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Title: Methodology on the My World Survey (MWS): A Unique Window into the

World of Adolescents in Ireland

Abstract

Background: Internationally, 75% of all mental health problems emerge before the age of 25 years, and adolescence represents a critical period that strongly influences the course of these problems. To date, there is limited research on the mental health of young people aged 12-25 years in Ireland. The My World Survey (MWS) national study provides data on risk and protective factors of mental health among 14,306 young people. The MWS was conducted in two phases: Phase 1- MWS-Second Level (MWS-SL) with adolescents aged 12-19 years and Phase 2-MWS-Post Second Level (MWS-PSL) among young adults aged 17-25 years.

Aim: This article provides a comprehensive overview of the development of the MWS-Second Level (MWS-SL) study. Another aim is to identify key learning points when conducting research in the second-level school system.

Method: The MWS-SL study was conducted with 6,085 adolescents aged 12-19 years in 72 second-level schools. The MWS consists of standardized reliable and valid measures that have been used internationally to assess a range of risk and protective factors associated with adolescent mental health.

Results: Schools recruited for the MWS-SL study represented quite well the national distribution of second-level schools based on gender composition, disadvantaged/non-disadvantaged status, and geographic location.

Conclusions: Key learning points when collecting survey data in schools include pilot testing of survey instruments; building relationships with key stakeholders to ensure buy-in for the study from schools; establishing rigorous data collection and processing protocols and recognizing the value of online surveys.

Key Words: Methodology, Adolescent Mental Health, Risk Factors, Protective

Factors, My World Survey.

Introduction

Internationally, research has shown that young people are most vulnerable to develop

mental health difficulties, with 75% of all mental health problems emerging before 25

years.[1,2] Adolescence represents a critical period which strongly influences the course

and severity of these problems.[3] There is limited research on the prevalence of mental

health difficulties among young people when sampled as a cohort aged 12-25,

particularly in Ireland. Most published Irish studies provide mental health data on

young people aged 12-17 years presenting no data on those aged 18 upwards. [4,5] Past

research has mainly focused on mental health problems and disorders,[4,6] with a

primary focus on negative (risk) factors. The current My World Survey (MWS) has

two broad aims: to extend the age distribution up to 25 years, and to consider

protective factors in conjunction with risk factors of youth mental health. The MWS

was conducted in two phases: Phase 1- MWS-Second Level (MWS-SL) with

adolescents aged 12-19 years and Phase 2-MWS-Post Second Level (MWS-PSL)

among young adults aged 17-25 years.

Purpose of the MWS

The MWS is a collaboration between University College Dublin School of

Psychology and Headstrong- The National Centre for Youth Mental Health.

Headstrong, in partnership with communities, has undertaken a long-term initiative to

transform mental health services and supports for young people aged 12-25 years. [7]

The main aim of the MWS study is to provide the first national baseline of data on

risk and protective factors of youth mental health in Ireland. The specific objectives

are to:

1. Profile youth mental health at a national level across the age spectrum 12-25

    years, thus allowing communities and service providers to use resources

appropriately. The profile is presented as follows:

    a. Adolescent Sample – MWS-Second Level (MWS-SL)

    b. Young Adult Sample – MWS-Post Second Level (MWS-PSL)

    c. Full Sample – Developmental Data for 12-25 year-olds

2. Identify whether various groups of young people (i.e. those in third level, national training courses/schemes, employed, unemployed) differ in the risk and protective factors associated with their mental health.

3. Use the national data collection to inform the development of a model of resilience which can be used in prevention programmes to enhance youth mental health.

4. Contribute to the setting of effective and responsive policies and services relating to youth mental health in conjunction with Headstrong.

5. Enable international comparisons between youth mental health data in Ireland and published international norms.

6. Provide an accessible national archive of youth mental health data.

Given the methodological complexities involved in the two phases of the MWS, this article presents the survey development for the MWS-Second Level (MWS-SL) study. This article also discusses key learning points in an effort to inform future researchers conducting survey-based research within the school system**.**

Background to the My World Survey

Survey Development

The MWS was developed following a comprehensive review of the international

research on key risk and protective factors related to youth mental health. Before the

national 'My World' study was undertaken, a pilot test was conducted with 1,051

adolescents aged 12-18 in second-level education. [8] The pilot demonstrated that the

MWS was a sensitive and reliable measure, easy to administer, had good

psychometric properties and was cost-efficient. The MWS was also shown to

discriminate between clinical and community based participants. Following

recommendations from the pilot, some of the measures and protocols in the MWS

were revised and amended before data were collected for the national study.

Conceptual Framework for MWS-SL

The MWS-SL study adopted an ecological risk/protective framework to identify

selected risk and protective factors for mental health across all domains important to a

young person's development. [9] An important aspect of the ecological risk/protective

model is that it places the young person within the context of family, cultural and

societal influences that may affect their mental health. Thus, risk and protective

factors included in the MWS have been identified in terms of the individual

characteristics of the young person, family, peer group/friends, school, neighbourhood,

community and the larger society. Table 1 provides examples of variables used in the

MWS that are pertinent to the ecological risk/protective factor model.

[Insert Table 1 Here]

Methodology for the MWS

Overview

Ethical approval to conduct the MWS was received from the UCD Human Research

Ethics Committee in December 2010. The MWS sought to collect data with (1)

second-level students (12-19 years) and (2) young adults post second-level education

(17-25 years). Data collection took place between February and October 2011. The

present paper will describe the study methodology for the second-level sample.

Methodology for Adolescent Sample

The MWS-Second Level (MWS-SL) study sought to recruit a sample of adolescents

enrolled in post-primary schools that would be representative of students enrolled in

the 732 post-primary schools in Ireland. Four criteria were identified that had to be

met to achieve a nationally representative sample.

1. The sample had to reflect the distribution of schools and students in all four

   Health Service Executive (HSE) areas. The Health Service Executive (HSE) is

   responsible for providing health and personal social services for everyone

   living in Ireland. The HSE is divided into four geographic regions in Ireland:

   HSE Dublin Mid-Leinster; HSE Dublin North East; HSE South; HSE West.

2. The sample had to reflect the national distribution of schools characterised as

   disadvantaged (DEIS) and non-disadvantaged (DEIS) in the four HSE areas.

3. The sample had to reflect the distribution of schools with regard to gender

   composition (males only, females only, mixed gender).

4. The sample had to include at least one school in every county in the Republic

   of Ireland.

Based on these criteria, a random sample of 171 schools was generated.

Recruitment of Schools

School principals were contacted by post about participating in the MWS-SL. They received a research pack that contained letters for students and guardians describing the study, consent forms and a paper copy of the survey.

Response Rate: School and Individual Level

A total of 72 schools agreed to participate (response rate was 42%). On the basis of the number of 'informed consent' forms delivered to the 72 schools for distribution to parents, and the number returned with parental approval, the final sample of 6,085 students constitutes a response rate for student participation of 45% (response rates varied across schools from 6% to 89%). Active parental and student consent was obtained in each school. The main reasons for non-participation were absenteeism and failure to return consent forms. The characteristics of sampled post-primary schools are presented in Table 2. The characteristics of the sampled schools were compared to the full sample of second-level schools in Ireland. The ratio of DEIS to non-DEIS schools is 3:1 nationally, and this was observed in the MWS-SL sample. Nationally, 65% of second-level schools are mixed compared to 70% in the sampled schools. In addition, nationally 15% of schools are single-sex male schools compared to 16% in this sample and, nationally 20% are single-sex female schools and this was 14% for the sampled schools. Using a goodness of fit test, χ^2 (2, 72)=1.69, *p*>.05, these data were found to fit the national distribution of schools. In relation to the HSE areas, Dublin Mid-Leinster comprises 28% of schools nationally compared to 24% in this sample. For Dublin North East, the national percentage is 17.6% versus 14% in the current sample, the Western HSE area comprises 27.6% of schools nationally and the current sample contained 36%. Finally, the Southern HSE percentage of schools

nationally is 26.8% versus 26% in the current sample. Using a goodness of fit test, the

sampled schools did not depart from the national distribution, χ^2 (3, 72)= 2.95, *p*>.05.

[Insert Table 2 Here]

Characteristics of the Post-Primary Students

The sample consisted of 3,101 females (51%) and 2,952 males (49%) (gender was not

reported for 32 participants). The students ranged in age from 12-19, with a mean age

of 14.94 (SD=1.63).

Description of MWS-SL Study

The MWS-SL version contains two sections. The first section includes a range of

demographic and personal well-being questions (see Table 3).

[Insert Table 3 Here]

Positive and Negative Domains

The second section contained a number of scales previously shown to have good

reliability and validity. Listed below in Table 4 are those scales, the number of items

in each scale, and the alpha based on data from the MWS-SL study.

[Insert Table 4 Here]

POSITIVE DOMAINS +++++

Rosenberg's Self-Esteem Scale (RSE)

Self-esteem is assessed with the 10-item Rosenberg Self-Esteem scale (RSE).[10] The

RSE is the most widely used scale of self-esteem and assesses a person's overall

evaluation of his/her worthiness as a human being.

Coping Strategy Indicator (CSI)

The CSI assesses three dimensions of coping strategies: problem-solving, seeking social support, and avoidance.[11] The three-factor solution has been replicated. [12] An adapted 15-item version of the CSI is used for the present study. The adapted version has previously demonstrated a three-factor structure in line with the original CSI.

Life Orientation Test Revised (LOT-R)

The LOT-R is a measure of dispositional optimism. The LOT-R has acceptable internal consistency and 4- and 13-week test-retest reliability. [13, 14] Scores on the LOT-R are correlated positively with self-esteem and negatively with hopelessness, depression, and perceived stress.

Formal and Informal Help-Seeking Behaviour (HSB)

Formal help-seeking is assessed using a measure that was slightly adapted. [15] Participants were asked: 'Have you had any serious problems in the past year?' – for example, 'personal, emotional, behavioural, problems that caused you considerable stress and you felt you would have benefited from professional help'. Response options were: '*I have few or no problems*', '*I have had some problems but I did not feel I needed professional help*', '*I have had some problems but I did not seek professional help although I thought I needed it*', and '*I have had some problems and I did seek professional help*'.

Informal help-seeking was assessed with 8 items adapted from Saunders et al. [15] Participants were asked two questions: 'When you have problems, do you talk about them with anyone?' 'If yes, who would you talk to … family, friend, no one?' They were then asked who they would talk to first if they had problems with their family or a friend, had a romantic relationship problem, a school problem, or a problem with

depression or with alcohol and drug use. Saunders et al. found kappa coefficients of .96-.99 across two independent coders.[15]

Resilience Scale for Adolescents (READ)

The READ is a 28-item measure of adolescent resilience.[16] This scale focuses on how the adolescent relates to family and friends, and the degree to which they are goal-oriented. This scale consists of five factors: 1) personal competence, 2) social competence, 3) structured style, 4) family cohesion, and 5) social resources. The READ has shown adequate psychometric properties and promising validity. [16]

Multidimensional Scale of Perceived Social Support (MSPSS)

The 12-item MSPSS measures perceived social support from family, friends and significant others.[17] The reliability, validity and factor structure of the MSPSS has been demonstrated in different samples. [17,18, 19]

Support About Your Mental Health

Two questions assessed 1) what places young people are *likely to use* and 2) what places they have *actually used* to get information and support about their mental health. The list of places included: parents, relatives, friend, internet, phone help-line, teacher/guidance counsellor, doctor/GP, psychologist/counsellor/therapist, or other.

Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS)

The BMSLSS is a 6-item measure which asks the adolescent to indicate the degree to which they are satisfied with family life, friends, school experience, 'myself', 'where I live' and with 'my overall life'.[20] The BMSLSS has shown adequate reliability and validity for adolescents.[21]

Network of Relationships Inventory – Relationship Qualities Version (NRI-RQV)

The NRI-RQV assesses the quality of relationships with mothers, fathers, same-sex friends and romantic partners.[22] Three subscales from the NRI-RQV assess two positive relationship features: approval and satisfaction, and one negative relationship feature: criticism. The NRI-RQV has previously been used among Irish adolescents and the internal consistency of all the subscales has been estimated to be good. [23]

Hemingway Measure of Adolescent Connectedness (MAC)

Three subscales from the Hemingway Measure of Adolescent Connectedness (MAC) were used to assess adolescents' connectedness with their peers, teacher and school.[24] The Hemingway has been found to demonstrate adequate validity. [25,26]

Neighbourhood Safety

One item asks about adolescents' perception of neighbourhood safety 'How safe do you feel living in your neighbourhood'? Response options range from '*very safe*' to '*very unsafe*'.

NEGATIVE DOMAINS -----

Depression, Anxiety and Stress Scale (DASS-21)

The DASS-21 is a self-report measure in which participants rate the frequency and severity of experiencing negative emotions over the previous week. Using recommended cut-off scores, adolescents are classified as displaying normal, mild, moderate, severe, or very severe symptoms of depression, anxiety or stress.[27] The validity of the DASS-21 has been consistently demonstrated. [28,29,30]

Alcohol Use Disorders Identification Test (AUDIT)

The World Health Organization AUDIT tool is a 10-item screener for high risk alcohol consumption. [31] The AUDIT has been shown to be a valid and reliable tool for identifying adolescents alcohol behaviour. [32]

CRAFFT Substance Use Screening Scale

The CRAFFT is a valid measure to detect substance problem use, abuse and dependence among adolescent populations. [33,34] A total score for the CRAFFT is computed ranging from 0 to 6. When evaluated in a general paediatric setting, a cut-off score of ≥2 correctly classified in 86% of cases whether the adolescent did or did not have a current substance abuse or dependence disorder. [34]

Cannabis Use

Adolescents are asked about whether they have ever used cannabis and, if yes, at what age they started using cannabis.

Behavioural Adjustment Scale (BAS)

A 13-item version of the BAS is used to assess the frequency over the past month that adolescents engaged in substance misuse and school misconduct.[35] The BAS has been shown to have acceptable validity. [35, 36]

Pupils' Experience of Bullying Scale (PEBS)

Experiences of bullying were assessed with items that had been used in previous research and were found to be reliable. [37] The adolescent is asked if they have seen anyone bullied and if they have been bullied and, if so, how recently and how they were bullied and where they were most frequently bullied.

From Survey Design to Data Processing: Key Learning Points

The MWS-SL study has identified a number of key learning points in relation to survey design, school recruitment, data collection and data processing that can provide a guide to researchers collecting data within the school system in the future.

Survey Design

Two formats of the MWS-SL were developed including a paper-based and web-based survey. The web-based survey was presented via a survey software tool called

Qualtrics. Qualtrics was housed in the UCD School of Psychology. [38] Qualtrics is a feature-rich web survey tool that is directive and powerful, can be formatted to be appealing and easy to complete by respondents and all data is stored in an online database with security protection.

The present study adopted Dillman's guidelines regarding the design of the paper-based survey in order to maximize response rates.[39] Dillman suggested that by making the survey appear easier to read, and less time consuming to complete, respondents will be more willing to complete them. The paper-based survey was designed to be accessible, youth-friendly, colourful, and was produced on high quality paper. The survey was in booklet format and presented professionally as it was felt that the look and feel of the survey would enhance both school and student participation rates.

Dillman also indicated that respondent-friendly questionnaires can improve response rates.[40] The survey was presented in youth-friendly format, in an appropriate font size, with an emphasize placed on colours and shading. The survey was designed in section format to facilitate students taking short breaks/rests while completing the survey if required. The section headings guided the students in terms of the information being sought. Examples of headings included 'my life', 'your personal wellbeing' 'my family, friends and I', 'you and your drinking', 'how I deal with problems'. Dillman suggested the use of official stationary and sponsorship, and the MWS consciously used the Headstrong logo to fit with this guideline.[40] A support card with key services specific to the needs of young people was designed in line with ethical approval. This support card was designed to be discrete and wallet-sized. A support card was provided to each participating student who completed the paper version. The web-based version followed the same format as the paper-based version

and support information was provided on completion of the survey on a web-based
'thank you' page.

The length of time to complete both versions of the survey was piloted and it
was found to take students' approximately 30 minutes to complete. The timing of the
survey was critical as school class times are approximately 40 minutes and it was a
requirement by schools that the survey could be completed within a class period.

Buy-In From Schools

Previous research conducted in school settings has highlighted the importance of
having buy-in from key stakeholder groups and investing in relationship-building
efforts prior to and during the recruitment process. [41] Second-level schools in Ireland
are invited on a regular basis to participate in research studies. Therefore, to ensure
the highest possible response rates from schools selected to take part in the MWS-SL,
key second-level education organizations were contacted in advance of schools
recruitment, in an effort to obtain their formal endorsement of the research being
undertaken. These organizations included the National Association of Principals and
Deputy Principals (NAPD), National Post-Primary Parent's Council (NPPPC), Irish
Second-Level Students' Union (ISSU) and the Association of Secondary School
Teachers, Ireland (ASTI). All of these organizations agreed to actively support and
promote the research, for example, many of them advertised about the research
through their newsletters and websites. The NAPD offered to provide a strong letter
of support for the MWS research encouraging schools selected to participate, and this
letter was included in the first formal written communication to schools. In hindsight,
the time spent relationship building with key organizations in advance of recruitment
was found to significantly enhance the willingness of schools to participate in the
research.

Standardized Protocol for Survey Administration

In advance of training field researchers, a significant amount of time was devoted to the design of protocols for survey administration within the school system. Four protocols were designed including web and paper-based protocols for schools completing the survey themselves and web and paper-based protocols for researchers collecting data in the schools. Each protocol detailed the management of consent, survey administration, managing students with language/literacy difficulties, and the timeline/ schedule of tasks. To ensure that the time required to collect data within schools was minimized, each school was asked to designate a key staff member who liaised with the researcher. The majority of students within schools were under 18 years, therefore, parent and student consent forms were distributed at a sufficient time prior to the survey date to allow enough time for consent for all students to be returned. Ideally, research packs were sent out on Monday to be returned by students on Friday of that week.

When consent forms were returned to schools, the designated person responsible for consent documented which students / parents returned signed consent forms and whether these consent forms agreed or refused to consent. A list of all students who returned signed consent was kept to ensure that only students for whom parent and student consent was received participated in the study. It was recommended that class lists be used to record students for whom consent had been returned. Sample forms for recording parent and student consent were provided to each school.

On the day of survey administration, the protocol included cross-referencing consent and assent, and having a contingency plan for special circumstances. Teachers/ researchers were provided with a standardized script to follow when

administering the survey, depending on how the survey was being managed within the school. Participants were ensured of the confidentiality and anonymity of their responses, that their participation was voluntary and that there were no right or wrong answers. Signed student assent and parent consent forms were collated separately from the survey booklets and all documentation were stored in locked filing boxes for return to a secure filing system in UCD in line with ethical recommendations. To facilitate schools completing the MWS themselves, a freepost address, along with jiffy bags were provided to schools to enable them to post back the surveys to the UCD School of Psychology.

Prior to data collection, field researchers received training as a group in the UCD School of Psychology. Training included how to recruit schools and manage gatekeeping with schools, how to build and maintain a good relationship with the school, and how to implement the standardized data collection protocol within schools once school recruitment had been established. Part of the training included procedures to be followed if any difficulties were encountered during data collection. Any issues the field researchers felt they were unable to manage themselves on-site in schools were referred back to the principal investigators. Each researcher was also issued with a work mobile phone so that they could be the point of contact if schools/parents had a query about the research. An additional reason for the issuing of work mobile phones was to ensure that researchers were protected against unwarranted contact while in the field. Researchers were advised that it was critical to adhere to the standardized protocols to ensure the quality of the data collected. To minimize costs, field researchers were allocated a geographical region near to their place of residence but visited UCD School of Psychology on a regular basis for supervision, team meetings and return of the completed surveys.

Road Blocks to School Data Collection

171 schools were randomly selected to participate. 72 schools opted into the study yielding a 42% response rate. Non-participation at school level was recorded and included the following reasons: 1) Gatekeeping- Although contact was made to the school at an administrative level, despite several follow-up phone calls, contact with the principal could not be established. School principals have delegated authority and must consent to allow students' to engage in non-school activities. This gatekeeping issue occurred in several schools (n=9). 2) Timing- During the academic year 2010-2011, several school days were lost due to severe weather conditions (i.e., snow). The loss of school days put immense pressure on schools to complete the academic curriculum on schedule before the end of school term. Some schools cited the loss of these days as a main reason for not participating in the study. Many of these schools expressed an interest in having data collected in their school in the subsequent academic year, however, the MWS aimed to have school data collected by October 2011 and it was not possible to facilitate all these requests. Additional reasons for non-participation included 3) schools participating in other research, 4) the survey not being provided in Irish, 5) the survey length, and 6) the perception that the questions asked in the MWS were invasive- this issue was particularly associated with single-sex male schools.

In the Field

Engagement with the survey and survey completion was very high. A small minority of participants (<2%) did not take the survey seriously, therefore, their responses were deleted from the database. Feedback from students was sought during data collection and, overall, students responded positively about the MWS. Many students reported that the survey was thought provoking, enjoyable and interesting. With regard to two

open-ended questions, over 73% of the participants offered a personal definition of

bullying, and 17% provided a comment at the end of the survey.

Benefits of Web-based Surveys

Only 21% (n=15) of schools opted for web-based data collection. The main reasons

schools did not opt for this format included their unfamiliarity with completing web-

based research, the size of their IT facilities, and their limited broadband speed to

facilitate the web-based survey. Several advantages of web-based surveys have been

noted. [42,43] Online surveys can be administered in a time-efficient manner, minimizing

the period it takes to get a survey into the field and for data collection. [42] Other

benefits include their relatively low cost, time efficiency and flexibility.

The paper-based survey was costly due to the survey design and production, training

of researchers in the field, postage and data entry and data cleaning costs. The web-

based survey was flexible and was tailored to participants' demographics (e.g., school

year) and responses so that participants were only asked questions relevant to them

through the use of skip logic. For example, if participants reported they 'never' drank

alcohol, the software program directed them to the next section of the survey. In

addition, the web-based survey length was reduced for respondents by tailoring the

survey to their answers. Post data collection, paper-based surveys must be kept for a

defined period of time in line with ethical approval. In a large-scaled study, this

generates significant paper requiring storage. This necessity for paper storage is

eliminated when web-based data collection is used. Another key advantage of the

web-based survey was students' familiarity with the online environment, given the

pervasiveness of the Internet in adolescents' lives. [44]

Managing Consent Forms

To avoid the need to store signed guardian and student assent and consent forms, all

forms were scanned and electronically stored in PDF format securely with password

protection. On completion of this task, both consent and assent forms were shredded,

avoiding the need for storing large volumes of paper in secure physical filing systems,

thus reducing costs and resources.

Data-Processing Procedures

On completion of data collection, all the data for the web-based surveys were stored

instantaneously in the Qualtrics database. Researchers were required to complete data

entry of paper-based survey. Each researcher received training and adhered to a data

entry protocol. Approximately, 10% of paper-based surveys were randomly checked

for data errors. Data errors were minimal as all data was entered via the Qualtrics

system. The MWS data for the web and paper based surveys were downloaded from

Qualtrics into Microsoft Excel files and merged together. This file was then converted

to a PASW file and data cleaning and editing were performed with PASW Statistics

Version 18.0.

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Dissemination of MWS Findings

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Public Dissemination

A report on the My World Survey National Study of Youth Mental Health in Ireland

has recently been published. [45] With regard to the internet, Headstrong maintains an

Internet site that includes information regarding the MWS

(http://www.headstrong.ie/content/myworld). The Internet site includes Portable

Document Files (PDFs) of the MWS national report, executive summary of report,

and key themes from the MWS. In addition, a series of reports on key aspects of

mental health from the MWS data will be developed. These reports will focus on

topics such as help-seeking, alcohol behaviour and bullying. Specific reports and

feedback will be provided to schools who took part in the MWS. A minimum of ≥80

respondents in each school is required to provide schools with a report of results

specific to their school so as to protect anonymity of respondents.

Government

A White Paper calling on the government to develop a youth mental health strategy

following the publication of the My World Survey will be forthcoming. A White

Paper is an authoritative report that can be used to educate readers and help people

make decisions, and may be a consultation as to the details of new legislation. [46]

Academic Community

A series of publications in peer-reviewed journals will be written from the MWS data

following on from key reports.

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Strengths and Limitations of MWS

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The MWS has both strengths and weaknesses. The MWS-SL includes the use of

standardized reliable and valid measures that have been used internationally to assess

a range of risk and protective factors of youth mental health. The survey is balanced

for both positive and negative factors, taking a more positive approach to youth

mental health. The MWS-SL data provides a good representation of young people

who attend second level education in Ireland.

One of the main weaknesses of the MWS is that all data are self-reported, and

the extent of underreporting or overreporting of behaviours cannot be determined.

However, the self-report measures in the MWS-SL have been shown to have good

reliability and validity, demonstrating that the data are of acceptable quality. Second,

the MWS-SL study required active parental consent for those who are under 18 years,

which may introduce a sampling bias into our study. Third, the study is cross-

sectional in nature, making it difficult to draw causal inferences about the MWS findings. Fourth, certain explicit topics such as questions on self-harm and suicidal ideation were omitted from the MWS-SL at the recommendation of the ethics board. However, it is important to have an understanding of these issues among younger adolescents, particularly as Irish studies have reported a high frequency of these behaviours among young people. [47]

Conclusions

There are a number of key learning points from the MWS-SL study methodology. The study was conducted in a rigorous manner and an extensive literature review was conducted to ensure careful selection of reliable and valid measures for the MWS-SL instrument. The importance of pilot testing was evident and findings from the pilot showed that the MWS-SL was easy to administer, sensitive and had good psychometric properties. This research has highlighted the importance of investing in relationship-building efforts with key stakeholders to obtain buy-in for the study from schools and principals. The research showed that training researchers to adhere to standardized protocols was critical to ensure consistency and quality of data collected across numerous schools. This research also demonstrated the benefits of web surveys in school settings in terms of cost, time efficiency and flexibility. It is recommended that future large scaled school surveys utilize online surveys as schools advance their IT facilities and technologies.

Acknowledgements

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Table 1. Selected risk and protective factors of adolescent mental health in MWS

Domain	Risk factors	Protective factors
Biological	Parental mental health problems	
	Age/Gender	Age/Gender
	Substance abuse	
Psychological	Stress	Self-esteem
	Anxiety	Optimism
	Depression	Resilience
	Angry a lot	Copes well with problems
	High level of avoidant coping	High level of support-focused coping
	Learning disorders/difficulties	High level of problem-solving
	Financial stress	
Social		
a) Family	Low socioeconomic status	Enjoys family life
	Family status/structure	Family support
	Parental criticism	Parental approval
	Death of a family member	
b) Friends		Friend support
		Peer connectedness
		Satisfaction with friends/romantic partner
c) School	Bullying	Teacher connectedness
	Academic failure	School connectedness
d) Community	Trouble with the gardaí	Neighbourhood safety
	Discrimination/Racism	Support from significant others

Table 2. Characteristics of sampled post-primary schools

DEIS and non-DEIS schools n (%)	Gender classification of schools n (%)	HSE areas n (%)	School type n (%)
n=53 (74%) of schools were classified as non-DEIS	Mixed gender n=50 (70%)	Dublin-Mid Leinster HSE area n=17 (24% of schools in sample)	Secondary n=39 (54%)
n=19 (26%) were classified as DEIS	Single-sex males n=12 (16%)	Dublin North East HSE area n=10 (14%)	Vocational n=23 (32%)
	Single-sex females n=10 (14%)	Western HSE area n=26 (36%) Southern HSE area n=19 (26%)	Community n=10 (14%)

Table 3. Demographic and personal well-being questions included in MWS-SL version

Age	Mother/father employment
Gender	Are you adopted?
Ethnicity	Irish or foreign adoptee, how old when adopted, country adopted from
School year	Number of children in family
Who they live with	Marital status of parents
Where they live	A parent has experienced mental health problems
Mother/father education	Adolescent has experienced mental health problems
Enjoyment of family life	Academic position
Cope well with problems	Trouble with the Gardaí
Three ways that help you cope when things are tough	Top three stressors in your life
Body dissatisfaction	

Table 4. Reliabilities of scales in the adolescent MWS-SL version

Scales in MWS-SL	Number of items in scale	Cronbach's alpha
POSITIVE DOMAINS +++++		
Rosenberg Self-Esteem Scale (RSE)	10	.89
Coping Strategy Indicator (CSI-15)	15	.74
CSI-Planned Coping	5	.84
CSI-Avoidance Coping	6	.79
CSI-Support-Focused Coping	4	.91
Life Orientation Test – Revised (LOT-R)	6	.74
Formal Help-Seeking Scale	2	.74
Informal Help-Seeking Scale	8	.73
Resilience Scale for Adolescents (READ)	28	.91
READ-Personal Competence	8	.77
READ-Social Competence	5	.74
READ-Structured Style	4	.58
READ-Social Resources	5	.76
READ-Family Cohesion	6	.86
Brief Multidimensional Students' Life Satisfaction Scale	6	.86
MSPSS-Multidimensional Scale of Perceived Social Support	12	.94
MSPSS-Family	4	.90
MSPSS-Friend	4	.93
MSPSS-Significant Other	4	.92
NRI-RQV-Network of Relationships Inventory-Relationship Qualities Version		
NRI-RQV-Mother Approval	3	.82
NRI-RQV-Father Approval	3	.84
NRI-RQV-Best Friend Satisfaction	3	.80
NRI-RQV-Romantic Partner Satisfaction	3	.84
Hemingway Measure of Adolescent Connectedness (MAC)		
MAC-Peer Connectedness	6	.71
MAC-Teacher Connectedness	6	.83
MAC-School Connectedness	6	.82
NEGATIVE DOMAINS -----		
DASS-21		
DASS-Depression	7	.88
DASS-Anxiety	7	.80
DASS-Stress	7	.83
AUDIT-Alcohol Use Disorders Identification Test	10	.82
CRAFFT Substance Misuse	6	.74
Behavioural Adjustment Scale (BAS)	13	.86
NRI-RQV-Network of Relationships Inventory-Relationship Qualities Version		
NRI-RQV-Mother Criticism	3	.84
NRI-RQV-Father Criticism	3	.85
NRI-RQV-Best Friend Criticism	3	.80
NRI-RQV-Romantic Partner Criticism	3	.79