

# Development and content validation of the 10-item Well-being instrument (WiX) for use in economic evaluation studies

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Daphne Voormolen, PhD  
Judith Bom, PhD  
Esther de Bekker-Grob, PhD  
Werner B.F. Brouwer, PhD  
Job van Exel, PhD



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#### Title

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#### Authors

**Daphne Voormolen**, PhD, Erasmus School of Health Policy & Management  
**Judith Bom**, PhD, Erasmus School of Health Policy & Management  
**Esther de Bekker-Grob**, PhD, Erasmus School of Health Policy & Management  
**Werner B.F. Brouwer**, PhD, Erasmus School of Health Policy & Management  
**Job van Exel**, PhD, Erasmus School of Health Policy & Management

Corresponding author: Daphne Voormolen, [voormolen@eshpm.eur.nl](mailto:voormolen@eshpm.eur.nl)

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## **Abstract**

*Objectives* It's increasingly recognized that the evaluative space of economic evaluations in health and social care needs to be broadened and instruments measuring well-being are required. A generic measure of well-being comprehensively capturing all relevant domains of well-being in terms of functionings is not available. The aim is to describe the development of such an instrument, the 10-item Well-being instrument (WiX), and to report the findings from a content validation study.

*Methods* A draft version of the instrument was based on available instruments pursuing the same aim, a comprehensive theoretical framework of the domains of well-being, and recent empirical evidence from the general population about the constituents of well-being. Content validation was conducted following COSMIN methodology and investigated relevance, comprehensiveness, and comprehensibility. In the qualitative content validation, semi-structured interviews were conducted with experts and members of the general population. During quantitative content validation, a representative sample (n=501) from the general population completed an online survey.

*Results* The qualitative validation showed the relevance and comprehensiveness of the WiX were adequate, but several changes were made to consecutive draft versions of the items and their descriptions and response levels to improve comprehensibility. The quantitative validation confirmed these findings and resulted in some additional, minor changes.

*Discussion* A new instrument to measure functionings in the adult general population on ten important domains of well-being was developed. The content validation results are encouraging, but further validation and valuation steps are necessary before the WiX can be used in (economic) evaluation studies of interventions with impacts broader than health.

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## **Introduction**

Economic evaluations typically compare interventions in terms of their costs and benefits, in order to assess their value for money (Drummond et al. 2005). Ultimately, such evaluations can inform optimal allocations of scarce resources within and across different sectors. Within the healthcare sector, economic evaluations often take the form of a cost-utility analysis, in which benefits are usually expressed in terms of Quality-Adjusted Life-Years, encompassing both length and quality of life. The quality-of-life component is typically confined to health-related quality of life (HRQoL), as measured by commonly used generic instruments such as the EuroQol instrument (EQ-5D) (EuroQol Group 1990), the Short-Form Health Survey (SF-36) (Ware and Sherbourne 1992) or the Health Utilities Index (HUI) (Furlong et al. 2001). This closely conforms to the notion that healthcare decision makers would be especially - or even exclusively - interested in producing health (measured as HRQoL) from the available healthcare budget.

In recent years, however, it has been asserted that the evaluative space commonly adopted in economic evaluations might be too narrow. Health (and social) care interventions may not always aim to improve (only or primarily) health, but (also) broader elements of quality-of-life, or well-being (Payne et al. 2013; Weatherly et al. 2009; Coast 2004). The fact that such interventions are commonly funded from healthcare budgets may signal that healthcare decision makers also consider broader benefits from interventions than only health. Areas in which this seems especially relevant include social care, palliative care, long-term care and elderly care, but prevention and cure may also have effects above and beyond health (Coast 2014; Milte et al. 2014; Makai et al. 2014; Hackert et al. 2021). In such cases, an adequate comparison of costs and benefits of interventions and a fair assessment of their value for money requires that the instruments used to assess the benefits from interventions capture all the relevant outcomes. Failing to do so may lead to a misrepresentation of the societal value of interventions, suboptimal decision making and, ultimately, to misallocation of scarce resources.

Over the past years, this recognition that the evaluative space of economic evaluations in healthcare needs to be broadened, has stimulated the development of instruments to measure well-being. By now, many of such instruments exist, but only few have been developed for use in the context of (health) economic evaluations and fulfil the necessary criteria for this purpose (Makai et al. 2014). Prominent examples include the ICEpop CAPability (ICECAP) measures (Al-Janabi et al. 2012; Coast et al. 2008; Grewal et al. 2006), the Adult Social Care Outcome Toolkit (ASCOT) (Netten et al. 2012), and the Well-being of Older People (WOOP) measure (Hackert et al. 2021). These instruments, however, differ in their conceptualisation and operationalisation of well-being: the ICECAP measures are clearly embedded in capability theory (Coast et al. 2008), while the ASCOT and the WOOP focus more on actual functioning of people in different life domains. In addition, these instruments differ in scope, that is, whether they measure well-being generically or in specific subgroups or contexts (e.g., older people, health and social care users), and partially or comprehensively (e.g., ICECAP and ASCOT do not measure health directly, but also do not seem to capture all elements of health indirectly (Hackert et al. 2017)). Recently, the EuroQol Group introduced the EuroQol Health and Well-being (EQ-HWB) instrument (Brazier et al. 2022), which, in terms of included domains and scope, appears importantly based on existing quality of life measures aimed at users of health and social care services and carers (Carlton et al. 2022).

Taken together, one may argue that a generic measure of well-being for use in economic evaluations that captures all relevant domains of well-being comprehensively is not yet available. The aim of this paper is to describe the development of such a well-being instrument, the 10-item Well-being instrument, abbreviated as WiX (with ‘W’ referring to ‘well-being’, ‘i’ to instrument’, and ‘X’ to the 10 domains of well-being that the instrument covers). In line with Makai et al. (2014), our conceptualisation of well-being is that it represents individual welfare, which depends on the functioning of individuals in all their life domains, including physical and mental health. The WiX thus aims to capture overall (or general) quality-of-life in terms of people’s functionings, what they actually are and do (rather than their capabilities, the freedoms and opportunities to realize these functionings (Robeyns 2005, 2006)). The development of the WiX was theory driven, building systematically on several theories of well-being and explorative empirical work (Van der Deijl et al. 2023) as well as existing generic instruments to ensure its comprehensiveness. Therefore, we think the WiX is not only suitable for use in (economic) evaluations of interventions in health and social care, but also in other sectors and across sectors. This makes the WiX complementary to existing measures of well-being.

The remainder of this paper describes the development of the WiX, a multi-dimensional instrument that aims to measure well-being in the adult general population comprehensively for use in (economic) evaluation studies and reports the findings from a content validation study.

## Methods & data

### Development of the instrument

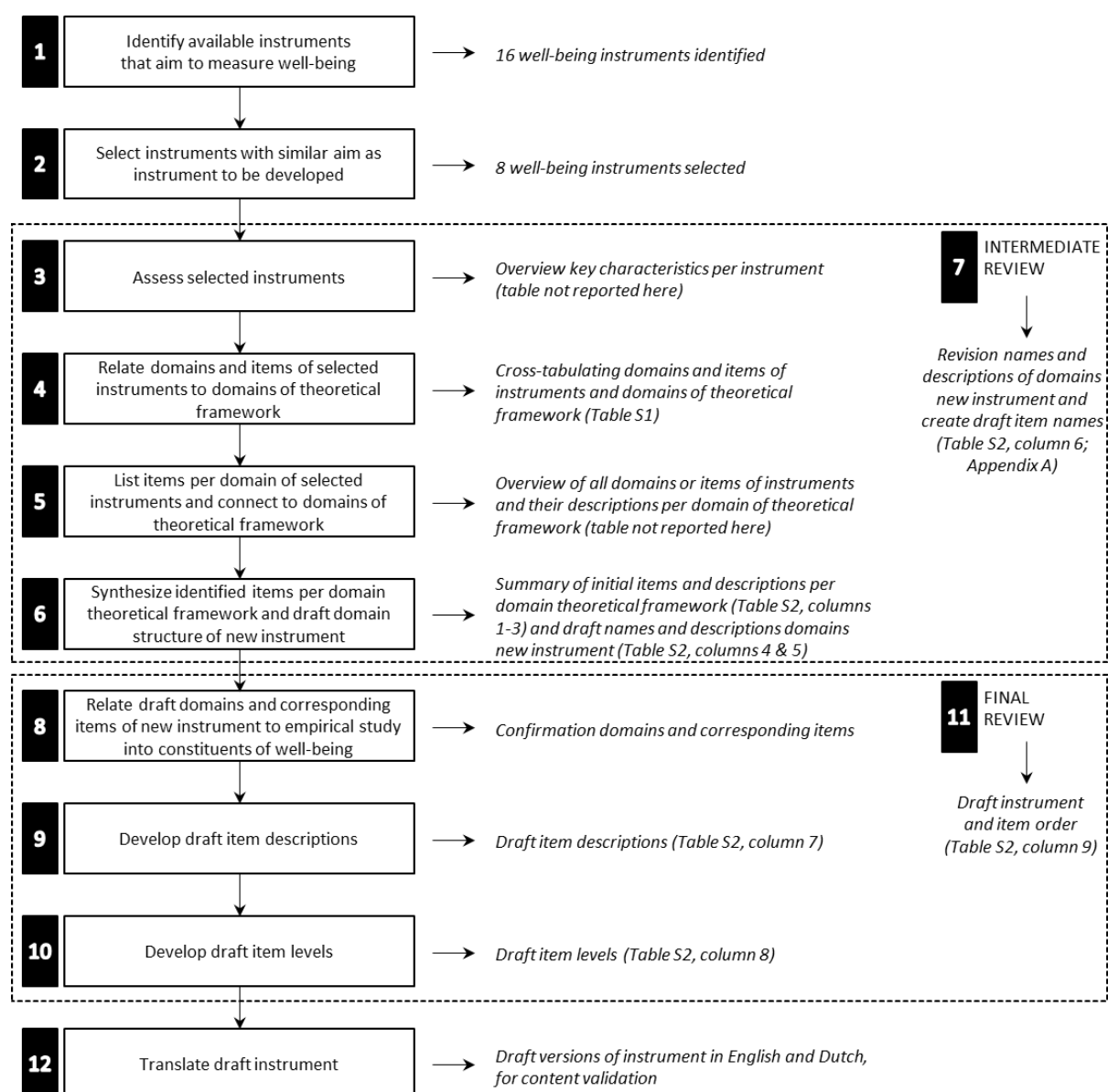
Figure 1 provides an overview of all steps taken to develop the draft version of the WiX. As the first step in developing the new instrument, one of the authors (A1; blinded for review) conducted a scoping review (Grant and Booth 2009) to identify existing instruments that aim to measure well-being. A total of 16 instruments were identified (in alphabetical order): Control, Autonomy, Self-Realization and Pleasure-19 (CASP-19) (Hyde et al. 2003); Extending the Quality-Adjusted Life Year (E-QALY)<sup>1</sup> (Mukuria et al. 2018); ICEpop CAPability measure for Older people/ Adults (ICECAP-O/-A) (Grewal et al. 2006)/(Al-Janabi et al. 2012) ; Living Standards Framework (LSF) (Treasury 2018); Office of National Statistics (ONS) four subjective wellbeing questions (ONS-4) (ONS 2017); Personal Well-being Index Scale (PWI) (I. W. Group 2013); Psychological Well-being Scale (PWS) (Ryff 1989); Quality of Life – Aged Care Consumers (QOL-ACC) (Ratcliffe et al. 2019); Quality of Life at the End of Life (QUAL-E) (Steinhauser et al. 2002); Quality of Well-being Scale self-administered (QWB-SA) (Sieber et al. 2008); Self-Evaluated Quality of Life Questionnaire (SEQOL) (Ventegodt et al. 2003); Social Production Function Instrument for the Level of well-being (SPF-IL) (Nieboer et al. 2005); The Adult Social Care Outcomes Toolkit (ASCOT) (Netten et al. 2012); The World Health Organization Quality of Life (WHOQOL) (W. Group 1997); Well-being Adjusted Life Years (WALY) (Birkjær 2020); Well-being of Older People (WOOP) (Hackert et al. 2020).

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<sup>1</sup> The E-QALY is the predecessor of the EQ-HWB (Brazier et al., 2022), for our analyses we made use of the first draft version of the E-QALY.

In the second step, four authors (A1, A3, A4, A5) jointly assessed these 16 instruments and selected those that have a similar aim as the planned new instrument, namely: (1) multi-domain (or multi-attribute) instruments; (2) measuring functionings (Robeyns, 2005); and (3) focused on measuring well-being in the adult general population. In the end, 8 of the 16 instruments were retained for further analysis: E-QALY, ONS-4, PWI, PWS, QWB-SA, SPF-IL, WALY and WHOQOL. For example, the WOOP was not selected because it was specifically developed for the older population, and the ICECAP-A was not selected because it is focused on measuring capability well-being.

**Fig1** Overview of 12 steps in development of a draft version of the WiX



In the third step, one author (A1) assessed these eight instruments more thoroughly by identifying the key publications underlying each instrument and creating an overview of their aim, approach to development, domain (or item) and level structure, instructions for users, available languages, and sources of funding for the development of the instrument. This information was summarized in a large table (not reported here because of its size). Next, in the fourth step, two authors (A1, A5) cross-tabulated the domains and items of these eight instruments against the domains of a theoretical framework outlined by van der Deijl et al. (Van der Deijl et al. 2023) that synthesized the main existing theories of well-being. This framework distinguished 11 domains of well-being, namely: physical health; safety; recreation and leisure; mental well-being; political representation; mental development; environmental conditions; social relations; material well-being; labour conditions; and achievements (see Table S1 in online Supplementary Information 1). This showed that the domains of the eight selected instruments covered 10 of the 11 domains of the theoretical framework, with exception of political representation. In addition, some domains of the eight instruments could not be matched to 1 of the 11 domains of the theoretical framework unambiguously and were, therefore, provisionally categorized as ‘other’ (in additional row Table S1).

In the fifth step, one of the authors (A1) created a table with an overview of all domains (or items) of the selected instruments and their descriptions per remaining domain of the theoretical framework (i.e., excluding political representation) (table not reported because of its size). In the sixth step, two authors (A1, A5) reviewed this table and synthesized the identified domains and items from the selected instruments by merging domains and items with similar meaning and harmonizing the wording of the resulting items and their descriptions (see Table S2 in online Supplementary Information 2, columns 1-3). Based on this, an initial version of the domain structure of the new instrument was drafted, consisting of the ten domains from the theoretical framework, the synthesis of items and their descriptions for each domain, and draft names and descriptions for the 10 items of the new instrument (see Table S2 in online Supplementary Information 2, columns 4-5).

In the seventh step, two other authors (A3, A4) independently reviewed the approach, decisions, and results of steps three to six. Their feedback was discussed and implemented in a joint meeting with the whole research team. We agreed that the domain 'Political representation' would be excluded from the new instrument, because it was not represented in any of the selected instruments and was also not considered an important constituent of well-being in any of the five views on what is important for a good life among the adult population of the Netherlands identified in the Q-study by van der Deijl et al. (Van der Deijl et al. 2023). This decision was, however, flagged as an item to be verified with experts and members of the public in the content validation phase. In addition, we decided that none of the domains or items of the eight selected instruments categorized as ‘other’ in the fourth step (see bottom row of Table S1 in online Supplementary Information 1) needed to be included in the new instrument in addition to the already distinguished ten domains. Appendix A provides more details to these changes. Finally, several changes were made to the wording of the names and descriptions of the domains, and draft names were created for the ten items of the new instrument, hence each item corresponds to one specific domain (see Table S2 in online Supplementary Information 2, columns 4-6; see Appendix A).

In the eighth step, to evaluate the comprehensiveness of the draft instrument, two authors (A1, A5) compared the ten domains and the corresponding items of the WiX to the findings of the Q-study by van der Deijl et al. (Van der Deijl et al. 2023). This study identified five views on well-being, namely: Health and feeling well; Hearth and home; Freedom and autonomy; Social relations and purpose; and Individualism and independence. By inspecting

the characterizing and distinguishing statements belonging to these five views, we determined that no important items were missing from the draft instrument. Therefore, the original selection of ten domains and their corresponding items were retained for further development of a draft version of the WiX. In the ninth step, two authors (A1, A5) formulated draft descriptions for the ten items of the WiX, based on the draft descriptions of the domains (see Table S2 in online Supplementary Information 2, column 7). In the tenth step, the same two authors drafted item levels for the ten items of the WiX, taking the number and wording of levels of available instruments -collected in step 5- as starting point. Accordingly, each item is accompanied by a description conveying its meaning to respondents, and five response levels measuring the level of functioning of the respondent on that well-being domain, distinguishing between “I’m very satisfied”; “I’m satisfied”; “I’m reasonably satisfied”; “I’m dissatisfied”; and “I’m very dissatisfied” (on the specific domain) (see Table S2 in online Supplementary Information 2, column 8).

In the eleventh step, two other authors (A3, A4) independently reviewed the approach, decisions, and results of steps eight to ten and their feedback was discussed and implemented in a joint meeting with the whole research team. After several iterations of changes to the wording of the draft domain names, descriptions, and levels of the WiX, with particular focus on consistency and comprehensibility of formulations, consensus was achieved about a final draft version of the instrument. These adjustments were incorporated into Table S2 in online Supplementary Information 2 (see columns 6 to 8). Lastly, the order in which the items in the draft version of the WiX were presented, was adapted to minimize confounding of meaning between the items (see Table S2 in online Supplementary Information 2, column 9), and the recall period was set to “today”.

The twelfth and final step in developing a draft version of the WiX was a forward-backward translation of the WiX from English into Dutch, which was commissioned to a certified translation company. The differences between the original and back-translated English versions of the WiX were discussed and resolved in a meeting with the full research team, in coordination with the translator. This resulted in final draft versions of the new instrument in English and Dutch to be used in the content validation study discussed next.

### **Content validity**

To assess the content validity of the WiX, we followed the COSMIN methodology (Mokkink et al. 2010), with content validity defined as the degree to which the content of the new instrument adequately reflects the construct that we intend to measure, well-being. Following this definition content validity consists of three aspects: (1) relevance, meaning that all items of the instrument should be relevant for the construct of interest; (2) comprehensiveness, meaning that no important aspects of the construct should be missing; and (3) comprehensibility, meaning that all items of the instrument should be understood as intended. For this purpose, a qualitative and a quantitative assessment of the content validity of the WiX was conducted.

#### *Qualitative assessment of content validity*

To assess the content validity of the WiX, two authors (A1, A2) conducted interviews with experts and members of the general population. The interviews were conducted online and via telephone because, at the time, COVID-



19 measures did not allow for in-person interviews. As suggested by Beatty & Willis (Beatty and Willis 2007), the interviews were conducted in several rounds until saturation was reached. After each round, interview answers were analysed and discussed by three members of the research team (A1, A2, A5), and, if needed, the instrument was adapted accordingly.

Eight experts in the field of health care, health technology assessment, well-being, and outcome measurement were interviewed. These experts worked in the Netherlands at governmental agencies, (semi-)academic institutions or in the healthcare sector. All interviews were conducted online in November and December 2020 by an experienced researcher (A1), following a semi-structured interview protocol (see Appendix B). Experts received the draft version of the WiX beforehand. During the interview, they were asked general questions about well-being measurement and specific questions regarding the relevance, comprehensiveness, and comprehensibility of the WiX.

Individuals from the general population were interviewed by two experienced researchers (A1, A2), in three rounds. Individuals aged 18 years or older and able to communicate in Dutch were eligible to participate. To achieve a diverse representation of the general population, respondents were purposely sampled based on age, sex, education level, migration background, health status and religion. For the first round of interviews, ten respondents were recruited via the snowball sampling method. For the second and third rounds of interviews, a sampling agency recruited the respondents based on specified sampling criteria. In round 1 (January 2021), 2 (March 2021) and 3 (April 2021) respectively 10, 6 and 4 interviews were conducted. Recruitment of respondents stopped once no new issues were brought forward during the interviews.

Cognitive interviewing techniques (Willis 2005) were used to interview respondents in the general population sample. Specifically, a think-aloud strategy combined with verbal probing was applied to study the relevance, comprehensiveness and comprehensibility of the draft instrument, its items and their descriptions and levels. Having respondents verbalizing their thoughts gives insight into how respondents understand and answer questions, and aids in checking whether the questions and answer options are well understood. In practice, this strategy implied that respondents were asked to read and answer each item of the WiX out loud, after which they were asked, for example, to explain whether they found it hard to select an answer and, if so, for what reason. Finally, to check the relevance and comprehensiveness of the WiX, respondents were presented the entire instrument and asked whether any item of the WiX was redundant or any aspect that they considered important for their well-being was missing.

To ensure that the interviews were conducted in a consistent manner, a semi-structured interview protocol was prepared by the two interviewers (A1, A2) and discussed with the rest of the research team before commencing the interviews. After the first two interviews, the interview protocol was evaluated. As no significant changes were required, these two interviews were included in the analysis. Respondents received a small financial compensation for their time.

All interviews were recorded and transcribed verbatim and analysed by the two researchers who conducted the interviews. An analysis scheme corresponding to the interview guides was developed to identify issues regarding the items, descriptions and response levels, the recall period, and the relevance, comprehensiveness, and comprehensibility of the instrument. After each round (i.e., one round of interviews for the experts, three rounds

of interviews for the general population), interviews were deductively analysed using the analysis scheme, and retrieved issues were condensed into discussion points. These points were then discussed with the whole research team and, if needed, adjustments were made to the instrument.

### *Quantitative assessment of content validity*

After completion of the interviews, the draft version of the WiX was used for a quantitative content validation in a larger sample of the general population. A sampling agency recruited 501 respondents, quota-sampled to be representative for the adult general population of the Netherlands based on age, sex, education level and country region.

In the online survey, respondents first completed the Cantril ladder (Cantril 1965), which asks them to rate their life on a scale from 0 (“the worst possible life for you”) to 10 (“the best possible life for you”). Next, they were asked an open question: “Could you explain in a couple words what well-being means to you?”, followed by questions about their age, sex, level of education, country region, migration background and self-reported health. After these questions, they were asked to complete the WiX. Then, they were consecutively shown each item of the WiX with its description and their score on the item (from the previous question) and asked how important this item was for their well-being (on a five-point scale ranging from “very important” to “very unimportant”), and to explain this in an open text field. After rating all items according to importance, respondents were shown all items of the WiX and asked to indicate whether any items they considered important to their well-being were missing from this list. If they answered “yes”, they could insert up to three items in an open text field; for each item inserted, they were asked to indicate how important this item was for their well-being (on a five-point scale ranging from “very important” to “very unimportant”). Finally, respondents were shown one randomly selected item of the WiX with its description and their score on the item (from the question before). For this WiX item, respondents were asked how clear the description of this item was to them (on a five-point scale ranging from “very clear” to “very unclear”), followed by an open question for suggestions to improve the clarity of the description. In addition, respondents received three questions about the response levels of the item: (1) how clear the response levels were to them (on a five-point scale ranging from “very clear” to “very unclear”); (2) how difficult it was to select the response option that was most applicable to them (on a five-point scale ranging from “very easy” to “very difficult”); and, (3) whether they could as well have chosen one response category higher or lower (on a five-point scale ranging from “completely agree” to “completely disagree”). In the randomization procedure for the question above, four items of the WiX (i.e., ‘Personal and social safety’, ‘Self-worth’, ‘Independence’ & ‘Social relations’) were shown twice as often as the other items, because these items most frequently raised issues in terms of comprehensibility during the interviews with members of the general population (as discussed later).

Frequencies were calculated for the responses to the closed questions regarding the relevance, comprehensiveness, and comprehensibility of the items of the WiX and their descriptions and response levels. Responses to the open question about what well-being meant to respondents were open coded into aspects of well-being (e.g., “not having to worry about money” or “no worries about expenditures for shelter or food” into the aspect ‘no financial worries’) using inductive content analysis (Elo and Kyngäs 2008). Next, these aspects were matched to the ten domains of well-being included in the WiX (e.g., aspects like ‘financial stability’ and ‘no financial worries’ to the domain

‘Financial situation’) or a category ‘other’. A similar approach was used for coding the responses to the other open questions. Incomplete or unclear answers and mentions of “don’t know” were coded as missing. Because all questions were mandatory, there were no missing values. Respondents with very short answers to any of the open questions were seen as potential speeders, but after excluding these respondents from the data as a robustness check, it was concluded that their answers did not affect the results presented here.

### *Translation of the WiX*

The interviews and surveys were administered using consecutive draft versions of the WiX in Dutch. The final version of the instrument after content validation was translated into English. The forward-backward translation was commissioned to a certified translation company. The differences between the original and back-translated Dutch versions of the instrument were discussed and resolved by the research team. The final English and Dutch versions of the WiX are included in Appendix C and D.

### *Ethics*

The study protocol was approved by the Research Ethics Review Committee of the Erasmus School of Health Policy & Management (case number 21-001). Participation in the study was voluntary and could be terminated at any point. All respondents provided informed consent for participation in the study and use of their responses for academic research and publication purposes.

## **Results**

### *Qualitative assessment of content validity*

Below we describe the most important revisions to the initial draft version of the WiX following the consecutive rounds of interviews with experts and members of the general population. A detailed overview of the frequency of reporting issues regarding the relevance, comprehensibility, and comprehensiveness of the WiX, per interview round, is included in Appendix E.

The interviews with the experts resulted in two important changes to the instrument. First, the third (or middle) response option was changed from “I’m reasonably satisfied” to “I’m satisfied nor dissatisfied”, to represent the true middle. In addition, the items, descriptions, and levels of the instrument were checked by a language specialist to meet comprehensibility at language level B1 (intermediate), and the instrument was revised accordingly. Table S3a (in online Supplementary Information 3) lists the issues identified, quotes from the interviews with experts, and the corresponding changes that were made to the draft version of the instrument.

Table 1 presents an overview of the main characteristics of the members of the general population who participated in the qualitative and quantitative validation study. The interviews with members of the public demonstrated that the instrument worked well; no issues were identified regarding the relevance and comprehensibility of the WiX, but some minor issues were reported regarding the comprehensiveness of the item descriptions, which resulted in

the following changes. First, some respondents indicated to dislike the negative description of the items for physical and mental health. They mentioned that the descriptions were worded too negatively, which could potentially influence their answers. Therefore, the descriptions of the items for physical and mental health were changed from negatively worded statements (e.g., “Consider feelings of anxiety”) to positively worded statements (e.g., “Consider feeling mentally well and not suffering from feelings of anxiety”). Second, some respondents reported difficulties answering the item about safety, following from difficulties understanding a specific part of the item description related to social safety: “...where everyone is treated with dignity and respect”. However, they did acknowledge it to be an important aspect of safety. Throughout the interviews, alternative descriptions were explored and discussed with respondents, eventually resulting in describing social safety as: “...that others accept you and that you are not harassed because of who you are or what you think or believe”. Tables S3.2 to S3.4 (in online Supplementary Information 3) list the issues identified per interview round with members of the public, quotes from the interviews, and the corresponding changes that were made to consecutive draft versions of the instrument.

**Table 1.** Descriptive statistics of the members of the general population included in the qualitative interview and quantitative survey samples

Variables	Qualitative interview sample (N=20)	Quantitative survey sample (N=501)
Sex (female)	50%	53%
Age		
18-25	10%	10%
26-45	35%	31%
46-65	25%	39%
66-75	20%	16%
>75	10%	4%
Education		
Low	25%	31%
Middle	35%	45%
High	40%	24%

#### *Quantitative assessment of content validity*

After completing the draft version of the WiX, 447 respondents (89%) provided a meaningful answer to the question about what well-being means to them. The most frequently mentioned aspects related to health (73%) and emotional well-being (46%), followed by financial situation (26%) and social contacts (19%) (see Table 2). Nearly all the mentioned aspects were clearly linked to the domains included in the WiX, supporting the relevance and comprehensiveness of the instrument, except for (1) the well-being of others and (2) personal development/having a certain goal or purpose in life, which both were mentioned by about 3% of the respondents. Few respondents (N=20; 4%) reported to miss an item in the instrument. The most mentioned aspects were

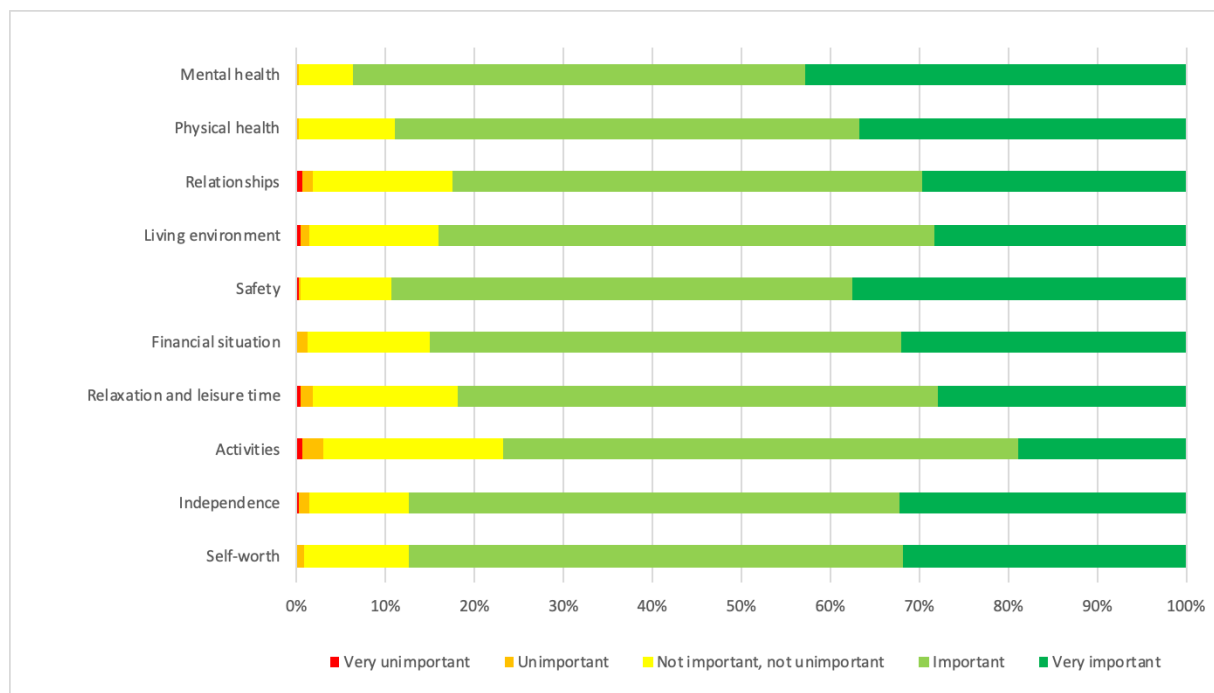
‘personal development’ (e.g., future outlook, skills) (1%), ‘spirituality/religion’ (1%) and ‘society/political system’ (e.g., politics, norms, climate) (1%).

**Table 2.** Definition of well-being according to respondents (N=446)

Domain	Mentioned aspects	Number (%) of respondents
Health	Feeling healthy; Mental or physical health; No worries or stress; Being energetic	327 (73%)
Emotional well-being	Feeling good/happy; Having a good life; Being satisfied; Enjoying life	204 (46%)
Financial situation	Financial means; Ability to pay for certain expenses; Not having financial worries; Being financially secure	115 (26%)
Social contacts	Contacts; Family; Love; Friends	86 (19%)
Independence	Doing what I like; Freedom	45 (10%)
Environment	Having a house; Facilities and services	21 (5%)
Activities	Having a (nice) job; Being involved in (daily) activities; Providing care	17 (4%)
Leisure	Leisure time; Work-life balance; Travelling	17 (4%)

Note: Only domains for which aspects were mentioned by at least 15 respondents are listed in the table.

**Figure 2.** How important is this item for your well-being? (N=501)



The relevance of the items of the WiX was further investigated by asking respondents how important they considered the items of the WiX to be for their well-being. Most respondents indicated to find all items (very) important, with the highest proportion for ‘Mental health’ (94%) and the lowest proportion for ‘Activities’ (77%) (see Figure 2). When asked why they considered an item (not) to be important for their well-being, respondents reported a broad range of arguments (see Table 3). The few respondents who indicated an item not to be important, mostly mentioned that the item did not apply to them. For example, respondents who indicated finding the item ‘Activities’ not important to their well-being explained they do not, or are unable to, being involved in activities like work or household chores.

**Table 3.** Synthesis of provided answers to the question: Why do you consider this item (not) relevant for well-being?

<b>Item</b>	<b>Mentioned aspects regarding the (ir)relevance of an item</b>
Mental health	Affects how you feel, how happy you are; Important to not be stressed; Has an impact on life in general; Good mental health is essential to do other things; Mental health affects your independence; It is related to physical health.
Physical health	Health is important; Essential to do everything you want to do; Affects how you feel
Relationships	Contacts are a necessity in life; It feels good to be loved/in contact with others; Receiving support/Being in contact with others helps to deal with worries; (Enjoy the) presence of partner, family, children; Not being lonely.
Living environment	Being in a nice place/having a nice house/green surroundings is important; Nice surroundings make you feel less stressed; It is important to feel at home; Related to safety and health.
Safety	Not feeling safe will lead to stress/affect your mental health; Don’t want to feel scared; Important to feel good; Want the freedom to do all the things you want to do; Important not to experience harassment/ traffic accidents/criminal activities.
Financial situation	Not having enough money gives stress/worries; Money needed to purchase items that are necessary to live (e.g., food); Gives independence, makes it possible to do what you like; Important to have enough; Money not needed to be happy, but useful to have some and live a comfortable life.
Relaxation and leisure time	It is essential to relax and recharge; Leisure might lead to stress relieve; Important to do nice things, and decide how to spend your time yourself; Not having enough spare time might affect your mental/physical health.
Activities	Important to stay active (especially at older age); Activities provide a purpose/goal; Will prevent you from getting bored; Related to health; Important to do nice things/have a nice job/do what you like.
Independence	Important to not be dependent of others and be able to take care of yourself; Want to make my own decisions and do what I like; Gives a feeling of freedom.
Self-worth	Affects how you feel; Important to be yourself and follow you own norms; Important to be satisfied with who you are and to be proud of yourself; Self-worth is needed for meaningful relations with others; Affects mental health.

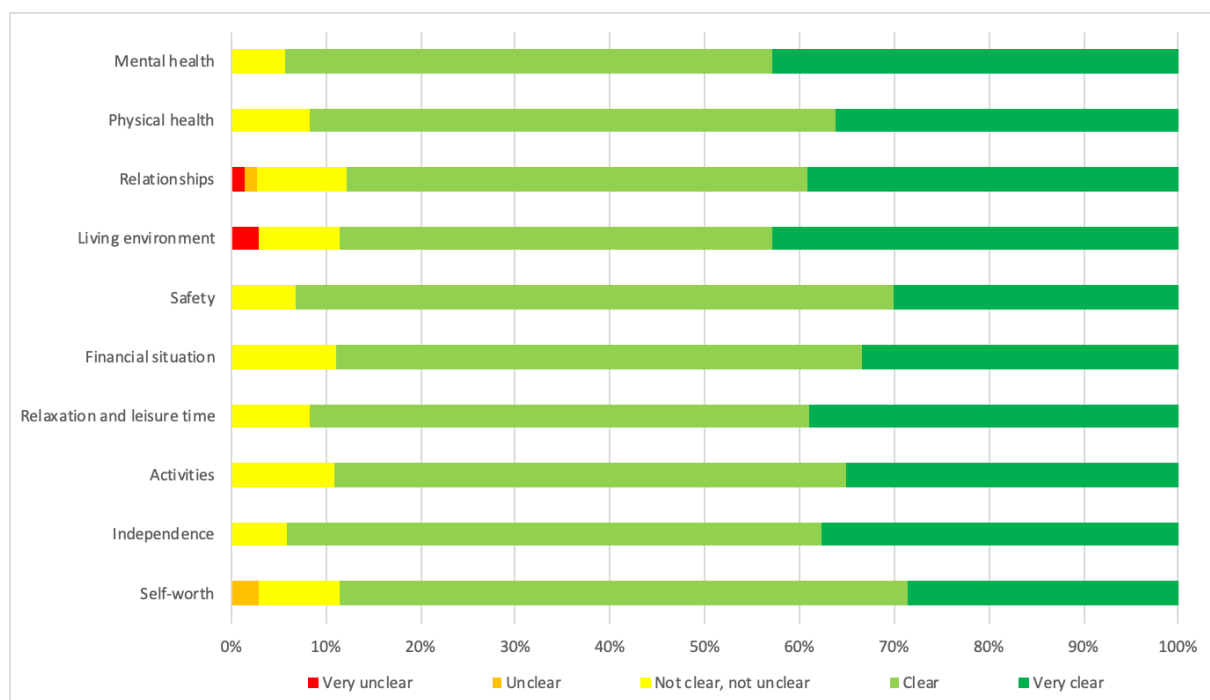
Note: Only aspects mentioned by at least 15 respondents are listed in the table.

Regarding comprehensibility, most respondents (83% or more, per item) found the item descriptions and response levels (very) clear (see Figures 3 and 4). In addition, very few found it difficult to select the right answer (i.e., level) to the items (see Figure 5). The high level of comprehensibility of the items and item descriptions was also evident from the written feedback provided by respondents, who reported only few suggestions for improvement. Based on these suggestions, we slightly revised the wording of the description of the ‘Relaxation and leisure time’ item. Table S3e (in online Supplementary Information 3) lists the changes that were made to the draft version of the instrument based on the quantitative validation.

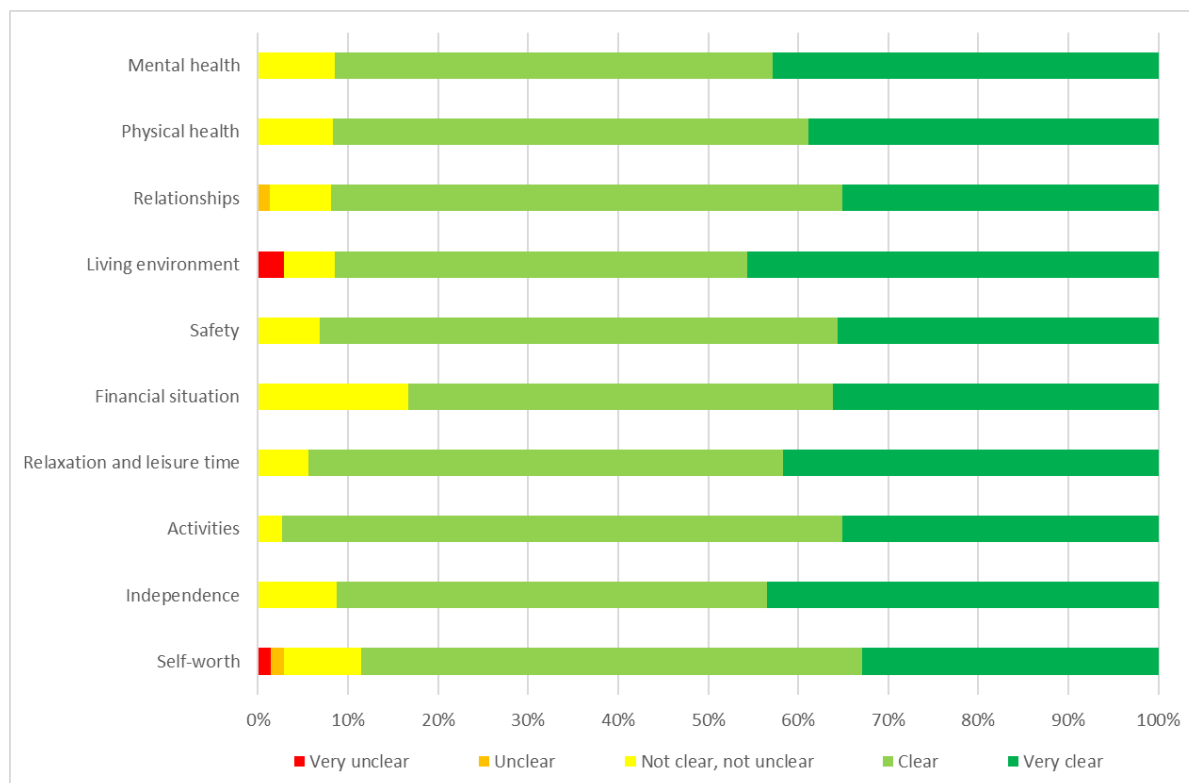
On average, 35.3% (completely) disagreed that they could as well have chosen one answer level higher or lower, which was lowest for the item ‘Activities’ (24.3%) and highest for the item ‘Physical health’ (45.7%), while 23.6% of respondents (completely) agreed, which was lowest for the item ‘Safety’ (13.7%) and highest for the item ‘Activities’ (32.4%).

Finally, based on differences between the Dutch language version of the instrument after the content validation and the forward-backward translation into English, we slightly revised the wording of the description of the item ‘Living environment’ in the Dutch language version (see Table S3f in online Supplementary Information 3).

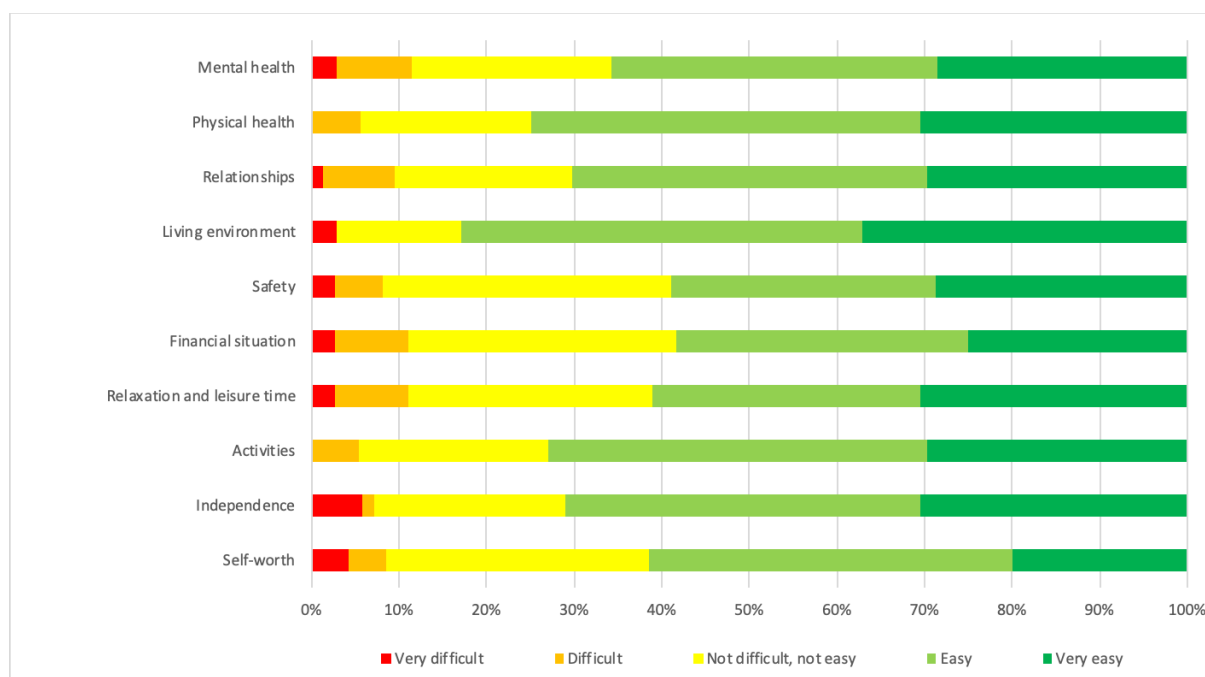
**Figure 3.** How clear is the description of this item to you? (70 to 74 respondents for items ‘Relationships’, ‘Safety’, ‘Independence’ and ‘Self-worth’, 35 to 37 respondents for the other items)



**Figure 4.** How clear are the answer options for this item to you? (70 to 74 respondents for items ‘Relationships’, ‘Safety’, ‘Independence’ and ‘Self-worth’, 35 to 37 respondents for the other items)



**Figure 5.** How difficult was it to select the right answer to this item? (70 to 74 respondents for items ‘Relationships’, ‘Safety’, ‘Independence’ and ‘Self-worth’, 35 to 37 respondents for the other items)





## Discussion

When interventions have effects beyond health, the evaluative space of common HRQoL instruments may be considered too limited to capture all the benefits relevant to individuals. In such cases, instruments measuring well-being comprehensively are required. While a few well-being instruments exist that could be used in the context of economic evaluations, all seem to have some limitations. Therefore, in this paper a new instrument was introduced that covers ten important domains of well-being for the adult general population: the 10-item Well-being instrument (WiX). This paper presented its development and content validation.

The development of the WiX was based on a theoretical framework synthesizing leading theories of well-being (Van der Deijl et al. 2023) and a scoping review of existing instruments with a similar aim. The final version of the instrument covers ten important domains of well-being and measures functionings in these domains. The content validity of the WiX was investigated following the COSMIN methodology (Mokkink et al. 2010), addressing its relevance, comprehensiveness, and comprehensibility in a qualitative and a quantitative validation study. The results of these studies confirmed that the WiX covers all relevant well-being domains, does not include irrelevant domains, and is considered clear and feasible by the target population. These results are encouraging and highlight that the WiX is a promising instrument to measure well-being in the adult general population.

Considering the development process of the WiX described in this paper, the results for its content validity support that this well-being instrument is truly generic, meaning that it is not confined to a specific subgroup in the adult population (e.g., care users) or to a subset of the relevant well-being domains. Moreover, it also confirms that it is comprehensive, unlike some of the existing well-being instruments (as highlighted in the introduction). These strengths of the WiX are especially important when interventions are expected to have broad effects on well-being and also make the instrument more relevant for use in the evaluation of interventions across sectors and settings, as well as outside the healthcare sector.

By measuring the functionings of respondents in ten distinct domains of well-being, the informational density of the WiX is high. This makes it possible to offer an indication of overall well-being, but also helps to identify the domains in which functioning may not be optimal and hence understand the sources of reduced well-being. In addition, this information can be directly relevant for the development and implementation of policy interventions. While the ten items required to make the WiX comprehensive, make it longer than most other existing instruments, the results of this study indicate that the WiX seems to be clear and concise, and, therefore, still feasible to be used for self-completion in the context of evaluation studies.

A few issues regarding the instrument and its content validity deserve further discussion here. First, in both the development and content validity phases some elements of well-being were encountered that may be important for well-being but, after deliberation, were not included in the final instrument. Two examples of this are political participation and spirituality/religion. These aspects are mentioned in the literature (Van der Deijl et al. 2023) and were reported by (very small proportions of) respondents, but at this time we found insufficient evidence to support their inclusion in the final instrument as additional domains. Future research should explore the role of these aspects for well-being further.

Secondly, we developed the WiX and conducted the content validity study in the Netherlands. While the instrument was based on broad, international theories of well-being and available well-being instruments from the

international literature, and we tried to represent the multi-cultural environment in the Netherlands in the content validation phase, future studies need to confirm the (content) validity of the instrument in other countries. This may be especially relevant in countries where the economic, political and cultural environments differ considerably from the Netherlands. In addition, the content validation of the WiX took place during the COVID-19 pandemic. While it is difficult to say whether and how this may have influenced the results of the content validation study presented in this paper, we expect that respondents may have been more aware of well-being (issues) in general as a result of the pandemic (and the governmental measures) and that it may have impacted the relative importance attached to certain well-being domains (like health or social activities).

Thirdly, despite the theory-driven, systematic development process and the extensive content validation, several additional development steps are needed before the WiX can be recommended for use in evaluation studies. These steps include further validation of the instrument, including its feasibility, reliability, construct validity and sensitivity/responsiveness, ideally in different contexts, populations and countries. Moreover, for use in economic evaluation studies, utility weights need to be determined, showing the relative importance of the different domains of well-being and levels of functioning in those domains for overall well-being. Such utility weights can then be used to compute well-being scores for the different well-being states described by the instrument.

Concluding, the thorough development and content validation phases reported in this paper have resulted in a new instrument to measure functionings in the adult general population on ten important domains of well-being: the 10-item Well-being instrument (WiX). The results for the relevance, comprehensiveness and comprehensibility of the WiX are encouraging, but further validation and valuation steps are necessary before it can actually be used in (economic) evaluation studies. Conditional on the results of these steps, the WiX seems to be a promising alternative for existing measures of well-being, which are much needed to adequately assess the full impact and value for money of interventions with impacts broader than only health.

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## Appendix A. Overview of changes intermediate review (step 7)

The following changes were made to the domains (or items) of instruments categorized as ‘other’ in step four (see bottom row Table S1 in online Supplementary Information 1):

- WALY: the item ‘Self-sufficiency’ of the domain ‘Physical health’ was moved to the draft domain ‘Independence’ of the new instrument because self-sufficiency was considered as one of the requirements for being independent.
- E-QALY: the item ‘Self-care’ of the domain ‘Activity’ was discarded because it was considered to be a factor that directly influences well-being and is already being addressed by other domains included in the new instrument.
- QWB-SA: the domain ‘Symptom/problem complexes’ was discarded since it was considered too detailed and already covered under the draft domain description of ‘Physical health’.
- PWI: the domain ‘Future security’ was discarded since this concept was considered already covered under draft domain ‘Safety’ of the new instrument.
- ONS-4: the domain ‘Life satisfaction’ was moved to draft domain ‘Achievements’ of the new instrument since it was considered to fit with the concept of feeling accomplished in life.
- WHOQOL: the item ‘Activities of daily living’ of the domain ‘Level of independence’ was moved to draft domain ‘Activities’ since it was mainly focused on a persons’ use of his or her energy for work. The item ‘Health and social care: accessibility and quality’ from the domain ‘Environment’ moved to draft domain ‘Environment’ of the new instrument since the main focus was if people felt that health and social care were in the near vicinity.
- SPF-IL: the domain ‘Stimulation’ was moved to draft domain ‘Activities’ since it mainly included questions concerning activities. The domain ‘Perspective on the future’ was discarded since the research team believed all concepts in this domain were already covered within the rest of the domains.

Overview of changes to the initial domain names (See table S2 in online Supplementary Information, columns 1, 4, 6):

- The domain ‘Safety’ was renamed into ‘Personal and social safety’ to show more specifically in the domain name what is included in the domain and item.
- The domain ‘Recreation and leisure’ was renamed into ‘Recreation and leisure time’.
- The domain ‘Mental well-being’ was renamed into ‘Mental health’ to align the wording of the domain name with the ‘Physical health’ domain and to distinguish the domain more clearly from overall well-being, which is intended to be captured by the full version (i.e., all domains together) of the new developed instrument.
- The domain ‘Mental development’ was renamed into ‘Independence’ since the research team believed this to define the description of the domain better, and elements concerning mental issues were moved to the domain ‘Mental health’.
- The domain ‘Environmental conditions’ was renamed into ‘Environment’ and ultimately was named ‘Living environment’ to better fit the description of the domain.
- The domain ‘Material well-being’ was renamed into ‘Making ends meet’ and ultimately was named ‘Financial situation’.

- The domain 'Labour conditions' was renamed into 'Activities' to represent a broader range of activities besides (paid) work, such as volunteering and informal caregiving, that may also contribute to their well-being.
- The domain 'Achievements' was renamed into 'Self-worth' to better fit the domain description as achievements seems to be mainly focusing on attaining certain goals.

## **Appendix B. Interview protocol – experts & general public**

### **Interview protocol experts**

<Experts received the first draft version of the instrument beforehand>

#### **Introduction**

Introduction + informed consent

#### **Part I (General)**

- What is your opinion on the measurement of well-being in health care?
- Do you think it is important to measure well-being in health care?
- Do you think this new instrument is suitable for this? And is it a good addition to existing instruments?

#### **Relevance**

- Are all domains, descriptions, and levels in the WiX relevant to the measurement of general well-being within the health and well-being sectors?

#### **Comprehensiveness**

- Are there life aspects that are important for measuring well-being within the sectors of care and well-being, that have not yet been named? Phrased differently, are any domains missing? Would you suggest other names for some of the domains? (Independence vs. self-reliance)
- Are the descriptions complete? Do the descriptions adequately cover the scope of the domain? Are things missing?
- Are the levels complete? Is the way of measurement relevant? Are the levels sufficiently different? Is there enough differentiation between the levels?

#### **Comprehensibility**

- Are all terms and phrases understandable (to an adult population)?

#### **Part II Advice on instrument validation**

- Discuss experts' experience and advice regarding instrument validation

#### **Part III**

- Check any remaining important stakeholders, or important case studies.

#### **Closure**

- Summarize most important comments
- Check for additional remarks/comments



## **Interview protocol general public**

### **Introduction**

Introduction + informed consent

The Erasmus University is conducting research on a new questionnaire to measure well-being (or happiness, satisfaction with life) among the Dutch people aged 18 years or older. We are curious to know whether these questions are clear and whether we have included everything in the questionnaire that is important for your well-being.

We are interested in your opinion. There are no right or wrong answers.

### **Part I (General)**

- Can you describe in a few words what well-being means to you?
- What do you personally consider important for your well-being?

### **Part II (The instrument: is it clear, recognizable, complete, and understandable?)**

We are now going to discuss the questionnaire together. The questionnaire has 10 questions. We will read each question one by one. Would you like to explain out loud for each question what you think when reading and completing the question? We would like to know your opinion, there are no wrong answers.

\*Ask the respondent to answer every question of the instrument out loud. Ask probing questions after answering every item to check whether the questions are relevant, complete, and understandable. For example, ask: Was the description clear or understandable? Was it difficult to answer the question? What would need to happen to give a higher/worse score for a certain item?

\*Check specifically: The questionnaire begins with an introduction. Based on that, is it clear what is expected of you?

<Show entire instrument>

- Are there things (in life) that are important to your well-being that have not yet been named? Are there elements missing in the questionnaire?
- Are there elements currently in the questionnaire that are not so important to you/ you do not feel are necessary?
- Have there been any major events in your life in the past year that affect your well-being currently?
- If you wish, can you describe these major events and the effect they have on your well-being currently? Can you indicate the questions on which this/these event(s) had an effect?

### **Part III (demographic questions)**

Age, education, religion, migration background and health.

### **Part IV (the future)**

Check for further comments/remarks and whether the respondent wants to stay informed regarding future development and achievements of the instrument.

## Appendix C. The 10-Item Well-being instrument (WiX) – English version

For each section, select the description that applies to you best today.

### Mental health

*Consider feeling mentally well and not suffering from feelings of anxiety, stress, sadness, and not having worries or a lack of control.*

- I'm very satisfied with my mental health
- I'm satisfied with my mental health
- I'm not satisfied but also not dissatisfied with my mental health
- I'm dissatisfied with my mental health
- I'm very dissatisfied with my mental health

### Physical health

*Consider feeling physically well and not suffering from physical limitations, low energy, problems with vision, hearing, speech, sleep or movement, pain, and other physical complaints.*

- I'm very satisfied with my physical health
- I'm satisfied with my physical health
- I'm not satisfied but also not dissatisfied with my physical health
- I'm dissatisfied with my physical health
- I'm very dissatisfied with my physical health

### Relationships

*Consider the relationships with your family, partner, friends, colleagues, and other people who are important to you. This concerns the number and quality of your relationships, including feeling love and friendship and getting practical or emotional support when you need it.*

- I'm very satisfied with my relationships
- I'm satisfied with my relationships
- I'm not satisfied but also not dissatisfied with my relationships
- I'm dissatisfied with my relationships
- I'm very dissatisfied with my relationships

### Living environment

*Consider the house and the neighbourhood you live in, the availability of open and green areas, and the facilities and services that you need.*

- I'm very satisfied with my living environment
- I'm satisfied with my living environment
- I'm not satisfied but also not dissatisfied with my living environment
- I'm dissatisfied with my living environment
- I'm very dissatisfied with my living environment

### **Safety**

*Consider feeling safe in your daily life, that others accept you and that you are not harassed because of who you are or what you think or believe, and that there is little risk of something terrible happening to you at home, on the streets or online.*

- I'm very satisfied with my safety
- I'm satisfied with my safety
- I'm not satisfied but also not dissatisfied with my safety
- I'm dissatisfied with my safety
- I'm very dissatisfied with my safety

### **Financial situation**

*Consider having enough money for your expenses for things like housing, insurance, clothing, and food, occasionally something extra and not having any worries about money.*

- I'm very satisfied with my financial situation
- I'm satisfied with my financial situation
- I'm not satisfied but also not dissatisfied with my financial situation
- I'm dissatisfied with my financial situation
- I'm very dissatisfied with my financial situation

### **Relaxation and leisure time**

*Consider taking a break, doing something fun, hobbies, sports and going on holiday. This concerns the amount and quality of your relaxation and leisure time.*

- I'm very satisfied with my relaxation and leisure time
- I'm satisfied with my relaxation and leisure time
- I'm not satisfied but also not dissatisfied with my relaxation and leisure time
- I'm dissatisfied with my relaxation and leisure time
- I'm very dissatisfied with my relaxation and leisure time

### **Activities**

*Consider activities like studying, paid work, volunteer work, household chores and providing care or support to family, friends, or acquaintances. This concerns the amount and quality of your activities.*

- I'm very satisfied with my activities
- I'm satisfied with my activities
- I'm not satisfied but also not dissatisfied with my activities
- I'm dissatisfied with my activities
- I'm very dissatisfied with my activities

### **Independence**

*Consider feeling autonomous and being able to find, understand and use information, and making your own choices and carrying them out in daily life.*

- I'm very satisfied with my level of independence
- I'm satisfied with my level of independence
- I'm not satisfied but also not dissatisfied with my level of independence
- I'm dissatisfied with my level of independence
- I'm very dissatisfied with my level of independence

### **Self-worth**

*Consider living according to your own values and beliefs, and being satisfied with who you are and what you do.*

- I'm very satisfied with my self-worth
- I'm satisfied with my self-worth
- I'm not satisfied but also not dissatisfied with my self-worth
- I'm dissatisfied with my self-worth
- I'm very dissatisfied with my self-worth

## Appendix D. The 10-Item Well-being instrument (WiX) – Dutch version

Kies bij ieder onderdeel de beschrijving die vandaag het best bij u past.

### Mentale gezondheid

*Denk hierbij aan u psychisch goed voelen en geen last hebben van gevoelens van angst, stress, verdriet, en geen zorgen hebben of gebrek aan controle.*

- Ik ben zeer tevreden over mijn mentale gezondheid
- Ik ben tevreden over mijn mentale gezondheid
- Ik ben niet tevreden maar ook niet ontevreden over mijn mentale gezondheid
- Ik ben ontevreden over mijn mentale gezondheid
- Ik ben zeer ontevreden over mijn mentale gezondheid

### Lichamelijke gezondheid

*Denk hierbij aan u fysiek goed voelen en geen last hebben van lichamelijke beperkingen, weinig energie, problemen met zien, horen, spreken, slapen of bewegen, pijn en andere lichamelijke klachten.*

- Ik ben zeer tevreden over mijn lichamelijke gezondheid
- Ik ben tevreden over mijn lichamelijke gezondheid
- Ik ben niet tevreden maar ook niet ontevreden over mijn lichamelijke gezondheid
- Ik ben ontevreden over mijn lichamelijke gezondheid
- Ik ben zeer ontevreden over mijn lichamelijke gezondheid

### Relaties

*Denk hierbij aan de relaties met uw familie, partner, vrienden, collega's en andere mensen die belangrijk voor u zijn. Hierbij gaat het om het aantal en de kwaliteit van uw relaties, waaronder liefde en vriendschap voelen en praktische of emotionele steun krijgen wanneer u die nodig heeft.*

- Ik ben zeer tevreden over mijn relaties
- Ik ben tevreden over mijn relaties
- Ik ben niet tevreden maar ook niet ontevreden over mijn relaties
- Ik ben ontevreden over mijn relaties
- Ik ben zeer ontevreden over mijn relaties

### Leefomgeving

*Denk hierbij aan het huis en de buurt waarin u woont, de beschikbaarheid van open en groene ruimten, en van voorzieningen en diensten die u nodig heeft.*

- Ik ben zeer tevreden over mijn leefomgeving
- Ik ben tevreden over mijn leefomgeving
- Ik ben niet tevreden maar ook niet ontevreden over mijn leefomgeving
- Ik ben ontevreden over mijn leefomgeving
- Ik ben zeer ontevreden over mijn leefomgeving

### **Veiligheid**

*Denk hierbij aan u veilig voelen in het dagelijks leven, dat anderen u accepteren en u niet wordt lastiggevalen om wie u bent of wat u denkt of gelooft, en dat er weinig kans is dat er iets ergs met u gebeurt in huis, op straat of online.*

- Ik ben zeer tevreden over mijn veiligheid
- Ik ben tevreden over mijn veiligheid
- Ik ben niet tevreden maar ook niet ontevreden over mijn veiligheid
- Ik ben ontevreden over mijn veiligheid
- Ik ben zeer ontevreden over mijn veiligheid

### **Financiële situatie**

*Denk hierbij aan voldoende geld hebben voor uw uitgaven aan zaken zoals wonen, verzekeren, kleding en voeding, af en toe iets extra's en geen geldzorgen hebben.*

- Ik ben zeer tevreden over mijn financiële situatie
- Ik ben tevreden over mijn financiële situatie
- Ik ben niet tevreden maar ook niet ontevreden over mijn financiële situatie
- Ik ben ontevreden over mijn financiële situatie
- Ik ben zeer ontevreden over mijn financiële situatie

### **Ontspanning en vrije tijd**

*Denk hierbij aan even rust nemen, iets leuks doen, hobby's, sporten en op vakantie gaan. Hierbij gaat het om de hoeveelheid en de kwaliteit van uw ontspanning en vrije tijd.*

- Ik ben zeer tevreden over mijn ontspanning en vrije tijd
- Ik ben tevreden over mijn ontspanning en vrije tijd
- Ik ben niet tevreden maar ook niet ontevreden over mijn ontspanning en vrije tijd
- Ik ben ontevreden over mijn ontspanning en vrije tijd
- Ik ben zeer ontevreden over mijn ontspanning en vrije tijd

### **Activiteiten**

*Denk hierbij aan activiteiten zoals studie, betaald werk, vrijwilligerswerk, huishoudelijke taken en het geven van zorg of steun aan familie, vrienden of bekenden. Hierbij gaat het om de hoeveelheid en de kwaliteit van uw activiteiten.*

- Ik ben zeer tevreden over mijn activiteiten
- Ik ben tevreden over mijn activiteiten
- Ik ben niet tevreden maar ook niet ontevreden over mijn activiteiten
- Ik ben ontevreden over mijn activiteiten
- Ik ben zeer ontevreden over mijn activiteiten

### **Onafhankelijkheid**

*Denk hierbij aan u zelfstandig voelen, informatie kunnen vinden, begrijpen en gebruiken, en uw eigen keuzes kunnen maken en uitvoeren in het dagelijks leven.*

- Ik ben zeer tevreden over mijn mate van onafhankelijkheid
- Ik ben tevreden over mijn mate van onafhankelijkheid
- Ik ben niet tevreden maar ook niet ontevreden over mijn mate van onafhankelijkheid
- Ik ben ontevreden over mijn mate van onafhankelijkheid
- Ik ben zeer ontevreden over mijn mate van onafhankelijkheid

### **Eigenwaarde**

*Denk hierbij aan leven volgens uw eigen waarden en opvattingen, en tevreden zijn met wie u bent en wat u doet.*

- Ik ben zeer tevreden over mijn eigenwaarde
- Ik ben tevreden over mijn eigenwaarde
- Ik ben niet tevreden maar ook niet ontevreden over mijn eigenwaarde
- Ik ben ontevreden over mijn eigenwaarde
- Ik ben zeer ontevreden over mijn eigenwaarde

**Appendix E.** Overview of issues mentioned regarding relevance, comprehensibility, and comprehensiveness, per interview round

		Experts (N=8)	General population		
			round 1 (N=10)	round 2 (N=6)	round 3 (N=4)
Issues related to instructions		-	-	-	-
Issues related to response options		4	-	-	-
Issues related to recall period		2	-	-	-
Issues related to comprehensibility entire instrument		5	-	-	-
Issues related to comprehensiveness entire instrument		3	2	3	-
1. Mental health	Comprehension issue	3	4	-	-
	Comprehensiveness issue	-	2	-	-
	Relevance issue	-	-	-	-
2. Physical health	Comprehension issue	-	3	-	-
	Comprehensiveness issue	1	1	-	-
	Relevance issue	-	-	-	-
3. Relationships	Comprehension issue	-	-	-	-
	Comprehensiveness issue	1	1	4	-
	Relevance issue	-	-	-	-
4. Living environment	Comprehension issue	1	-	-	-
	Comprehensiveness issue	-	2	-	-
	Relevance issue	-	-	-	-
5. Safety	Comprehension issue	-	6	1	2
	Comprehensiveness issue	1	1	1	-
	Relevance issue	-	-	-	-
6. Financial situation	Comprehension issue	-	1	-	-
	Comprehensiveness issue	-	1	2	2
	Relevance issue	-	-	-	-
7. Relaxation & leisure time	Comprehension issue	1	-	-	-
	Comprehensiveness issue	-	1	-	-
	Relevance issue	-	-	-	-
8. Activities	Comprehension issue	-	4	-	-
	Comprehensiveness issue	2	-	-	-
	Relevance issue	-	-	-	-
9. Independence	Comprehension issue	1	-	-	-
	Comprehensiveness issue	-	6	-	-
	Relevance issue	-	-	-	-
10. Self-worth	Comprehension issue	-	-	2	-
	Comprehensiveness issue	-	1	-	-
	Relevance issue	-	-	-	-

Notes: Please note that comprehension issues do not necessarily mean that respondents answered to these questions wrongly, in most cases it means that respondents mentioned, or researchers observed that respondents found it difficult to answer to this question. Final domain names are used.



## Supplementary Information 1

**Table S1.** Cross-tabulation of domains corresponding to the theoretical framework from van der Deijl et al. (2023) with domains of selected instruments

Domains theoretical framework	Selected instruments								
	WALY (Well-being Adjusted Life Years)	E-QALY (Extended the Quality-Adjusted Life Year)		QWB-SA (Quality of Well-Being Scale Self-administered)	PWI (Personal Wellbeing Index Scale)	PWS (Psychological Wellbeing Scale)	ONS-4 (Office of National Statistics four subjective wellbeing questions)	WHOQOL (World Health Organization Quality of Life)	SPF-II (Social Production Function Instrument for the Level of well-being)
1. Physical health	Physical health ◦ Vitality	Activity ◦ Mobility ◦ Communication/speech ◦ Hearing ◦ Vision	Physical sensation ◦ Pain ◦ Discomfort (e.g. itching, feeling sick, dizziness) ◦ Fatigue and tiredness ◦ Sleep problems Self-worth ◦ Treated with dignity/respect	Mobility  Physical activity	Health	-	-	Physical Health ◦ Energy and fatigue ◦ Pain and discomfort ◦ Sleep and rest  Level of Independence ◦ Mobility ◦ Dependence on medicinal substances and medical aids ◦ Work capacity	Comfort  Stimulation
2. Safety	-	Feelings and emotions ◦ Feeling safe	-	-	Safety	-	-	Environment ◦ Freedom, physical safety and security	Affection
3. Recreation and leisure	-	Activity ◦ Enjoyable or meaningful activity/roles	-	Social activity	-	-	-	Environment ◦ Participation in and opportunities for recreation/leisure	-
4. Mental well-being	Mental health ◦ Depression/anxiety ◦ Optimism ◦ Engagement	Sadness/happiness ◦ Hopeless/hope ◦ Anger/frustration ◦ Anxious/calm	Control and coping ◦ Control ◦ Coping  Concentration and memory ◦ Concentration/thinking clearly ◦ Memory ◦ Confusion	-	Health	-	Anxiety  Happiness	Psychological ◦ Bodily image and appearance ◦ Negative feelings ◦ Positive feelings  Level of Independence ◦ Dependence on medicinal substances and medical aids ◦ Work capacity	-
5. Political representation	-	-	-	-	-	-	-	-	-
6. Mental development	-	-	-	-	-	Autonomy	-	Psychological ◦ Thinking, learning, memory and concentration  Environment ◦ Opportunities for acquiring new information and skills  Spirituality/Religion/Personal beliefs ◦ Religion/Spirituality/Personal beliefs	Status
7. Environmental conditions	-	-	-	-	-	-	-	Environment ◦ Home environment ◦ Physical environment ◦ Transport	-

Domains theoretical framework	Selected instruments							
	WALY (Well-being Adjusted Life Years)	E-QALY (Extended the Quality-Adjusted Life Year)	QWB-SA (Quality of Well-Being Scale Self-administered)	PWI (Personal Wellbeing Index Scale)	PWS (Psychological Wellbeing Scale)	ONS-4 (Office of National Statistics four subjective wellbeing questions)	WHOQOL (World Health Organization Quality of Life)	SPF-IL (Social Production Function Instrument for the Level of well-being)
8. Social relations	Social health <i>◦ Loneliness</i>	Relationships <i>◦ Loneliness</i> <i>◦ Feeling supported</i> <i>◦ Stigma</i> <i>◦ Good relationships</i> <i>◦ Belonging/connectedness</i>	Social activity	Relationships Community-connectedness	Positive relations with others	-	Social Relations <i>◦ Personal relationships</i> <i>◦ Social support</i> <i>◦ Sexual activity</i>	Behavioral confirmation
9. Material well-being	-	-	-	Standard of living	-	-	Environment <i>◦ Financial resources</i>	-
10. Labour conditions	-	Activity <i>◦ Enjoyable or meaningful activity/roles</i>	-	-	Purpose in life Personal growth	Worthwhile	-	-
11. Achievements	-	Self-worth <i>◦ Self-worth/self-respect/confidence</i>	-	Achieving in life	Environmental mastery Self-acceptance	-	Psychological <i>◦ Self-esteem</i>	Status
Other	Physical health <i>◦ Self-sufficiency</i>	Activity <i>◦ Self-care</i>	Symptom/problem complexes	Future security		Life satisfaction	Level of Independence <i>◦ Activities of daily living</i> Environment <i>◦ Health and social care: accessibility and quality</i>	Stimulation Perspective on the future

Note: Domains in normal font, items (per domain) in italics. Abbreviations: WALY=Wellbeing Adjusted Life Years; E-QALY=Extending the Quality-Adjusted Life Year; QWB-SA=Quality of Wellbeing Scale self-administered; PWI=Personal Wellbeing Index Scale; PWS=Psychological Wellbeing Scale; ONS-4=Office of National Statistics four subjective wellbeing questions; WHOQOL=The World Health Organization Quality of Life; SPF-IL=Social production function-il

## Supplementary Information 2

**Table S2.** An overview of the development of a draft version of the WiX

Initial domain name based on the theoretical framework by van der Deijl et al. (2023)	Initial items from the selected instruments	Overview of descriptions for each item	Draft domain name	Draft domain description	Draft item name	Draft item description	Draft item levels	Item order in draft version of the WiX
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1. Physical health	1. Mobility 2. Sleep / Energy 3. Pain 4. Senses	1. Consider physical limitations that affect your daily functioning 2. Consider energy limitations that affect your daily functioning (Having sufficient energy to do my daily activities -- sleep is linked to energy) 3. Consider pain or unpleasant physical sensations that affect your daily functioning (Feeling no pain or unpleasant physical sensations) 4. Consider problems with vision, hearing or speech that limit your daily functioning	Physical health	Consider physical limitations, pain or other unpleasant physical sensations, and problems with sleep, energy, vision, hearing or speech that affect your daily functioning.	Physical health	Consider physical limitations, lack of energy, eyesight, hearing, speech, sleep, pain, and other physical complaints.	I'm very satisfied with my physical health I'm satisfied with my physical health I'm reasonably satisfied with my physical health I'm dissatisfied with my physical health I'm very dissatisfied with my physical health	2
2. Safety	1. Feeling safe / security 2. Feeling respected (social safety)	1. Consider being in a stable environment with little risk of dramatic events in your personal life 2. Consider being in an environment where everyone's values are respected	Personal and social safety	Consider being in a stable environment with little risk of dramatic events in your personal life, and being in an environment where everyone's values are respected.	Personal and social safety	Consider your personal safety and living in surroundings with little risk of severe incidents, where everyone is treated with dignity and respect.	I'm very satisfied with my personal and social safety I'm satisfied with my personal and social safety I'm reasonably satisfied with my personal and social safety I'm dissatisfied with my personal and social safety I'm very dissatisfied with my personal and social safety	5

Initial domain name based on the theoretical framework by van der Deijl et al. (2023)	Initial items from the selected instruments	Overview of descriptions for each item	Draft domain name	Draft domain description	Draft item name	Draft item description	Draft item levels	Item order in draft version of the WiX
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
3. Recreation and leisure	1. Enjoyable activities	1. Consider going on vacation or spending time on leisure	Recreation and leisure	Consider going on vacation or spending time on enjoyable activities This concerns the amount and quality of the vacation and activities.	Recreation and leisure time	Consider activities such as hobbies, practising sports and going on holiday. This concerns the amount and quality of your recreation and leisure time.	I'm very satisfied with my recreation and leisure time I'm satisfied with my recreation and leisure time I'm reasonably satisfied with my recreation and leisure time I'm dissatisfied with my recreation and leisure time I'm very dissatisfied with my recreation and leisure time	7
4. Mental well-being	1. Anxiety 2. Negative/positive feelings and emotions 3. Control and coping	1. Consider feelings of anxiety or stress that affect your daily functioning 2. Consider feelings of distress that affect your daily functioning 3. Consider feelings of control that affect your daily functioning	Mental health	Consider feelings of anxiety, stress, distress and control that affect your daily functioning.	Mental health	Consider feelings of anxiety, stress, sadness, worry and control.	I'm very satisfied with my mental health I'm satisfied with my mental health I'm reasonably satisfied with my mental health I'm dissatisfied with my mental health I'm very dissatisfied with my mental health	1
5. Mental development	1. Autonomy 2. Learning / cognition 3. Spirituality	1. Consider being independent in making your own choices 2. Consider being able to absorb and process information 3. Consider religious or spiritual beliefs that affect your daily functioning	Independence	Consider being able to absorb and process information and to make your own choices in daily life.	Independence	Consider being able to take in and process information and to make your own choices in daily life.	I'm very satisfied with my level of independence I'm satisfied with my level of independence I'm reasonably satisfied with my level of independence I'm dissatisfied with my level of independence I'm very dissatisfied with my level of independence	9

Initial domain name based on the theoretical framework by van der Deijl et al. (2023)	Initial items from the selected instruments	Overview of descriptions for each item	Draft domain name	Draft domain description	Draft item name	Draft item description	Draft item levels	Item order in draft version of the WiX
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
6. Environmental conditions	1. Home and neighborhood 2. Environment 3. Accessibility (transport facilities/infrastructure)	1. Consider living in a house or neighborhood you like 2. Consider living in an environment with sufficient open and natural spaces 3. Consider having access to facilities that are important to you	Environment	Consider living in a house or neighborhood you like, living in an environment with sufficient open and natural spaces, and having access to facilities that are important to you.	Living environment	Consider the house and neighbourhood where you live, the proximity of open and green areas, and the facilities and services you need.	I'm very satisfied with my living environment I'm satisfied with my living environment I'm reasonably satisfied with my living environment I'm dissatisfied with my living environment I'm very dissatisfied with my living environment	4
7. Social relations	1. Personal relationships 2. Romantic relationship 3. Feeling supported	1. Consider your relationship with family, friends and others that are important to you. This concerns the amount and quality of the contact you have 2. Consider being able to have a romantic relationship 3. Everyone needs help or support sometimes. Consider being able to count on practical or emotional support when you need it.	Social relations	Consider your relationship with your family, friends and other people who are important to you, being able to have a romantic relationship and being able to count on practical or emotional support when you need it. This concerns the amount and the quality.	Social relations	Consider relationships with your family, partner, friends, and other people who are important to you. This concerns the number and the quality of your relationships, including receiving practical or emotional support when you need it.	I'm very satisfied with my social relationships I'm satisfied with my social relationships I'm reasonably satisfied with my social relationships I'm dissatisfied with my social relationships I'm very dissatisfied with my social relationships	3
8. Material well-being	1. Sufficient financial resources to meet needs	1. Consider having enough money to meet your daily needs and having no money worries	Making ends meet	Consider having enough money to meet your daily needs and having no money worries	Financial situation	Consider having enough money to meet your daily needs and having no money worries.	I'm very satisfied with my financial situation I'm satisfied with my financial situation I'm reasonably satisfied with my financial situation I'm dissatisfied with my financial situation I'm very dissatisfied with my financial situation	6

Initial domain name based on the theoretical framework by van der Deijl et al. (2023)	Initial items from the selected instruments	Overview of descriptions for each item	Draft domain name	Draft domain description	Draft item name	Draft item description	Draft item levels	Item order in draft version of the WiX
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
9. Labour conditions	1. Meaningful daily activities	1. Consider having a meaningful daily activity such as study, paid work, unpaid work, voluntary community work, housework or providing care or support to a loved one.	Activities	Consider having meaningful activities such as study, paid work, unpaid work, voluntary work, housework or providing care or support to a loved one. This concerns the amount and quality of the activities.	Activities	Consider activities such as study, paid work, voluntary work, household chores, and providing care or support to a loved one. This concerns the amount and quality of your activities.	I'm very satisfied with my activities I'm satisfied with my activities I'm reasonably satisfied with my activities I'm dissatisfied with my activities I'm very dissatisfied with my activities	8
10. Achievements	1. Achievements 2. Self-worth / self-respect / self-esteem 3. Feeling appreciated	1. Consider accomplishing or having accomplished something for yourself or society that you are proud of 2. Consider living according to your own values 3. Consider being appreciated by your social environment for who you are and what you do	Achievements	Consider accomplishing or having accomplished something for yourself or society that you are proud of, living according to your own values, and being appreciated by your social environment for who you are and what you do.	Self-worth	Consider living according to your own values and beliefs and feeling worthy and appreciated for who you are and what you do.	I'm very satisfied with my sense of self-worth I'm satisfied with my sense of self-worth I'm reasonably satisfied with my sense of self-worth I'm dissatisfied with my sense of self-worth I'm very dissatisfied with my sense of self-worth	10

Note: Domain 5. "Political representation" of initial theoretical framework was deleted. Abbreviations: WiX=10-item Well-being instrument

### Supplementary Information 3. Overview of changes to the instrument

**Table S3a.** Overview of the changes incorporated in the instrument based on expert interviews

Original	Comments	Updated version
<i>Introduction</i> For each section, select the description that is most appropriate for you today.	-	-
<i>Order of items</i> 1. Mental health 2. Physical health 3. Social relationships 4. Living environment 5. Personal and social safety 6. Financial situation 7. Recreation and leisure time 8. Activities 9. Independence 10. Self-worth	Items 4&5 and items 7&8 switched places, as order of the items may be confusing for respondents	Order of items 1. Mental health 2. Physical health 3. Social relationships <b>4. Personal and social safety</b> <b>5. Living environment</b> 6. Financial situation <b>7. Activities</b> <b>8. Recreation and leisure time</b> 9. Independence 10. Self-worth
<i>Response levels</i> I'm very satisfied with X I'm satisfied with X I'm reasonably satisfied with X I'm dissatisfied with X I'm very dissatisfied with X	Reasonably satisfied does not represent the true mid-point of the scale.	Answer options I'm very satisfied with X I'm satisfied with X I'm <b>satisfied nor dissatisfied</b> with X I'm dissatisfied with X I'm very dissatisfied with X
<i>Mental health</i> Consider feelings of anxiety, stress, sadness, worry and control.	“Lack of” was added to make sure all items in the description are worded negatively Check with the general population whether negative formulation is a problem	Mental health Consider feelings of anxiety, stress, sadness, worry and <b>lack of</b> control.
<i>Physical health</i> Consider physical limitations, low energy, vision, hearing, speech, sleep, pain, and other physical complaints.	Mobility important aspect, added  Check with the general population whether negative formulation is a problem	Physical health Consider physical limitations, low energy, problems with vision, hearing, speech, sleep, <b>movement</b> , pain, and other physical complaints.

<b>Original</b>	<b>Comments</b>	<b>Updated version</b>
<p><i>Social relationships</i> Consider the relationships with your family, partner, friends, and other people who are important to you. This concerns the number and the quality of your relationships, including getting practical or emotional support when you need it.</p>	<p>Loneliness was mentioned as an important aspect of social relationships</p>	<p>Social relationships Consider the relationships with your family, partner, friends, and other people who are important to you. This concerns the number and the quality of your relationships, including getting practical or emotional support when you need it <b>and not feeling lonely.</b></p>
<p><i>Living environment</i> Consider the house and neighbourhood you live in, the <b>availability</b> of open and green areas, and the facilities and services that you need.</p>	<p>B1 check: Dutch word for proximity (nabijheid) changed into availability (beschikbaarheid)</p>	<p>Living environment Consider the house and neighbourhood you live in, the <b>availability</b> of open and green areas, and the facilities and services that you need.</p>
<p><i>Personal and social safety</i> Consider your personal safety and living in surroundings with little risk of severe incidents, where everyone is treated with dignity and respect.</p>	<p>'Living' (residing) and 'living' are two different words in Dutch (<i>leven &amp; wonen</i>), in the updated Dutch version of the instrument both words are included as the item should not be limited to safety at the place where you reside.</p>	<p>Personal and social safety Consider your personal safety and <b>living in</b> surroundings with little risk of severe incidents, where everyone is treated with dignity and respect.</p>
<p><i>Financial situation</i> Consider having enough money to meet your daily needs and not having any worries about money.</p>	-	-
<p><i>Recreation and leisure time</i> Consider activities such as hobbies, sports and going on holiday. This concerns the amount and quality of your recreation and leisure time.</p>	<p>B1 check: Recreation changed "Activities" removed to avoid confusion with item activities</p>	<p><b>Relaxation</b> and leisure time Consider hobbies, sports and going on holiday. This concerns the amount and quality of your <b>relaxation</b> and leisure time.</p>
<p><i>Activities</i> Consider activities like studying, paid work, volunteer work, household chores, and providing care or support to a loved one. This concerns the amount and quality of your activities.</p>	<p>B1 check: 'Loved one' (Dutch: 'dierbare'), changed into easier words.</p>	<p>Activities Consider activities like studying, paid work, volunteer work, household chores, and providing care or support to <b>family, friends, or acquaintances.</b> This concerns the amount and quality of your activities.</p>
<p><i>Independence</i> Consider being able to understand and process information and making your own choices in daily life.</p>	<p>B1 check: "process" replaced</p>	<p>Independence Consider being able to understand <b>and use</b> information and making your own choices in daily life.</p>



<b>Original</b>	<b>Comments</b>	<b>Updated version</b>
<i>Self-worth</i> Consider living according to your own values and beliefs and feeling worthy and appreciated for who you are and what you do.	-	-

**Table S3b.** Overview of the changes incorporated in the instrument based on round 1 interviews with the general population (all changes in bold, in case no changes were made, the item is not reported)

Version used in interview round 1	Identified issue, solution & supporting quotes	Updated version
<p><i>Order of items</i></p> <p>1. Mental health 2. Physical health 3. Social relationships 4. Personal and social safety 5. Living environment 6. Financial situation 7. Activities 8. Relaxation and leisure time 9. Independence 10. Self-worth</p>	<p>Items 4 &amp; 5 switched places as respondents only focus on safety when discussing their living environment. For example, when explaining their satisfaction regarding their living environment they mentioned: <i>“And if you have left a key in your door, someone will knock on the door, or throw it in the letterbox for you (...). So, I feel very, very safe in that regard.”</i> (R.8).</p> <p>Items 7&amp;8 switched places as respondents are unsure whether leisure activities are captured in the activity item. <i>“Should I also consider hobbies?”</i> (R.4). <i>“Are sports part of this?”</i> (R.8)</p>	<p>Order of items</p> <p>1. Mental health 2. Physical health 3. Social relationships 4. <b>Living environment</b> 5. <b>Personal and social safety</b> 6. Financial situation 7. <b>Relaxation and leisure time</b> 8. <b>Activities</b> 9. Independence 10. Self-worth</p>
<p><i>Mental health</i></p> <p>Consider feelings of anxiety, stress, sadness, worry and lack of control.</p>	<p>Mental &amp; physical health descriptions changed to positive wording as respondents find it confusing that the mental and physical health items are negatively phrased. <i>“It is so negatively phrased”</i> (R.4) <i>“But actually this only reflects the negative part of mental health. In other words, I think mental health can also mean that you are happy, and you are not too worried and feel that you have control over the situation, et cetera.”</i> (R.8)</p>	<p>Mental health</p> <p><b>Consider feeling mentally well and not suffering from</b> feelings of anxiety, stress, sadness, and not having worries or a lack of control</p>
<p><i>Physical health</i></p> <p>Consider physical limitations, low energy, problems with vision, hearing, speech, sleep, movement, pain, and other physical complaints.</p>	<p>See mental health.</p>	<p>Physical health</p> <p><b>Consider feeling physically well and not suffering from</b> physical limitations, low energy, problems with vision, hearing, speech, sleep or movement, pain, and other physical complaints.</p>
<p><i>Personal and social safety</i></p> <p>Consider your personal safety and living in surroundings with little risk of severe incidents, where everyone is treated with dignity and respect.</p>	<p>Description expanded as respondents have difficulties understanding the concept of social safety.</p> <p>R1: <i>“[Social safety] I find that quite difficult, maybe you feel safe in a group or something”</i></p> <p>Additionally, online safety is added, as it was missed.</p> <p>R9: <i>“Social safety means being treated with respect, I wonder if social safety isn't broader. That also includes things like being heard. And does this also include safety on social media, for example”</i></p>	<p>Personal and social safety</p> <p><b>Consider feeling safe, not facing large risks at home, on the street or online and being accepted by others and treated with dignity and respect.</b></p>

Version used in interview round 1	Identified issue, solution & supporting quotes	Updated version
<p><i>Financial situation</i> Consider having enough money to meet your daily needs and not having any worries about money.</p>	<p>“Daily needs” described in more detail, as the terms does not represent all financial obligations for respondents. R.7: “<i>Daily needs just sounds a bit more like only groceries when I fill it in.</i>”</p>	<p>Financial situation Consider having enough money <b>for your expenses for things like housing, insurance, clothing, and food</b>, and not having any worries about money.</p>
<p><i>Relaxation and leisure time</i> Consider hobbies, sports and going on holiday. This concerns the amount and quality of your relaxation and leisure time.</p>	<p>Description extended as activities such as going out for dinner or going to a concert need to be considered. R.9: “<i>I still miss going out a bit, [going to the] cinema, eating out, that sort of thing.</i>”</p>	<p>Relaxation and leisure time Consider hobbies, sports, <b>going out</b> and going on holiday. This concerns the amount and quality of your relaxation and leisure time.</p>
<p><i>Independence</i> Consider being able to understand and use information and making your own choices in daily life.</p>	<p>Description extended as respondents (especially older ones) note that they find it hard to find the relevant information and need help with that. R.3: “<i>And I need help, nowadays especially with the media and online, all that stuff, I just need help with that.</i>”</p> <p>Additionally, a respondent with physical disabilities mentioned that it is not only about being able to make your own decisions, but also about being able to execute them: R.8: “<i>I can now make the choice to go somewhere, but if I cannot physically do that, it is very nice that I made that choice, but it is of no use to me.</i>”</p>	<p>Independence Consider <b>feeling autonomous and</b> being able to <b>find</b>, understand and use information, and making your own choices <b>and carrying them out</b> in daily life.</p>

**Table S3c.** Overview of the changes incorporated in the instrument based on round 2 interviews with the general population (all changes in bold, in case no changes were made, the item is not reported)

Version used in interview round 2	Identified issue, solution & supporting quotes	Updated version
<p><i>Social relationships</i> Consider the relationships with your family, partner, friends, and other people who are important to you. This concerns the number and the quality of your relationships, including getting practical or emotional support when you need it and not feeling lonely.</p>	<p>Description extended and title changed as respondents miss love or being in an intimate relationship. R.12: <i>“Love isn’t there. A lot of people derive happiness from a relationship with another person, with a partner”</i> Description extended as respondents miss colleagues in the description. R.12: <i>“Maybe the colleagues from the work can be added. (..) [seeing them] it is still half of your day, on an ordinary day.</i></p>	<p><b>Relationships</b> Consider the relationships with your family, partner, friends, <b>colleagues</b>, and other people who are important to you. This concerns the number and the quality of your relationships, including <b>feeling love and friendship</b> and getting practical or emotional support when you need it.</p>
<p><i>Personal and social safety</i> Consider feeling safe, not facing large risks at home, on the street or online and being accepted by others and treated with dignity and respect.</p>	<p>Description updated as respondents find the distinction between personal and social safety difficult, are unsure about what “large risks” entail and what the difference is between respect and appreciation (in description of self-worth),  R.12: <i>Is a bit more complicated. Because they are two different subjects.</i> R.12: [after reading the description of self-worth] <i>“What is the difference between being appreciated and being respected”</i> R.16: <i>“How am I supposed to see this? Not facing any major risks, is that a robbery or theft, that I fall down the stairs, how should I see that?”</i></p>	<p><b>Safety</b> Consider feeling safe <b>in your daily life, for example that others accept you for who you are and that there is little risk of something terrible happening to you at home, on the street or online.</b></p>
<p><i>Self-worth</i> Consider living according to your own values and beliefs and feeling worthy and appreciated for who you are and what you do.</p>	<p>Description updated following comments on acceptance as part of social safety (see above), being appreciated by others seems more a social aspect, whereas self-worth is about accepting yourself.</p>	<p>Self-worth Consider living according to your own values and beliefs and <b>being satisfied with</b> who you are and what you do.</p>

**Table S3d.** Overview of the changes incorporated in the instrument based on round 3 interviews with the general population (all changes in bold, in case no changes were made, the item is not reported)

<b>Version used in interview round 3</b>	<b>Identified issue, solution &amp; supporting quotes</b>	<b>Updated version</b>
<p><i>Safety</i> Consider feeling safe in your daily life, for example that others accept you for who you are and that there is little risk of something terrible happening to you at home, on the street or online.</p>	<p>Description updated as the phrase “That others accept you for who you are” is not well understood. R.19: “<i>I find ‘that others accept you as you are’ comes a little out of the blue. I don’t know how to relate that to safety.</i>” Respondents do however find social safety important R.17: “<i>Ah that way. I would add something about bullying or so. You should rephrase that question</i>”</p>	<p>Safety Consider feeling safe in your daily life, that others accept you <b>and that you are not harassed because of who you are or what you think of believe</b>, and that there is little risk of something terrible happening to you at home, on the street or online.</p>
<p><i>Financial situation</i> Consider having enough money for your expenses for things like housing, insurance, clothing, and food and not having any worries about money.</p>	<p>Description extended as respondents mentioned that proper financial situation means that you have some room for additional purchases/emergency purchases or a savings account. R.17: “<i>If you can just make ends meet, that is not enough</i>”</p>	<p>Financial situation Consider having enough money for your expenses for things like housing, insurance, clothing, and food, <b>occasionally something extra</b> and not having any worries about money.</p>

**Table S3e.** Overview of the changes incorporated in the instrument based on the quantitative survey (all changes in bold, in case no changes were made, the item is not reported)

<b>Version used in quantitative survey</b>	<b>Identified issue, solution &amp; supporting quotes</b>	<b>Final version</b>
<i>Relaxation and leisure time</i> Consider hobbies, sports, going out and going on holiday. This concerns the amount and quality of your relaxation and leisure time.	Description extended as individuals miss certain items: <i>“It’s also about relaxing, calming down”</i> <i>“Thinking about going out (uitgaan), I think of bars and discos, while going out (erop uitgaan) I think about the forest, walks and bike rides. To me the latter is much more relevant.”</i>	Relaxation and leisure time Consider <b>taking a break, doing something fun</b> , hobbies, sports and going on holiday. This concerns the amount and quality of your relaxation and leisure time.

**Table S3f.** Overview of the changes incorporated in the instrument based on back-forward translation (all changes in bold, in case no changes were made, the item is not reported)

<b>Version used in quantitative survey</b>	<b>Identified issue, solution &amp; supporting quotes</b>	<b>Final version</b>
Living environment Consider the house and neighbourhood you live in, the availability of open and green areas, and the facilities and services that you need.	Based on discussion of the translation wording in Dutch changed slightly: ‘en de faciliteiten’ to ‘en van faciliteiten’	Living environment Consider the house and neighbourhood you live in, the availability of open and green areas, and the facilities and services that you need.

**Erasmus University Rotterdam**

**Erasmus Centre for Health Economics Rotterdam**

Burgemeester Oudlaan 50

3062 PA Rotterdam, The Netherlands

T +31 10 408 8555

E [escher@eur.nl](mailto:escher@eur.nl)

W [www.eur.nl/escher](http://www.eur.nl/escher)