

アンケートに関するQ&A

Q. アンケートの目的は？結果はどのように使われますか？

- A. このアンケートは、中学1年生の子どもたちにインターネットの利用、その他生活習慣に関わる幅広いことを質問することで、ネット社会における子どもの健康問題や社会的問題の実態を明らかにすることを目的としています。
- 調査結果は、厚生労働科学研究報告書として調査結果の概要を公表したのちに、我が国における未成年者のネット依存対策の重要な基礎資料として、健康や医療に関する様々な取り組みに広く活かされます。

Q. なぜ、中学1年生を対象にするのですか？

- A. 便利なインターネットも、ネット依存に陥ると健康や生活に思わしくない影響がでできます。特に、自律が未熟な中高生はネット依存に陥りやすく、成人以上に深刻な問題になっています。
- そのため、中学1年生を対象に5年間の縦断調査を行うことにより、どのような要因によってネット依存が出現するのかをより明らかにし、子どもの健全な育成に役立てていきたいと考えているからです。

Q. 縦断調査とは何ですか？

- A. 継続調査とは、5年間にわたり、同様な内容で同じ対象者に継続して行う調査です。
- 私ども厚生労働省の研究班では、ネット依存が出現する要因についてより深く分析するために、今回のアンケートにご協力頂いた方に継続して調査を行いたいと考えております。同封の縦断調査説明文書をお読みになり、縦断調査に協力しても良いとご判断頂けた場合は、アンケート用紙と一緒に縦断調査参加同意書（水色の用紙）をご返送頂けますと幸いです。
- （同意書をご返送いただかなかった方に、今後私どもからご連絡をさしあげることとはございません。）

Q. 個人情報を守られますか？

- A. アンケートは無記名で行い、ご回答はすべてコンピュータにより統計的に処理しますので、個人のお名前やお答えの内容が公表されることは、一切ございません。また、個人の回答結果が学校を含めた第三者に知らされることはありません。
- 調査の実施は、60年にわたり世論調査などを手がけております一般社団法人 中央調査社に委託していますが、個人情報は厳重に保管し、調査終了後、完全に破棄するよう厳格に義務付けています。



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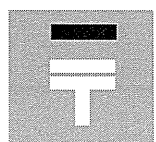
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Q. 回答方法は？どうやって提出するのですか？

- A. このアンケートは、保護者の方にご同意を頂いた上で、中学1年生のお子さんにご回答をお願いします。
1. このお願い状をお読みいただいた上でアンケートへご協力いただけるとご判断頂けた場合は、アンケート用紙表紙の「保護者同意欄」の「アンケートへの協力に同意します」の個所に保護者の方のご自筆で○をお願いします。
 2. 中学1年生のお子さんに、アンケートの用紙へご記入をお願いします。
 3. ご回答いただきましたアンケート用紙は、同封の返送用封筒に切手を貼らずに入れ、郵便ポストへご投かんください。

※学校には提出しないでください。



「生活習慣についてのアンケート」 縦断調査について

— 縦断調査説明文書 —



この冊子は、5年間にわたって計画している「生活習慣に関する縦断調査」についての説明文書です。第1回目は来年の2月頃を予定しています。お子さんが縦断調査に参加してもよいかどうかを判断するためにお読みください。

※本縦断調査は、久里浜医療センター倫理審査委員会の承認を得て実施されます。

1. 縦断調査の目的

縦断調査は、厚生労働省の助成を受けた研究班（研究分担者 独立行政法人 国立病院機構 久里浜医療センター 樋口進 院長）が企画を行い、国の研究班として未成年者のインターネット利用の実態を明らかにすることを目的に行われます。

5年間にわたり、同じ対象者に継続して調査を行うことにより、インターネットの利用が日常生活にどのような影響を及ぼすかをより明らかにすることを主要な目的としています。

また、研究結果は、子どもの健全な育成のための基礎資料として、健康や医療に関する様々な取り組みに広く活かされます。

2. 縦断調査の内容

調査では、インターネットの利用状況、その他生活習慣に関わる幅広いことを質問します。回答にかかる時間は、おおよそ20分から30分程度です。

お子さんの回答内容は、調査倫理上、保護者の方にも開示できません。

（主な調査内容）

- ・パソコンやスマートフォンの利用状況
- ・生活習慣や健康状態について など

3. 縦断調査の調査対象

調査対象は、今回のアンケート調査にご協力頂いた方のうち、縦断調査への参加にご同意頂いた方です。具体的には、同封の「縦断調査参加同意書」に保護者の方とお子さんの両方にご記名頂いた上でご返送頂いた方に、来年の2月頃に、縦断調査のご依頼をさせていただきます。

4. 縦断調査の予定期間と謝礼

縦断調査は2016年2月頃の第1回調査から、2020年まで年に1回、合計5回の調査を予定しています。

調査にご協力いただいた方には、謝礼として、1回の調査ごとに1000円相当のクオカードを進呈します。

5. 第1回縦断調査の回答方法

2016年2月頃に中央調査社の調査員がご自宅に調査のお願いに訪問します。
なお、調査に回答するのはお子さん本人のみで、回答方法は2種類あり、どちらか
お選びいただけます。

1) 紙アンケートでの回答

調査員が持参したアンケート用紙に回答を記入し、後日訪問した調査員に提出
する方法です。

2) インターネットでの回答

WEBサイトにアクセスいただき、回答を入力する方法です。パソコンか
スマートフォンのどちらかで回答いただけます。

6. 個人情報の保護

回答はすべてコンピュータにより統計的に処理しますので、個人の名前や答えの内
容が公表されることは、一切ありません。また、縦断調査の回答は、学校などの第
三者に回答が知らされることも一切ありません。

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管し、調査期間終了後、完全に破棄します。なお、個人情報は、厚生労働省研究班
も含め、中央調査社以外には一切開示されません。

7. 調査実施機関について

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本調査に関するお問い合わせ先

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（本冊子は、お手元で保管してください。）

（縦断調査参加同意書の見本）

生活習慣についてのアンケート

縦断調査 参加同意書

厚生労働省 未成年者のネット使用と生活習慣調査研究グループ

調査代表 独立行政法人 国立病院機構 久里浜医療センター 樋口進 院長 殿

私は、「生活習慣についてアンケート」の縦断調査について、説明文書を読み、その趣旨・内容を理解しました。

その上で、来年の第1回調査から2020年まで、合計5回の調査に参加することに同意します。

① 保護者の方がご記入ください 同意日： _____ 年 月 日

住所： 〒 _____

保護者氏名（署名）： _____（続柄 _____）

② お子さんがご記入ください 同意日： _____ 年 月 日

子ども氏名（署名）： _____

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生活習慣についてのアンケート

縦断調査 参加同意書

厚生労働省 未成年者のネット使用と生活習慣調査研究グループ

調査代表 独立行政法人 国立病院機構 久里浜医療センター 樋口進 院長 殿

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① 保護者の方がご記入ください 同意日： _____ 年 月 日

住所：〒 _____ - _____

保護者氏名（署名）： _____（続柄 _____）

② お子さんがご記入ください 同意日： _____ 年 月 日

子ども氏名（署名）： _____

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ご返送をお願いします。

横浜市立中学校 第1学年 保護者 様

横浜市教育委員会事務局
人権教育・児童生徒課
課 長 山川 伸二

「生活習慣についてのアンケート調査」に関するご協力をお願い

日頃より、本市並びに学校の教育に対するご理解とご協力をいただきありがとうございます。

さて、「厚生労働省 未成年者のネット使用と生活習慣調査研究グループ」より、未成年者の生活習慣の実態を把握し、ネット利用の状況を明らかにするために、横浜市の平成26年度中学1年生を対象にしたアンケート調査への協力依頼がありました。

この調査が子どもの健全育成を支える国の施策づくりの貴重な基礎資料となることをご理解いただき、アンケート調査へのご協力をお願いいたします。

つきましては、生徒本人と保護者の方に、同封されている資料の内容をよく確認していただきたいと存じます。今回のアンケート調査への回答につきましては、本人と保護者の同意書が必要となっており、同意していただける場合のみ回答していただくことになっております。あくまでもアンケート調査へのご協力は任意となります。

また、今回のアンケート調査にご協力いただいた方で、さらに同意書に署名していただいた場合には、今後5年間にわたる縦断調査（現在中学1年生の生徒が継続して、各年に一度アンケートに回答する追跡調査）にご協力いただくこととなります。

なお、アンケート調査に関するお問い合わせ先は、資料にもありますように、学校ではなく調査実施委託機関の「中央調査社」となっておりますのでご承知おきください。

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[担当]

横浜市教育委員会事務局

人権教育・児童生徒課 窪田

TEL 671-3699

**Meeting on Public Health Implications of Behavioural Addictions
Associated with Excessive Use of the Internet, Computers, Smart
Phones and Similar Electronic Devices**

MEETING REPORT

Main Meeting Hall, Foundation For Promotion Of Cancer Research

National Cancer Research Centre, Tokyo, Japan

27-29 August 2014



Management of Substance Abuse, Department of Mental Health and Substance Abuse, World Health Organization, 2015

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Table of Contents

Acknowledgements	4
Report overview	5
Background	5
Meeting objectives	6
Meeting format	7
Review	8
1. Scope	8
2. Epidemiology.....	10
3. Comorbidity	13
4. Phenomenology and clinical course.....	13
5. Clinical descriptions and diagnostic guidelines	15
6. Classification	17
7. Management	18
8. Public policy and health system responses.....	19
Conclusions	22
Appendix A: Meeting programme	26
Appendix B: List of participants	28
Appendix C: Background papers	32

Acknowledgements

The meeting was organized within the framework of collaboration between WHO headquarters' Department of Mental Health and Substance Abuse (Management of Substance Abuse unit), the WHO Regional Office for the Western Pacific (WPRO), the International Society for Biomedical Research on Alcoholism (ISBRA) and the National Hospital Organization Kurihama Medical and Addiction Centre (Japan), WHO Collaborating Centre for Research and Training on Alcohol-related Problems. WHO gratefully acknowledges the financial support for organizing the meeting provided by the Kurihama Medical and Addiction Centre within the framework of collaborative agreement with WHO.

Preparation of the meeting and this report in WHO was coordinated by Dr Vladimir Poznyak, Management of Substance Abuse, Department of Mental Health and Substance Abuse, in collaboration with Dr Xiangdong Wang, WHO Regional Office for the Western Pacific, and Dr Susumu Higuchi, the National Hospital Organization Kurihama Medical and Addiction Centre (Japan).

This report would not be possible without contributions from all participants of the meeting listed in Appendix B.

For drafting, elaboration and finalization of this report we acknowledge the following: Dr Linda Laatikainen and Dr Kanna Sugiura.

Administrative support in preparation of the meeting and production of the report was provided by Divina Maramba.

Report overview

This report provides a summary of the three-day meeting held in Tokyo on 27-29 August 2014. As described in the **Background** and **Meeting objectives** sections of this report, the meeting was held in order to discuss public health implications of excessive use of the Internet, computers, smart phones and other electronic devices in the context of "behavioural addictions" associated with such excessive use. The term "behavioural addictions" is not part of the official nomenclature used by the World Health Organization (WHO) and, as a diagnostic group, was not included in the 10th International Classification of Diseases (ICD-10). However, the term "behavioural addictions" has become increasingly used in the scientific literature and in preparation of the meeting. Hence, the current report uses "behavioural addictions" as the best available term to describe a range of conditions under consideration at the meeting, without prejudice to any future decision regarding its place in WHO nomenclature.

The section on **Meeting format** introduces the eight main topics discussed at the meeting (scope, epidemiology, comorbidity, phenomenology, diagnosis, classification and management of the disorders as well as public health policy and health system responses). It also gives a short overview of the meeting programme and participants, which are listed in full in **Appendix A** and **Appendix B**.

The section titled **Review** focuses on the expert inputs made at the meeting. However, this section is not a detailed summary of each presentation. Background papers related to this section are provided in full in **Appendix C**.

Sections titled **Conclusions** and **Next steps** provide an overview of the future direction. In particular, the meeting participants recommended three concrete program activities for the WHO in this area. Some of these activities have already been started at the time of writing this report.

Background

The use of the Internet, computers, mobile phones, smart phones and other electronic devices has dramatically increased over the last decades in all parts of the world. This may promote public health with respect to provision of information, facilitation of pro-social activities and other factors. However, this increase is also associated with documented cases of excessive use that warrant consideration.

Given that the patterns and extent of use vary widely, there is continuing debate on how best to define such excessive use from a public health perspective. Currently, behavioral addictions are usually characterized by an irresistible urge, impulse or drive to repeatedly engage in an activity (non-substance use) and an inability to reduce or cease this behaviour (loss of control) despite serious negative consequences to the person's physical, mental, social and/or financial well-being.

behaviours associated with gambling, viewing pornography, video/DVD gaming, internet-based single-player and multi-player gaming, excessive use of various social media, smart phone applications (apps) and similar electronic devices.

The scope of this problem has reached the magnitude of a significant public health concern in some jurisdictions. Others are yet to experience this concern as the use of the Internet and other electronic devices increases further globally. Hence, there is a need to identify feasible and successful public policy and health services responses.

With this in view, the meeting in Tokyo on 27-29 August 2014 was held in order to review available information related to health conditions associated with excessive use of the Internet, computers, smart phones and other electronic devices, including conditions considered as "behavioural addictions".

Meeting objectives □

The meeting had the following five objectives:

1. Review the available evidence on epidemiology, nature, phenomenology, outcomes and public health implications of health conditions associated with excessive use of the Internet, computers, smart phones and similar electronic devices;
2. Review clinical descriptions and diagnostic guidelines of behavioural addictions associated with excessive use of the Internet and computers in the current classifications systems of mental and behavioural disorders;
3. Review the available public policy and health system responses from different parts of the world including their feasibility, effectiveness, costs and public health benefits;
4. Develop suggestions for WHO's further program activities in this area.

Meeting format

The meeting was conducted over three days in Tokyo, Japan. The meeting programme included 13 plenary sessions structured around the following eight discussion topics (see Appendix A for full programme):

1. **Scope** of health conditions under consideration. Behavioural addictions associated with excessive use of the Internet, computers, smart phones and similar electronic devices. Boundaries with normality. Scope of health and social consequences due to excessive use of the Internet, computers and similar electronic devices.

2. **Epidemiology** of disorders associated with excessive use of the Internet, computers, smart phones and similar electronic devices. Measurement challenges. Available epidemiological data.
3. **Comorbid conditions**. Psychosocial factors influencing development and outcomes of the disorders under consideration.
4. **Phenomenology and natural course** of disorders associated with excessive use of the Internet, computers, smart phones and similar electronic devices.
5. **Clinical descriptions and diagnostic guidelines** of disorders associated with excessive use of the Internet, computers, smart phones and similar electronic devices. Diagnostic instruments.
6. Disorders associated with excessive use of the Internet, computers, smart phones and similar electronic devices in the **classifications** of mental and behavioural disorders.
7. Identification and **management** of disorders and health conditions associated with excessive use of the Internet, computers, smart phones and similar electronic devices.
8. **Public policy and health system responses**. Feasibility, effectiveness, costs and public health benefits. Case studies from represented countries.

Note: for the purposes of readability, the titles of the above meeting sessions have been simplified (based on the text shown in bold) in the main text of this meeting report.

The meeting was attended by 21 participants and 31 observers (see Appendix B for a full list of participants). Dr Susumu Higuchi (Director of the National Hospital Organization Kurihama Medical and Addiction Centre) was the chair of the meeting.

Review

The following section provides an overview of the meeting discussions on each of the eight discussion topics, i.e. scope, epidemiology, comorbidity, phenomenology and clinical course, clinical description and diagnostic guidelines, classification and management as well as public policy and health system responses. Notably, the following section is not a detailed summary of each presentation or of the topic as a whole. Further details on these topics can be found in the background papers provided in Appendix C.

1. Scope

Since introduction of the “World Wide Web” in 1990 the availability and use of the Internet and digital technology has considerably increased throughout the world. By now the Internet has become integrated into the occupational, social and recreational parts of most people’s lives. Reported benefits of the Internet and digital technology are vast, including “doing more in less time” and hence having more time for family and friends. Many benefits may directly promote public health, e.g., provision of information and facilitation of pro-social activities.

However, the rising popularity and use of the Internet and electronic devices has also seen an increasing clinical, research and media focus on health problems associated with excessive use. As a result there is an ongoing debate about how best to view the use of Internet and electronic devices from a public health perspective. Such public health debate concentrates on the negative health conditions associated with excessive use of the Internet and modern technologies. Given that the concept is fairly new, the scope of ‘health conditions’ associated with ‘excessive use’ of ‘modern technologies’ is yet to be defined.

a) Health conditions under consideration

Currently, the concept of “behavioural addiction associated with excessive use of the Internet, computers, smartphones and similar electronic devices” is typically based on key features of substance use disorders. Hence, one of the many descriptions of behavioural addictions is the following: an irresistible urge, impulse or drive to repeatedly engage in an action and an inability to reduce or cease this behaviour (loss of control) despite serious negative consequences to the person’s physical, mental, social and/or financial well-being.

In the future, the concept needs to be more carefully defined, including potential diagnostic categories and their sub-groups. One way to define the concept in more detail could be to consider three different dimensions: exposure (i.e. duration, intensity), driving force of behaviours (i.e. dependence), and consequences. The latter of these, i.e. physical, mental, social (and financial) consequences are described in more detail below. Notably, social functioning is normally not part of WHO definitions of dependence or harmful use, but among “internet use disorders” this is one of the key diagnostic features.

b) Boundaries with normality

Boundaries between normal and abnormal (or excessive and pathological) use is challenging to define, because behavioural patterns and the extent of use vary widely between individuals. Generational effects and social norms are also relevant in defining boundaries with normality for rapidly developing technologies. Moreover, excessive use of the Internet and other modern technologies may be a cultural phenomenon for which defining boundaries with normality is culture-, time- and occupation-bound.

It is also under debate, whether “excessive use” of the internet and electronic devices should itself be the focus of a new behavioural disorder (with a single clinical representation) or whether the Internet and modern technologies merely serve as a vector for a wide range of behaviours, e.g., socializing, gaming, shopping, getting information, pornography-viewing, that can potentially be harmful. In any case, the framework of hazardous use, harmful use and dependence could be considered in the context of excessive use of the Internet and electronic devices.

c) Spectrum of modern technologies

Harmful use of the Internet and modern technologies can relate to a wide range of products and services. These include older types of electronic screen products such as televisions and videos, as well as newer electronic screen products such as computers, smartphones, video games and e-books. More research is needed to identify whether different technologies link to different subgroups of the behavioural disorder.

In conclusion, absence of universal definition of scope for this relatively recent phenomenon, including lack of universal terminology and diagnostic criteria, hampers international communication and research in this field.

2. Epidemiology

The main objective of this session was to review the available evidence on epidemiology of health conditions associated with excessive use of the Internet, computers, smart phones and similar electronic devices. This section consists of selected examples of currently available data (from background papers included in Appendix C) and an overview of the challenges involved with availability and quality of epidemiology data in this area.

a) Current data

The most active adopters of the Internet and modern technologies have been adolescents and young adults, reflecting the fact that they have grown up in an environment with a well-developed Internet. This has presumably contributed to higher prevalence estimates for internet use disorders among adolescents and young adults. In Korea internet addiction has been identified as the largest health problem experienced among kids (Ministry of Science, ICT and Future Planning, 2012 Survey

of internet use, 2013). In China the highest rate of internet use related problems was 15.6% in the ages of 18-23 (2009 Report on Internet Addiction in Teenagers). Also, in Switzerland problematic internet use (defined as Compulsive Internet Use Scale results of 28 points or higher) reached 6.5% among the 15-19 year age group, but only 0.9% among the general population (see Kuenig et al. in Appendix C). However, use of the Internet and modern technologies is rising also among older populations and hence general population studies are becoming increasingly important.

Prevalence estimates, presented not only vary by age, but also by within and between geographies. For example, the prevalence of problematic internet use within Europe ranges from 1% in Norway to 18% in the United Kingdom. In contrast, the range in the United States of America is reported as 0-26% and 7-23% in Hong Kong (Kaye and Farrell, see Appendix C). While these data provide an indication of prevalence of internet related disorders, these values can be questioned due to methodological challenges and inconsistencies described below. In fact, prevalence estimates vary as widely as 0-90%, depending on the country, age group and epidemiological method in question (see e.g., Jiménez-Murcia et al., Kaye and Farrell, Achab et al. in Appendix C). Also, a disproportionate amount of the available epidemiological data on internet use disorders is collected from Asia and Europe. According to Achab et al. (see Appendix C) the vast majority of studies on cell phone addiction are also from Asia and Europe.

In addition to research on internet use disorders and cell phone addiction, social network site addiction has also been studied a little. Hereby, the trends follow internet and cell phone-related data trends. For example, social network site addiction data suggests significantly higher prevalence in Chinese college (34%) than in Nigerian (1,6%) or Peruvian (8,6%) university students (Achab et al, see Appendix C).

Whether there are differences between genders, like in substance use disorders, appears to be a matter of debate. However, data from the Ontario Student Drug Use and Health Survey (OSDUHS; n=5478; grades 7-12) 2013 suggested that the percentage of males responding "Yes" to the nine problem video game playing (PVP) scale items was significantly higher than the percentage of females saying "Yes" for all nine categories. Data from China also suggested higher internet addiction rates in males (16.9%) than in females (11.3%).

b) Availability of data

There are four key limitations related to the availability of epidemiological data on internet use disorders:

- High availability and use of the Internet and electronic devices makes it convenient to collect data. This can result in elevated prevalence estimates if the type and quality of risk is not sufficiently evaluated (see related comments on measurement challenges below).
- Few studies from general populations means that epidemiological estimates from different countries often reflect a specific sub-population.

- Absence of longitudinal studies makes it challenging to establish causal relationships, co-relationships and explain natural courses.
- Limited qualitative or cross-cultural studies makes it is hard to explain the phenomenology.

While lagging decades behind research on substance use disorders, internet gambling and internet gaming are the most studied from so called behavioural addictions. Hence, research on internet gambling and internet gaming may be a good starting point for future research on internet use disorders.

c) Measurement challenges

Where data is available, it varies widely in type and quality. Three common measurement challenges are listed below:

- Most epidemiological studies use questionnaires that are not specific enough to identify true prevalence. In the background paper of Achab et al. (see Appendix C) 21 assessment tools are listed for excessive use of the Internet. These include Chen's and Young's Internet Addiction Scales to measure the presence and severity of internet addiction, respectively. These tools are screening instruments but not diagnostic instruments (as there is no international consensus on diagnostic criteria and scope of conditions under conditions). Hence, the used questionnaires are not specific enough to differentiate between screening prevalence and true prevalence. Also, they typically lack sufficient validation at national and international scale. Hence, epidemiological research in this field requires standardized quality and quantity instruments that can define whether a given level and nature of usage has pathological features or the key features of a disorder or a disease (such as the WHO diagnostic instruments "Composite International Diagnostic Interview" (CIDI) or "Schedules for Clinical Assessment in Neuropsychiatry" (SCAN)).
- There is significant heterogeneity in the definition and naming of conditions associated with excessive use of the Internet and electronic devices. Also, their meanings vary depending on the context. This is creating significant noise and confusion among researchers in this field.
- Many surveys measure screen time, which is technically hard to measure and may not indicate true usage (e.g., due to sleep time settings and multi-screen usage). Moreover, screen time can correlate more clearly with physical than psychological consequences or addiction (see discussion on clinical presentation for suggested list of psychological, physical and social health consequences). Also, screen time may be habitual, education- or work-related, and indicate a cultural phenomenon. Hence, qualitative and cultural research is needed to complement quantitative metrics in order to accurately capture what people do during "screen time".

The above examples clarify that better scales, surveys, nomenclature and diagnostic guidelines are needed to improve the quality of data in this field of research.

In conclusion, epidemiological research in this field is faced with limited and often unreliable data. Hence, there is an urgent need to generate novel, international-level research, e.g., by designing standard questions/scales/instruments to measure prevalence, quality and quantity of the behaviours that may represent disorder(s). Such future research with comprehensive assessment in the domains of gaming/internet use behaviour, health status and psychosocial functioning may facilitate the development of the assessment and eventually diagnostic instruments for a broad range of activities associated with gaming or internet use.

3. Comorbidity

Data presented at the meeting suggest that individuals with excessive use of the Internet have comorbid psychopathology. However, causal relationships have not been established due to lack of longitudinal data. It seems that attention deficit hyperactivity disorder (ADHD) and particularly major depression are the most common comorbid conditions (see e.g., Kaye and Farrell in Appendix C). In contrast, associations with anxiety, social phobia, obsessive-compulsive disorder and hostility/aggression appear to be significantly weaker. Comorbidity with other health conditions (e.g., substance use disorders, suicidal ideation, schizophrenia and insomnia) has been investigated to a lesser extent.

In addition to comorbidity with psychiatric conditions, excessive use of the Internet and electronic devices typically presents itself together with other physical and psychosocial problems, e.g., back pain, social withdrawal, sleep deprivation, low self-esteem. Hereby the direction of causality and link between the disorders is unclear.

Regardless of the direction of causality, however, comorbidity is likely to complicate the screening, diagnosis and management of internet use disorders. Hence, there is a need for more cohort prospective studies and longitudinal data.

4. Phenomenology and clinical course

"Behavioural addictions associated with excessive use of the Internet, computers, smartphones and similar electronic devices" is an umbrella term that covers a broad range of conditions which need to be defined and named in a more succinct manner in the future. Notably, the term "behavioural addictions" is not part of the official nomenclature used by the WHO and was used at the meeting and in this report only for convenience. Other commonly used terms for conditions related to excessive use of Internet and electronic devices with signs and symptoms of dependence syndrome and related conditions include "internet addiction", "internet addiction disorder (IAD)", "internet use disorder", "internet gaming disorder (IGD)", "internet gambling disorder", "problematic internet use (PIU)" and "compulsive internet use (CIU)".

Of these concepts, "internet gambling disorder" and "internet gaming disorder" are better described concepts than other so called "behavioural addictions". However, several meeting participants clarified that disorders demanding treatment in coming years are not limited to gambling and gaming disorders. On the other hand, phenomenological research to date fails to provide clear boundaries between health conditions associated with excessive use of the Internet and the use of e.g., smartphones. Hence, the meeting session on phenomenology and natural course focused on conditions grouped under the term "internet use disorders" with acknowledgement of heterogeneity of conditions grouped under this term and, therefore, challenges in describing their phenomenology and natural history.

The phenomenology and clinical course of internet use disorders is not well described and understood, with most of the documented evidence being in the context of internet gaming disorder or following that of impulse control or substance use disorders. Hence, detailed descriptive interviews with affected individuals (with or without treatment) and their significant others across cultures are needed to better understand the phenomenology and totality of internet use disorders. Even after the taxonomy, phenomenology and natural course of internet use disorders is defined, prevention and treatment interventions need to be developed based on practical experiences and research findings (see discussions below on management and health system responses).

Internet use disorders are reported in children, adolescents and adults, but the time of onset is unclear (estimates vary from 6 months to over 10 years from initial use of the Internet). Among motives behind excessive use of the Internet some are believed to relate to states of detachment or dissociation (e.g., intense intimacy, disinhibition, loss of boundaries and timelessness). Unique motives behind internet gaming are related to sense of achievement, status and membership as well as specific experiences of immersion into the game.

These motives are believed to drive adolescents' or young adults' failure to resist the urge, impulse, craving, drive or temptation to use excessively the Internet – even when it is hazardous or harmful to the person or to others. This leads to a change in saliency hierarchy toward repetitive engagement in (typically) one of the following internet activities:

- Excessive gaming
- Internet-based gambling
- Sexual internet-based preoccupations (e.g. viewing pornography)
- Socialising or social networking (e.g. emailing, messaging, frequenting "chat" rooms).

The repetitive engagement in any of the above activities ultimately interferes with functioning in multiple domains through excessive use, withdrawal, tolerance and

other negative repercussions (see clinical presentation-discussion for details). Some studies suggest that internet use disorders are chronic, relapsing conditions that are resistant to treatment. High relapse rates may, in part, be due to high accessibility of the Internet and the need to use it in daily life, particularly in academic and occupational settings.

In summary, internet use disorders involve a persistent pattern of maladaptive behaviour, which is characterized by either an irresistible preoccupation with, or excessive use of, the Internet for longer periods of time than planned, and leads to clinically significant distress and/or impaired functioning (see Kaye and Farrell in Appendix C for further information on the topic).

5. Clinical descriptions and diagnostic guidelines

Elaboration of clinical descriptions, diagnostic guidelines and boundaries with “normality” for internet use disorders and related health conditions will be important for clarifying the scope of the problem, defining clinical utility of diagnostic categories and developing effective interventions as well as for building up the evidence base for future developments. Hence, one of the five meeting objectives was to ‘review clinical descriptions and diagnostic guidelines of behavioural addictions associated with excessive use of the Internet and computers in the current classifications systems of mental and behavioural disorders’. While a review of these topics was possible, meeting participants concluded that results of the review do not provide sufficient evidence and information for making suggestions on diagnostic guidelines, and further work is required to address taxonomy of conditions under consideration, their phenomenology and available evidence of their nature, clinical course and treatment responses.

a) Clinical presentations

Typical components of what is described as “internet addiction” are the following:

- Saliency/Excessive use - often associated with a loss of the sense of time (resulting in e.g., use of the Internet for 16 hours or more per day) and/or a neglect of basic needs (e.g. food, sleep)
- Withdrawal - including feelings of anger, tension, anxiety and/or depression, when the Internet/computers are inaccessible
- Tolerance - including the need for better computer equipment, more software or more hours of use
- Negative repercussions/Conflict - including self-imposed social isolation and disintegration, lying, arguing, poor academic and occupational achievement and fatigue.

In other words, individuals “addicted” to the Internet focus excessive numbers of hours on internet-related activities at the expense of broader life activities, including those

associated with fulfilling the basic needs (e.g., food, sleep, intimate contacts).

Beyond these psychological “addiction”- related consequences, internet use disorders and associated health conditions may present together with physical and social consequences of clinical and public health significance. There is currently no consensus among experts on how wide the scope of health and social consequences under consideration should be. Potential physical and social consequences of excessive use of the Internet, computers, smart phones and other electronic devices are listed below (see full background paper by Department of Health, Hong Kong SAR, China, in Appendix C). The list is not meant to be comprehensive, exhaustive or definitive, but rather highlight areas of public concern. The public health and clinical relevance of below-listed health consequences of excessive use of internet, computers and similar electronic devices will require confirmation by properly designed and implemented studies in the future.

Physical health

- Sedentary lifestyle: Excessive screen time (associated with e.g., snacking/poor diet, decreased sleep time and insufficient physical fitness) relates to obesity and overweight, as well as other potential health risks.
- Vision: Prolonged use of electronic screen products may potentially lead to eye and visual symptoms like ocular discomfort, eyestrain, dry eye, headache, blurred vision and even double vision.
- Musculoskeletal problems: Prolonged use of electronic screen products in a fixed posture can cause or exacerbate musculoskeletal symptoms.
- Hearing: Electronic devices with audio entertainment functions can typically generate harmful levels of sound, which can be linked to permanent hearing damage.
- Injuries and accidents: Mobile electronic devices, such as smartphones, are commonly used while doing other tasks, which may make the user more prone to injuries and accidents.
- Infections: Insufficient hygiene precautions and sharing of mobile devices such as smartphones may enable the spread of pathogens and infectious diseases.

Psychosocial health

- Cyber-bullying: modern technologies and the Internet enable a new type of bullying, namely cyber-bullying, which is associated with a range of serious psychosocial consequences.
- Social development: Spending too much time online and using modern electronic devices may cause social withdrawal and/or hinder social skill development, e.g., through decreased face to face interaction and unreal social interactions online.

- Sleep deprivation: Excessive use of electronic devices relates to sleep deprivation, which affects growth and development in children and adolescents.
- Risky sexual behaviours: Sexual content and increased availability of the Internet and electronic devices may increase risky sexual behaviour.
- Aggressive behaviours: Violent content of videos and online games may have adverse effects on the behaviour of children, adolescents and adults.
- Other social and psychological problems: Excessive use of the Internet and electronic devices can be associated with a range of social and psychological problems such as poor psychological well-being, poor self-confidence, family problems, marital breakdown, reduced work and academic performance.

For some of the consequences listed above, there remains limited evidence to link them to long-term use of electronic devices. Hence, it is possible that disorders associated with excessive use of electronic devices are eventually defined more narrowly than the above list of health consequences suggests.

It is likely that future diagnostic criteria for internet use disorder (to be defined) may not represent the totality of the problem, but rather the features that are most reliably or easily measured.

b) Diagnostic guidelines

There is continuing debate about whether internet use disorders and related health conditions represent a reasonable, independent diagnostic entities (rather than, e.g. a medium for presentation of other psychiatric conditions) and, if so, how best to define them. Diagnostic criteria for internet addiction typically assume that the following features are the same for substance use disorders and internet addiction: salience (i.e., a preoccupation with the activity, which dominantly occupies cognitive and emotional processing and behaviour), mood modification (e.g. euphoria), withdrawal, tolerance, conflict and relapse. However, this approach is fairly generic across addictions, and may as such not sufficiently reflect specific features of internet use disorders (e.g., "immersion" could be a unique feature for internet gaming disorder). Also, conceptualization of addiction as any excessive behaviour may oversimplify the individual and psychological consequences under consideration (see Achab et al in Appendix C). Hence, the currently proposed descriptions, diagnostic categories and diagnostic criteria for internet use disorders and related health conditions need to be revisited and elaborated as soon as possible.

6. Classification

Pathological gambling was introduced as a disorder of impulse control in the 3rd Diagnostic and Statistical Manual (DSM-3; American Psychiatric Association, 1980), suggesting an intrapersonal difficulty to control one's actions (see discussion above

on clinical course). Based on clinical and phenomenological similarities, comorbidity, comparable treatment response and neurobiological findings with substance use disorders, pathological gambling is included into the category of substance-related and addictive disorders in DSM-5 (see Jiménez-Murcia et al in Appendix C). After reviewing similar evidence for internet gaming disorder, this is also included in DSM-5 Section 3, i.e., "a condition warranting more clinical research and experience before it might be considered for inclusion as a formal disorder". Internet addiction disorder (also called problematic internet use or compulsive internet use) will not be included in DSM-5 due to insufficient data on the topic (see background paper by Potenza in Appendix C).

World Health Organization is currently in the process of developing ICD-11 which gives an opportunity to incorporate the latest developments related to internet use disorders and related health conditions into the draft ICD-11 provided that consensus is built up with regard of diagnostic categories, their clinical descriptions and diagnostic guidelines, and their clinical and public health utility is confirmed in the process of field testing.

If "internet use disorder" is eventually included in ICD-11, it's diagnostic criteria may significantly overlap with those for substance use disorders and pathological gambling. The relationships between "internet use disorders", "internet gaming disorder" and "gambling disorder" are yet to be investigated.

Regardless as to whether internet use disorder is eventually considered as mental and behavioural disorder or not, the currently available evidence and information indicate that excessive use of internet and related modern technologies may result in health conditions which are similar to substance use disorders in their phenomenology, clinical course and neurobiological basis, which has important public health and public policy implications.

7. Management

The meeting reviewed available information on risk factors and potentially effective prevention and management strategies related to excessive use of the Internet and electronic devices. However, in view of heterogeneity and insufficient knowledge about the diagnostic entities under consideration (see discussion above on scope and epidemiology), any conclusions regarding effective interventions may be premature.

a) Individual risk factors

A range of psychobiological and psychosocial risk factors associated with excessive use of the Internet and electronic devices were reviewed at the meeting.

Psychobiological risk factors include personality and temperament-related factors (e.g., neuroticism, impulsivity, low self-esteem and introversion) as well as mechanisms related to self-regulation (e.g., poor decision-making under uncertainty and risk). In addition to psychobiological risk factors, psychosocial risk factors such as negative life events, poor academic/professional performance and comorbidities were

reviewed. It may be helpful to differentiate between psychosocial risk factors among adolescents (e.g., poor social relations at school) and adults (e.g., low job satisfaction and unhealthy behaviours). These risk factors should be the focus of preventative and early identification measures among at-risk individuals and their families.

b) Management strategies

Treatment interventions that also aim to reduce the psychosocial problems related to internet use disorders and excessive use of the Internet and electronic devices include Cognitive behavioural therapy (CBT), group therapy, family therapy, and pharmacotherapy. Depending on the country, these services are provided by the health, education and/or communication sector and may include both governmental and non-governmental players. Interventions are done in communities or in health facilities like hospitals or health centers (but rarely in the primary health care settings). In either case, there is typically no systematic referral system.

In addition to interventions focusing on behaviours and psychological problems, it is also relevant to tackle physical and social consequences of excessive use of the Internet and electronic devices (see discussion on clinical presentation for a suggested list of psychological, physical and social consequences).

8. Public policy and health system responses

Public policy and health system responses for implementation at different levels (e.g., municipal, national, regional, global) were discussed for the majority of Meeting Day 3 and the topic was discussed from multiple angles. It was noted that the increasing availability and use of the Internet, internet-based technologies and electronic devices have brought significant benefits to multiple life domains of most internet users. However, this increasing use of Internet and electronic devices is associated with increasing number of people experiencing problems and higher risks of developing internet use disorders and associated conditions. Hence, public prevention policies and interventions are justified and already implemented in countries where internet use disorders are considered as clinical conditions and emerging public health problem. Such policies and interventions are expected to be developed and implemented in other jurisdictions as soon as the increasing rates of Internet penetration and use of smartphones and similar electronic devices result in a significant number of individuals suffering from their excessive and harmful use.

a) Public policies

Regulations on use of the Internet through public policy and users themselves are becoming more common in parallel with increased use of the Internet worldwide. Effectiveness of these measures has not been measured in a systematic manner, because the phenomenon is relatively new. The main challenges related to feasibility of public policies are the following:

- Unfavourable public perception, e.g. due to
 - Lack of public awareness of the problem (e.g., due to low availability of the Internet and electronic devices)
 - Cultural differences
 - Differences in lifestyle (e.g., differences in popularity of games)
 - Potential impact on social activities.
- Poorly established terminology
- Commercial needs of the relevant economic operators (e.g., gaming and gambling industries)
- Divided responsibilities within governments (communication, education and health).

On the topic of divided responsibilities, meeting participants felt that while responsibilities are divided, the public health sector should take primary responsibility for action related to this topic.

Examples from South Korea and Hong Kong SAR China presented at the meeting highlighted the wide-ranging perceived benefits of increased government prevention activities in this area (e.g., due to high prevalence of internet use disorders and associated conditions, seriousness of consequences and harm to others), as well as presented an estimate of the direct (e.g., treatment, usage fees) and indirect (e.g., loss of productivity) socioeconomic costs of the problem in South Korea.

b) Health system responses

Health system responses have been implemented to a lesser extent than public policies regulating the availability of the Internet and electronic devices, but special treatment programs for internet use disorders and associated conditions are being established in many countries around the world either integrated with services for mental health and/or substance use disorders or stand-alone services. A significant barrier for their further development is the lack of universal diagnostic criteria and, therefore, solid evidence of effectiveness of prevention and treatment interventions (see above for detailed discussion). Additionally, the feasibility of health system responses is challenged by limited health insurance coverage in many countries.

c) Examples from countries

Many of the currently implemented public policies are very similar to policies used for reducing health risks associated with psychoactive substance use and gambling, such as regulating product development, regulating availability and accessibility (e.g., age and time-of-day limits) as well as implementing restrictions on marketing and

advertisements. Some countries also have particular government bodies responsible for internet safety. However, these entities typically do not deal with health consequences.

Country examples for national information policies and strategies include the regional "Gamer guard" in Thailand, and the "Fatigue system" policy in China, whereby players gain no experience points in the game of choice after 5 hours of playing. Examples of integrated national plans and policies include Belarus' governmental program for treatment of internet dependence and South Korea's 2nd master plan for prevention of internet addiction. The latter case example was discussed in detail at the meeting and includes:

- Policies that relate to the content of services, e.g., the "Game Industry Promotion Act" requires that all game material is presented and rated by the Game Rating Board.
- Policies that protect vulnerable individuals, e.g., based on the "Juvenile Protection Act" people suffering from internet addiction receive education and counselling according to their individual levels of risk.
- Plans to setup 12 community-based internet addiction response centers. 45 "Wee" centers, 3 Counseling/therapy centers for internet gaming disorder, Addiction Supervision Centers, and the "RESCUE School" boarding institute for recovery.
- Policies to limit accessibility, such as the Health Internet Game Policy and the Nighttime Shutdown Policy, which force online games providers to shutdown their services for teenagers under 16 from midnight to 6am, as well as the Fatigue System (similar to that in China). Interestingly, the Selective Shutdown Policy was also prepared in 2013, but this voluntary shutdown request by teenagers under 18 or their legal guardians (which games providers must abide with) is rarely used. Also, the Cooling Off Policy, which would put restrictions on the amount of time spent playing games by minors between the age of 6 and 18, was eventually discarded.

An important conclusion from the sessions on public policy and health system responses was that policy and program responses to internet use disorders involve multiple sectors and different levels of societal responses which are very similar to societal responses to substance use disorders, and sufficient resources and commitment are needed for monitoring the situation and associated public health risks at different levels. Moreover, documenting current policy and program responses should include exploration on the feasibility, effectiveness and cost-effectiveness of different policy options.

Conclusions

The review of available evidence on internet use disorders and excessive use of the Internet and electronic devices identified important gaps to be filled in coming years. Despite these caveats, the meeting concluded that rapidly increasing use of the Internet and electronic devices with enormous benefits for societies and different domains of a person's life can also result in health consequences which are of concern from a public health perspective. The observed and documented negative health and psychosocial consequences include a range of health conditions that share signs and symptoms with disorders such as gambling disorder and substance use disorders. These problems of public health concern and importance have already been recognized in many countries, which has led particularly governments to look for effective prevention policies and response strategies aimed at reducing health risks and consequences associated with excessive use of Internet and electronic devices.

Meeting conclusions can be summarized under three major themes:

1. *Need to conceptualize and define the scope, phenomenology and typology of disorders associated with excessive use of Internet, computers, smart phones and similar devices which have shared signs and symptoms with substance use disorders and "behavioural addictions".* Whenever possible, international consensus regarding diagnostic entities under consideration, as well as their clinical descriptions and diagnostic guidelines should be developed. For this purpose meeting participants suggested that WHO continues its efforts on building up international consensus and convenes an international expert meeting to address taxonomy, clinical and public health utility and diagnostic boundaries of disorders associated with excessive use of the Internet and electronic devices.
2. *Need for intensifying international research to address current knowledge gaps and to generate essential needed information for development of prevention and treatment policies, strategies and interventions.* This international research should involve both developed and less-resourced countries from different parts of the world. Key research areas for consideration are the following:
 - Health and social consequences and associated disease, social and economic burden
 - Phenomenology, natural course and diagnostic boundaries of disorders and their sub-groups
 - Harm to others, including impact on health and well-being of families and significant others
 - Effectiveness and cost-effectiveness of preventive and treatment

strategies, policies and interventions.

In order to improve understanding of this public health problem from many perspectives, future research should utilize all of the following tools and channels:

- Population-based and other surveys, e.g., adult surveys, school surveys, mental health surveys and national gambling surveys
- Regularly collected population-based data using standardized and validated instruments and data collection tools, coupled with a new set of standardized questions
- Registry systems within health care services whenever feasible and appropriate (including follow-up data), to document and monitor scale of the problem, age and gender distribution of cases, health and social consequences of conditions and medical costs involved.

It was suggested that WHO convenes an expert meeting to identify priorities for international research and explore possibilities for developing and supporting international research projects outlined above, including the work on designing and validating a standardized instrument to measure prevalence and health impact of excessive use of Internet and electronic devices. For this purpose, partnerships and collaboration agreements can be sought, as appropriate, with other international organizations (e.g., World Bank, ITU, UNESCO, UNICEF, global cooperates), national institutions and private companies with due diligence to conflict of interests in case of potential public-private collaboration or partnerships.

3. *Need for documenting and evaluating policies, strategies and interventions aimed at preventing and reducing health risks and disorders associated with the relatively new phenomenon of excessive use of the Internet and electronic devices.* Suggested activities include the following:

- Document, compile and share case studies, experiences and relevant data on developing and implementing public policy and health system responses in different countries in order to inform future policy and program developments
- Explore cultural and health system contextual factors and their role in developing and implementing public health policies and responses in this area
- Support monitoring and evaluation of implemented policies and programs, including appropriate surveillance strategies using standardized instruments and data collection tools for population-based surveys
- Raise public awareness of health problems associated with internet use

disorders and excessive use of internet, computers and similar electronic devices, also for enabling early identification (e.g., how to identify the problem; what support services are available; what are potential health risks and harms associated with excessive use of the Internet and modern technologies, and what are available prevention approaches and treatment interventions)

- Document and support development of a comprehensive health service response to demand for treatment and psychosocial support involving community-based interventions, several response layers with appropriate referrals and support services for significant others such as families and friends of affected individuals.

Meeting participants suggested that WHO could encourage and support international networking and evaluation research, as well as activities on documenting and disseminating examples of societal responses.

Next steps

The meeting concluded by discussing the future direction and agreed on the following next steps:

- An international expert committee will develop a standardized questionnaire to measure scope and impact of excessive use of the Internet, computers, smart phones and similar electronic devices. This work will be leveraged to formulate a set of questions to be included in ICD-11 field-testing.
- Actors from wide range of fields such as health, technology, and communications must work together to define and measure this public health problem as well as to implement interventions.
- Countries that are yet to experience public health concerns related to excessive use of the Internet, computers, smart phones and similar electronic devices due to less use of the Internet and other electronic devices should be alerted of the public health risks involved.

As summarized below, some of the next steps listed above have already been refined at the time of writing this report:

- WHO Collaborating Centre, National Hospital Organization Kurihama Medical and Addiction Centre (lead by Dr Susumu Higuchi) will take the lead in gathering a more comprehensive evidence base on behavioural addictions associated with excessive use of the Internet, computers, smart phones and similar electronic devices by end of 2016.
- A WHO meeting will be organized in Seoul, South Korea in Mid 2015 to discuss the scope of the problem and joint priorities for international research.

- A WHO meeting will be organized in 2016 in Hong Kong to discuss public policy and health services responses.

Appendix A: Meeting programme

Note: for the purposes of readability, the titles of meeting sessions have been simplified in the main text of this meeting report.

Day 1: Wednesday, 27 August 2014

Time	Session	Facilitators/Presenters
09.00-9.45	Welcome remarks: Government of Japan and WHO - Introduction of participants - Objectives of the meeting - Conflicts of Interests	Dr S. Higuchi Dr V. Poznyak Dr X. Wang
09.45-10.40	Scope of health conditions under consideration. Behavioural addictions associated with excessive use of Internet, computers, smart phones and similar electronic devices. Boundaries with normality. Scope of health and social consequences due to excessive use of Internet, computers and similar electronic devices.	Dr M. Potenza Dr Th. Chung
10.40-11.00	Coffee/tea	
11.00-12.30	Epidemiology of disorders associated with excessive use of Internet, computers, smart phones and similar electronic devices. Measurement challenges. Available epidemiological data.	Dr Y. Osaki Dr Y. Rehm Dr H.-J. Rumpf
12.30-13.30	Lunch	
13.30-15.30	Comorbid conditions. Psychosocial factors influencing development and outcomes of the disorders under consideration.	Dr H. Nakayama Dr J. Billieux
15.30-15.50	Coffee/tea	
15.50-17.30	Phenomenology and natural course of disorders associated with excessive use of Internet, computers, smart phones and similar electronic devices.	Dr M. Farrell Dr J. Saunders

Day 2: Thursday, 28 August 2014

Time	Session	Facilitators/Presenters
09.00-10.40	Clinical descriptions and diagnostic guidelines of disorders associated with excessive use of Internet, computers, smart phones and similar electronic devices. Diagnostic instruments.	Dr J. Saunders Dr S. Higuchi
10.40-11.00	Coffee/tea	
11.00-12.30	Disorders associated with excessive use of Internet, computers, smart phones and similar electronic devices in the classifications of mental and behavioural disorders.	Dr W. Hao Dr M. Potenza Dr V. Poznyak
12.30-13.30	Lunch	
13.30-15.30	Identification and management of disorders and health conditions associated with excessive use of Internet, computers, smart phones and similar electronic devices.	Dr J. Billieux Dr M. Farrell
15.30-15.50	Coffee/tea	
15.50-17.30	Epidemiology, identification, classification and management: conclusions and recommendations ¹	All

Day 3: Friday, 29 August 2014