

ORIGINAL PAPER

Kathleen Vanheusden · Jan van der Ende · Cornelis L. Mulder · Frank J. van Lenthe · Frank C. Verhulst · Johan P. Mackenbach

The use of mental health services among young adults with emotional and behavioural problems: equal use for equal needs?

Received: 5 July 2007 / Accepted: 21 April 2008 / Published online: 29 May 2008

■ **Abstract** *Objective* Mental health problems are highly prevalent in young adults. Despite possibilities for effective treatment, only about one-third of young adults with mental health problems seek professional help. Little knowledge exists of which groups of young adults are underusing mental health services and for what reasons. The present study examined socio-demographic inequalities in the use of mental health services by young adults, and examined whether such inequalities were attributable to differences in objective need, subjective need, predisposing or enabling factors. *Design* Cross-sectional study among the general population aged 19–32 years (2,258 respondents). A postal survey was administered including questions on socio-demographic factors and mental health service use. Data were analyzed with logistic regression analysis. *Setting* South–West Netherlands.

Participants All respondents with serious internalizing and externalizing problems ($n = 367$). *Main outcome measure* Twelve-month primary and specialty mental health services use. *Results* Only 34.6% of young adults with psychopathology had used any mental health services: 16.2% had used only primary mental health services and 18.4% had used specialty mental health services. No socio-demographic differences were found in the use of only primary mental health services. However, recipients of specialty mental health services were more often female (OR = 2.12, 95% CI = 1.14–3.96), economically inactive (OR = 3.12, 95% CI = 1.59–6.09) or students (OR = 2.38, 95% CI = 1.05–5.42) and they were less often higher educated (OR = 0.49, 95% CI = 0.25–0.97). The higher odds ratio for specialty service use among young adults who were female or economically inactive attenuated when adjusting for need for care. The other socio-demographic disparities in specialty service use did not attenuate when adjusting for need, enabling or predisposing factors. *Conclusion* Among young adults, equal use of specialty mental health services for equal needs has not been achieved. The underserved groups of young adults oppose the traditionally underserved groups in the general population, and may inform interventions aimed at improving young people's help-seeking behaviours.

K. Vanheusden, PhD · J. van der Ende, MS (✉)
F.C. Verhulst, MD, PhD
Dept. of Child and Adolescent Psychiatry
Erasmus Medical Center
Sophia Children's hospital
Dr. Molewaterplein 60
3015 GJ Rotterdam, The Netherlands
Tel.: +31-10/463-6091
Fax: +31-10/463-2111
E-Mail: jan.vanderende@erasmusmc.nl

K. Vanheusden, PhD · F.J. van Lenthe, PhD
J.P. Mackenbach, MD, PhD
Dept. of Public Health
Erasmus Medical Center
Rotterdam, The Netherlands

C.L. Mulder, MD, PhD
Dept. of Psychiatry
Erasmus Medical Center
Rotterdam, The Netherlands

C.L. Mulder, MD, PhD
Mental Health Group Europort
Barendrecht, The Netherlands

■ **Key words** behavioural model of health care use – mental health service use – socio-demographic inequalities – emotional and behavioural problems – young adults

Introduction

National mental health surveys indicate that young people in the age range 15–24 have the highest rate of mental disorders [6, 12, 22]. In the Netherlands, 34%

of 18–24 year-olds meet criteria for a 12-month mood, anxiety or substance use disorder, compared with 24% of 25–34 year olds, 24% of 35–44 year olds, 20% of 45–54 year olds and 15% of 55–64 year olds [12]. Among adolescents and young adults, mental disorders are the leading cause of disability [3, 34]. Effective treatments for mental disorders in young people exist, including pharmacological treatments and psychosocial interventions, particularly those with a cognitive-behavioural orientation [31]. However, population-based surveys demonstrate that only about 25–30% of young people with mental health problems seek professional help [1, 8, 29]. It is important to improve our understanding of which groups of young adults are underusing mental health services and for what reasons.

The few studies on young adults' help-seeking behaviours all indicate that young males are particularly unlikely to seek help for mental health problems [1, 8, 10], which agrees with studies reporting findings across wider age groups [7, 38]. However, groups that typically underuse mental health services as identified by studies examining wider age groups, such as employed persons [7, 11] and persons living with their partner [11, 23], have not been identified in studies examining young adults. Only one study examined socio-demographic factors associated with professional help-seeking in young adults with mental health problems, and did not find occupation or living arrangements to predict service use [10]. The authors suggested that factors such as employment status, marital status, and living arrangements may be more influential in middle and later adulthood [10]. As yet, little knowledge exists of which groups of young adults are underusing mental health services and for what reasons.

This study focused on identifying socio-demographic inequalities in young adults' use of mental health services. The Dutch health care setting is such that in primary care both somatic and mental health problems are treated, with the GP acting as a gate keeper for the referral to specialty mental health services; although in practice people also consult specialty services directly. This study distinguished between the use of primary mental health services (delivered by a GP, a company physician, or general social work) and the use of specialty mental health services (delivered by mental health professionals).

The Behavioural model of health care use [4, 5] was used to identify factors that could mediate socio-demographic inequalities in young adults' mental health services use. This model suggests that health service use is influenced by an objective need for care (e.g., problem severity), a subjective need (e.g., a self-perceived need for care), predisposing factors (e.g., the tendency to consult) and enabling factors (e.g., financial means). In the first version of the behavioural model, background variables such as sex, age and educational level were assumed to have an indi-

rect effect on health service use via the three main determinants of need, predisposing and enabling factors. However, some researchers found direct effects of the background variables on service use, independently of the three main determinants [13, 17]. In response, Andersen adopted the background variables in the predisposing category. This approach has been criticized because it is unlikely that need for care and enabling factors would be unrelated to these background variables [13, 18]. We share this point of view and will adopt the original behavioural model.

Thus, the present study examined socio-demographic inequalities in the use of mental health services by young adults, and examined whether such inequalities were attributable to differences in objective need, subjective need, predisposing or enabling factors. If the use of mental health services by subgroups of young adults is not in accordance with their objective need, then inequalities in service use exist. These inequalities then may be explained by differences in subjective need, enabling factors or predisposing factors. These latter factors may represent barriers-to-care, making them important targets for interventions.

Methods

■ Sample

This study was a cross-sectional population-based survey conducted from September 2004 to October 2005. The Medical Ethics Committee of the Erasmus MC approved the design and conduct of the study. Thirty-five municipalities were randomly selected from the Dutch province Zuid-Holland. Zuid-Holland is comprised of 92 municipalities in both rural and urban areas and contains 21.2% of the Dutch population [14]. In each municipality, 19–30 year-olds were randomly selected from a population list of all residents aged 19–30 years. The total sample comprised 3,338 young adults.

A postal survey was sent to all 3,338 young adults in September 2004. After 9 weeks, the potential participants were reminded, either by phone or a home visit, to fill in the questionnaire. A total of 165 persons were excluded from the sample because of intellectual or physical disability, a language barrier, moving away from the province, or death. Of the 3,173 eligible young adults, 2,258 (71.2%) participated. Due to the duration of the data-collection, the age range of the participants expanded from 19–30 years to 19–32 years. Non-respondents were more likely to be male, non-Dutch and younger than respondents (data not shown). A large majority of participants ($N = 2,077$) filled in the questionnaire by themselves, while 181 participants completed the questionnaire in the presence of someone from our data-collection team, generally because the participant needed help in completing the questionnaire. These 181 respondents were disproportionately male and from non-Dutch origin, but they did not differ from the other respondents in age, psychopathology, or mental health service use (data not shown). After complete description of the study to the participants, written informed consent was obtained.

■ Instruments

Instrument used for selecting participants

The Adult Self-Report (ASR) was used to assess internalizing and externalizing problems in the past 6 months [2]. The ASR com-

prises 123 statements on problem behaviours which can be scored with 0 = not true, 1 = somewhat or sometime true, 2 = very true or often true. The 123 problem behaviours constitute eight empirically-based syndromes: Anxious/Depressed, Withdrawn, Somatic Complaints (together constituting the Internalizing group of syndromes), Rule-Breaking behaviour, Aggressive Behaviour and Intrusive (together constituting the Externalizing group of syndromes), Thought Problems and Attention problems (these two syndromes do not constitute a higher-order scale). A Total Problem score can be derived by summing the individual item scores. The following are examples of ASR items: "I am fearful or anxious" (Anxious/Depressed), "I keep from getting involved with others" (Withdrawn), "heart pounding" (Somatic Complaints), "I get in many fights" (Aggressive Behaviour), "I do things that may cause me trouble with the law" (Rule-Breaking Behaviour) and "I try to get a lot of attention" (Intrusive). Good reliability and validity have been demonstrated for the ASR [2].

We selected participants who scored in the borderline or clinical range of the ASR total problem score. Scores between the 84th and 90th percentile represent the borderline range; scores in this range indicate that enough problems were reported to be of concern [2]. Scores above the 90th percentile represent the clinical range; scores in this range indicate that professional help is warranted [2].

Mental health service use

The use of mental health services was assessed with the following question: "Have you consulted one of the following persons, sources or agencies for mental health problems or substance use problems in the past 12 months?" Sources of primary care that could be endorsed were a general practitioner, a company physician, or general social work. Sources of specialty care that could be endorsed were a community mental health care institute, a psychiatrist, psychologist, or psychotherapist in private practice, therapy via the Internet, ambulatory addiction care, residential addiction care, a psychiatric day care institute, a psychiatric residential care institute, sheltered accommodation, or the use of psychotropic medication. We classified three levels of mental health service use: (1) no use, (2) use (≥ 1 contact) of only primary mental health services and (3) use (≥ 1 contact) of specialty mental health services (with or without the use of primary mental health services).

Socio-demographic factors

The following socio-demographic factors were examined: sex, age, ethnicity, living arrangements, occupational status and educational level. In keeping with the National Bureau of Statistics, participants with at least one parent born outside the Netherlands were considered to be non-Dutch [14]. Educational levels was classified as lower (primary education only, lower or intermediate vocational school, or lower secondary school) or higher (intermediate or higher secondary school, higher vocational school, or university). Participants who were following a course of education at the time of the survey were classified according to this level of education, even though they had not yet obtained any qualifications.

Objective need

Indicators of objective need included problem severity and disability. Since there was still a considerable range in the ASR Total Problem score (62–215 points) among the included group with scores above the 84th percentile, we used the ASR Total Problem score to indicate the severity of internalizing and externalizing problems. Further, 1-month disability was measured with the World Health Organisation-Disability Assessment Scale, which assesses disability in self-care, mobility, relationships, household chores and social functioning [19].

Subjective need

Problem-recognition was assessed with the following question: "Did you have mental health problems during the past 12 months?" The following three responses could be provided: 1 = not at all, 2 = a little bit or sometimes, 3 = clearly or often. A dichotomized variable was constructed indicating that problems were admitted (response 2 or 3) or that problems were denied (response 1).

Participants who admitted that they had mental health problems were asked whether they had needed professional help for these problems in the past year. The absence of a self-perceived need for care was inferred for those without problem-recognition.

Predisposing factors

Predisposing factors comprised coping strategies and the "tendency to consult". Coping strategies were measured with the Multidimensional Health Profile-Psychosocial functioning [36]. Good validity and reliability has been reported for this questionnaire. The coping scale was divided into a passive (e.g., "I try to accept my feelings") and an active coping scale (e.g., "I make specific plans to solve my problems"). The "tendency to consult" was assessed by asking participants whether they would consult a mental health professional in case of mental health problems.

Enabling factors

Enabling factors comprised geographical availability of services, financial resources and the use of informal care. Since urban areas offer more mental health services than rural areas, urbanicity was used to indicate the geographical availability of services. Urbanicity was measured at a municipal level, using a 5-point rating of the average address density for each municipality [14]. Further, because privately insured persons generally have a higher income than the publicly insured, the type of health insurance was used as an indicator of financial resources. Informal care use was defined as having consulted at least one of the following resources for mental health or substance use problems in the past 12 months: family or friends, a telephone helpline, information on the Internet, a self-help book, a complementary caregiver (e.g., a herbalist), a religious representative, or a self-help group. An overview of all measures is presented in Table 1.

Data analysis

Preliminary analyses were conducted to select relevant determinants of primary and specialty mental health services use, using four multivariate logistic regression analyses: (1) relating socio-demographic factors to the use of only primary mental health services (versus no use or use of specialty mental health services) and (2) relating objective need, subjective need, predisposing and enabling factors to the use of only primary mental health services (versus no use or use of specialty mental health services), (3) relating socio-demographic factors to the use of specialty mental health services (versus no use or use of only primary mental health services) and (2) relating objective need, subjective need, predisposing and enabling factors to the use of specialty mental health services (versus no use or use of only primary mental health services).

Significant determinants from the preliminary analyses were analyzed further. To explain socio-demographic inequalities in service use, five multivariate logistic regressions models were fitted for each category of service use (five models for primary mental health service use and five models for specialty mental health service use). In the first model, significant socio-demographic factors were related to service use. Objective need factors were added in the second model. The reduction in the odds ratio (OR) for service use among for example women after including objective need in the second model indicates the contribution of objective need to the sex-difference in service use. The reduction in OR was computed as

Table 1 Measurements included in this study

Variables	Operationalisation	Categorization
Care utilization		
Mental health service use	Either primary or mental health care use for mental health or substance use problems in past year	No use; use of only primary care; use of specialty care
Socio-demographic factors		
Sex	–	Female versus male
Age	–	26–32 versus 19–25 years old
Educational level	Highest educational attainment	Higher versus lower
Ethnicity	Parental country of birth	Non-Dutch versus Dutch
Occupational status	School or employment status	Economically inactive; student; versus employed
Living arrangements	Current living arrangements	Living alone; living with parents; versus living with partner
Behavioral model factors		
Objective need		
Problem severity	Checklist of emotional and behavioural problems (see “Methods”)	Total score
Disability	Checklist of disability (see “Methods”)	Total score
Subjective need		
Problem-recognition	“Did you have mental health problems in the past year?”	“Clearly” or “a little bit” versus “no”
Self-perceived need for care	“Have you needed professional help for mental health problems in the past year?”	Yes versus no
Enabling factors		
Financial means	Type of health insurance	Public versus private
Geographic availability of services	Urbanicity, at a municipal level	5-point scale of address density
Informal care use	Checklist of informal care use (see “Methods”)	Any versus no use
Predisposing factors		
Tendency to consult	“Would you consult a mental health professional in case of mental health problems?”	5-point scale very unlikely-very likely
Passive coping, active coping	Checklist of coping strategies (see “Methods”)	Total passive/active coping score

follows: $\left(\frac{OR_{model1} - OR_{model2}}{OR_{model1} - 1}\right) \times 100$. If the odds ratio still differs from 1 after adjusting for objective need, it indicates that inequalities exist in service use that cannot be accounted for by objective need. Subjective need, predisposing and enabling factors were added in model 3, 4 and 5 respectively to determine whether remaining socio-demographic inequalities could be explained by these factors.

Results

■ Inequalities in mental health service use

Among young adults with internalizing and externalizing psychopathology ($n = 367$), only 34.6% ($n = 126$) had used any mental health services; 16.2% ($n = 59$) had used only primary mental health care and 18.4% ($n = 67$) had used specialty mental health care (with or without primary care). A multivariate logistic regression analysis of sex, age educational level, employment status, ethnicity and living arrangements (independent variables) with the use of only primary mental health care (dependent variable) did not reveal any socio-demographic correlates. A multivariate logistic regression analysis of sex, age educational level, employment status, ethnicity and

living arrangements with specialty mental health care revealed 4 independent effects of socio-demographic factors. Women (OR = 2.12, 95% CI = 1.14–3.96) were twice as likely to have used specialty care as compared to men, and economically inactive persons (OR = 3.12, 95% CI = 1.59–6.09) and students (OR = 2.38, 95% CI = 1.05–5.42) were twice as likely to have used specialty care as compared to employed young adults. Furthermore, young adults who were higher educated (OR = 0.49, 95% CI = 0.25–0.97) were half as likely to have used specialty care as compared to lower educated young adults.

■ Behavioural model of health care use

A multivariate logistic regression analysis of objective need, subjective need, predisposing and enabling factors (see Table 1 for an overview of the variables) and the use of only primary mental health care revealed that the use of informal care use (OR = 3.80, 95% CI = 1.79–8.07) was associated with an increased likelihood of using only primary care. Further, a multivariate logistic regression analysis of objective need, subjective need, predisposing and enabling factors and the use of specialty mental

Table 2 Associations between socio-demographic factors (independent variables) and specialty mental health service use (dependent variable), adjusting for relevant covariates (need, predisposing and enabling factors) in five logistic regression models

	Used specialty mental health services (67 out of 364)				
	Model 1: crude model OR (95% CI) ^e	Model 2: objective need OR (95% CI) ^e	Model 3: subjective need OR (95% CI) ^e	Model 4: predisposing OR (95% CI) ^e	Model 5:enabling OR (95% CI) ^e
Sex					
Male	1.00	1.00	1.00	1.00	1.00
Female	2.05 (1.15–3.66) ^a	1.61 (0.87–2.96)	1.05 (0.52–2.11)	1.00 (0.49–2.03)	0.89 (0.42–1.89)
Education					
Lower educated	1.00	1.00	1.00	1.00	1.00
Higher educated	0.49 (0.26–0.95) ^a	0.60 (0.30–1.18)	0.57 (0.27–1.20)	0.66 (0.31–1.42)	0.51 (0.23–1.13)
Employment status					
Employed	1.00	1.00	1.00	1.00	1.00
Economically inactive	2.78 (1.46–5.32) ^b	1.76 (0.87–3.58)	1.33 (0.62–2.88)	1.26 (0.58–2.78)	1.43 (0.62–3.28)
Student	1.75 (0.85–3.62)	1.85 (0.87–3.92)	2.03 (0.88–4.65)	1.85 (0.79–4.30)	1.89 (0.79–4.53)
Objective need					
Disability ^d		1.05 (1.03–1.07) ^c	1.04 (1.02–1.06) ^b	1.04 (1.02–1.06) ^b	1.03 (1.01–1.06) ^b
Subjective need					
No need			1.00	1.00	1.00
Perceived need for care			12.71 (5.61–28.83) ^c	12.66 (5.53–28.95) ^c	9.84 (4.23–22.89) ^c
Predisposing					
Tendency to consult ^d				1.45 (1.12–1.88) ^b	1.42 (1.08–1.87) ^a
Enabling					
No informal care use					1.00
Informal care use					5.37 (2.24–12.88) ^c

OR odds ratios, 95% CI 95% confidence interval, *Model 1* socio-demographic factors, *Model 2* socio-demographic factors + objective need, *Model 3* socio-demographic factors + objective need + subjective need, *Model 4* socio-demographic factors + objective need + subjective need + predisposing factors, *Model 5* socio-demographic factors + objective need + subjective need + predisposing factors + enabling factors

^a $P < 0.05$, ^b $P < 0.01$, ^c $P < 0.001$, ^dContinuous variables, ^eOdds ratios are adjusted for the effects of the other variables in each multivariate model

health care revealed four independent effects: a higher level of disability (OR = 1.03, 95% CI = 1.00–1.06), a self-perceived need for care (OR = 8.03, 95% CI = 3.28–19.68), a greater tendency to consult (OR = 1.45, 95% CI = 1.10–1.92) and the use of informal care (OR = 4.24, 95% CI = 1.75–10.26) were all positively associated with specialty mental health service use.

■ Explaining inequalities in the use of specialty mental health care

Significant findings from the preliminary analyses were analyzed further, to identify mechanisms underlying socio-demographic disparities in specialty mental health service use. Table 2 presents multivariate associations between socio-demographic factors (independent variables) and specialty mental health services use (dependent variable), adjusting for relevant covariates (need, predisposing and enabling factors) in five logistic regression models.

Model 1 (Table 2) indicates that women were twice as likely (OR = 2.05, 95% CI = 1.15–3.66) to have used specialty mental health services as compared to men (Table 2). When adjusting for the level of objective need (Model 2, Table 2), the odd ratio declined from 2.05 to 1.61 (41.9% reduction); further adjustment for subjective need (Model 3, Table 2) resulted in a further decline in the odds

ratio to 1.05 (95.2% total reduction, relative to Model 1).

Furthermore, economically inactive young adults were three times as likely (OR = 2.78, 95% CI = 1.19–3.71) to have used specialty mental health services as compared to the employed (Model 1, Table 2). When adjusting for the level of objective need (Model 2) the odd ratio declined from 2.78 to 1.76 (57.3% reduction); further adjustment for subjective need (Model 3, Table 2) resulted in a further decline in the odds ratio to 1.33 (81.5% total reduction).

The lower probability of specialty mental health service use among the higher educated, and the higher probability among students did not attenuate when adjusting for need, predisposing and enabling factors (Model 2–5, Table 2).

Discussion

■ Principal findings

A population-based survey indicated that only 34.6% of Dutch young adults with serious internalizing and externalizing problems had used mental health services; 16.2% had used only primary mental health care and 18.4% had used specialty mental health care. Primary mental health services were equally accessible across population groups, whereas with regard to specialty mental health services undesirable socio-

demographic inequalities were found. Significantly lower rates of specialty mental health service use were found in young adults who were male, employed or higher educated. These lower rates of specialty mental health service use could only partly be accounted for by a lower objective need for care.

■ Limitations

A limitation is that the present study is cross-sectional which makes it difficult to establish the causal pathways of socio-demographic disparities in use of mental health services. Furthermore, time frames were not compatible, with psychopathology pertaining to the past 6 months and mental health service use pertaining to the past 12 months. However, this would have affected results for socio-demographic disparities in service use only if the socio-demographic disparities in psychopathology in the first 6 months of the 12 months preceding the survey would differ from such disparities in the subsequent 6 months, which we render unlikely. The time frames for disability and service use are also not compatible. We assessed 1-month disability, which strongly predicted 12-month mental health service use. This probably indicates that young adults who seek professional help for their mental health problems are those with a more chronic course. Moreover, non-response rates were higher among males, 19–25 year olds and immigrants. We may have overestimated the use of mental health services for these groups, since studies of health insurance data indicate that health-surveys-non-respondents are low users of health services [15].

■ Explanation for the findings

Objective Need

After taking into account the level of objective need for care, the higher odds ratio for specialty mental health service use among young adults who were female or economically inactive attenuated, whereas other socio-demographic disparities in specialty mental health service use retained strength. Thus, socio-demographic characteristics were associated with specialty mental health service use over and above objective need for such services, indicating that inequalities exist in the accessibility of specialty mental health services.

One may wonder whether the inequalities in specialty mental health service use result from an insufficient adjustment for objective need for care. The self-report assessment of internalizing and externalizing psychopathology has been shown to partly converge with objective need defined in terms of psychiatric diagnoses. Correlations have been demonstrated for the empirically-based externalizing

syndromes of Achenbach's self-reports with externalizing disorders such as attention-deficit/hyperactivity disorder, and likewise, correlations have been demonstrated for the empirically-based internalizing syndromes with mood and anxiety disorders [16, 20, 28]. It has been suggested that the incorporation of a measure of disability would improve the validity of both the diagnostic approach and the empirical approach of Achenbach [16]. Therefore, we also included disability as an indicator of objective need. In conclusion, we believe that our assessment of objective need is adequate.

Subjective need

The low use of specialty mental health care among men and employed persons was strongly associated with a lack of subjective need for care. Likewise, previous mental health surveys indicate that men with mental health problems are less likely to perceive a need for care than do women [21, 26]. Unfortunately, our study cannot give insight into the mechanisms underlying the lack of subjective need for care among men and employed persons. However, it has been suggested that the traditional masculine role discourages men to admit that they need professional help for mental health problems [27]. The lack of a subjective need for care among employed young adults with mental health problems suggests that employment promotes feelings of self-sufficiency.

Predisposing and enabling factors

Socio-demographic differences in mental health service use could not be attributed to differences in predisposing factors (i.e., "tendency to consult" in our behavioural model) or enabling factors (i.e., the use of informal care). The reasons why some groups of young adults underused specialty mental health services may reflect enabling or predisposing factors that were not included in our behavioural model, possibly predisposing factors such as attitudes towards general practitioners [9] and mental health professionals [30].

■ Critique of the behavioural model

One may question whether the behavioural model of health care use addresses all key factors in the help-seeking process. The model depends on the assumption that help-seeking is a matter of rational, voluntary choice: individuals are seen as weighing within their minds whether their need for care can be met by the resources available [32]. However, rational choice may be a suboptimal candidate for understanding the mechanisms underlying use of health services when acknowledging that psychiatric symptoms may entail confused thinking and lack of insight. Pescosolido et al (1991) suggested that dealing with a health

problem is a social process that is managed through contacts within the community, such as family, police or other institutional agents. Thus, the reasons why young adults underuse mental health services may not be found exclusively within the behavioural model of health care use.

■ Contrasts with existing literature

The low specialty mental health service use that we found among males and employed persons is in keeping with a previous Dutch population-based study that took into account psychiatric morbidity, and found these characteristics to predict the absence of seeking some form of care for mental health problems [11]. However, the other two socio-demographic disparities in mental health service use identified in the present study contrast with findings among broader age groups.

The lower likelihood of specialty mental health service use among higher educated young adults contrasts with findings from previous mental health surveys among a broader age range of adults. People with a higher educational level have been found less likely to use primary care, but more likely to use specialty mental health care for mental health problems [24, 37], presumably because they view mental health professionals more positively than do people with less education [25, 35]. However, we found that young adults with higher education were less likely to use specialty mental health care. The question arises why educational level would operate differently in young people. It could be that higher educated young adults take pride in solving their problems alone, or that they have more internal resources to manage their problems alone.

Further, the higher likelihood of specialty mental health service use we found among students contrasts with the lower likelihood found in a Dutch population-based study [11]. It may be inadequate to examine the effect of student-status in a broad age sample, since students are generally younger. Thus, our results suggest that students are more inclined to use specialty mental health services than employed persons, possibly because mental health services are often available within college settings [33].

Thus, when examining young adults specifically, other inequalities in mental health service use are found than when examining broader age groups. However, it cannot be excluded that different associations between socio-demographic factors and service use were found because we are looking at individuals with internalizing and externalizing problems rather than individuals with a psychiatric diagnosis.

Conclusion

Mental health problems are highly prevalent in young adults. Despite possibilities for effective treatment,

young adults underuse mental health services. Studies on young adults' help-seeking behaviours are scarce and have not investigated which groups of young adults are underusing mental health services. The present study revealed that equal use of mental health services for equal needs has not been achieved. This study identified male, employed, and higher educated young adults as groups that under-use specialty mental health services when facing mental health problems. Interventions aimed at male, employed and higher educated young adults may improve young adults' use of mental health services. For example, intensifying mental health services for university students or higher vocational students may lead to reductions of educational inequalities in the use of mental health services.

References

1. Aalto-Setälä T, Marttunen M, Tuulio-Henriksson A, Poikolainen K, Lonnqvist J (2002) Psychiatric treatment seeking and psychosocial impairment among young adults with depression. *J Affect Disord* 70:35–47
2. Achenbach TM, Rescorla LA (2003) Manual for the ASEBA Adult Forms and Profiles. University of Vermont, Research Center for Children, Youth, & Families, Burlington
3. AIHW Australian Institute of Health and Welfare (1999) Australia's young people: their health and wellbeing. Australian Government Publishing Services, Canberra
4. Andersen R, Newman JF (1973) Societal and individual determinants of medical care utilization in the United States. *Milbank Mem Fund Q Health Soc* 51:95–124
5. Andersen RM (1995) Revisiting the behavioral model and access to medical care: does it matter? *J Health Soc Behav* 36:1–10
6. Andrews G, Henderson S, Hall W (2001) Prevalence, comorbidity, disability and service utilisation. Overview of the Australian National Mental Health Survey. *Br J Psychiatry* 178:145–153
7. Bebbington P, Brugha T, Meltzer H, Jenkins R, Ceresa C, Farrell M, Lewis G (2003) Neurotic disorders and the receipt of psychiatric treatment. *Int Rev Psychiatry* 15:108–114
8. Bergeron E, Poirier LR, Fournier L, Roberge P, Barrette G (2005) Determinants of service use among young Canadians with mental disorders. *Can J Psychiatry* 50:629–636
9. Biddle L, Donovan JL, Gunnell D, Sharp D (2006) Young adults' perceptions of GPs as a help source for mental distress: a qualitative study. *Br J Gen Pract* 56:924–931
10. Biddle L, Gunnell D, Sharp D, Donovan JL (2004) Factors influencing help seeking in mentally distressed young adults: a cross-sectional survey. *Br J Gen Pract* 54:248–253
11. Bijl RV, Ravelli A (2000) Psychiatric morbidity, service use, and need for care in the general population: results of The Netherlands Mental Health Survey and Incidence Study. *Am J Public Health* 90:602–607
12. Bijl RV, Ravelli A, van Zessen G (1998) Prevalence of psychiatric disorder in the general population: results of The Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Soc Psychiatry Psychiatr Epidemiol* 33:587–595
13. Cassee ET (1973) Naar de dokter, enkele achtergronden van ziekte-gedrag en gezondheidszorg. Leiden University, Leiden
14. CBS (2004) Statline. <http://statline.cbs.nl>. Accessed 4 August 2007
15. Etter JF, Perneger TV (1997) Analysis of non-response bias in a mailed health survey. *J Clin Epidemiol* 50:1123–1128

16. Gould MS, Bird H, Jaramillo BS (1993) Correspondence between statistically derived behavior problem syndromes and child psychiatric diagnoses in a community sample. *J Abnorm Child Psychol* 21:287–313
17. Greenley JR, Mechanic D (1976) Social selection in seeking help for psychological problems. *J Health Soc Behav* 17:249–262
18. Hosman CMH (1983) Psychosociale problematiek en hulpzoeken. In: Een sociaal-epidemiologische studie ten behoeve van de preventieve geestelijke gezondheidszorg. (Psychosocial problems and help-seeking behavior. A social-epidemiological study in preventive mental health care). University of Nijmegen, Nijmegen
19. Janca A, Kastrup M, Katschnig H, Lopez-Ibor JJ Jr, Mezzich JE, Sartorius N (1996) The World Health Organization Short Disability Assessment Schedule (WHO DAS-S): a tool for the assessment of difficulties in selected areas of functioning of patients with mental disorders. *Soc Psychiatry Psychiatr Epidemiol* 31:349–354
20. Kasius MC, Ferdinand RF, van den Berg H, Verhulst FC (1997) Associations between different diagnostic approaches for child and adolescent psychopathology. *J Child Psychol Psychiatry* 38:625–632
21. Kessler RC, Brown RL, Broman CL (1981) Sex differences in psychiatric help-seeking: evidence from four large-scale surveys. *J Health Soc Behav* 22:49–64
22. Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, Wittchen HU, Kendler KS (1994) Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey. *Arch Gen Psychiatry* 51:8–19
23. Lefebvre J, Lesage A, Cyr M, Toupin J, Fournier L (1998) Factors related to utilization of services for mental health reasons in Montreal, Canada. *Soc Psychiatry Psychiatr Epidemiol* 33:291–298
24. Madianos MG, Madianou D, Stefanis CN (1993) Help-seeking behaviour for psychiatric disorder from physicians or psychiatrists in Greece. *Soc Psychiatry Psychiatr Epidemiol* 28:285–291
25. Madianou D, Madianos M, Kounalaki A, Vlachonikolis J, Stefanis C (1986) Help-seeking and awareness on psychosocial issues in two Athenian communities (in Greek). *Encephalos* 23:213–224
26. Meadows G, Burgess P, Bobevski I, Fossey E, Harvey C, Liaw ST (2002) Perceived need for mental health care: influences of diagnosis, demography and disability. *Psychol Med* 32:299–309
27. Moller-Leimkuhler AM (2002) Barriers to help-seeking by men: a review of sociocultural and clinical literature with particular reference to depression. *J Affect Disord* 71:1–9
28. Morgan CJ, Cauce AM (1999) Predicting DSM-III-R disorders from the Youth Self-Report: analysis of data from a field study. *J Am Acad Child Adolesc Psychiatry* 38:1237–1245
29. Newman DL, Moffitt TE, Caspi A, Magdol L, Silva PA, Stanton WR (1996) Psychiatric disorder in a birth cohort of young adults: prevalence, comorbidity, clinical significance, and new case incidence from ages 11 to 21. *J Consult Clin Psychol* 64:552–562
30. Parslow RA, Jorm AF (2000) Who uses mental health services in Australia? An analysis of data from the National Survey of Mental Health and Wellbeing. *Aust N Z J Psychiatry* 34:997–1008
31. Patel V, Flisher AJ, Hetrick S, McGorry P (2007) Mental health of young people: a global public-health challenge. *Lancet* 369:1302–1313
32. Pescosolido BA, Boyer CA (1999) How do people come to use mental health services? Current knowledge and changing perspectives. In: Horwitz AV, Scheid TL (eds) *A handbook for the study of mental health: social context, theories, and systems*. Cambridge University Press, New York, pp 393–405
33. Reifler CB, Liptzin MB, Fox JT (2006) College psychiatry as public health psychiatry. 1967. *J Am Coll Health* 54:317–325
34. RIVM (2003) National institute for Public Health and the Environment. <http://rivm.nl/vtv>. Accessed 4 October 2006
35. Rost K, Smith GR, Taylor JL (1993) Rural-urban differences in stigma and the use of care for depressive disorders. *J Rural Health* 9:57–62
36. Ruehlman LS, Lanyon RI, Karoly P (1999) Development and Validation of the Multidimensional Health Profile, Part I: Psychosocial Functioning. *Psychol Assess* 11:166–176
37. ten Have M, Oldehinkel A, Vollebergh W, Ormel J (2003) Does educational background explain inequalities in care service use for mental health problems in the Dutch general population? *Acta Psychiatr Scand* 107:178–187
38. Wang PS, Lane M, Olfson M, Pincus HA, Wells KB, Kessler RC (2005) Twelve-month use of mental health services in the United States: results from the National Comorbidity Survey Replication. *Arch Gen Psychiatry* 62:629–640