Community resilience and its effect on the University of Twente students' intolerance of uncertainty during COVID-19 and now

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Abstract

The COVID-19 pandemic has negatively affected the general public's livelihood on an unprecedented scale. Previous literature suggests that this pandemic has negatively the general public's well-being and led to increased levels of intolerance of uncertainty. Additionally, it is believed that there is a relationship between intolerance of uncertainty and community resilience, specifically that individuals with high levels of community resilience experience less uncertainty. The aim of this quantitative study was to answer the question if university students experience less intolerance of uncertainty now in comparison to students during the COVID-19 pandemic due to university community resilience. Researchers conducted a t-test and two regression analyses in order to test this. The results of this research found that there no significant difference between the levels of intolerance of uncertainty during the COVID-19 pandemic and now. Furthermore, no association between community resilience and intolerance of uncertainty during the COVID-19 pandemic and no association between the community resilience and the intolerance of uncertainty now was found. As this conclusion is opposite to what is currently widely accepted, further research in to the topic is recommended.

Introduction

Since the start of the COVID-19 pandemic in 2019, 757.264 million individuals tested positive for the disease and 6.85 million died because of it worldwide (WHO, 2023). The COVID-19 pandemic impacted the mental well-being of the general population negatively due to multiple reasons (Kola, 2020; Moreno et al., 2020). Covid measures such as lockdowns and physical distancing as well as uncertainty led to social isolation, loneliness, decreased access to basic services and a downturn in the economy (Kola, 2020). The economic downturn leads to unemployment, financial insecurity, and poverty in the general population (Kola, 2020; Moreno et al., 2020). Furthermore, Kola (2020) states that the death of friends of family due to COVID-19 impacts the general public's well-being negatively. Overall, the general public reported increased levels of symptoms of depression, anxiety and stress related to the COVID-19 pandemic. Additionally, the COVID-19 pandemic's effect on life disruption as well as fear of contracting the disease and experiencing negative economic effects influenced these symptoms. Quarantine specifically has a significant positive effect on stress, anger, and an increase in risk behaviours (Ebrahimi et al., 2021; Morneo et al., 2020). Overall, the COVID-19 pandemic affected the physical and mental health as well as the quality of life of the general public negatively (Kola, 2020; Moreno et al., 2020).

Uncertainty

During the COVID-19 pandemic, the general public experienced an increase of uncertainty, for example about financial aspects, their interpersonal relationships and their health (Karatas& Tagay, 2021). According to Freeston et al. (2020), uncertainty distress is defined as "the subjective negative emotions experienced in response to the as yet unknown aspects of a give situation" (Freeston et al., 2014, p.1). These emotions may consist of anxiety, frustration, anger due to the helplessness or unfairness of the given situation (Freeston et al., 2020). This uncertainty affects an increase of stress and anxiety which leads to more distress in the general public (Karatas & Tagay, 2021). A framework that defines empirically proven strategies for coping with the COVID-19 pandemic induced uncertainty was introduced by Afifi and Afifi (2021). Additionally, this framework states that uncertainty not only leads to increased levels of stress and anxiety, but also affects an increase in depression (Afifi &Afifi, 2021). Furthermore, Marin-Chollon and Panjwani (2022) conducted a cross-sectional study on the relationships between intolerance of uncertainty, worry, rumination and distress in college students during the covid pandemic and found that intolerance of uncertainty not only has a direct effect depressive symptoms, but also on coronavirus anxiety. Coronavirus anxiety is

defined as "dysfunctional anxiety associated with the COVID-19 crisis" (Lee, 2020, p.1). According to Lee et al. (2021), being infected with COVID-19 increases coronavirus anxiety significantly. However, there are individual differences in the level of tolerance of uncertainty. Individuals who posse a high level of intolerance of uncertainty will perceive situations as more threatening and uncertain than others with a lower level of intolerance of uncertainty (Freeston et al., 2020)

The effect of the COVID-19 pandemic on university students

.   One of the groups that is vulnerable to experiencing uncertainty are university students. University education was affected during the COVID-19 pandemic. Universities had to shift their in-person classes to online classes in online environments like Zoom and Microsoft Teams. This was a challenge because of the lack of available technology infrastructure as well as the need to adapt and implement said technology at the universities (García-Morales et al., 2021). Additionally, this change requires students and teachers to own fitting technology and a well working Wi-Fi connection at home, that they might have usually used at their university/ have been provided with by their university on campus (Sahu, 2020). This also entails that university staff that did not possess technological skills or equipment needed for online education prior to this shift, needed to be educated and provided with resources and support (García-Morales et al., 2021). Universities needed to digitalize their education process and materials in a short time frame in order to ensure their students with a quality education. Because of the urgency of this change, it led to a feeling of uncertainty in university communities (García-Morales et al., 2021). Some content also does not seem fitting to be taught online, for example labs, music, and art classes. Furthermore, the assessment and evaluation of students' work had to be adapted to the online teaching environment. Because this was often an underdeveloped aspect of online education prior to covid, it caused uncertainty among students and staff members (Sahu, 2020).

Furthermore, all students may have been concerned about an interruption of their studies, delays of their examinations and potential monetary consequences that may be caused by this (Odriozola-González et al., 2020; Sahu, 2020). This led to uncertainty among students (Sahu, 2020). A descriptive study assessing Dutch university students' experiences during the COVID-19 pandemic, found that university students indicate an increase in study delays, with half of the participants indicating that their study progress has decreased during the pandemic. An example of this is required internships which could not commence or resume due to the pandemic. Students may have experienced financial challenges due to the pandemic induced

loss of their jobs. The Dutch government implemented some financial accommodations in order to support these students (De Boer, 2020). This may have reduced these students' uncertainty.

Moreover, the pandemic had led to negative effects on students' well-being because of increased levels of stress and concerns about their health, safety, education as well as concerns about their family's health. This might also have affected the students' ability to learn as well as decreased their learning outcomes (Sahu, 2020). A longitudinal study found that Dutch university students' study related well-being decreased due to the pandemic and its effects on the changes in education. The participants of this study experienced lower scores of study engagement and higher levels of academic burnout. The study related well-being, education satisfaction and study effort decreased when the measures were increased, and the study related well-being increased to normal levels again once the measures were partially lifted and students could partially return to in person education. The changes in study related experiences indicate that students were relatively capable to adjust to the changes and difficulties of online education. Overall, the study resumes that students' mental health remained relatively consistent at a lower level, with only minor fluctuations based on the severity of the covid measures in place at the time, after having initially decreased during the beginning of the COVID-19 pandemic (Vollmann et al., 2022).

Community resilience

Ungar (2011) argues that individuals will recover better from dramatic events such as the COVID-19 pandemic if they experience community resilience. Community resilience is defined as "a community's social capital, physical infrastructure and culturally embedded patterns of interdependence that give it the potential to recover from dramatic change, sustain its adaptability and support new growth that integrates the lessons learned during a time of crisis" (Ungar, 2011, p.1). In the context of a university, this includes student associations, study advisors, the possibility to access mental and physical health services. Additionally, it includes the opportunity to visit physical and online study areas in order to interact with students and university staff as well as be mentally and academically supported by these community members in a difficult time period such as the COVID-19 pandemic.

The connection between uncertainty and community resilience

Afifi and Afifi (2021) state that covid-related community coping strategies for alleviating uncertainty enhance community resilience. One of them is "advocate for who you can (Agency- community)" (Afifi & Afifi, 2021, p. 331). Here, this coping mechanism consists

of individuals developing, improving, or expanding community programs in order to support community members, so that they feel safe and can develop skills that facilitate change and self-advocacy. This is important because if communities are experiencing uncertain events may lead to them feeling a loss of control that can be regained by involvement in advocacy and rebuilding such agency. This coping mechanism relates to community resilience because it enhances the community's social capital and interdependence. Students at universities often organize themselves in clubs and associations, for example study associations, student associations, sports and cultural clubs as well as student unions. In these associations, members meet regularly and engage in community activities together (University of Twente, n.d.). Student unions, for example, specifically advocate for their fellow students and offer support outside of an academic context, by for example offering well-being workshops, alumni events, and entrepreneurial challenges (Student Union University of Twente, n.d.). In the context of these associations and their community programs, students are supporting each other and developing new skills. By adapting to covid measures, for example by implementing online meetings and meeting in person while adhering to the social distancing rules, these associations continued to support each other during the COVID-19 pandemic (University of Twente, n.d.; Student Union University of Twente, n.d.).

Another covid related coping mechanism that Afifi and Afifi (2021) mention is "elevate who you are with (agency- relational)" (Afifi & Afifi, 2021, p.332). For this coping mechanism, individuals enhance their interpersonal relationships and reduce their uncertainty by building agency at the relational level. This can be achieved by engaging in coping as a community and providing conforming and elevating messages to other members of the community. This enhances the social capital of the community and the interdependence of the group and therefore enhances community resilience. Afifi and Afifi (2021) state that strong social ties are essential for managing threats and using this coping mechanism may create an environment in which others will then also show "attachment -promoting and anxiety buffering behaviours" (Afifi et Afifi, 2021, p.333) which will reduce feelings of uncertainty. As mentioned above, members of student associations continued to enhance their interpersonal relationships during the COVID-19 pandemic by maintaining contact and adapting their events to the online and social distancing context (University of Twente, n.d.; Student Union University of Twente, n.d.). The enhanced community resilience students may have experienced due to these community related covid strategies may have reduced the students' intolerance of uncertainty during the COVID-19 pandemic.

Societal impact

Due to globalization and its connected aspects, for example international trade, travel and migration, the likelihood and speed of the spread of pandemics, such as COVID-19, has increased. Therefore, the possibility of future international crises has also increased. (Zimmermann et al., 2020). In case of another global crises, like a pandemic, knowledge derived from this thesis project (about the connection between intolerance of uncertainty due to COVID-19 and the potential positive effects of community resilience on those feelings) may aid universities and its students to adapt to the challenges imposed by the crisis quicker and more efficiently. By doing this, universities may be able to prevent a rapid increase in intolerance of uncertainty and its negative effects among their students.

The study context

This study focuses on the university community of the University of Twente (UT). At the UT, the first covid restriction was imposed on the 12. 03. 2020 by the university's central crisis team. These measures included postponing examinations, cancelling events with more than 100 participants, closing down part of their sports centre offers, like group lessons and fitness rooms as well as announcing that they are preparing to offer online education and introduce working from home measures soon (University of Twente, 2023).

Since the 25.2.2022, educational activities in person at the UT, like PhD defences, lectures, and conferences, have been allowed again. For employees, a partial working from home advice remained. Due to ventilation reasons, there were still some limitations on the number of users for some rooms. However, there have not been restrictions on the number of group sizes since the 18.2.2022. Additionally, from the 25.2.2022 on, the requirement to wear a face mask has been lifted but remained strongly advised, and the requirement to use a covid entry pass for sports, culture, study spaces and study associations on campus have been lifted. (University of Twente, 2023).

On the 14.03.2023, the University of Twente informed their executives that the remaining covid measures will be removed because the Dutch government has decided to remove the remaining measures. For the UT this includes for example, removing disinfection columns and instructions in buildings (like advising users to only use lifts one person at a time), not ordering any more self-tests for the university community as well as adjusting the communication about the COVID-19 pandemic with students and staff members to the current situation (University of Twente, 2023).

Existing literature states that university students were affected by multiple aspects of the COVID-19 pandemic that led to feelings of uncertainty (Sahu, 2020). Additionally, Ungar (2011) states that individuals are able to cope better with crisis due to community resilience (Ungar, 2011). Because the covid-19 pandemic is a recent issue, there has not yet been done a lot of research on the connection between intolerance of uncertainty due to the COVID-19 pandemic and the potential positive effects of community resilience on those feelings.

Based on the theoretical framework, the following research question and hypotheses were designed.

Research question: Do university students experience less intolerance of uncertainty now in comparison to students during the COVID-19 pandemic due to university community resilience?

1.Hypothesis: Current students who studied during the time that covid measures were implemented at the UT experienced a higher levels of intolerance of uncertainty than students who did not study at the UT during the time in which covid measures were implemented.

2. Hypothesis: Community resilience is negatively associated with intolerance of uncertainty for students who studied during the COVID-19 pandemic.

3. Hypothesis: Community resilience is negatively associated with intolerance of uncertainty for students who study now and did not study during the time when covid measures were implemented.

Methods

Study design

The study design of this study is a quantitative and analytical research design and is part of a larger survey. The independent variable is the university community resilience, and the dependent variables are intolerance of uncertainty during the COVID-19 pandemic and intolerance of uncertainty now.

Additionally, it is important to note that this research was conducted in cooperation with other researchers who study other aspects related to university community resilience, namely place attachment, well-being, and self-efficacy. These constructs are measured with additional scales and open questions which are displayed in the survey.

Participants

Participant flow and recruitment period

A total of 132 UT students filled in the survey. Out of those, answers of 94 participants could be included into the analyses. The excluded 38 participants did either answered "no" to the informed consent form (n=2) or did not fill in the above-mentioned control items correctly (n=36). An example of a control item is "It is important to pay attention while giving your answers. Please indicate 'totally agree' if you read this.".

The majority of the sample are women (67.78%) with an average age of 21.22 years (SD=1.93). The majority of the participants are from the Netherlands (42.22%). The second most common country of origin is Germany (34.44%). The most common study that participants are enrolled in is Psychology (41.11%). The second most common study field is Mechanical Engineering (10%), and the third most common study is Biomedical Engineering (7.78%). Additionally, the majority of the participants are in the third year of the Bachelor course (42.22%). The second most common study year is the first year of the Bachelor course (27.78%).

Sampling procedure

Before the researchers started the data collection, an ethical approval by the BMS (Behavioural, Management and Social sciences) ethical committee was obtained. In order to be participate in the study, individuals needed to be at least 18 years of age and be a student at the University of Twente. The participants were self-selected which means that they volunteered to participate in the study. In order to recruit participants, the survey that was used for the data collection was published on the Sona website, the university's BMS faculty's website for conducting experiments and gathering participants. Students from the BMS faculty have access to this website and were rewarded with 0.25 Sona credits in return for their participation in the study. Furthermore, the researchers used convenience sampling in order to gather participants. For this, they asked members of their social network and fellow students of their study program to participate in the study. Additionally, the researchers distributed flyers advertising the study around the campus as well as asked students on campus to participate in the study. Participants who were recruited in person were compensated for their participation with a chocolate bar per person. Students who were recruited with other methods then over the Sona website or in person were not reimbursed for their participation. The majority of the participants was asked to

participate in person (51.11%), and the second most common recruitment method was asking participants to fill in the survey with a text message (35.56%).

Materials

Transcultural community resilience scale (T-CRS)

In order to measure the constructs of community resilience and uncertainty, two scales are used in the survey. In order to measure community resilience, the Transcultural community resilience scale (T-CRS) is used (Cénat et al., 2021). This scale consists of 28 Likert scale items and participants have to indicate their agreement with the items ranging from 1 ("strongly disagree") to 5 ("strongly agree"). An example for an item is "1. If anything was to happen to me, I know I could count on my community." Participants could score a minimum of 28 points and a maximum of 140 points (Appendix A). Reverse coding was not needed for this procedure.

This scale was chosen to measure this construct because it has excellent psychometric properties (Cénat et al., 2021). For example, the scale's reliability is high because the internal consistency has been proven to be good. The scale shows a Cronbach Alpha = 0.95 and a McDonald's Omega =0.91 (Cénat et al., 2021). Furthermore, the scale's construct validity has been proven to be good and is positively associated with individual resilience and negatively associated with depression scores (Cénat et al., 2021). Additionally, the aspect of transculturality was deemed as fitting for this study because the University of Twente is an international university and therefore consists of an international student and staff body.

This scale was adapted in order to fit the context of the survey. That means, that the community resilience that was assessed was the community at the UT. In all items the term "community" was changed to "UT community". For example, the item " 1. If anything happens to me, I know I could count on my community." was changed to "1. If anything happens to me, I know I could count on my UT community." (Appendix B, Appendix C). The standardized Cronbach's alpha of the adapted TCRS is 0.93 which indicates an excellent internal consistency. The total McDonald's omega of this adapted TCRS is 0.95 which indicates a excellent internal consistency and reliability.

Intolerance of uncertainty scale (IUS)

The variables intolerance of uncertainty during the COVID-19 pandemic and intolerance of uncertainty now were measured with the Intolerance of uncertainty scale (IUS) (Buhr& Dugas, 2002). The scale consists of 27 Likert scale items ranging from "1. Not at all characteristic" to "5. Entirely characteristic". An example for an item of this scale is "1.

Uncertainty stops me from having a strong opinion" (Buhr& Dugas, 2002). Participants are able to score a minimum of 27 points to a maximum of 135 points (Appendix D). No reverse coding was needed for this procedure.

This scale is seen as fitting for this measurement because it is described as a reliable and valid instrument (Buhr and Dugas, 2002). Buhr and Dugas (2002) found that this scale has a Cronbach's Alpha of 0.94 which indicates an excellent internal consistency. Additionally, it has good test-retest reliability and shows convergent and divergent validity "when assessed with symptom measures of worry, depression, and anxiety" (Buhr& Dugas, 2002, p.1). The standardized Cronbach's alpha of the IUS in the non-covid context is 0.92. The IUS in the covid context has a standardized Cronbach's alpha of 0.93. This indicates excellent internal consistency (Buhr& Dugas, 2002).

Open questions

Additionally, multiple open questions were included in the survey in order to further measure the constructs of community resilience and uncertainty. The open questions are "Do you think the UT community has the strengths and resources to overcome crises (e.g., a pandemic) and recover from them? Why or why not do you think so?" and "How much do you feel part of the UT community and why?" as well as "If you felt uncertain during covid, what did make you feel uncertain and why? Please answer briefly." and "If you feel uncertain at the moment, what makes you feel this way and why? Please answer briefly.".

Study procedure

This study did take place between 17.4.2023 and 5.5.2023. The data was collected with a Qualtrics survey that was connected to the University of Twente Sona System. After recruiting the participants and them following the link to the Qualtrics survey, they were informed about the study and were asked to sign the informed consent form. The participants filled in the survey which took them between 20 to 25 minutes to fill in.

Survey flow

First, the participants filled in the consent form and gave answers to demographic information. Afterwards, all participants filled in the transcultural community resilience scale (Cénat et al., 2021). Optionally, they could answer to two open questions, namely "How much do you fell part of the UT community and why? Answer briefly." and "Do you think the UT community has the strengths and resources to overcome crises (e.g., a pandemic) and recover from them? Why or why not do you think so? Please answer briefly."

As part of the larger survey, after this, the participants filled in the "Psychological place attachment scale (Li &Frieze, 2016) as part of the larger survey as well as additional open question. Furthermore, they filled in the "Psychological well-being scale" (Ryff &Keyes, 1995) and the general self-efficacy scale (Schwarzer & Jerusalem, 1995). The answers to these scales were not considered further, because they are part of the larger survey and they are not relevant to the research conducted to answer the research question of this thesis.

Afterwards, as part of this study, the participants filled in the IUS (Intolerance of uncertainty scale). The participants who studied at the University of Twente during the period of time during which social distancing measures were implemented (12.3.2020 until 25.2.2022) form one group and filled in the IUS while keeping their experience during covid measures in mind. Voluntarily, they could fill in the open question "If you felt uncertain during covid, what did make you feel uncertain and why? Please answer briefly." Respondents who started studying at the UT after the measures were lifted form the other group and filled in the IUS while keeping their experiences from the last month in mind. These participants could choose to answer the open question "If you feel uncertain at the moment, what makes you feel this way and why? Please answer briefly.".

Finally, in order to increase the quality of the measurements, the participants are asked in the introduction to pay attention and carefully read and answer the scale items. Additionally, the scales include control items to ensure that potential inattention of respondents is detected. An example for a control item is " It is important to pay attention while giving your answers. Please indicate 'totally agree' if you read this.". None of the participants have informed the researcher team about adverse events nor is the research team aware of any serious side effects or consequences of the survey.

Data preparation

Missing data

Furthermore, another 4 participants who met the above-mentioned requirements, of agreeing to the consent form and selecting the correct answers to the control items, needed to be excluded from the data set because they failed to complete all items that are necessary for the analysis. If one necessary item was missing, participants were excluded from the data set as they were determined as a missing value.

Creation of variables

In order to determine if the analyses of the data set will be reliable, the basic statistical assumptions were tested. In order to do this, the intolerance of uncertainty during the COVID-19 pandemic variable, the intolerance of uncertainty now and the community resilience variable were built. In order to score the IUS scale, the participants' sum scores were created. Here, the scores were created by summing because the scoring instructions of the IUS entail this procedure (Appendix E). Then the scores from the IUS in the covid context were combined into the intolerance of uncertainty during the COVID-19 pandemic variable and the scores related to the IUS in the now-context were combined into the intolerance of uncertainty now variable.

Furthermore, the community resilience variable was created by calculating the mean scores for all participants. For this variable, the mean scores were chosen because the TCRS does not include specific instructions on how to score the scale and this procedure is the recommended for scoring Likert scales (Bhandari & Nikolopulou, 2020).

Data analysis strategy

In order to test the difference in levels of intolerance of uncertainty of the two subsamples: students who studied at the UT during the time when covid measures were implemented and students who study at the UT now, a Welch two sample t-test was performed. Because this is an independent one-sided t-test and an unequal variance is assumed because there is a difference in standard deviation between the two groups, the Welch-Satterthwaite formula, is used to calculate the degrees of freedom. Because a direction was assumed and therefore the one-sided test was chosen, unequal variance is assumed. Additionally, two linear regressions were performed in order to test if community resilience is negatively associated with intolerance of uncertainty during the COVID-19 pandemic and if community resilience is negatively associated with intolerance of uncertainty now.

Furthermore, the answers to the open questions were included in the analysis in order to provide further explanation for the results that were provided by the previous statistical analyses. A preliminary analysis was conducted by processing the data and categorizing the answers into two categories: students who do feel as though they are a part of the UT community and students who do not feel as though they are a part of the UT community. One of these tables includes the answers of the individuals who do feel as though they are a part of the UT community, and the other table includes the answers of the individuals who do not feel as though they are a part of the UT community.

Results

The following section aims to provide insight into the outcomes of the formulated hypotheses based on the collected data from the survey. To accomplish this, a comprehensive statistical analysis of the uncertainty and community resilience variables was conducted. Finally, the statistical differences between the uncertainty students experienced during the COVID-19 pandemic and now as well as the intercorrelations between the uncertainties and the community resilience were explored.

Descriptive statistics

Table 1 displays the means, standard deviations, reliability and intercorrelations of the variables "intolerance of uncertainty during the COVID-19 pandemic", "intolerance of uncertainty now" and "community resilience". No significant correlation was found between the intolerance of uncertainty during the COVID-19 pandemic and community resilience variables. The intolerance of uncertainty during the COVID-19 pandemic and intolerance of uncertainty now refer to the same factor and due to the design of the survey, participants only provided responses for only one of the two variables. Consequently, there cannot be a correlation between these two variables.

Table 1

Mean, Standard Deviation, Reliability and Intercorrelations of the three variables.

Variable	*M*	*SE*	α	A.1.	A.2.	B.
A.1. intolerance of uncertainty during the COVID-19 pandemic	75.21	0.54	0.95		N/A	-0.04
A.2. intolerance of uncertainty now	68.68	17.06	0.92			-0.12
B. community resilience	3.47	0.54	0.95			

Note. A.1-B: p =0.74, A.2-B: p =0.55.

Additionally, a preliminary analysis of the answers to the open questions was conducted in order to provide supportive data to the statistical analysis. A selection of answers to the open questions "Do you think the UT community has the strengths and resources to overcome crises (e.g., a pandemic) and recover from them? Why or why not do you think so?" and "How much do you feel part of the UT community and why?" are displayed in Tables 2 and 3 in order to further illustrate the differences in the experiences of participants related to community resilience. Example answers by students who do not feel as though they are a part of the UT community are displayed in Table 2 and example answers of students who feel as though they are a part of the UT community are displayed in Table 3.

Basic statistical assumptions

After conducting the tests for the basic assumptions, it was found that the assumption of a linear relationship is not met. The relationship of independence is met. The assumption of homoscedasticity is met. Additionally, the assumption of normality is met.

Table 2:

Examples of participants who do not feel as though they are a part of the UT community.

Number	Example
1	"The UT community seems to have quite strong social groups in it, which can withstand crises. I'm less sure about the extent to which people who are not (yet) engrained in these groups would be able to deal with a crises, especially as this would hinder their ability to be adapted into these groups."
2	"It is hard to answer as I am not a part of it."
3	"I would say no, because when I first moved here in 2021 when covid was still present, their response was not helpful and the updates were in no way supportive, therefore I would say they do not respond to change well and do not come up with optimal solutions to overcome them or recover from them."
4	"I think theoretically it has the resources, but they are put in the wrong fields. Everything seems to be about how things look, without actually taking care of its people (example: availability of psychologists, focus on efficiency etc.)."
5	"I think in general yea but for my cohort there was not enough time to bond strongly through university events."
6	"I have no idea, mainly because I do not associate with the UT community. I bet there is a strong possibility that other people within the community are connected to each other in the way that they could provide each other with the strengths necessary to overcome crises, but as I do not know anyone within my studies, I could not say for sure."
7	"I guess it has the resources for some, but since I am not really part of it I don't know. For me personally it doesn't therefore."
8	"I do not really feel as a part of the UT community because I am at campus not very often and because I don't have many friends and connections at the UT."

Table 3

Examples of participants who do feel as though they are a part of the UT community.

Number	Example
1	"Yes, as far as I can tell, the UT has a very strong community and the university itself adapt easily and quickly to times of crises."
2	"Yes I do think so because I know that the study advisors always assist with problems but also think that the students support each other a lot."
3	"When the pandemic started, the UT community was not prepared, but no one was. But if another pandemic were to hit us, they would probably be better prepared to overcome such a crises[...], definitely, since the UT community, as I have perceived so far, has a strong bond, and values communication and helping each other."
4	"I think the UT community has the strengths and resources to overcome crises, because the Ut has many associations which can organize events and I think all people feel comfortable in the UT community because it is very open and tolerant for all people, so that all people can get help if they need."
5	"I think seen upon the pandemic we had the years before, we overcame it strongly, because everyone was willing to reunite to socialize or participate in events online during the pandemic […]".
6	"[…] There are many associations that can be joined to receive emotional support as well as institutional figures."
7	"I feel the UT community is really strong so it will definitely overcome difficult times."

Inferential statistics

1. Hypothesis: Students who studied during the time that covid measures were implemented at the UT experienced a higher levels of intolerance of uncertainty than students who did not study at the UT during the time in which covid measures were implemented

In order to test the first hypothesis, an independent one-sided t-test was conducted. Because it is hypothesized that the mean of the intolerance of uncertainty during the COVID-19 pandemic was higher than the mean of the intolerance of uncertainty now, a one-sided test was chosen instead of a two-sided test. This t-test's results are displayed in Table 4. Contrary to the first hypothesis, there was a no a significant difference between the two groups [t(59.25) = 1.61, p = 0.06] Because a significance level of α = 0.05 is assumed, the p-value of 0.06 means the correlation is not significant (Olsson-Collentine et al., 2019). In other words, students who studied during the time that covid measures were implemented at the UT did not experience a significantly higher level of intolerance of uncertainty than students who did not study at the UT during the time in which covid measures were implemented.

Table 4

Independent one-sided t-test.

T-value	df	p-value	95 % C Lower	95 % CI Upper	Mean of intolerance of uncertainty during the COVID-19 pandemic	Mean of intolerance of uncertainty now
1.61	59.25	0.06	-1.61	14.67	75.21	68.68

2. Hypothesis: Community resilience is negatively associated with intolerance of uncertainty for students who studied during the COVID-19 pandemic.

In order to test whether there is a positive relationship between community resilience and the intolerance of uncertainty during the COVID-19 pandemic, a linear model was created. This linear model illustrates the relationship between community resilience and intolerance of

uncertainty during the COVID-19 pandemic. As shown in Table 1, there is a non-significant correlation between community resilience and the intolerance of uncertainty during the COVID-19 pandemic (r = -0.04, p = 0.74). Even though the basic statistical assumption of linearity was not met, a linear regression was performed to gain insight into the direction and magnitude of the relationship between these two variables based on the slope coefficient in the linear regression.

The results of the linear model show that there is no significant effect of community resilience on intolerance of uncertainty during the COVID-19 pandemic, multiple R^2= 0.00, adjusted R^2= -0.01, $F(1,60)$= 0.11, p= 0.74. Even though the coefficient of community resilience indicates a negative relationship with intolerance of uncertainty during the COVID-19 pandemic, the p-value of this coefficient is statistically not significant and thus, this association is considered to be non-significant. In conclusion, community resilience is not significantly negatively associated with intolerance of uncertainty during the COVID-19 pandemic (see Table 5).

Table 5

Regression Analysis Predicting Mean of Intolerance of Uncertainty during the COVID-19 pan demic from Mean TCRS.

	B	SE	β	t(60)	p
Intercept	80.69	16.74		4.82	<.001
Community resilience	-1.57	4.74	-0.33	0.33	0.74

Note. B represents the slope, SE represents the standard error, β represents the standardized coefficients, t represents the t-value, p represents the p-value, N represents the sample size. N= 62, df=60, multiple R^2 = 0.00, Adjusted R^2 = -0.01, F-statistic= 0.11, p-value=0.74

3. Hypothesis: Community resilience is negatively associated with intolerance of uncertainty for students who study now and did not study during the time when covid measures were implemented.

In order to test if there is a positive relationship between community resilience and the intolerance of uncertainty now, a linear model was created. This linear model displays the relationship between community resilience and the intolerance of uncertainty now. The values

presented in Table 1 (r = -0.12, p = 0.55) indicate a weak statistically non-significant correlation between community resilience and intolerance of uncertainty now. Even though the basic statistical assumption of linearity was not met, a linear regression was performed in order to gain more insight into the direction and magnitude of the relationship between these two variables based on the slope coefficient in the linear regression.

The results of the linear model between the variables community resilience and the intolerance of uncertainty now do not indicate a significant effect between the two variables, multiple $R^2 = 0.01$, adjusted $R^2 = -0.002$, $F(1,26) = 0.38$, p=0.55. Even though the coefficient of community resilience ($\beta = -0.61$) indicates a negative relationship with intolerance of uncertainty now, the p-value of this coefficient is p = 0.55 and thus, this association is also considered to be not significant. In conclusion, the independent variable community resilience is not significantly negatively associated with the intolerance of uncertainty now (see Table 6).

Table 6

Regression Analysis Predicting Mean Intolerance of Uncertainty now from Mean TCRS.

	B	SE	β	t(26)	p
Intercept	80.49	19.54		4.12	<.001
Community resilience	-3.50	5.71	-0.61	-0.61	0.55

Note. B represents the slope, SE represents the standard error, β represents the standardized coefficients, t represents the t-value, p represents the p-value, N represents the sample size. N=28, df=26, Multiple R^2=0.01, Adjusted R^2 = -.002, F-statistic= 0.38, p-value=0.55

Discussion

The aim of this quantitative study was to research if university students experience less intolerance of uncertainty now in comparison to students during the COVID-19 pandemic due to university community resilience. The analysis does not support the first hypothesis. Participants who studied during the COVID-19 pandemic did not experience a significantly higher level of intolerance of uncertainty then participants who did not study during the COVID-19 pandemic and study now.

Additionally, the results indicate that community resilience does not have a significant impact on the levels of intolerance of uncertainty students experienced during the COVID-19 pandemic or the levels of intolerance of uncertainty students experience now.

Contrary to the first hypothesis, it was found that the participants who studied at the UT during the COVID-19 pandemic did not experience a significantly different level of intolerance of uncertainty in comparison to participants who did not study at the UT during the COVID-19 pandemic and study now. This is not line with the research of Karatas and Tagay (2021). They stated that the COVID-19 pandemic induces uncertainty which results in an increase of stress and anxiety. Due to this, the general population level of distress would increase as well (Karatas & Tagay, 2021).

A cross sectional study about college students' knowledge of COVID-19 and its relation to fear of COVID-19 and intolerance of uncertainty during the pandemic by Elsharkawy and Abdelaziz (2021) found some outcomes that could potentially explain the results of this study. They found that younger students in earlier steps of their academic program experienced higher levels of fear and intolerance of uncertainty. Additionally, they scored lower in knowledge about COVID-19 in comparison to their older peers who were already further into their academic program. Elsharkawy and Abdelaziz (2021) hypothesizes that this could be because older students know more about COVID-19 and prevention methods and therefore experience less fear of the disease. This could potentially explain the results related to the levels of intolerance of uncertainty during the COVID-19 pandemic and now. The average age of participants was 21.22 years. Furthermore, a majority of the sample was in the third year of their Bachelor program. The students are mostly further into their academic program and have a higher average age than students who just started their study and are 17, 18 or 19 years of age.

Additionally, the study by Elsharkawy and Abdelaziz (2021) found that students from health and sciences colleges experienced lower levels of fear of and intolerance of uncertainty than their peers in humanities colleges. This is possibly due to related courses in their study which may result in a better understanding of the disease. The UT is a technical university and most of the participants studied health of science related programs (Psychology (41.44%), Mechanical Engineering (7.78%) and Biomedical Engineering (7.78%)). Because Psychology is an interdisciplinary science related to social science, natural science and health science, Mechanical Engineering is a technical science and Biomedical Engineering is related to both health and technical science, it is assumed that these students may have had high levels of knowledge about COVID-19 due to related course content in their programs and possibly

experienced less fear of COVID-19 and therefore also less intolerance of uncertainty during the COVID-19 pandemic (University of Twente, 2023). Thus, the level of intolerance of uncertainty during the COVID-19 pandemic and now may not be significantly different due to this reason.

Another potential reason for this non-significant difference in the levels of intolerance of uncertainty levels is that students may have been supported by individual teachers and therefore did not experience an elevated level of uncertainty. Charoensukmongkol and Phungsoonthorn (2020) found that employees in low intransigence work environment experienced a negative effect of supervisor support on uncertainty levels during COVID-19. This may relate to the UT because some students work closely together with teachers, for example during their Bachelor and Master theses, or because they participated in mandatory interactive classes. Additionally, the UT asked students and employees for feedback during the covid measures (University of Twente, 2023) and therefore the university seems like a low intransigence environment.

Unexpectedly, the results are not in line with the second and third hypothesis. Community resilience is not significantly associated with intolerance of uncertainty in students who studied during the COVID-19 pandemic. Additionally, community resilience is not significantly associated with intolerance of uncertainty in students who did not study during the time covid measures were implemented and study now. It was expected that the association between community resilience and intolerance of uncertainty during COVID-19 pandemic would be significant because individuals recover better from dramatic events, such as the COVID-19 pandemic if they experience community resilience (Ungar, 2011).

According to Afifi and Afifi (2021) there are multiple covid-related uncertainty coping strategies that enhance community resilience. The coping mechanism "elevate who you are with (agency-relational)" (Afifi & Afifi, 2021, p.332) relates to this study's findings. The UT informed the UT community regularly about the circumstances of covid, changes in measures and positive affirmations (University of Twente, 2023). An example for this is the coronavirus update from the 18.11.2020. Here, the UT acknowledges that the month of December and its festive activities would not be able to proceed normally and urges the student body to "stay in touch with each other and to look after each other, so that we can get through this pandemic together" (University of Twente, 2020). Because of this, it was expected that the students would have experience an increased university community resilience. In line with this, the sample shows an above average mean for community resilience.

The answers to the open questions in the survey were used for further analysis. As shown in the Tables 2 and 3 in the Results section, while many participants indicated that they feel as though they are a part of the UT community, multiple participants of this study do not feel part of the UT community. The reasons that these students mention are primarily related to not being part of a social group at the UT. Participants explain that this is because there is not enough time to get to know other students and develop interpersonal relationships with their fellow students during the university courses. Other students mention that they are not visiting the UT campus often. Overall, many of the students who do not feel as though they are a part of the UT community state that they do not know many other students and do not have many friends at the UT and thus, not feel part of the community. Other students mention that they do not feel as though they belong to the UT community because they do not experience the UT as supportive and helpful towards them. A student mentions that, in their opinion, the UT does not provide efficient services for their students, e.g., they mentioned that there was no sufficient access to the university's psychologists. Additionally, another student stated that the UT did not solve issues during the COVID-19 pandemic efficiently (see Table 2). These students' experiences possibly had an effect on the results and may have led to there not being a significant association between the variables community resilience and intolerance of uncertainty during the COVID-19 pandemic and also to the non-significant association between the variables community resilience and the intolerance of uncertainty now.

Limitations

The limitations of the study are the following: The sample is homogenous due to multiple reasons. Most of the participants were recruited for the study in person when they were on campus (51.11%). The second most efficient recruitment method was asking participants to take part in the study through a text message (35.56%). It seems as that is a homogenous group of individuals who interact with other students, strangers or acquaintances, and who visit the campus. As indicated by the answers to the open questions, many individuals do not feel part of the UT community and do not visit the campus often. It is assumed that many other students who feel similar and do not experience a high level of community resilience, may also not visit the campus often and will not be reached and recruited through text messages. It is assumed that they may not be reached through text messages because multiple participants who indicated that they do not feel part of the UT community, mentioned that they have a limited number of acquaintances and friendships with fellow students at the UT. Thus, the likelihood of them being recruited through a personal text message is low.

Additionally, the Intolerance of Uncertainty scale (Buhr & Dugas, 2002) represents a limiting factor. The IUS uses a Linkert scale that is based on how characteristic participants think a specific item is to them (Appendix D), so here the intolerance of uncertainty is defined as a characteristic. However, in this study, participants were asked to fill in the IUS while thinking about how they felt in a certain moment, during the COVID-19 pandemic or now. This is based on the existing literature that defines uncertainty as a mental state (Freeston, 2014; Anderson et al., 2019; Smithson, 2007). This might have caused an issue with the construct validity of the construct of intolerance of uncertainty.

Furthermore, the duration that it took the participants to fill in the survey was circa 20 minutes, and the IUS was placed at the end of the survey. A study by Geri et al. (2017) on students' attention span in online video lectures found that students' completion of the lecture decreases after 15 minutes due to a decreased attention span. This suggests that the students may have experienced a decreased attention span and have not focused on answering the items as correctly as possible. Because no control items were placed in the IUS, it cannot be checked for this aspect of possible declining attention here.

Another important aspect is the potential recall bias that may be associated with the retrospective aspect of the study, it is the IUS that students filled out on the basis of their experiences during the COVID-19 pandemic. According to Colombo et al. (2020) and Evans and Leighton (1995), recall bias is common in participants of retrospective studies and has a negative impact on the validity of the results. However, there is not yet enough knowledge about possible underlying aspects of recall bias, like possible differences in recalling the occurrence of positive and negative experiences (Colombo et al., 2020).

Recommendations

Based on the results of this study, further research into the aspects that influence students' university community resilience is advisable. Because multiple participants mentioned that they do not feel as though they are a part of the UT community and it seems as that the sample might have been homogeneous, another mixed method study focusing on community resilience that uses a larger, heterogenous sample should be conducted. According to Ungar (2011), community resilience enables groups to "[..]recover from dramatic change, sustain its adaptability and support new growth that integrates the lessons learned during a time of crisis " (Ungar, 2011, p.1). Therefore, research into the aspects that may enhance students' feelings of belonging, therefore enhancing their community resilience should be integrated into that study as well. This could be done by first conducting qualitative interviews in order to

determine these aspects. Furthermore, it is recommended to conduct a quantitative prospective cohort study instead, in order to enhance the validity of the results and in turn investigate possible changes in individuals' intolerance of uncertainty. Even though, this study did not show a significant effect of community resilience on intolerance of uncertainty, community resilience may have a significant negative effect on intolerance of uncertainty in other contexts.

Additionally, research into other aspects that may influence the effect of community resilience on university students' intolerance of uncertainty negatively is needed. This study found that multiple participants do not feel as though they are a part of the UT community and experience low levels of community resilience. Thus, the aspects that influence individuals' community resilience should be investigated further. Additionally, an exploration of individuals' intolerance of uncertainty and aspects connected to it is recommended. As explained above, a qualitative interview study is recommended for a preliminary analysis. Furthermore, a quantitative prospective cohort study is recommended in order to collect sufficient data for further analysis. This knowledge is necessary for future interventions at universities that target students' well-being in case of future pandemics or similar global impacting events. Additionally, this knowledge may be used to enhance students' well-being in their normal, everyday circumstances. This may lead to an enhanced positive study atmosphere, less study delay and a general enhanced study success.

Another recommendation for further research is to adapt the IUS by changing the wording of the Likert scale from, for example "1. Not at all characteristic" to "I do not feel like this at all." to avoid an issue with construct validity of the construct "intolerance of uncertainty". In order to determine this adapted scale's usability, the scale's reliability, validity and construct validity would first need to be assessed. Another possibility would be to choose another scale that measures the intolerance of uncertainty as a mental state. Finally, in order to avoid falsified data, it is recommended to use more control items throughout the survey to detect potential attention decline of the participants.

Conclusion

Due to globalisation, the likelihood of future global crises, such as the COVID-19 pandemic, has increased. Previous research suggests that the COVID-19 pandemic increased the general population's level of intolerance of uncertainty. Additionally, current theory indicates that individuals' levels of intolerance of uncertainty decreases due to community resilience. Therefore, this study aimed to answer the question if university students experience less intolerance of uncertainty now in comparison to students during the COVID-19 pandemic

due to university community resilience. Students who studied during the time that covid measures were implemented at the UT did not experience higher levels of intolerance of uncertainty than students who did not study at the UT during the time in which covid measures were implemented. Community resilience is not negatively associated with intolerance of uncertainty in students who did study during the COVID-19 pandemic. Community resilience is not negatively associated with intolerance of uncertainty in students who did not study during the time covid measures were implemented and study now.

Based on the findings of the research question can be answered. University students did not experience less intolerance of uncertainty now in comparison to students during the COVID-19 pandemic due to university community resilience.

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Appendix A

The Transcultural Community Resilience Scale

The Transcultural Community Resilience Scale ™

Instructions. We all belong to communities we identify with on different levels. These communities can be ethnocultural or religious groups, our neighborhood or area of residence, a profession, a sports team, among others. Answer these questions while thinking of your experiences and your perceptions regarding the communities you belong to or identify with the best.
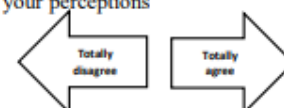
	Items	1	2	3	4	5
1.	If anything were to happen to me, I know I could count on my community					
2.	In the event of a catastrophic event (natural disaster, war, etc.), I know that I could count on my community to cope with the event and move forward					
3.	When I go through hard times, there are people in my community I can talk to					
4.	The relationships I maintain in my community help me cope with problems that happen to me or that may happen					
5.	One of my strengths when facing adversity is knowing that I can count on one or more members of my community					
6.	The members of my community know they can count on me when problems arise					
7.	I am willing to help members of my community who are facing difficulties					
8.	I get involved in activities in my community					
9.	My cultural traditions and spiritual and/or religious and/or my values help me cope with difficulties					
10.	Activities in my community help me create bonds with people					
11.	My community helps me adapt in the event of important life changes or difficulties					
12.	Being able to count on my community in the event of difficulties is very reassuring to me					
13.	In my community, we always find a way to laugh and distract ourselves, even in difficult times					
14.	In my community, there is at least one person who can help me find concrete solutions when I face difficulties					
15.	When I go through difficult times, there are institutions in my community and/or my city that are there to help me					
16.	If I were to fall ill, I know that I can turn to the healthcare institutions in my area to receive the adequate care					
17.	I trust the health care staff in my area to provide me with adequate care					
18.	I trust the social services available in my community					
19.	I have enough information to know which institutions to turn to in the event of difficulties					
20.	In my community, there are strong traditions of mutual support					
21.	My community makes efforts to integrate all its members and make them stronger					
22.	My community enables its different members to build strong bonds with each other					
23.	Mutual support is one of the values held by my community					
24.	In my community, sharing is a very important value					
25.	I am proud to be a member of my community					
26.	I share the values of my community					
27.	Participating in my community's activities is important to me					
28.	I feel connected to my community and to its values					

Appendix B :
WHO Guidelines on Translations and Adaption of Instruments

Translation and adaptation of the Transcultural Community Resilience Scale – T-CRS

- Le T-CRS includes 28 items regrouped in 3 subscales:
  - o Community strengths and support: 14 items
  - o Community trust and faith: 9 items
  - o Community values: 5 items
- Read this article for instructions:
  https://www.frontiersin.org/articles/10.3389/fpsyg.2021.713477/full
- Existed versions
  - o English
  - o French
  - o Haitian Creole
  - o Kinyarwanda
  - o Lingala

Translation process

To translate the T-CRS, we recommend following the World Health Organization (WHO) translation standards. A revised version is presented below. For questions, please write to: jcenat@uottawa.ca and vtrac@uottawa.ca.

Revised WHO Guidelines on Translation

Process of translation and adaptation of instruments

The aim of this process is to achieve different language versions of the English instrument that are conceptually equivalent in each of the target countries/cultures. That is, the instrument should be equally natural and acceptable and should practically

perform in the same way. The focus is on cross-cultural and conceptual, rather than on linguistic/literal equivalence. A well-established method to achieve this goal is to use forward-translations and back-translations. This method has been refined in the course of several WHO studies to result in the following guidelines.

Implementation of this method includes the following steps:

1 Forward translation
2 Expert panel Back-translation
3 Pre-testing and cognitive interviewing
4 Final version

1. Forward translation

One translator, preferably a health professional, familiar with terminology of the area covered by the instrument and with interview skills should be given this task. The translator should be knowledgeable of the English-speaking culture but his/her mother tongue should be the primary language of the target culture.

Instructions should be given in the approach to translating, emphasizing conceptual rather than literal translations, as well as the need to use natural and acceptable language for the broadest audience. The following general guidelines should be considered in this process:

- Translators should always aim at the conceptual equivalent of a word or phrase, not a word-for-word translation, i.e. not a literal translation. They should consider the definition of the original term and attempt to translate it in the most relevant way.
- Translators should strive to be simple, clear and concise in formulating a question. Fewer words are better. Long sentences with many clauses should be avoided.
- The target language should aim for the most common audience. Translators should avoid addressing professional audiences such as those in medicine or any other professional group. They should consider the typical respondent for the instrument being translated and what the respondent will understand when s/he hears the question.
- Translators should avoid the use of any jargon. For example, they should not use:
    o Technical terms that cannot be understood clearly; and
    o colloquialism, idioms or vernacular terms that cannot be understood by common people in everyday life.
- Translators should consider issues of gender and age applicability and avoid any

terms that might be considered offensive to the target population.

2. Expert panel

A bilingual (in English and the target language for translation) expert panel should be convened by a designated editor-in-chief. The goal in this step is to identify and resolve the inadequate expressions/concepts of the translation, as well as any discrepancies between the forward translation and the existing or comparable previous versions of the questions if any. The expert panel may question some words or expressions and suggest alternatives. Experts should be given any materials that can help them to be consistent with previous translations. Principal investigators and/or project collaborators will be responsible for providing such materials. The number of experts in the panel may vary. In general, the panel should include the original translator, experts in health, as well as experts with experience in instrument development and translation.

The result of this process will produce a complete translated version of the questionnaire.

3. Back-translation

Using the same approach as that outlined in the first step, the instrument will then be translated back to English by an independent translator, whose mother tongue is English and who has no knowledge of the questionnaire. Back-translation will be limited to selected items that will be identified in two ways. The first will be items selected by the WHO based on those terms / concepts that are key to the instrument or those that are suspected to be particularly sensitive to translation problems across cultures. These items will be distributed when the English version of the instrument is distributed. The second will consist of other items that are added on as participating countries identify words or phrases that are problematic. These additional items must be submitted to WHO for review and approval.

As in the initial translation, emphasis in the back-translation should be on conceptual and cultural equivalence and not linguistic equivalence. Discrepancies should be discussed with the editor-in-chief and further work (forward translations, discussion by the bilingual expert panel, etc.) should be iterated as many times as needed until a satisfactory version is reached.

Particularly problematic words or phrases that do not completely capture the concept addressed by the original item should be brought to the attention of WHO.

4. Pre-testing and cognitive interviewing

It is necessary to pre-test the instrument on the target population. Each module or section will be fully tested using the methodologies outlined below.

a. Pre-test respondents should include individuals representative of those who will be administered the questionnaire. For this study, dependent opioid users should be used to test the translated instruments, although such users could be drawn from sources other than those used to recruit study participants – preferably persons who would not otherwise be eligible for the main study.

b. Pre-test respondents should number 10 minimum for each section. They should represent males and females from all age groups (18 years of age and older) and different socioeconomic groups.

c. Pre-test respondents should be administered the instrument and be systematically debriefed. This debriefing should ask respondents what they thought the question was asking, whether they could repeat the question in their own words, what came to their mind when they heard a particular phrase or term. It should also ask them to explain how they choose their answer. These questions should be repeated for each item.

d. The answers to these questions should be compared to the respondent's actual responses to the instrument for consistency.

e. Respondents should also be asked about any word they did not understand as well as any word or expression that they found unacceptable or offensive.

f. Finally, when alternative words or expressions exist for one item or expression, the pre-test respondent should be asked to choose which of the alternatives conforms better to their usual language.

g. This information is best accomplished by in-depth personal interviews although the organization of a focus group may be an alternative.

h. It is very important that these interviews be conducted by an experienced interviewer.

A written report of the pre-testing exercise, together with selected information regarding the participating individuals should also be provided.

5. Final version

The final version of the instrument in the target language should be the result of all the iterations described above. It is important that a serial number (e.g. 1.0) be given to each version. Instructions for providing the electronic version of the final translated instrument to WHO will be provided.

6. Documentation

All the cultural adaptation procedures should be traceable through the appropriate documents. These include, at the least:

- Initial forward version;
- A summary of recommendations by the expert panel;

- The back-translation;
- A summary of problems found during the pre-testing of the instrument and the modifications proposed; and
- The final version.

It is also necessary to describe the samples used in this process (i.e. the composition of the expert panel and the pre-test respondent samples). For the latter, the number of individuals as well as their basic characteristics should be described, as appropriate.

Appendix C
Adapted Version of the Transcultural Community Resilience Scale

1. 1. If anything was to happen to me, I know I could count on my university community
2. 2. In the event of an extreme situation (natural disaster, war, etc.), I know that I can count on my university community to face the event and move forward
3. 3. When I go through hard times, there are people in my university community I can talk with
4. 4. The relationships I maintain in my university community help me cope with problems that happen to me or that may happen
5. 5. One of my strengths in the face of adversity is knowing that I can count on one or many people from my university community
6. 6. The members of my university community know they can count on me when problems arise
7. 7. I am willing to help the members of my university community who face difficulties
8. 8. I get involved in my university community's activities
9. 9. My cultural traditions and spiritual and/or religious and/or my values help me cope with difficulties
10. 10. My university community's activities help me create bonds with people
11. 11. My university community helps me adapt in the event of changes or difficulties
12. 12. Being able to count on my university community in the event of difficulties is very reassuring to me
13. 13. In my university community, we always find a way to laugh and distract ourselves, even in difficult times
14. 14. In my university community, there is at least one person who can help me find concrete solutions when I face difficulties
15. 15. When I go through difficult times, there are institutions in my university community and/or my city that can help me
16. 16. If I were to get sick, I know that I could turn to the health care institutions of the University of Twente, here: the campus doctor offices, to have the care necessary
17. 17. I trust the health care staff at the University of Twente, here: the staff members of the doctor's offices, to provide me with adequate care
18. 18. I have trust in the social services of my university community
19. 19. I have enough information to know which university institutions to turn to in the event of difficulties
20. 21. In my university community, there are important traditions of mutual support
21. 22. My university community makes efforts to integrate all its members and to make them stronger
22. 23. My university community enables its different members to build strong bonds
23. 24. Mutual support is one of the values in my university community
24. 25. In my university community, sharing is a very important value
25. 26. I feel proud to be a member of my university community
26. 27. I share the values of my university community
27. 28. Participating in my university community's activities is important to me
28. 29. I am attached to my university community and to its values

Appendix D:
Intolerance of Uncertainty Scale

IUS

You will find below a series of statements which describe how people may react to the uncertainties of life. Please use the scale below to describe to what extent each item is characteristic of you. Please circle a number (1 to 5) that describes you best.

	Not at all characteristic of me	Somewhat characteristic of me	Entirely characteristic of me

1. Uncertainty stops me from having a firm opinion. ....1..........2..........3..........4..........5..........

2. Being uncertain means that a person is disorganized. ....1..........2..........3..........4..........5..........

3. Uncertainty makes life intolerable. ....1..........2..........3..........4..........5..........

4. It's unfair not having any guarantees in life. ....1..........2..........3..........4..........5..........

5. My mind can't be relaxed if I don't know what will happen tomorrow. ....1..........2..........3..........4..........5..........

6. Uncertainty makes me uneasy, anxious, or stressed. ....1..........2..........3..........4..........5..........

7. Unforeseen events upset me greatly. ....1..........2..........3..........4..........5..........

8. It frustrates me not having all the information I need. ....1..........2..........3..........4..........5..........

9. Uncertainty keeps me from living a full life. ....1..........2..........3..........4..........5..........

10. One should always look ahead so as to avoid surprises. ....1..........2..........3..........4..........5..........

	Not at all characteristic of me	Somewhat characteristic of me	Entirely characteristic of me

11. A small unforeseen event can spoil everything, even with the best of planning. ....1...................2..................3................4..................5............

12. When it's time to act, uncertainty paralyses me. ....1...................2................3................4..................5............

13. Being uncertain means that I am not first rate. ....1...................2................3................4..................5............

14. When I am uncertain, I can't go forward. ....1...................2................3................4..................5............

15. When I am uncertain I can't function very well. ....1...................2................3................4..................5............

16. Unlike me, others always seem to know where they are going with their lives. ....1...................2................3................4..................5............

17. Uncertainty makes me vulnerable, unhappy, or sad. ....1...................2................3................4..................5............

18. I always want to know what the future has in store for me. ....1...................2................3................4..................5............

19. I can't stand being taken by surprise. ....1...................2................3................4..................5............

20. The smallest doubt can stop me from acting. ....1...................2................3................4..................5............

21. I should be able to organize everything in advance. ....1...................2................3................4..................5............

22. Being uncertain means that I lack confidence. ....1...................2................3................4..................5............

	Not at all characteristic of me		Somewhat characteristic of me		Entirely characteristic of me
23. I think it's unfair that other people seem sure about their future.	1	2	3	4	5
24. Uncertainty keeps me from sleeping soundly.	1	2	3	4	5
25. I must get away from all uncertain situations.	1	2	3	4	5
26. The ambiguities in life stress me	1	2	3	4	5
27. I can't stand being undecided about my future.	1	2	3	4	5

Appendix E : Scoring instructions for the IUS

Scoring Instructions

The IUS may be used as a unifactorial or a bifactorial assessment tool.

To score the IUS as a unifactorial tool, add up the responses for each of the items.

As a bifactorial tool, the IUS is used to assess the following two factors:
  Factor 1: Uncertainty has negative behavioural and self-referent implications
  Factor 2: Uncertainty is unfair and spoils everything

To score Factor 1, add up the responses for items 1, 2, 3, 9, 12, 13, 14, 15, 16, 17, 20, 22, 23, 24, and 25
To score Factor 2, add up the responses for items 4, 5, 6, 7, 8, 10, 11, 18, 19, 21, 26, and 27

A discussion on the 2-factor IUS scale may be found here:

Sexton, K. A., & Dugas, M. J. (2009). Defining Distinct Negative Beliefs about Uncertainty: Validating
    the Factor Structure of the Intolerance of Uncertainty Scale. *Psychological Assessment, 21* ,
    176-186.