THE EUROPEAN JOURNAL OF PSYCHIATRY

www.elsevier.es/ejpsy

ORIGINAL ARTICLE

The Swiss Youth Mental Health Literacy and Stigma Survey: Study methodology, survey questions/vignettes, and lessons learned

M. Dey [a,*], L. Marti [a], A.F. Jorm [b]

[a] *Swiss Research Institute for Public Health and Addiction at the University of Zurich, Konradstrasse 32, Zurich, Switzerland*
[b] *Centre for Mental Health, Melbourne School of Population and Global Health, University of Melbourne, 207 Bouverie Street, Melbourne, VIC 3010, Australia*

Abstract
Background and objectives: Mental health literacy and stigma towards mentally ill people have hitherto mainly been studied in relation to depression and schizophrenia and in adult samples. The *Swiss Youth Mental Health Literacy and Stigma Survey* (*SYMHLSS*) was planned and carried out to address these gaps. The aims of this article are to (1) outline and reflect on the methodology of the *SYMHLSS* in order to build a sound methodological foundation for preparing and conducting similar future surveys; and (2) advance school-based survey methods more generally.
Methods: The Australian *National Survey of Youth Mental Health Literacy and Stigma* (telephone survey) served as basis for the Swiss survey. As in the Australian survey, vignettes describing a person with a mental disorder were the core element to which most subsequent survey questions referred. Five vignettes were used in the online-based Swiss survey that used a representative school-based sample of roughly 5000 students: (1) depression; (2) alcohol abuse; (3) depression and alcohol abuse combined; (4) schizophrenia, and (5) social anxiety disorder.
Results and conclusions: The current paper describes (1) the aims and research questions of the *SYMHLSS* against the backdrop of some essential research gaps in the field; (2) the rationale for selecting the particular vignettes mentioned above; (3) the adaption and development process of the *SYMHLSS* (including pilot testing); (4) the reasoning for using a school-based online survey with in situ guidance of research staff; (5) and methodological insights gained during data collection.

The provided information might be used as guiding references for other researchers who aim to adapt and develop vignette-based surveys in the field of mental health literacy or stigmatizing attitudes or who are planning a school-based online survey with in situ presence of research staff.

Background

Mental disorders (including substance abuse) account for a large proportion of the burden of disease in young people.[1–3] Yet, even in high-income countries a significant proportion of affected youth does not get specialized mental health treatment.[1,2,4] The reasons for not getting professional care despite the existing need include limited *mental health literacy (MHL)*, defined as ''*knowledge and beliefs about mental disorders which aid their recognition, management or prevention.*''.[5] For young people with a mental disorder, not recognizing their condition, not knowing where to seek help, or believing that professional help would not improve their well-being, might all be a result of a limited MHL. Not being willing to disclose a mental health problem and to seek professional help might also stem from *stigma* attached to such conditions and to seeking professional help for it.[6–11] Such stigmatizing attitudes are possibly associated with the repeatedly demonstrated preference of young people to seek informal instead of formal help[8] or to rely on themselves.[7,8] Similarly, a limited MHL and stigma may also manifest itself in poor mental health first aid skills among young people, i.e., a limited ability to provide adequate help to a peer developing a mental health problem or in a mental health crisis.[12] Various methods exist to assess people's *MHL* and their *stigmatizing attitudes* towards mentally-ill people in population-based surveys.[13–15] The traditionally dominant approach is to use questionnaires featuring vignettes (a description of a person with a mental disorder), which allow the elicitation of responses from study participants.[13] Such vignette-based surveys targeting young people have been for instance carried out as computer-assisted telephone interviews[16] or as school-based paper–pencil surveys.[17–21] Despite the importance of the methods used, scholars have hitherto barely published detailed methodological descriptions, which provide in-depth insights into the adaption and development of such questionnaires (including the reasoning why vignettes of particular mental disorders have been portrayed) and elaborate the pros and cons of the chosen procedure of data collection. The current article outlines the study methodology of the *Swiss Youth Mental Health Literacy and Stigma Survey* (*SYMHLSS*) as a foundation for future publications and presents lessons learned for similar future surveys. On the one hand, since the *SYMHLSS* adapted a similar vignette-based survey to that used in Australia,[16,22] this article also features learnings for researchers who seek to adapt extant surveys to other cultural and linguistic contexts and other modes of data collection (from a telephone-based interview to an online survey). Furthermore, it contributes to advancing school-based survey methods by combining online survey methods with in situ guidance of participants (provided by physically present research staff). The remainder of this article is structured as follows: First, against the backdrop of some essential research gaps in the field, the aims and research questions of the *SYMHLSS* are outlined. Secondly, the iterative adaption and development of the vignettes and questionnaire are documented, reflecting the feedback received during the pilot testing phase. In a third step, we report on the data collection process and provide insights on the participants' use of different devices to fill out the online questionnaire. Fourthly, the planned quantitative and qualitative analyses of the *SYMHLSS* are outlined. While the different strengths of particular methodological decisions are discussed across all subsequent sections, the limitations of the *SYMHLSS* are described separately in a fifth section, before concluding the article in a sixth section.

Aims and research questions of the *SYMHLSS*

The *SYMHLSS* aims to explore MHL and stigmatizing attitudes towards different mental disorders in young people attending secondary schools in Switzerland. Most research (including from Switzerland) has hitherto either targeted adults[13] or did not report results for adolescents separately even when actually including young participants. This is regrettable given the early onset of many mental disorders,[1,4,23,24] the significant (long-term) impact of such conditions[1,2] as well as the possibility that adolescents and young adults have their unique ways of dealing with mental health problems. Surveying young people also allows the use of vignettes and subsequent questions that are designed to be more age-appropriate. Secondly, the *SYMHLSS* aims to contribute to a sophisticated understanding of MHL and stigma by focusing on a broad range of mental disorders beyond those that have hitherto been predominantly studied (depression and schizophrenia/psychosis).[13,25] Thirdly, it is aimed to conduct cross-country comparisons between the *SYMHLSS* and the Australian *National Survey of Youth Mental Health Literacy and Stigma*, which constituted the basis of the here-presented study. Such country comparisons are still scarce,[13] even though some studies have already reported on the existence of such difference.[26] The comparison with Australia will be of particular interest, since this country occupies a pioneering role, having defined a national strategy for mental health in 1997[27] and carried out several programmes that aimed to increase the public's MHL and reduce stigmatizing attitudes (e.g., beyondblue). In recent years, efforts to strengthen the MHL of the general public and to reduce stigmatizing attitudes towards mentally

ill people have also increased in Switzerland, in conjunction with campaigns such as ''Wie geht's dir?'' (''How are you?''; launched in 2014) and ''Prävention Jugendsuizid: Hör zu, wenn jemand Suizidgedanken hat'' (''Preventing youth suicide: Listen when someone has suicidal thoughts''; launched in 2018) and might further increase in the near future. Hence, as well as giving insights into the current state of MHL/stigmatizing attitudes of young people, the *SYMHLSS* data can be used as a baseline for monitoring future population changes. Lastly, some aspects of MHL, such as mental health first aid beliefs and intentions, have, to the best of our knowledge, not yet been investigated in Switzerland and will be studied with the data from the *SYMHLSS*.

The following research questions will guide this study:

1) Do young people recognize particular mental disorders described in vignettes (i.e., use accurate psychiatric labels) or do they characterize them inaccurately (e.g., downplaying the symptoms)?
2) Do adolescents and young adults intend to seek help in case of suffering from a mental disorder (from informal and/or formal sources) or do they reject help (and, if so, what are the reasons for it)?
3) What are young people's beliefs about the effectiveness of particular self-help strategies, professional interventions, preventative measures and mental health first aid actions and do they differ from the scientific evidence on effectiveness and expert consensus on best practices, respectively?
4) Do participants intend to provide help to a peer with a mental disorder and, if so, what mental health first aid would they provide? Is this first aid appropriate as measured against expert consensus on best practice?
5) Do young people exhibit and report stigmatizing attitudes towards people with mental disorders?
6) What factors predict a low/high MHL or the existence of stigmatizing attitudes?
7) Do the results of the Swiss survey differ from those that have been collected in Australia?

Adaptation and development process

The Australian origin

As mentioned above, the Swiss survey was based on the Australian *National Survey of Youth Mental Health Literacy and Stigma*[16,22] (the original questionnaire can be found in Supplementary Material 1). The Australian telephone-based survey was similarly tailored to study a broad range of mental disorders in order to develop a differentiated understanding of the subject matter. Depending on the age and gender of the participant, a particular vignette was presented in a way that most closely resembled the age and gender of participants (each of the vignettes was available in four versions: two gender (male, female) × two age groups (12–17 years; 18–25 years)), so that participants were able to optimally relate to the character portrayed. These mental disorders marked the core element of the survey and served as the point of reference for subsequent questions on MHL and stigmatizing attitudes. While the Swiss survey continues the use of partially adapted vignettes and questions, it draws

on a distinct rationale for selecting a (reduced) set of mental disorders and draws on a diverging method of survey-based data collection.

Selection process of mental disorders for the SYMHLSS

On the one hand, since MHL and stigmatizing attitudes have been shown to substantially vary between different mental disorders,[25,28–30] the Swiss survey set out to study a broad range of mental disorders. On the other hand, however, we had to limit the survey to five disorders in order to achieve enough answers per vignette in terms of statistical power. The following mental disorders have been included: (1) depression; (2) alcohol abuse; (3) depression and alcohol abuse combined; (4) schizophrenia, and (5) social anxiety disorder. The rationale for selecting these specific mental disorders was first and foremost anchored in the intent to include conditions from different ICD-blocks (alcohol abuse >F10–19, schizophrenia >F20–29, depression >F30–39, and social anxiety disorder >F40–48) and thereby reflect the heterogeneity of conditions advocated by one of the core classification systems. Secondly, the survey seeks to reflect different prevalence rates of mental disorders in young people, ranging from relatively low (e.g., schizophrenia[31]) to relatively high rates (e.g., depression).[32] Including disorders with different prevalence rates is important since these rates have potential effects on the likelihood of a person's exposure to the disorder (being affected oneself or knowing a person with the condition), which in return might influence the level of MHL and the types of stigmatizing attitudes.[25,33,34] Thirdly, the selection was also based on the degree to which the mental disorders have previously been researched. On the one hand, counteracting the bias towards depression and schizophrenia by studying previously fairly neglected conditions (e.g., social anxiety or depression in combination with alcohol abuse) is important to gain new and more differentiated insights into the phenomenon (e.g., regarding possible misconceptions among young people). On the other hand, including already well-researched conditions (e.g., schizophrenia) is particularly important for conducting comparisons between countries in terms of the states of MHL, cultural idiosyncrasies pertaining to stigma, or the effectiveness of population-based (policy) efforts.

Translation process and adaptations before pilot testing

The vignettes and subsequent questions were first translated into German by MD, then back-translated by LM, and subsequently checked by AFJ for accuracy. Some adaptations were already incorporated during this translation process. First, in contrast to the Australian *National Survey of Youth Mental Health Literacy and Stigma*, we also included an ''alcohol abuse only''-vignette, which had been developed by Lubman et al.[35] In favour of coherence, we did not use the original vignette that combined depression and alcohol abuse from the Australian *National Survey of Youth Mental Health Literacy and Stigma*, but combined the contents of the ''depression without suicidal thoughts'' vignette used in the Australian survey with the ''alcohol

abuse'' vignette of Lubman et al. Including a ''depression only''-, an ''alcohol abuse only''- and a ''depression and alcohol abuse combined''-vignette allowed a comparison of pure versus co-morbid disorders regarding MHL and stigma. Secondly, the names of the characters in the vignettes have been changed to names that are more common in Switzerland. Thirdly, no differentiation by age group has been made in the Swiss survey, since the Swiss sample was not defined by age but by educational level (see Section ''target population and sampling strategy''). The wording used for the 18–25-year olds in the Australian survey proved to be appropriate for the entire Swiss target group of young people, with the characters in the vignettes being described as ''*being about the same age*'' as the participant. Fourhtly, due to switching from a telephone-based to a school-based survey method, a more self-explanatory language and structure of the survey had to be adopted.

Pilot testing and subsequent adaptations

A first printed version of the translated and adapted questionnaire was pilot tested in a vocational class of 16 students (mostly 16–17-year olds) on the 20th of June 2017. After reading through the vignettes and questions, the content of the survey was discussed in two focus groups (moderated by LM and MD). One of the most frequent feedbacks from students was that the change of perspective, which participants have to perform across the questionnaire, is perceived as rather difficult. More specifically, depending on the section of the survey, the character described in the vignette has to be pictured as a close friend or acquaintance, whereas in other sections, participants have to imagine being themselves the person described in the vignette. To minimize the cognitive challenge for the participants and to increase the accuracy of answers, we introduced and emphasized the distinct type of perspective at the outset of each section. Another feedback was that the terms ''mother'' and ''father'' were too narrow to cover all possible primary caregivers, therefore the terminology was further generalized (female or male caregiver). Furthermore, some questions and answer categories that were not well understood or associated with some ambiguities were adapted or deleted. For instance, most students claimed that they did not feel able to answer the question about the helpfulness of particular medications, such as antipsychotics, since they did not know these specific medications. Hence, a more general question was developed, asking about the helpfulness of psychotropic medications prescribed by a physician (described as medications that for instance are used to treat depression, to calm someone's nerves, or to improve someone's sleep). This question allowed us to more broadly reflect our object of interest without risking a significant number of ''do not know''-answers. Lastly, the survey has been complemented with new questions. For instance, a question was introduced for those pupils who indicated that they would/could not help the person described in the vignette, allowing them to elaborate on the reasons for their response. Furthermore, a new question was developed that asks about the helpfulness of becoming/being creatively active (e.g., making music) in order to treat/prevent a mental disorder. Apart from adapting the content of the actual

survey, the introductory speech to be given by the scientific staff at the beginning of the survey was further developed based on the insights from the first pilot test and the guidelines of the ethics committee (see Supplementary Material 2). For instance, various pupils mentioned that it is difficult to answer questions referring to the vignette if the described problem is not fully understood. Hence, pupils were subsequently encouraged to answer the questions to the best of their ability (i.e., intuitively), even if they barely felt able to comprehend the problem described. In return, however, the survey was concluded with a question allowing the pupils to state how well they felt able to comprehend the problem(s) of the character described in the vignette and an invitation to openly comment on the survey in general.

A second pilot test of this adapted version was carried out on the 29th of June 2017 in a class of 16 students (mostly 16–17-year olds) of the same vocational school. Only some minor additional adaptions were carried out after this round.

The online version was subsequently set up using *LimeSurvey* and was tested in a third class of the same vocational school on the 7th of July 2017. The 16 students did not have any problems in filling out the questionnaire (including various open-ended questions) using tablet computers. The only problems that became apparent consisted of minor technical issues. Most importantly, it took several minutes for some students to connect the tablets with the WLAN of the school. In order to avoid this problem during the actual data collection, participating schools were asked in advance to provide information on the stability, speed, and usability (e.g., connection) of their WLAN. When a school did not fulfil the set criteria to collect data via the school's WLAN, the online survey was assessed via a mobile hotspot.

Final version of the questionnaire

The contents of the final version of the questionnaire are summarized in Table 1. Furthermore, the entire German questionnaire is presented in Supplementary Material 3.

Data collection

Target population and sampling strategy

The target population were pupils on the upper secondary education level in German-speaking parts of Switzerland (=ISCED3). The focus on the German-speaking region in the multilingual country of Switzerland was essential in order to ensure the feasibility of the study (due to budget restrictions, it would have been too time consuming and costly to translate and adapt the questionnaire into French and Italian, recruit and train French- and Italian-speaking staff, and to logistically coordinate and manage the data collection in the more distant French- and Italian-speaking parts of Switzerland). A two-stage stratified sample design was used with the aim of yielding a representative sample of about 5000 students (approximately 1000 students per vignette). The first-stage sampling units consisted of individual schools, which were randomly selected. Thus the two academic paths that can be followed after concluding mandatory schooling – general education (strata I) or vocational school (strata II) – were represented proportionally.

Table 1 Content of the questionnaire.

Content of the questionnaire	Specification
Introduction to the study and informed consent	After being orally informed by scientific staff about the study, students had the possibility to read the information about the study again (including information that participation is voluntary). Those who were willing to participate had to give their informed consent.
Class number/password	Each class had to fill in a class number and password. These data were checked with the data collection protocol that was filled out by scientific staff during data collection and was used for the data cleaning.
Socio-demographic characteristics	Age and gender of participants were assessed. Furthermore, participants were asked if they had a main female and male caregiver and, if so, who it is. Country of birth and highest educational achievement of female and male caregivers (if present) were assessed as well (according to the guidelines of the ethics committee, highest educational achievements were only assessed if the participant was at least 16 years old).
Vignette	One of five vignettes were randomly presented to participants: (1) depression only; (2) alcohol abuse only; (3) depression and alcohol abuse combined; (4) schizophrenia, and (5) social anxiety disorder.
Recognition of disorders	Participants were asked to describe the problem of the person in the vignette. Based on experiences during the pilot test, it was emphasized that participants should focus on the problem and *not* mention the *cause*.[a]
Intended actions to seek help and perceived barriers	Participants were asked several questions about how they would react if they had a problem like the one described in the vignette (Would they seek help/speak about the problem? If yes, from whom? What could hinder them from seeking help?).
Belief and intentions about mental health first aid	Participants were asked how they would help a close person with the same problem as the one described in the vignette and whether they believe they would and could help this person. Participants who indicated that they would or could not help the person in the vignette were also asked about the reasons for it. All participants were subsequently asked to assess the helpfulness/harmfulness of various potential mental health first aid strategies (e.g., suggesting the person to use cannabis (e.g., to forget his/her problem or to relax); listen to the person's problems in an understanding way).
Beliefs about interventions/self-help strategies	In this section, the character of the vignette was described as someone the participant knows, but is not close to. Participants were asked to rate the helpfulness/harmfulness of various people who might support the person described in the vignette (e.g., psychologist, a close family member, a close friend) as well as of particular interventions (e.g., psychotherapy) or self-help strategies (e.g., becoming physically active). Furthermore, they were asked how helpful/harmful it would be if the person described would deal with his/her problems on his/her own.
Beliefs about prevention	The character of the vignette was described as someone the participant knows, but is not close to, in this section. Students were asked about things that the person described in the vignette might have done in order to reduce his/her risk of developing the problem in the first place (i.e., preventive measures, such as keeping physically active, never drinking alcohol in excess).

Table 1 (*Continued*)

Content of the questionnaire	Specification
Stigma	In this section, the character of the vignette was introduced again as someone the participants knows, but is not (yet) close to. Participants were asked how strongly they personally (dis)agree with various statements in regard to the person described in the vignette (e.g., the character's problem is a sign of personal weakness; the described person is dangerous). Furthermore, they were asked whether they would look forward to spending time with the person described in the vignette (e.g., going out or working together on a project).
Exposure to mental disorders	Participants were asked if a family member/a close friend has had a similar problem to the person described in the vignette. If such a problem existed, they were asked whether the problem was treated professionally. Furthermore, they were asked if they themselves ever had a problem like the person described in the vignette, and if so, if this was within the last 12 months; if they received professional help; and if professional help was received, whether it was helpful.
Psychological distress[b]	The well-known and validated *Kessler Psychological Distress Scale (K6)* was used to assess psychological distress.[44,45] Referring to the past 30 days, participants were asked about the frequency of having felt (i) nervous, (ii) hopeless, (iii) restless or fidgety, (iv) so depressed that nothing could cheer them up, (v) that everything was an effort, and (vi) worthless.
Alcohol abuse[b]	The well-established and validated *AUDIT-C*[46,47] was used to assess problematic alcohol use. The measurement consists of three questions asking about the frequency and quantity of alcohol consumption, as well as the frequency of risky single-occasion drinking.
Cannabis use[c]	Participants were asked whether they have used cannabis during the previous 12 months and, if they did, they were also asked about the frequency of their use.
Comprehending the character's problem	Participants were asked to rate how well they comprehended the problem of the character described in the vignette on a scale ranging from 0 (very badly) to 10 (very well). This question was newly introduced, since some students mentioned during the pilot test that it is difficult to answer the questions (e.g., about the helpfulness of certain interventions) when the problem of the character in the vignette is not fully understood.
Open comment	Participants were given the opportunity to comment on the survey or write down anything that they needed to get off their chest (e.g., their experiences with the mental disorder described in the vignette; aspects of the survey that they (dis)liked).
Offers of help	Offers of help (including websites/phone numbers) for mental health problems or feelings of distress were included on the last page (a print out of offers of help was also available). Furthermore, participants were informed that a short report about the main study results will be published on the website of the institute.

[a] During the pilot test, some students just speculated about potential causes to explain why the character in the vignette was behaving this way (e.g., for the depression vignette ''she got dumped by her boyfriend.'' or for the social anxiety vignette: ''he got bullied.''). By emphasizing that participants should describe the problem (and not the cause), it was aimed to get a particular label for the problem in the vignette.

[b] Psychological distress and alcohol abuse were – among other things – assessed to look at differences between participants with high vs. low levels of psychological distress or participants who were abusing alcohol vs. those who were not in regard to their assessment of the depression or alcohol abuse vignette (e.g., stigmatizing attitudes towards the person described in the vignette), respectively.

[c] The cannabis use of participants was assessed, since cannabis use was addressed in several questions of the survey. Participants were for instance asked to assess the helpfulness/harmfulness of suggesting the person in the vignette to use cannabis (e.g., to forget his/her problem or to relax). Among other things, it will be analyzed whether the cannabis use is endorsed more frequently by participants who use cannabis regularly vs. those participants who are not using cannabis at all or just rarely.

The second-stage sampling units were classes within the sampled schools. In general, three classes were selected randomly in each participating school. All students of a selected class were asked to participate in the survey. The sampling strategy allowed us to cover a broad range of scholastic capacities and (study/vocational) interests and different levels of training in the field of public (mental) health.

Procedure and reasoning for choosing an online school-based survey with in situ guidance

Data collection started in October 2017 and lasted until June 2018. This long data collection phase allowed us to consider the individual schedules of schools and their preferred dates for data collection within the same school year. Research staff travelled to participating schools, introduced the survey to students and answered any questions that arose before the survey started. Subsequently, students filled out the online questionnaire during the remaining school lesson. If necessary, research staff provided further support to students (e.g., answering questions in a non-suggestive manner). The study protocol has been approved by the ethics committee of the University of Zurich (approval number: 17.4.9). Participants were required to provide informed consent before starting with the questionnaire (no consent from parents was needed).

The choice for an online school-based survey conducted in schools was motivated by the previously reported low refusal rates at the level of students in school-based surveys,[36,37] the simplicity of getting a representative sample of students who have chosen different academic tracks, and the relatively low costs of this approach compared to a telephone-based survey. Furthermore, an online rather than paper-and-pencil survey has various advantages, such as (1) allowing for a simplified random presentation of vignettes and building a more complex questionnaire without impairing the user-friendliness (e.g., some questions are only presented if a previous filter question has been answered in a certain way); (2) reducing missing values (e.g., by reminding participants that they did not fill out a particular question); (3) no need to entering data later on and thereby reducing a possible source of error (e.g., unlike a paper-and-pencil version, no deciphering of difficult handwriting is necessary when a survey is carried out online); and (4) connecting to the increasingly digitalized means of communication.

Participants

As expected, the participation rate at the level of students was high. Altogether, 4983 students of 314 classes of 105 schools participated (response rate among those who were present on the day of data collection = 99.4%; see Fig. 1). The characteristics of participants are detailed in Table 2. Furthermore, it must also be positively emphasized, that most of the participating students *fully completed* the online questionnaire (4908 out of 4983) and the comprehensive and detailed answers provided by the participants in the case of open format questions (e.g., regarding problem recognition or possible barriers to help-seeking) indicate that students
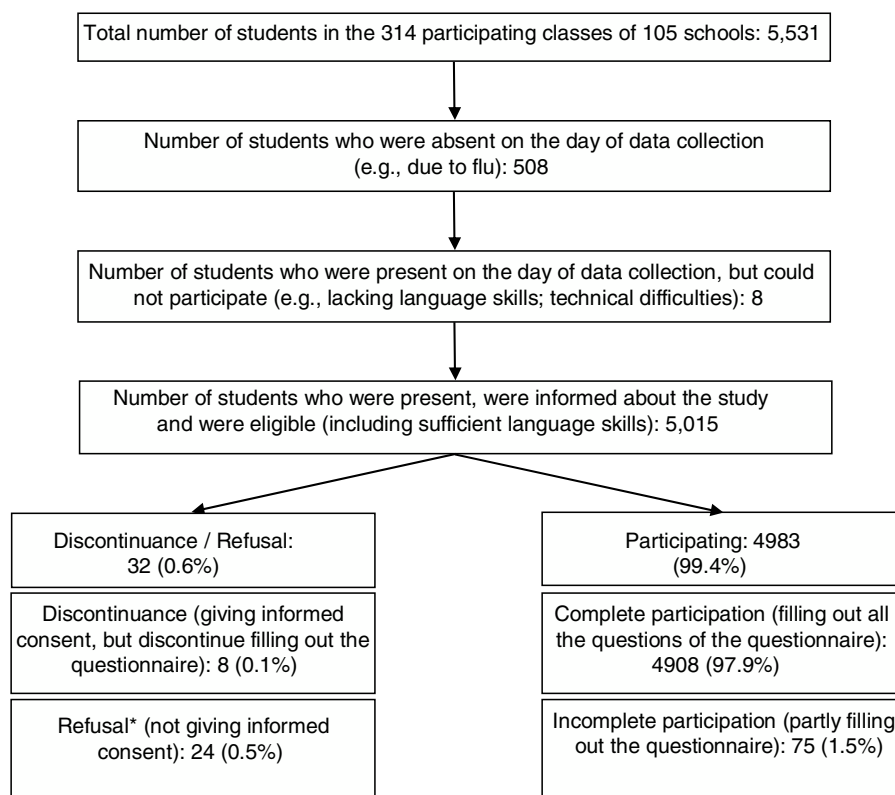

Figure 1 Participation at the level of students. *Note*: *Most students who refused to participate indicated that they preferred to study for an upcoming exam.

Table 2 Socio-demographic characteristics of the survey participants.

	Total: $n = 4983$	Strata I (general education): $n = 1370$	Strata II (vocational education): $n = 3613$
Age			
Up to 17 years old: n (%)	2530 (50.8)	857 (62.6)	1673 (46.3)
18–20 years old: n (%)	2054 (41.2)	508 (37.1)	1546 (42.8)
21 years old or older: n (%)	399 (8.0)	5 (0.4)	394 (10.9)
Male sex (%)	2687 (53.9)	881 (64.3)	1806 (50.0)
Country of origin female caregiver			
Switzerland: n (%)	3185 (63.9)	965 (70.4)	2220 (61.4)
Other European countries: n (%)	1054 (21.2)	237 (17.3)	817 (22.6)
Northern America: n (%)	24 (0.5)	14 (1.0)	10 (0.3)
Latin America/Caribbean: n (%)	124 (2.5)	29 (2.1)	95 (2.6)
Asia: n (%)	329 (6.6)	70 (5.1)	259 (7.2)
Africa: n (%)	76 (1.5)	22 (1.6)	54 (1.5)
Others (Oceania)/unknown/unclear: n (%)	105 (2.1)	17 (1.2)	88 (2.4)
Participant has no female caregiver: n (%)	86 (1.7)	16 (1.2)	70 (1.9)
Country of origin male caregiver			
Switzerland: n (%)	3162 (63.5)	967 (70.6)	2195 (60.8)
Other European countries: n (%)	990 (19.9)	228 (16.6)	762 (21.1)
Northern America: n (%)	29 (0.6)	18 (1.3)	11 (0.3)
Latin America/Caribbean: n (%)	45 (0.9)	11 (0.8)	34 (0.9)
Asia: n (%)	283 (5.7)	59 (4.3)	224 (6.2)
Africa: n (%)	69 (1.4)	19 (1.4)	50 (1.4)
Others (Oceania)/unknown/unclear: n (%)	113 (2.3)	17 (1.2)	96 (2.7)
Participant has no male caregiver: n (%)	292 (5.9)	51 (3.7)	241 (6.7)

Note: In Switzerland, more young people follow the academic track ''vocational school and training'' compared to ''general education''. Therefore, more students belonged to strata II.

generally made an effort to fill out the questionnaire in a proper manner. The high participation rate coupled with often fully completed surveys were achieved by a range of measures: Firstly, the in situ presence of the research staff emphasized the importance of the research project and further motivated the students to fill out the questionnaire (e.g., students expressed gratitude that somebody is taking care of the health issues of the public). Furthermore, the staff assisted students if necessary during the survey, which helped to prevent unnecessary discontinuation of the participation. Secondly, data was collected during school lessons. Hence, most students might also have been willing to participate since they did not have to sacrifice their leisure time. Thirdly, the piloting guaranteed the comprehensibility and cultural adequacy (e.g., culturally relevant types of self-help strategies) of the questionnaire and the feasibility of filling out an online version of the questionnaire. Hence, students generally remained motivated to completely fill out all questions. Lastly, participants were allowed to choose the mode of data collection that they felt most comfortable with (see below), which might also have contributed to their willingness to participate.

The device-related mode of participation

Mode of data collection within classes is presented in Table 3. In general, all students of a class filled out the questionnaire with the same type of device, e.g., PC or

Table 3 Mode of data collection within classes.

	Total classes: $n = 314$
PC/notebook: n (%)	124 (39.5)
Tablets: n (%)	90 (28.7)
Smartphone: n (%)	20 (6.4)
Mixed modes of data collection: n (%)	80 (25.5)

Note: Tablets were generally provided by the research team (occasionally, students also used their personal tablets); PCs were provided by schools; notebooks and smartphones were owned by students. ''Mixed modes of data collection'' indicates that not all students of a particular class filled out the online questionnaire via the same means.

tablet, which was possible due to the adaptive character of *LimeSurvey*. However, preferences of students were considered and they were allowed to switch to another device (e.g., use their smartphone rather than our tablets). This seemed to be important since some students preferred using personal devices, as they regarded them as being more private than using devices that were shared with other people (even though the survey was anonymous), while others preferred the tablets provided (e.g., since this was more novel to them).

Notes on the planned analyses

The data collected via LimeSurvey was downloaded as an SPSS file and cleaned (e.g., inconsistencies between

the data and the information on the data collection protocols were clarified). Closed questions will be analyzed with statistical programmes (e.g., R) to answer the above-mentioned research questions. Possible differences in response patterns as a function of the mode of data collection will be controlled as well. To account for the complex sampling design concerning appropriate point and variance estimation for population inference, survey weights will be used.[38]

Answers to open-ended questions will be fed into a programme suited for qualitative analyses (e.g., MAXQDA). We will apply methods such as content[39] and discourse analysis[40] to code and analyze these answers and contrast them with previous empirical findings and theories. For example, we will seek to flesh out and categorize the various mental health first aid strategies participants propose to help the character in the vignette and evaluate them in terms of their effectiveness against the backdrop of the scientific literature. The qualitatively derived codes will also be analyzed quantitatively in a second step. For instance, we will also trace how participants enact particular discourses with potentially stigmatizing effects. Furthermore, we can evaluate what variables (e.g., age, gender, school type) predict the use of (in)accurate labels.

Possible predictors will be studied for the outcomes assessed (e.g., recognition of mental disorders), including both predictors that have been identified in earlier studies (e.g., exposure to mental disorders),[25,33,34] as well as those that have previously not gained much attention. For instance, there will be an investigation of whether the level of mental health literacy varies as a function of particular types of vocational schools and/or high schools (e.g., based on the level of training the students are getting in the field of mental health). Lastly, differences between vignettes pertaining to the mental disorders will be evaluated in-depth (e.g., recognition rates for each mental disorder).

Limitations

Despite the numerous strengths of the survey that have been discussed in the previous sections, the following limitations have to be borne in mind: Firstly, the refusal rate at the school level was relatively high – a problem that will be elaborated in detail elsewhere. Secondly, it must be considered that not all young people will be reached by a school-based survey as it has been set up. More precisely, the roughly 10% of young people who do not complete upper-secondary education after mandatory school[41,42] were not included. Additionally, it must be considered that students with a (severe) mental disorder might be more likely to be absent on the day of data collection due to mental health sick leave. Thirdly, it must be kept in mind that despite the advantage of vignette-based questionnaires (providing a more detailed description for participants relative to just asking knowledge questions),[13,43] the vignettes represent hypothetical cases and answers of students to these scenarios might still differ from real-life situations. Lastly, the survey has, for the time being, only been carried out in the German-speaking part of Switzerland. An expansion to other language regions might follow later on. Besides these limitations, researchers who aim to conduct a similar survey also have to be aware of the considerable time that is needed for data collection: In particular in vocational schools the three randomly-selected classes could often not be surveyed on the same day and the research staff had to travel to these schools up to three times, which is time consuming despite the good public transport system in Switzerland. Hence, the advantages of having research staff on site must be weighed against the trade-off regarding time spent travelling/collecting data.

Conclusions

This article provides lessons that might be used for other researchers who aim to adapt and develop vignette-based surveys in the field of MHL or stigmatizing attitudes or who are planning a school-based online surveys with in situ presences of research staff. While some aspects might be useful regardless of the particular country (e.g., pilot testing with the target group), others might be more variable (e.g., what sampling strategy is best suited to achieve a representative sample; whether or not an in situ presence of research staff is feasible).

Conflict of interest

The authors have no conflict of interest to declare.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.ejpsy.2018.12.001.

References

1. Patel V, Flisher AJ, Hetrick S, McGorry P. Mental health of young people: a global public-health challenge. Lancet. 2007;369:1302–13, http://dx.doi.org/10.1016/S0140-6736(07)60368-7.
2. Costello EJ, Egger H, Angold A. 10-year research update review: the epidemiology of child and adolescent psychiatric disorders: I. Methods and public health burden. J Am Acad

Child Adolesc Psychiatry. 2005;44:972–86, http://dx.doi.org/10.1097/01.chi.0000172552.41596.6f.

3. Gore FM, Bloem PJN, Patton GC, Ferguson J, Joseph V, Coffey C, et al. Global burden of disease in young people aged 10–24 years: a systematic analysis. Lancet. 2011;377:2093–102, http://dx.doi.org/10.1016/S0140-6736(11)60512-6.

4. Lambert M, Bock Naber D, Lambert M, Bock T, Naber D, Löwe B, Schulte-Markwort M, Schäfer I, et al. Die psychische Gesundheit von Kindern, Jugendlichen und jungen Erwachsenen - Teil 1: Häufigkeit, Störungspersistenz, Belastungsfaktoren Service-Inanspruchnahme und Behandlungsverzögerung mit Konsequenzen. Fortschr Neurol Psychiatr. 2013;81:614–27.

5. Jorm A, Korten A, Jacomb P, Christensen H, Rodgers B, Pollitt P. 'Mental health literacy': a survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. Med J Aust. 1997;166(4):182–6.

6. Jorm AF, Barney LJ, Christensen H, Highet NJ, Kelly CM, Kitchener BA. Research on mental health literacy: what we know and what we still need to know. Aust N Z J Psychiatry. 2006;40:3–5, http://dx.doi.org/10.1111/j.1440-1614.2006.01734.x.

7. Gulliver A, Griffiths KM, Christensen H. Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. BMC Psychiatry. 2010;10(1):113, http://dx.doi.org/10.1186/1471-244X-10-113.

8. Rickwood D, Deane FP, Wilson CJ, Ciarrochi JV. Young people's help-seeking for mental health problems. Aust e-J Adv Ment Heal. 2005;4(3):1–34.

9. Rüsch N, Angermeyer MC, Corrigan PW. Mental illness stigma: concepts, consequences, and initiatives to reduce stigma. Eur Psychiatry. 2005;20(8):529–39, http://dx.doi.org/10.1016/j.eurpsy.2005.04.004.

10. Schomerus G, Angermeyer MC. Stigma and its impact on help-seeking for mental disorders: what do we know? Epidemiol Psichiatr Soc. 2008;17:31–7, http://dx.doi.org/10.1017/S1121189X00002669.

11. Clement S, Schauman O, Graham T, Clement S, Schauman O, Graham T, Maggioni F, Evans-Lacko S, Bezborodovs N, et al. What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. Psychol Med. 2015;45(1), http://dx.doi.org/10.1017/S0033291714000129.

12. Mason RJ, Hart LM, Rossetto A, Jorm AF. Quality and predictors of adolescents' first aid intentions and actions towards a peer with a mental health problem. Psychiatry Res. 2015;228(1):31–8, http://dx.doi.org/10.1016/j.psychres.2015.03.036.

13. Angermeyer MC, Schomerus G. State of the art of population-based attitude research on mental health: a systematic review. Epidemiol Psychiatr Sci. 2016:1–13, http://dx.doi.org/10.1017/S2045796016000627.

14. Wei Y, McGrath PJ, Hayden J, Kutcher S. Measurement properties of tools measuring mental health knowledge: a systematic review. BMC Psychiatry. 2016;16(1):297, http://dx.doi.org/10.1186/s12888-016-1012-5.

15. Wei Y, McGrath PJ, Hayden J, Kutcher S. Mental health literacy measures evaluating knowledge, attitudes and help-seeking: a scoping review. BMC Psychiatry. 2015;15(291.), http://dx.doi.org/10.1186/s12888-015-0681-9.

16. Jorm AF, Wright A, Morgan AJ. Beliefs about appropriate first aid for young people with mental disorders: findings from an Australian national survey of youth and parents. Early Interv Psychiatry. 2007;1:61–70, http://dx.doi.org/10.1111/j.1751-7893.2007.00012.x.

17. Lam LT. Mental health literacy and mental health status in adolescents: a population-based survey. Child Adolesc Psychiatry Ment Health. 2014;8(1):26, http://dx.doi.org/10.1186/1753-2000-8-26.

18. Loureiro LM, Jorm AF, Mendes AC, Santos JC, Ferreira RO, Pedreiro AT. Mental health literacy about depression: a survey of Portuguese youth. BMC Psychiatry. 2013;13:129, http://dx.doi.org/10.1186/1471-244X-13-129.

19. Melas Pa, Tartani E, Forsner T, Edhborg M, Forsell Y. Mental health literacy about depression and schizophrenia among adolescents in Sweden. Eur Psychiatry. 2013;28(7):404–11, http://dx.doi.org/10.1016/j.eurpsy.2013.02.002.

20. Coles ME, Ravid A, Gibb B, George-Denn D, Bronstein LR, McLeod S. Adolescent mental health literacy: young people's knowledge of depression and social anxiety disorder. J Adolesc Heal. 2016;58(1):57–62, http://dx.doi.org/10.1016/j.jadohealth.2015.09.017.

21. Wolkenstein L, Meyer TD. Attitudes of young people towards depression and mania. Psychol Psychother Theory Res Pract. 2008;81(1):15–31, http://dx.doi.org/10.1348/147608307X218274.

22. Wright A, Harris MG, Wiggers JH, Wright A, Harris MG, Wiggers JH, Jorm AF, Cotton SM, Harrigan SM, et al. Recognition of depression and psychosis by young Australians and their beliefs about treatment. MJA. 2005;183(1):18–23.

23. De Girolamo G, Dagani J, Purcell R, Cocchi A, McGorry PD. Age of onset of mental disorders and use of mental health services: needs, opportunities and obstacles. Epidemiol Psychiatr Sci. 2012;21(1):47–57, http://dx.doi.org/10.1017/S2045796011000746.

24. Kessler RC, Amminger GP, Aguilar-Gaxiola S, Alonso J, Lee S, Ustün TB. Age of onset of mental disorders: a review of recent literature. Curr Opin Psychiatry. 2007;20(4):359–64, http://dx.doi.org/10.1097/YCO.0b013e32816ebc8c.

25. Angermeyer MC, Dietrich S. Public beliefs about and attitudes towards people with mental illness: a review of population studies. Acta Psychiatr Scand. 2006;113(3):163–79, http://dx.doi.org/10.1111/j.1600-0447.2005.00699.x.

26. Ten Have M, De Graaf R, Ormel J, Vilagut G, Kovess V, Alonso J. Are attitudes towards mental health help-seeking associated with service use? Results from the European study of epidemiology of mental disorders. Soc Psychiatry Psychiatr Epidemiol. 2010;45:153–63, http://dx.doi.org/10.1007/s00127-009-0050-4.

27. Bürli C, Amstad F, Duetz Schmucki M, Schibli D. Psychische Gesundheit in der Schweiz Bestandesaufnahme und Handlungsfelder. Bericht im Auftrag des Dialogs Nationale Gesundheitspolitik. 2015:1–58, http://dx.doi.org/10.1007/978-3-658-04416-9.

28. Corrigan PW, Lurie BD, Goldman HH, Slopen N, Medasani K, Phelan S. How adolescents perceive the stigma of mental illness and alcohol abuse. Psychiatr Serv. 2005;56(5):544–50, http://dx.doi.org/10.1176/appi.ps.56.5.544.

29. Jorm AF. Mental health literacy: empowering the community to take action for better mental health. Am Psychol. 2012;67(3):231–43, http://dx.doi.org/10.1037/a0025957.

30. Kelly CM, Jorm AF, Wright A. Improving mental health literacy as a strategy to facilitate early intervention for mental disorders. Med J Aust. 2007;187(7):26–30.

31. Simeone JC, Ward AJ, Rotella P, Collins J, Windisch R. An evaluation of variation in published estimates of schizophrenia prevalence from 1990–2013: a systematic literature review. BMC Psychiatry. 2015;15(1):1–14, http://dx.doi.org/10.1186/s12888-015-0578-7.

32. Kessler RC, Avenevoli S, Ries Merikangas K. Mood disorders in children and adolescents: an epidemiologic perspective. Biol Psychiatry. 2001;49(1):1002–14, http://dx.doi.org/10.1016/S0006-3223(01)01129-5.

33. Jorm AF, Oh E. Desire for social distance from people with mental disorders: a review. Aust N Z J Psychiatry. 2009;43:183–200, http://dx.doi.org/10.1080/00048670802653349.

34. Jorm AF. Mental health literacy: public knowledge and beliefs about mental disorders. Br J Psychiatry. 2000;177(NOV.):396–401, http://dx.doi.org/10.1192/bjp.177.5.396.

35. Lubman DI, Cheetham A, Jorm AF, Lubman DI, Cheetham A, Jorm AF, Berridge BJ, Wilson C, Blee F, et al. Australian adolescents' beliefs and help-seeking intentions towards peers experiencing symptoms of depression and alcohol misuse. BMC Public Health. 2017;17(1):658, http://dx.doi.org/10.1186/s12889-017-4655-3.

36. Jeannin A, Narring F, Tschumper A, Jeannin A, Narring F, Tschumper A, Inderwildi Bonivento L, Addor V, Bütikofer A, et al. Self-reported health needs and use of primary health care services by adolescents enrolled in post-mandatory schools or vocational training programmes in Switzerland. Swiss Med Wkly. 2005;135:11–8, doi:2005/01/smw-10846.

37. Haug S, Castro RP, Kwon M, Filler A, Kowatsch T, Schaub MP. Smartphone use and smartphone addiction among young people in Switzerland. J Behav Addict. 2015;4(4):299–307, http://dx.doi.org/10.1556/2006.4.2015.037.

38. StataCorp. Stata 12 Base Reference Manual. College Station, TX: Stata Press; 2011.

39. Crowe M, Inder M, Porter R. Conducting qualitative research in mental health: thematic and content analyses. Aust N Z J Psychiatry. 2015;49(7):616–23, http://dx.doi.org/10.1177/0004867415582053.

40. Nelson P, Hardy C. Discourse analysis: investigating processes of social construction. Thousand Oaks: Sage; 2002.

41. Stalder B, Nägele C. Vocational education and training in Switzerland: organisation, development and challenges for the future. In: Youth transitions in Switzerland: results from the TREE panel study. Vol Zurich, Switzerland: Seismo; 2011. p. 18–39.

42. State Secretariat of Education Research and Innovation SERI. Vocational and Professional Facts and Figures 2016. Biel, Switzerland; 2017. https://www.sbfi.admin.ch/sbfi/en/home/documentation/publications/vocational-education-and-training.html.

43. Yang LH, Link BG, Phelan JC. Stigma measurement approaches: conceptual origins and current applications. In: Understanding the stigma of mental illness: theory and interventions. Chichester: Vol John Wiley & Sons; 2008. p. 175–92.

44. Kessler RC, Andrews G, Colpe LJ, Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand S-LT, et al. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. Psychol Med. 2002;32(6):959–76, http://dx.doi.org/10.1017/S0033291702006074.

45. Kessler RC, Barker PR, Colpe LJ, Kessler RC, Barker PR, Colpe LJ, Epstein JF, Gfroerer JC, Hiripi E, et al. Screening for serious mental illness in the general population. Arch Gen Psychiatry. 2003;60(2):184–9, http://dx.doi.org/10.1001/archpsyc.60.2.184.

46. Bush K, Kivlahan DR, McDonell MB, Fihn SD, Bradley KA. The AUDIT Alcohol Consumption Questions (AUDIT-C). An effective brief screening test for problem drinking. Arch Intern Med. 1998;158:1789–95.

47. Rumpf HJ, Wohlert T, Freyer-Adam J, Grothues J, Bischof G. Screening questionnaires for problem drinking in adolescents: performance of AUDIT, AUDIT-C CRAFFT and POSIT. Eur Addict Res. 2013;19(3):121–7, http://dx.doi.org/10.1159/000342331.