Subjective Wisdom and Wisdom Attitudes over the Course of a Short Wisdom Training

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Abstract

Dealing with complex and ambiguous life situations is a normal requirement in life. Wisdom is a complex and potentially trainable capacity that can help solve unsolvable problems. In this study, a brief wisdom skills training with three sessions was developed and evaluated using a pre-experimental one-group pre-post-test design. The three sessions of wisdom training each addressed one of Linden´s (2019) collection of wisdom competencies: problem-solving knowledge, perspective-taking, and sustainability. Thirty-three individuals from the general population participated in the wisdom training. Participants were surveyed with a wisdom attitude questionnaire (12-WD scale) and a wisdom self-rating question before and after each training session, and four weeks before and after the training overall. Results show an increase in subjective wisdom perception after the trainings, but not in wisdom attitudes. This pilot study provides evidence for the potential changeability of subjective wisdom using a brief training. Further studies with experimental design and differentiated wisdom measurement are necessary for clear effectiveness tests of the wisdom competence training.

Key words: Wisdom, training, coping, intervention

Selbsterlebte Weisheit und Weisheitseinstellungen im Verlauf eines Kurztrainings für Weisheitskompetenzen

Zusammenfassung

Schwierige, komplexe und uneindeutige Lebenssituationen meistern zu müssen, ist eine normale Anforderung des Lebens an uns Menschen. Weisheit ist eine komplexe und potentiell trainierbare Fähigkeit, die beim Lösen unlösbarer Probleme helfen kann. In dieser Studie wurde ein Kurztraining für Weisheitskompetenzen mit drei Einheiten entwickelt und anhand eines vorexperimentellen Ein-Gruppen-Vortest-Nachtest-Designs evaluiert. Die drei Einheiten des Trainings befassten sich jeweils mit einer Weisheitskompetenz aus der Sammlung der Weisheitskompetenzen nach Linden et al. (2019): Problemlösewissen, Perspektivwechsel und Nachhaltigkeit. 33 Personen aus der Allgemeinbevölkerung nahmen an dem Weisheitstraining teil. Die Teilnehmer wurden zu ihren Weisheitseinstellungen (12-WD-Skala) und einer direkten Frage zur Weisheitsselbsteinschätzung vier Wochen vor und nach dem Training befragt. Dieselben Fragebogen wurden auch unmittelbar vor und nach jeder Trainingseinheit ausgefüllt. Im Verlauf zeigte sich nach den Trainingseinheiten ein Anstieg im direkten subjektiven Weisheitserleben, nicht jedoch in den Weisheitseinstellungen. Diese Pilotstudie gibt Hinweise auf eine mögliche Veränderbarkeit von subjektiver Weisheit mittels eines Kurztrainings. Für eindeutige Wirksamkeitsprüfungen des Weisheitskompetenztrainings sind weitere Studien mit experimentellem Versuchsdesign und differenzierter Weisheitsmessung notwendig.

Schlüsselwörter: Weisheit, Training, Bewältigung, Intervention

1   Wisdom

Wisdom has accompanied mankind for millennia and is often regarded as the pinnacle of knowledge about human life and coping with difficult life problems (Baltes & Smith, 1990). Even Solomon, who was gifted by God with supernatural capacities, spoke of wisdom: "It offers as much security as money, indeed, it gives even more: whoever possesses wisdom, it keeps him alive." (Ecclesiastes 7:12, Hope for All). Thus, even 950 years before Christ wisdom was seen as something to be possessed by some people. In other Bible verses, it is said that one should strive to acquire wisdom.

Wisdom has also found its way into psychological research (Ardelt, 2004; Baltes & Smith, 1990) and clinical practice (Baumann & Linden, 2008; Linden, Lieberei & Noack, 2019): wisdom enables one to "solve unsolvable problems," to deal with difficult, complex, and ambiguous life situations, and helps to overcome negative experiences (Linden, Baumann, Lieberei, Lorenz & Rotter, 2011). Such life situations are not atypical or avoidable (Sipos & Schweiger, 2013). Wisdom is therefore relevant for everyone, with regard to problems at work (job loss, injustice), in private life (divorce or family conflicts), or small everyday situations ("Shall I buy the cheap juice and safe money for visiting the zoo, or shall I buy the expensive bio-juice for my child gets more vitamins?").

2   Wisdom Trainings

The aim of wisdom trainings is to improve coping with challenging work and life problems. Wisdom trainings in a clinical context have already been proofed to improve wisdom performance of patients with post-traumatic embitterment disorder (Baumann, 2007; Linden et al., 2011).

The study conducted here addresses the trainability of wisdom in a non-clinical context. The research question is whether perceived wisdom competencies are trainable and improvable. Therefore, three 75-minute wisdom training sessions have been developed based on Linden et al.'s (2019) wisdom competencies: Problem Solving Knowledge, Ability to Change Perspective, and Sustainability Orientation. Changes in wisdom before and after the trainings were recorded using self-report questionnaires.

Changes in wisdom ratings over time may indicate whether subjectively rated wisdom or wisdom attitudes can change over the course of a wisdom training. From this, it can be deduced whether wisdom trainings may be useful for non-clinical groups in order to support people in dealing with everyday and professional life problems.

In this study, we use the integrative definition of wisdom according to Linden et al. (2011): Wisdom is the ability to solve unsolvable problems. Here, in contrast to the expert approach and personality approach, wisdom is described as a complex capacity. Capacities are trainable and changeable (Baumann, 2007).

With only two short training sessions, Baumann (2007) was able to improve wisdom skills in patients with post-traumatic embitterment disorder (PTED), especially the capacities of sustainability and uncertainty tolerance. The control group, patients with various mental health problems, remained without change. Baumann & Linden (2008) developed an entire wisdom therapy from this approach. Its effectiveness was also tested in PTED patients. The wisdom therapy group had significantly stronger treatment success than the cognitive behavioral therapy treatment as usual group (Linden et al., 2011).

In the nonclinical setting, Staudinger and Baltes (1996a) were able to improve wisdom performance by means of a longer reflection period before answering a problem question, or by consultation with a familiar person, or by imaginary consultation with that person, or by consideration of the problem in the context of different cultures. Böhmig-Krumhaar (1998) attempted to train wisdom on healthy individuals using a memory strategy and increased the participants´ capacities of value relativism, factual knowledge, and contextualism.

In recent pilot studies, various wisdom trainings were developed and conducted with administrators from a government agency. Wisdom scores of most participants were higher after training than before training (Debener & Werk, 2019; Supper, Lindauer & Schrader, 2019).

3   Measuring Wisdom

A number of instruments have been developed to measure wisdom, such as the Practical Wisdom Scale adjective list with 18 wisdom-related adjectives or the Transcendent Wisdom Rating (Wink & Helson, 1997). The former is a self-assessment procedure. The second is an observer-rating of the extent to which subjects' responses to a problem seem wise. Also known are the Three-Dimensional Wisdom Scale by Ardelt (2003), which measures the three described personality traits of wisdom (see above) using 39 items, and the Self-Assessed Wisdom Scale by Webster (2007), which measures wisdom via five personality traits. In German-speaking countries, the 12-WD scale was published (Linden et al., 2019). It contains twelve items which assess the extent to which people agree with various generally valid situation-unspecific wisdom principles. The 12-WD scale is used in the present study to capture participants' wisdom attitudes before

and after wisdom training. It is well suited because the wisdom training sessions also build on the wisdom dimensions and wisdom principles included in the 12-WD scale.

4.   Evaluation of a Wisdom Training: Research Question

Several studies have already addressed the trainability of wisdom in clinical settings (Baumann, 2007; Linden et al., 2011). But, wisdom can also support general coping with life (Linden et al., 2019; Böhmig-Krumhaar, 1998; Staudinger & Baltes, 1996a). It is of interest whether a training that helps patients with post-traumatic embitterment to relieve stress (Linden et al., 2011) can also be used for people in the general population.

In the present study, a brief wisdom training with three training sessions is evaluated. The changes in subjective wisdom ratings and wisdom attitudes over the course of the wisdom trainings are measured. After completion of the three training sessions, a qualitative evaluation is conducted. Based on the empirical findings until now, it is assumed that the wisdom perception of the training participants can change and that the agreement with wisdom principles increases.

5   Method

Three wisdom training sessions were developed based on evaluated wisdom training approaches (Baumann & Linden, 2008). Each training session addresses one of the following wisdom competencies: problem-solving knowledge, perspective change, sustainability. The wisdom training sessions were conducted in spring 2020 using lectures, role plays, and exercise instructions. The exercises relate to fictitious general life problems, but also to personal problems, as these lead to greater learning success (Baumann, 2007; Baumann & Linden, 2008). The trainings were conducted under the title "Solving Unsolvable Problems." They were led by one of the two authors (K.S.) and were conducted online as a video conference.

Self-report scales were used to measure changes in subjective wisdom perception and wisdom attitudes before and after the trainings (12-WD scale, Linden et al., 2019, and a single wisdom item, Figure 1). Four weeks after the wisdom training, participants were additionally asked how they liked the training and how often they had applied the wisdom strategies in their daily life.
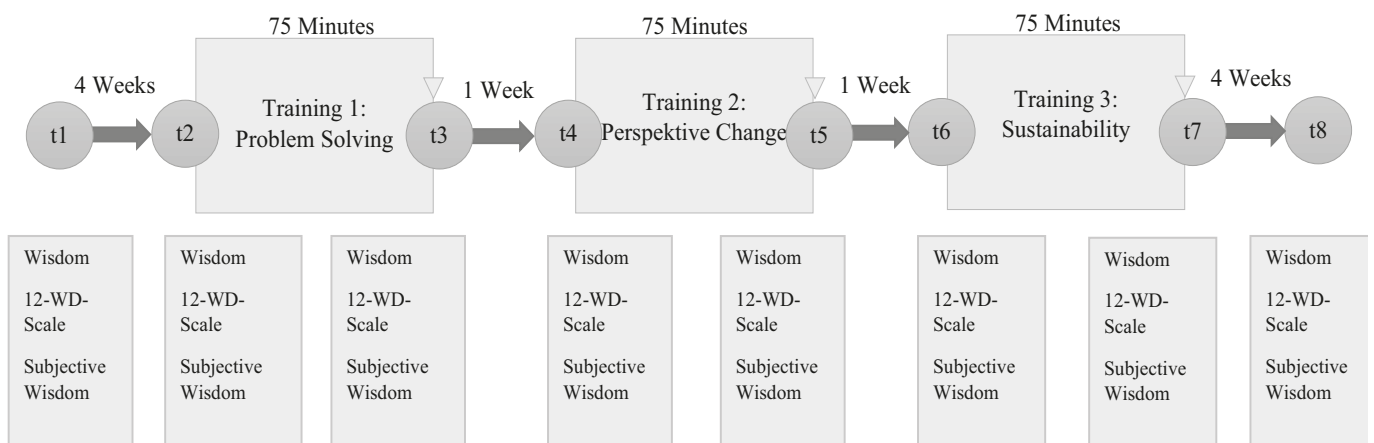
5.1   Participants

Participants were recruited by personal acquaintances. A total of 33 people took part in the three wisdom trainings. Five additional participants dropped out after or during the first training session because they had problems with the technology or with the online format in general (persons > 60 years), or because they could no longer find the time for the training sessions.

The average age of the 9 male and 24 female subjects was M=31.2 (SD=12.6) years. The youngest participant was 18 years old, and the oldest 58. None of the participants were without educational qualification. Among the participants were eight students, including teaching, civil engineering, food chemistry, economics, special education, human medicine, and psychology, as well as one student and two trainees (speech therapist and social pedagogical assistant). Three of the participants worked in the manual field, three in the health and social field, and two in the media field. One participant worked in research, two in sales, and five in management. Two were looking for work at the time of the study, three were housewives, and one was retired due to disability.

Figure 1

Design of wisdom training and measurements of wisdom over the course

Of the participants, 18% had experienced one to two stressful or critical situations in the past twelve months. 42% experienced three to five and 27% experienced more than five such situations. Only 12% had no stressful or critical experience in the past year.

5.2   Subjective wisdom

In the questionnaire before and after the training sessions, the participants were first asked about their subjective wisdom: "Wisdom is a skill for coping with complex and ambiguous life situations and to help overcome negative life experiences. According to this definition, how wise do you consider yourself to be?" The rating was given on a ten-point visual analog scale: 1 = not wise - 10 = very wise.

5.3   Wisdom Attitudes: 12-WD-Skala

Participants' wisdom attitudes before and after the training sessions were assessed with the 12-WD scale (Linden et al., 2019). The questionnaire is instructed as follows: "Here you will find different statements and principles about how people can respond to difficulties and life stresses. Please comment on each of the following statements and decide to what extent each applies to you personally." The questionnaire includes 12 items, one item per wisdom competency. A 6-point response scale from 1 = not at all true to 6 = exactly true was used to capture general wisdom-related attitudes, for example, statements such as "I try not to take myself too important whenever possible", "It is interesting for me to consider what others think about an issue", "I am one of those people who say it comes as it comes", or "Before I react to a problem, it is important for me to first understand what the problem is." In addition to the items used by Linden et al. (2019), a thirteenth item was added to the questionnaire: "I am confident that I can solve my problems on my own." A mean value is calculated over all 13 items. In the 12-WD scale, the word "wise" or "wisdom" does not appear at any point. This self-rating questionnaire has only been used with patients with mental illness before. In the study by Linden et al. (2019), internal consistency was high (Blanz, 2015) with a Cronbach's alpha of α = .81. The mean age of the 145 female and 57 male patients was 50 years. They suffered mostly from affective or somatoform disorders, as well as anxiety and stress disorders. The wisdom attitudes support mean of the patient sample was M=4.50 (SD=0.71). The study described patients with a wisdom score below 3.5 as "unwise." This was true for 7.1% of the patients (Linden et al., 2019).

In this present study, the internal consistency of the 12-WD scale (at t1) was a Cronbach's alpha of .54, indicating that participants responded differently to different items. At t1, participants scored a mean wisdom attitudes rating of M=4.54 (SD=0.47), which is similar to the mean of the above patient sample, despite the age and education differences. None of the participants of the present study had a wisdom score below 3.5 and can be classified as "unwise." Only the wisdom competence uncertainty tolerance ("it comes as it comes") was rejected by 30% of the participants (value $\leq$ 2).

6   Results

6.1   Subjective Wisdom

Participants rated their initial subjective wisdom four weeks before the wisdom trainings (t1) as average according to the wisdom definition and the ten-point scale (1 = not wise to 10 = very wise) with a mean score of 6.52 (SD=1.46) (Figure 2).

Immediately before the start of the first wisdom training session (t2), the mean wisdom score had initially dropped to 5.97 (SD=1.40) and then increased again to 6.21 (SD=1.34) after the first train-

Figure 2

Means of subjective wisdom perception on measurement time points t1 to t8 (1 = unwise to 10 = very wise) over the course of a wisdom training (N = 33 participants)
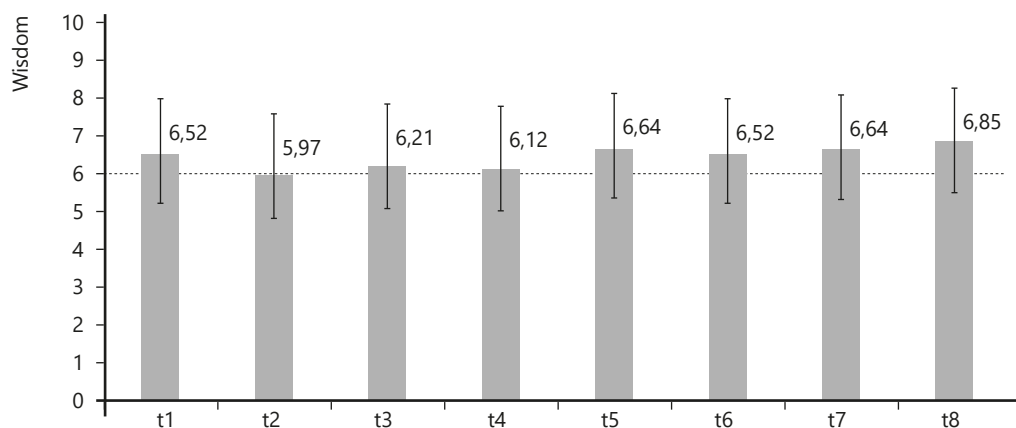
	df	df (failure)	F	p	Bonferroni correction	η_p^2
t1 vs. t2 before fist training session	1	32	5.592	.024	.243	.149
t2 vs. t3 pre-post first training session	1	32	4.414	.044	.436	.121
t4 vs. t5 pre-post second training session	1	32	9.267	.005	.046	.225
t6 vs. t7 pre-post third training session	1	32	.66	.423	1.000	.020
t2 vs. t7 pre-post whole wisdom training	1	32	9.915	.004	.035	.237
t2 vs. t8 pre-post four weeks after third wisdom training session	1	32	13.257	.001	.010	.293

Table 1

Contrast analysis with repeated measurements on subjective wisdom ("How wise do you consider yourself to be?") over the course of a wisdom training with three training sessions

ing session (t3). A similar development can be observed over the course of the following two training sessions. Before the second training session (t4), the wisdom score dropped to 6.12 (SD=1.34), but increased to 6.64 (SD=1.48) immediately after the training session (t5), and was thus for the first time higher than at the first measurement time point. In the last part, the value first decreased before (t6, M=6.52, SD=1.58) and increased after the sustainability training (t7, M=6.64, SD=1.52). Similarly, four weeks after the last training session, another wisdom increase was recorded with M=6.85 (SD=1.30). This is the highest achieved wisdom value within the eight measurement time points (Table 1).

6.2 Wisdom Attitudes

In contrast to the subjective wisdom, the agreements to wisdom statements (scale mean of the 12-WD wisdom attitudes scale) hardly changed over time (Figure 3, Table 2).

The lowest mean agreement to wisdom statements were found four weeks before the first training (t1, M=4.54, SD = 0.47). The highest values were obtained immediately after the perspective change training (t5, M=4.66, SD=0.48). There was no change in wisdom attitudes immediately after the other two training sessions.

In the first four weeks before the training as well as in the four weeks after the last training no changes in wisdom attitudes were observed.
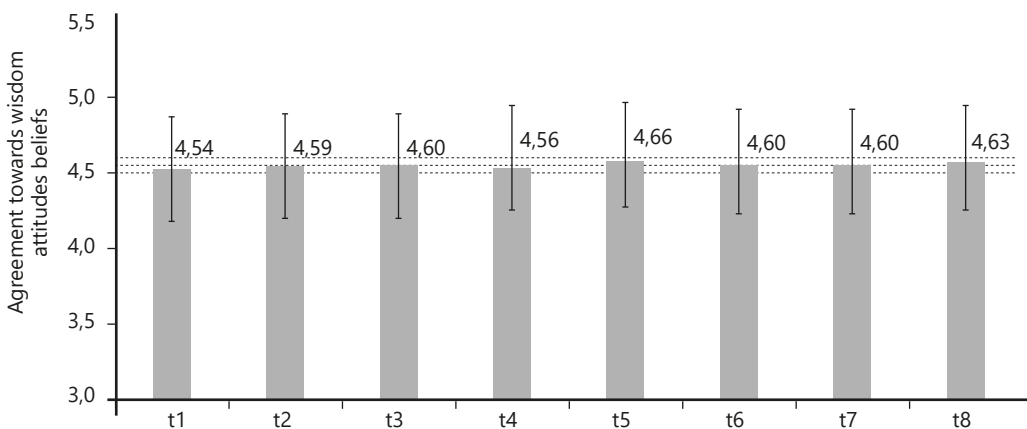

Figure 3

Means of agreement towards wisdom attitudes (wisdom attitudes according to 12-WD-Scale) on measurement time points t1 to t8 (1 = fully uncorrect to 6 = fully correct) over the course of a wisdom training (N = 33 participants)

	df	df (failure)	F	p	Bonferroni correction	η_p^2
t1 vs. t2 before fist training session	1	32	.634	.432	1.000	.019
t2 vs. t3 pre-post first training session	1	32	.056	.814	1.000	.002
t4 vs. t5 pre-post second training session	1	32	4.259	.047	.472	.117
t6 vs. t7 pre-post third training session	1	32	.025	.875	1.000	.001
t2 vs. t7 pre-post whole wisdom training	1	32	.014	.905	1.000	.000
t2 vs. t8 pre-post four weeks after third wisdom training session	1	32	.398	.533	1.000	.012

Table 2

Contrast analysis with repeated measurements on wisdom attitudes (12-WD Scale) over the course of a wisdom training with three training sessions

6.3   Qualitative Feedback

Out of 33 participants, 27 said four weeks after the last wisdom training session that they had already "sometimes" applied the wisdom strategies in their jobs and everyday lives.

Some participants would have liked some additional explanations for certain topics in the wisdom training, whereas for others the amount of information was sufficient. The wisdom training was rated on average as "good". The participants liked the many examples, videos, understandable explanations, practical exercises and role plays in the wisdom training.

7   Discussion

Before and after the three wisdom training sessions, there were no significant changes in the participants' wisdom attitudes as measured by the 12-WD scale.

However, there were changes in the subjective wisdom perception, i.e., the item that directly asked "How wise do you consider yourself to be?" on a ten-point scale. After the last training, this wisdom perception of the participants was significantly higher than before the first training. Moreover, it was higher after the perspective change training than before this training session. Subjectively assessed "wisdom" tends to increase immediately after each training session, levels off by the next training session, and increases over the course of several trainings.

Why are the developments of wisdom attitudes and wisdom perception so different as measured with the different instruments? The 12-WD scale measures attitudes, i.e., more general agreement or disagreement with an assertion or basic belief. These beliefs may be less situationally variable. Therefore, participants reported similar levels of agreement at different survey time points. The wisdom statements that make up the scale also contain statements that imply cross-situational validity and are cited, for example, with words such as "always." Agreement or disagreement with such basic attitudes are probably difficult to change in 75-minute online training sessions. The single item that directly asks how "wise" someone feels in the sense of being able to "deal with difficult complex and ambiguous life situations" may be more subject to situational fluctuations. It draws attention ad hoc and concretely to one's own person, life context, and actions. Life context and actions include constant change, different experiences, and shifting events. Subjective wisdom asked in this way can apparently vary at different interview times, comparable to well-being or satisfaction. It may represent a momentary state rather than a trait characteristic.

The participants' wisdom attitude scores at baseline (t1) were similar to those of the patient comparison sample (Linden et al., 2019); however, none of the participants in this present evaluation study were considered "unwise." The rather small changes may be attributable to participants' relatively high levels of agreement prior to the start of the wisdom trainings.

The sample was heterogeneous with a broad age, education, and occupational spectrum. This spectrum was targeted in order to be able to make statements about the trainability of wisdom in the general population.

7.1   Limitations

In this study, a pre-experimental one-group pretest-posttest design was used. Several pre-tests and post-tests increased the internal validity, so that clear differences between the pre-tests and post-tests can indicate an effectiveness of the online trainings (Bortz & Döring, 2016). Nevertheless, causal statements are not possible with this observational design. The changes before and after the trainings cannot be clearly attributed to be caused by the wisdom trainings.

The changes during the measurement period may also be influenced by external temporal factors: During the period of the survey, there were steady changes in the organization of public and social life due to a pandemic, which brought about contact restrictions, closed shops and culture places. As a result, participants may have been exposed to fewer social situations in which to observe and practice their interactional behavior. On the other hand, the pandemic brought existentially critical situations, such as isolation, unemployment, financial difficulties, or even illness, or loss of loved ones. These are difficult life situations, which in turn require wise decisions and problem solving. People were affected by the pandemic in different ways. Thus, wisdom assessments may also be influenced by situational and environmental events in participants' lives.

The wisdom trainings were designed for the general population and therefore invited different educational and age groups. Some participants praised appropriate scope and detailed explanations given in the trainings, whereas others criticized content limits of the trainings. However, since the online trainings proved to be "good" overall, future studies could draw on them. This applies to the general development of (online) trainings as well as to wisdom skills trainings.

7.2 Conclusion

In this study, a brief wisdom training was conducted with 33 participants and evaluated with two different wisdom measures. Different results are found depending on the wisdom measure: The level of agreement with general wisdom attitudes using the 12-WD scale was shown to be constant over the course of the wisdom training. In contrast, measuring wisdom with a single item that directly asks for subjective wisdom, an increase was observable, especially after the perspective change training.

The question "How wise do you consider yourself?" may reflect a situational facet of wisdom as an ad hoc perception of one´s own problem-solving competences. In contrast, general wisdom attitudes, which one can agree or disagree with, remain stable regardless of current own life situations or experiences.

Participants considered the wisdom training contents important and were satisfied with the trainings. They were able to identify learning successes and were motivated to use learned wisdom strategies in their everyday (professional) lives.

In the next step, the effectiveness of the wisdom skills training should be investigated with experimental study designs. Of interest could be the development of further trainings regarding the remaining nine wisdom competencies. Due to initially low scores in the wisdom dimension uncertainty tolerance in the 12-WD scale, training could be designed specifically for this wisdom competence, in order to possibly achieve greater success in terms of improved uncertainty tolerance.

Remarks

Data availability
Data are available from the authors upon request.

Conflict of Interest Statement
The authors have no conflicts of interest to declare.

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Author Contributions
K.S. designed the research question and the wisdom training, conducted data analysis and drafted parts of the manuscript. B.M. supervised the research process, wrote the final manuscript and carried out revisions.

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Wisdom Attitudes before and after an Informative Talk on Wisdom Competencies – A Quasi-Experimental Study

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Abstract

Wisdom is the "ability to solve unsolvable problems" in everyday life and in life. Wisdom can be strengthened by means of training and exercises. The present study investigates whether people of the general population change their agreement with various wisdom assumptions after a short informational lecture on "wisdom and wisdom skills." The development of wisdom attitudes in the wisdom lecture group (WG, n = 39) is compared to wisdom agreement of a control group that does not receive a wisdom lecture (CG, n = 44, students of a lecture without wisdom-related content). Agreement with wisdom assumptions is assessed before and after the wisdom lecture (WG) or before and after the non-wisdom lecture (CG) using the 12-WD wisdom attitudes scale.

After the wisdom information lecture, participants report stronger agreement with wisdom assumptions than before (M_{pre} = 7.43 – M_{post} = 7.56, scale 0-10). It is possible that an increase in knowledge strengthens the tendency to agree. In contrast, students who attended a non-wisdom-related lecture had a decrease in agreement (M_{pre} = 8.00 – M_{post} = 6.19). Agreement to wisdom assumptions was independent of age, gender, qualification degree. The study gives reason to consider changeability of wisdom attitudes through information. Randomized controlled experimental studies are needed for further evaluation of wisdom interventions for the general population.

Key words: Wisdom, information, coping, intervention, capacity, attitudes

Weisheitseinstellungen vor und nach einem Informationsvortrag zu Weisheitskompetenzen – eine quasiexperimentelle Studie

Zusammenfassung

Weisheit als die „Fähigkeit zum Lösen unlösbarer Probleme" im Alltag und im Leben ist eine wichtige Bewältigungskompetenz. Studien haben gezeigt, dass Weisheit mittels Trainings und konkreter Übungen gefördert werden kann. In der vorliegenden Studie wird untersucht, ob auch nach einem kurzen Informationsvortrag zum Thema „Weisheit und Weisheitskompetenzen" bei Menschen der Allgemeinbevölkerung eine Veränderung in der Zustimmung zu verschiedenen Weisheitsannahmen eintritt. Der Verlauf der Weisheitseinstellungen der Weisheitsvortrags-Gruppe (IG, n = 39) wird dabei verglichen mit dem einer Gruppe, die keinen Weisheitsvortrag erhält (KG, n = 44, Studierende einer Vorlesung ohne weisheitsbezogene Inhalte). Die Zustimmung zu Weisheitsannahmen wird vor und nach dem Weisheitsvortrag (IG) bzw. vor und nach der Vorlesung (KG) mit der 12-WD-Skala erfasst.

Nach dem Weisheits-Informationsvortrag berichten die Teilnehmer stärkere Zustimmung zu allgemeinen Weisheitssätzen als vorher ($M_{prä}$ = 7.43 – M_{post} = 7.56, Skala 0-10). Möglicherweise verstärkt sich durch den Informationszuwachs die Zustimmungsneigung. Dagegen zeigen die Studierenden, die eine nicht-weisheitsbezogene Vorlesung hörten, eine Abnahme in der Zustimmung ($M_{prä}$ = 8.00 – M_{pos}t = 6.19). Die Weisheitseinstellungen waren unabhängig von Alter, Geschlecht, Bildungsabschluss. Die Studie gibt Anlass zur Erwägung einer Veränderbarkeit von Weisheitseinstellungen durch Informationsgabe. Randomisierte kontrollierte experimentelle Studien erscheinen als nächster Schritt sinnvoll zur Prüfung dieser Effekte und für eine weitergehende Evaluation von Weisheitsinterventionen für die Allgemeinbevölkerung.

Schlüsselwörter: Weisheit, Information, Bewältigung, Intervention, Einstellungen

1   Wisdom: Dimensions, Measurement, Changeability

In the everyday understanding, wisdom includes the motivation to help others, and the ability to use competencies and capacities to cope with life events and problems (Bluck & Glück, 2003). The concepts of these everyday psychological, so-called implicit wisdom theories reveal differences in wisdom understanding across generations (Clayton & Birren, 1980; Knight & Parr, 1999) as well as across different cultures (Takahashi & Overton, 2005). Older persons have a more sophisticated understanding of wisdom. Older persons, in contrast to younger, distinguish the cognitive component of wisdom into crystalline and fluid knowledge (Clayton & Birren, 1980). Another difference is that older persons rated wise behavior as wiser than young people did (Knight & Parr, 1999). Young persons, in turn, associated wisdom with old age, whereas older people did not (Bluck & Glück, 2003). Baltes and Staudinger (2000) summarized everyday wisdom principles in seven key sentences:

1. Wisdom represents a higher level of knowledge, judgment and advice.
2. Wisdom intervenes with important and difficult questions and decisions regarding the conduct and meaning of life.
3. Wisdom includes the awareness of the limits of knowledge and the uncertainty of the world.
4. Wisdom represents knowledge of extraordinary scope and depth.
5. Wisdom is a harmonious interplay between mind and character and the agreement between knowledge and morality.
6. Wisdom means using one's knowledge for good or the welfare of oneself and others.
7. Wisdom may be difficult to attain or specify, but it is clearly recognizable once it is manifested.

So-called explicit wisdom theories test the validity of these implicit, everyday conceptions of wisdom (Kunzmann & Baltes, 2005). In scientific psychology, there are several explicit conceptualizations of

wisdom. In cognitive psychology research, the expertise paradigm prevailed (Staudinger & Baltes, 1996). The definition of wisdom as expertise in dealing with difficult questions in life fits into this paradigm (Staudinger & Baltes, 1996). This expertise represents a domain of knowledge that focuses on knowledge about life-"the fundamental pragmatics of life" (Staudinger & Baltes, 1996, p. 59). According to the Berlin Wisdom Paradigm, wisdom is needed when fundamental, existential problems occur which are related to meaning and direction of life (Kunzmann & Baltes, 2005). These problems are characterized by their complexity, while being poorly defined and having many different, unknown possible solutions (Kunzmann & Baltes, 2005; Wink & Helson, 1997). Staudinger and Baltes (1996) conclude that objective standards for correct or incorrect solutions are difficult to apply, differently from sciences such as physics or mathematics.

Wisdom is an expertise that is difficult to narrow down because it touches all areas of a person's life. It is not only relevant in dealing with critical life events that a person is faced with. Even in everyday life, wisdom is important: Do you buy the expensive organic juice or do you rather go to the zoo with the kids? Do you give a colleague critical feedback right now by email or at a later time in personal talk? "Wisdom-based knowledge and judgment cannot be disproved or falsified in a strict sense; only the consensus that a solution is plausible can be questioned or lost." (Staudinger & Baltes, 1996, p. 60).

One way to describe the multifaceted nature of wisdom by means of a self-assessment is the short scale on wisdom attitudes (12-WD scale, Linden et al., 2019). It measures the extent to which individuals agree with 12 statements, each of which contains a wisdom principle. The scale is based on the twelve wisdom competencies (Linden & Baumann, 2008). The twelve wisdom competencies can be divided into five domains (Table 1).

Factual and problem-solving knowledge includes both general and specific knowledge about problems, problem constellations, and possible solutions (Linden et al., 2019). Contextualism is

Table 1

Twelve Wisdom Competencies (Linden, Lieberei & Noack, 2019)

Domain	Wisdom Dimensions
View of the world	1. Factual and problem solving knowledge 2. Contextualism 3. Value relativism
View of other people	4. Perspektive change 5. Empathy
View of oneself	6. Problem relativization 7. Self-relativization 8. Self-distancing
View of one´s own perceptions	9. Emotional awareness and acceptance 10. Emotional serenity and humor
View of the future	11. Uncertainty tolerance 12. Sustainability

knowledge about the temporal and situational embeddedness of problems in numerous conditions (Linden et al., 2019). Value relativism is the ability to view individuals within their value system and to know about the diversity of values and life goals (Linden et al., 2019). Perspective change represents the ability to see a problem from the perspectives of the different people involved (Linden et al., 2019). Empathy maps ability to "empathize with the emotional experience of others" (Linden et al., 2019, p.2). Problem relativization is the ability to be humble and accept that one's own problems have a low status in the global context. Self-relativization is the acceptance that one's own person is not always most important and not everything goes according to one's own wishes and desires. Self-distancing is the ability to recognize and understand one's perceptions and evaluations from the point of view of other people. Emotional awareness and acceptance is the ability to perceive and accept one's own feelings. Emotional serenity and humor describe the ability to be emotionally balanced, to control one's own emotions according to the situation, and to take one's own person and one's own difficulties with humor. Uncertainty tolerance represents the knowledge of the uncertainty inherent in life regarding the past, present, and future. Sustainability includes knowledge of the positive and negative aspects of any event or behavior, short- and long-term consequences, and possible inconsistencies (Linden et al., 2019).

Wisdom, or various wisdom competencies, can be learned and changed. Wisdom (knowledge) growth results from life experience (Staudinger & Baltes, 1996; Baltes & Smith, 1990), or from specific wisdom training (Baumann & Linden, 2008; Linden et al., 2011; Böhmig-Krumhaar, 1998; Staudinger & Baltes, 1996; Grossmann et al., 2021).

2   Research Question and Aim

Until now, attempts have been made to improve wisdom by trainings with specific exercises, e.g., five minutes of reflection before responding to a problem, or deliberating in thought with a person whose opinion one values, or perspective change training (Staudinger & Baltes, 1996; Baumann & Linden, 2008; Linden et al., 2011).

The present study investigates whether general population persons´ agreement on wisdom principles changes after a short informative talk on wisdom and wisdom skills. The development of wisdom attitudes of this wisdom lecture group is compared to that of a group that does not receive a wisdom lecture (students of a lecture without wisdom-related content). Agreement with wisdom principles is recorded before and after the wisdom lecture (experimental group) or before and after

the lecture (control group) using the 12-WD scale (Linden et al., 2019).

It is not assumed that the control group (CG, non-wisdom-focusing lecture group) will change wisdom attitudes. In contrast, the intervention group (WG, wisdom lecture group) receives information about wisdom competencies, thus an updating of attitudes based on the new information can be expected. But, the wisdom lecture is purely informative and does not train the wisdom competencies by specific exercises. Therefore, even the changes in wisdom attitudes the WG should not be very strong. In the control group, there should be no changes in wisdom attitudes.

Research Question: Do wisdom attitudes change after - as compared to before - a wisdom lecture? Does the wisdom lecture result in increased level of agreement to wisdom principles in the wisdom lecture (WG) group, whereas the control group does not increase?

3   Method

3.1   Participants

The quasi-experimental study was conducted with a total of 83 people. The wisdom lecture group (WG) consisted of employees of the Technische Universität Braunschweig who attended the introductory event of the Health Campaign 2020. There were 39 people in the wisdom lecture group. 35 (89.7%) of them were women. The average age was 44.8

years (SD=13.59).

The control group (CG) consisted of students of the Technische Universität Braunschweig, who attended an online lecture on psychological diagnostics in the bachelor psychology program. The control group consisted of 44 students. Of these, 39 (88.6%) were female and one person (2.3%) was diverse. The mean age was 22.5 years (SD = 6.66).

3.2   Measuring Wisdom Attitudes

Agreement with wisdom principles was measured directly before and after the wisdom lecture (or the non-wisdom lecture) using the 12-WD wisdom attitudes scale. The 12-WD scale (Linden et al., 2019) was first used to measure the distribution and correlates of wisdom attitudes in psychosomatic patients. The scale measures self-reports of wisdom-related attitudes. These are not equal with wisdom-competent behaviors. The instruction of the questionnaire in the present study was as follows: "In the following you find different statements and guiding principles about how people react to difficulties and life stresses. Please think of your own specific situation. Decide for each statement,

to what extent it makes sense to you personally or not." The 12-WD scale contains 12 items, each of which covers one of the wisdom dimensions (Table 1). Each item is rated on a scale from 0 = do not agree at all to 10 = fully agree.

3.3 Wisdom lecture and non-wisdom related lecture

The 20-minute wisdom lecture (N.F. and V.S.) for the WG was given in February 2020 in the auditorium of the TU Braunschweig. The wisdom lecture started with a lay definition of wisdom. This definition described wisdom as a quality of a person and as prominent in old age. The lay definition was contrasted with the scientific definition of wisdom as an expertise for coping with difficult life situations as well as coping ability for negative life events (Baumann & Linden, 2008). An everyday story was used as an example to illustrate the twelve wisdom competencies. The story was about a vacation distribution among colleagues:

"You team is planning the vacation times. This year you would like to have your vacation time in July. Your colleague argues, as she did last year, that she can only take leave in July or August because she has school-age children with whom she wants to take the vacation. Therefore, you have to switch again to September for your own vacation."

Factual and problem-solving knowledge was presented as the first of the twelve wisdom dimensions, and it was shown how problem solving would be applied in the vacation planning situation. Sustainability, value relativism, problem relativism, emotional serenity and humor, uncertainty tolerance, contextualism, emotion awareness and acceptance, perspective change, empathy, self-distance, and self-relativization followed in the order mentioned. The wisdom lecture ended with a practical outlook: The participants were encouraged to put themselves in other people's shoes more often in their everyday life and to look at situations from the perspective of others.

Data collection of the control group was done in April 2020. Psychology students of the second bachelor semester participated in the lecture "Basics of Psychological Diagnostics" (B.M.). Due to a pandemic, this lecture was held online. At students received a link to the online version of the wisdom questionnaire. After about five minutes of time to complete the questionnaire, the lecture started. The lecture content was completely independent from wisdom or wisdom skills: the lecture was on test construction basics. After the diagnostic lecture, the students filled in the questionnaire a second time.

4 Results

A comparison of the wisdom attitudes of the two groups shows a divergent development:

The wisdom lecture group had a global increase in agreement with the wisdom principles (WG: MWpost=7.56 compared to MWpre=7.34). The agreement of the diagnostic lecture group decreased (CG: MWpost=6.19, MWpre=8.00, Table 2).

Looking at the development of agreement to the wisdom principles in the wisdom lecture group, increases can be observed especially for the dimensions problem solving, contextualism, perspective change, emotion awareness and acceptance, emotional serenity, and uncertainty tolerance, and tended to increase for self-relativism and sustainability.

No significant differential changes were found in value relativism, empathy, problem relativity, and self-distance.

Age, gender, and qualification level do not significantly contribute to explanation of wisdom attitudes´ changes (Table 2).

No significant correlations were found between initial wisdom attitudes (pre) on the one hand and the characteristics age (p=-.189), gender (p=.023), and qualification level (p=.056, N=83) on the other hand.

Wisdom attitudes	Group	Pre	Post	Significance (p) of differences between the two lecture groups in the development of wisdom attitudes pre-post Pillai´s Trace
Mean agreement with wisdom statements (across all 12 items)	WG	7.34 (0.87)	7.56 (1.08)	.497 Rep .557 Rep*Age .957 Rep*Gender .000 Rep*Group
	CG	8.00 (0.93)	6.19 (1.32)	
1. Before I react to a problem, it is important for me to understand what the problem is.	WG	8.49 (1.84)	8.69 (1.76)	.238 Rep .489 Rep*Age .356 Rep*Gender .657 Rep*Qualification .000 Rep*Group
	CG	8.59 (1.50)	5.18 (2.83)	
2. What is good or bad depends essentially on the context conditions	WG	6.64 (2.56)	7.31 (2.10)	.257 Rep .821 Rep*Age .371 Rep*Gender .326 Rep*Qualification .000 Rep*Group
	CG	8.50 (1.42)	5.05 (2.59)	
3. In my opinion, everyone should be happy in his own way.	WG	8.49 (1.70)	8.44 (1.67)	.175 Rep .524 Rep*Age .356 Rep*Gender .271 Rep*Qualification .130 Rep*Group
	CG	7.23 (2.42)	6.68 (2.45)	
4. It is interesting for me to think about what others think about a topic.	WG	6.53 (2.08)	6.92 (2.06)	.045 Rep .080 Rep*Age .113 Rep*Gender .953 Rep*Qualification .001 Rep*Group
	CG	7.41 (2.31)	6.50 (2.46)	
5. I always try to empathize how the other person feels.	WG	8.05 (1.49)	8.15 (1.77)	.859 Rep .874 Rep*Age .857 Rep*Gender .597 Rep*Qualification .420 Rep*Group
	CG	8.39 (1.69)	7.95 (2.17)	
6. If you are satisfied with what you have, then you are better off than if you complain about what you do not have.	WG	9.05 (1.17)	8.62 (1.78)	.187 Rep .171 Rep*Age .582 Rep*Gender .613 Rep*Qualification .492 Rep*Group
	CG	8.20 (1.65)	7.43 (2.34)	
7. If possible, I try not to take myself so important	WG	6.38 (2.51)	6.72 (2.22)	.626 Rep .343 Rep*Age .121 Rep*Gender .316 Rep*Qualification .079 Rep*Group
	CG	7.52 (2.22)	6.00 (1.99)	
8. I cannot expect others to like me if I do not behave accordingly.	WG	7.69 (2.59)	7.72 (2.15)	.195 Rep .257 Rep*Age .944 Rep*Gender .841 Rep*Qualification .227 Rep*Group
	CG	7.55 (2.14)	6.14 (1.91)	
9. I cannot demand to be always in a good mood.	WG	8.29 (1.59)	7.92 (1.75)	.174 Rep .369 Rep*Age .328 Rep*Gender .923 Rep*Qualification .000 Rep*Group
	CG	8.16 (0.99)	4.95 (2.74)	
10. If possible I try not to get upset, because you get nothing out of it, if you upset yourself.	WG	6.71 (2.32)	7.29 (1.60)	.710 Rep .384 Rep*Age .376 Rep*Gender .305 Rep*Qualification .000 Rep*Group
	CG	8.09 (1.25)	5.23 (2.80)	
11. I am one of those people who say, "It's going to happen comes what comes."	WG	5.08 (2.54)	5.89 (2.38)	.582 Rep .424 Rep*Age .393 Rep*Gender .793 Rep*Qualification .001 Rep*Group
	CG	8.52 (1.34)	6.41 (2.67)	
12. I always see crises as a chance for the future.	WG	6.66 (2.13)	7.03 (2.09)	.650 Rep .591 Rep*Age .168 Rep*Gender .697 Rep*Qualification .073 Rep*Group
	CG	2.89 (1.82)	6.73 (2.56)	

Table 2

Wisdom attitudes before and after a wisdom lecture (WG, n=39) as compared to wisdom attitudes before and after a non-wisdom-related diagnostic lecture (CG, n=44). Multivariate analysis of variance with repeated measurements (Rep); covariates: age, gender, qualification level

Figure 1. Degree of agreement towards wisdom sentences before and after a wisdom lecture or a diagnostic lecture
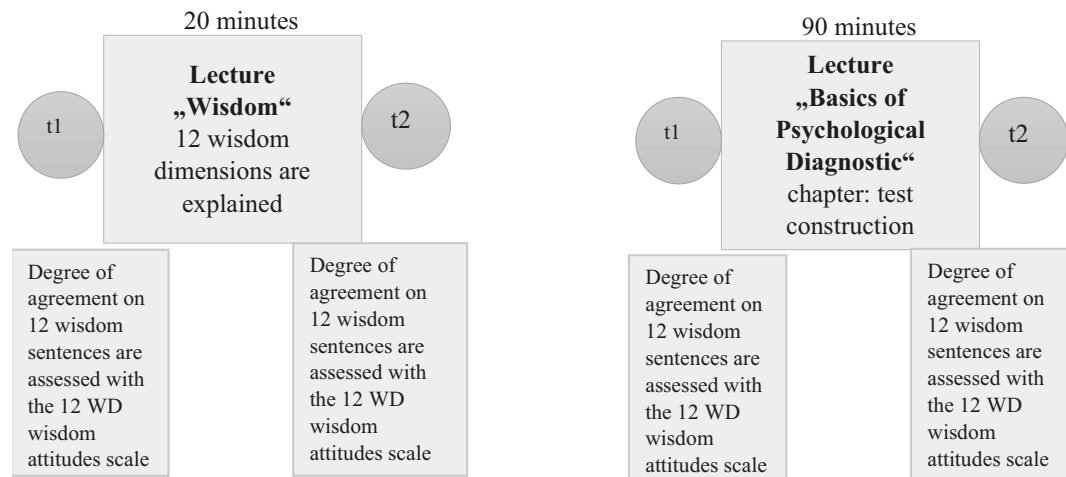
5   Discussion

After an informative lecture on wisdom and wisdom skills, participants report stronger agreement with wisdom principles. In contrast, individuals who listened to a non-wisdom-related lecture decreased in agreement.

It is possible that the information gain about the twelve wisdom dimensions activated concrete explicit thinking about wisdom in the wisdom lecture group. Taking in new information, and matching it with existing knowledge and experience, may support an ad hoc change in one's tendency to agree with wisdom principles. The lecture presented the wisdom principles as scientifically based. Also, using an easy-to-follow everyday example, listeners may experience an increase in their agreement with these wisdom principles, similar to attitude changes after receiving information on climate issues (Ranney & Clark, 2016).

The independence of wisdom attitudes from age, gender, and qualification level can be placed in a line of findings from other studies that show no linear correlations of wisdom with age or qualification. Rather, they provide evidence of the complexity and multifaceted nature of wisdom across contexts and ages (Linden et al., 2019; Ardelt et al., 2018; Lim & Yu, 2015; Knight & Parr, 1999; Clayton & Birren, 1980; Bluck & Glück, 2003).

The tendency of declining agreement with wisdom sentences among students after the lecture was surprising in the results of our study. A possible explanation may be regression to the mean, which cannot be excluded in repeated-measures surveys, in the case of initially above-average values (Zwingmann & Wirtz, 2005): Students expressed higher agreement than the wisdom lecture group in the first wisdom rating. It is also conceivable that some fatigue, reluctance, or impatience occurred after the 90-minute diagnostic lecture (psychology stu-

dents are routinely asked to complete questionnaires) and influenced responses to the second wisdom questionnaire.

A limitation of the study are the differences of the study groups concerning age, qualifications, length of lecture, and intrinsic motivation to participate in the wisdom study (older and professionally heterogenous general population versus young rather homogenous psychology students). The multivariate analysis of variance with repeated measurements however controlled for differences between the two groups. For further research, a replication of the study using an experimental study design and randomized assignment of participants to conditions (wisdom lecture versus other lecture) is recommended. This will allow for better control of potential confounding factors.

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