en werk vrij negatief geformuleerd. Ik mis wat vragen met een positieve inslag.
In general, the questions about thoughts/feelings and work are formulated quite negatively. I miss some questions that are more positive

Technical issues

Items

Bepaalde "opvolgvragen", zoals bijvoorbeeld alcohol gebruik, zijn nvt als je niet drinkt. Denk dat die vragen daarom ook niet ingevuld behoeven te worden als dit niet nodig is.
For some "follow up questions", like alcohol use, are n.a. if you don't drink. I think those questions don't have to be filled in if this is not necessary.

Ik vind alleen de schaal van nooit tot zeer vaak raar. Nooit, zou voor mij betekenen echt helemaal niet. Zeer vaak, zit voor mij nog enigszins iets in als in principe altijd maar heeeeeel soms niet. Dus of de schaal moet van Nooit tot altijd lopen, of van Vrijwel nooit tot zeer vaak.
I just think the scale from never to very often is weird. Never, would mean really not ever to me. Very often, sounds to me like in principle always but rarely not. So the scale either has to go from never to always or rarely ever to very often

Soms staat er 'Enigszins mee eens' en soms alleen maar 'Mee eens'
Sometimes it says 'somewhat agree' and other times it only says 'agree'

De vragen over alcoholgebruik lopen niet helemaal lekker. Als je aangeeft dat je minder dan 1x per maand alcohol drinkt, dan kloppen er een aantal vragen niet, naar mijn gevoel, maar ik weet niet goed meer welke
the questions about alcohol use don't flow well. If you say you only drink once a month, then I feel like some questions shouldn't be there, but I don't quite remember which ones

Bij de vragen over alcoholconsumpties zijn er meerkeuze antwoorden en bij de vragen over eten zijn het open vragen. De vragen zijn hetzelde maar verschillende antwoordmogelijkheden.
the questions about alcohol consumption are multiple choice and the ones on nutrition are open. They are the same question but the answering options are different

Bij zware activiteit stond een schuiver en een invulblok
For rigorous physical activity there was a slider and a textbox

Text
inleidende tekst is te groot en heeft vakjargon
introduction text is too big and has jargon

het lettertype/grootte veranderende nog wel eens van pagina tot pagina
The font type/size could change from page to page

font was niet overal hetzelfde, en de mee-(on)eens-vragen hebben een best klein lettertype tov de rest
font wasn't the same everywhere and the (dis)agree-questions have a pretty small font compared to the rest

geel bij invullen slecht te lezen
Yellow is hard to read while filling in

Difficulty answering questions:
ik houd mijn stappen niet bij per dag
I don't count my steps per day

Moeilijk om aan te geven hoeveel stappen ik zet omdat ik dat niet bijhoud, net zoals hoeveelheid slaap en zitten en dergelijke
difficult to answer how many steps I take because I don't keep track of it. Same with amount of sleep, sitting, etc

Vragen over aantal stappen werkelijk geen idee, houd dat niet bij
Questions about the amount of steps. I really don't know. I don't keep track

Ik kon niet beantwoorden hoeveel stappen ik per dag zet.
I could not answer how many steps I take per day

Appendix C: quotations per code:

Problem	Solution
Social life, informal care and satisfaction with life should be added as components to the LSC but the LSC already has an appropriate length	Perhaps we can add opt-out choices to each component of the LSC to add new topics without making the LSC too long. Then, users will be able to select the topics they want to receive help with without having to answer questions about components that are already going well or not important to them.
A minority has privacy concerns regarding alcohol and drug use and don't want to specify their medical condition and medication use.	Leave out the text box in which respondents have to specify information about their medical condition. Provide an opt-out option for alcohol and a "no answer" option for the question about drug use.
There were concerns about the anonymization of participants' answers in general.	Review the transparency of the privacy policy and add more detail where needed.
Participants wanted to explain their answers to some questions out of fear that the lifestyle coaches would misinterpret them but had no opportunity to do so.	Add a text box to each component where participants have the chance to explain their answers if they so wish. It will require a bit more work on the part of the lifestyle coaches but it will ensure that their advice will be in line with the lifestyle of the client.
the font size for some questions was smaller than the rest and the hyperlinks were not readable due to them being coloured yellow	Make the font size bigger and change the colour of the hyperlinks to blue
Some people thought the sleep and alcohol components were too long	Look for other potential constructs about sleep and alcohol that are shorter