When no-one notices...
Studies on suicidal expressions among young people in Nicaragua

Claudia Obando Medina
To my family
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ABSTRACT

Background
Suicidal behaviour among young people is one of the major public health problems in low-income countries; it is estimated that every year 70,000 young people take their lives and maybe 40 times as many attempt suicide. Nicaragua has the highest suicide rate among young people of all Latin and Central American countries. This thesis aims at examining: (1) suicidal expressions and their determinants among school adolescents in Nicaragua, (2) cross-cultural aspects on suicidal expressions comparing Nicaragua and Cambodia, (3) pathways to suicide attempts among young men, and (4) primary health care professionals’ perceptions of suicidal behaviour and mental health problems among young people.

Method
Paper I is a cross-sectional study of 368 school adolescents in Nicaragua using self-report instruments (Youth Self Report and Attitudes Towards Suicide). Paper II compares data from Paper I with corresponding data from a study of 316 adolescents in Cambodia using the same methodology. Paper III is a qualitative study based on interviews with 12 young men who have recently attempted suicide. Paper IV is a qualitative study with 12 primary health care professionals.

Results
Paper I: Among adolescents, suicide ideation during recent year was reported by 22.6%, suicide plans 10.3%, and suicide attempts 6.5%. Girls were significantly more likely to report suicidal ideation. Multivariate analyses showed that anxious/depressed syndrome (YSR), somatic complaints syndrome (YSR) and exposure to attempted or completed suicide in significant others were significantly associated with their own serious suicidal expressions.

Paper II: There was no significant difference in serious suicidal expressions (plans and attempts) between countries, but milder suicidal expressions during past year were more common among Nicaraguan young people. Overall, mental health problems were more commonly reported in Cambodia, where adolescents scored significantly higher on almost all YSR-syndromes as compared to Nicaraguan adolescents, except for withdrawn/depressed syndrome among boys. The pattern of association between mental health problems and suicide plans/Attempts differed between countries. In Nicaragua, all eight YSR-syndromes were significantly associated with serious suicidal expressions for both genders compared to only one syndrome among girls and two syndromes among boys in Cambodia.
**Paper III:** A model of the pathways leading to suicide attempts among young men was constructed based on the informants’ experiences. Structural conditions such as poverty or single-headed families, along with normative expectations within a framework of hegemonic masculinity, were all involved to create a sense of failure and an inability to cope. Subsequent increased drinking and drug abuse as well as exposure to attempted and completed suicide among friends and family acted as triggers to their own suicide attempt.

**Paper IV:** Primary health care professionals felt themselves that they lacked knowledge and competence when approached by young people with mental health problems. Misconceptions were common. They felt frustrated which made them either ignore signs of mental health problems or reject help-seeking young people. In practice, a common response from health care professionals was to refer the patient over to someone else, the “hot potato” strategy.

**Conclusions**

The prevalence of serious suicidal expressions among young people in Nicaragua is within the range reported from Western high-income countries. Health care professionals need to be aware that somatic complaints as such are related to an increased risk of serious suicidal behaviour among young people, and that those who have been exposed to the attempted or completed suicide of someone close are at increased risk of serious suicidal expressions also when there are no warning signs in terms of mental distress.

The cross-cultural comparison lends support to the notion that both cultural specificity and universality characterize serious suicidal expressions, as suggested by several researchers. Whereas prevalence shows less variation between cultures, associated factors might behave differently as shown in the present study, calling for different preventive approaches.

The interviews with young men who had attempted suicide tell us that not only difficult socio-economic conditions but also the normative expectations on young men need to be addressed to decrease their risk of suicide.

Health care professionals need to be alerted that sometimes serious mental health problems are hidden behind help-seeking for more trivial reasons. There is a necessity of a more integral approach towards mental health problems in PHC, including integral training of staff. The continued involvement of the community, family and other institutions would be essential to develop the care further.

**Key words** suicidal expressions, adolescents, young people, Nicaragua
RESUMEN

Antecedentes

El comportamiento suicida en los jóvenes es uno de los principales problemas de salud pública en países de bajos ingresos, se estima que cada año 70,000 jóvenes se quitan la vida y tal vez se cometen 40 veces más intentos de suicidio. Nicaragua tiene la mayor tasa de suicidios entre los jóvenes de todos los países de América Latina y Central. Esta tesis tiene por objetivo examinar: (1) las expresiones suicidas y sus determinantes entre los adolescentes en las escuelas públicas en Leon, Nicaragua, (2) aspectos interculturales en las expresiones suicidas comparando Nicaragua y Cambodia, (3) las vías de los intentos de suicidio entre los jóvenes, y (4) la percepción de los profesionales de atención primaria hacia la conducta suicida y problemas de salud mental entre los jóvenes.

Metodología

Artículo I es un estudio transversal con 368 adolescentes de las escuelas públicas en Leon, Nicaragua utilizando instrumentos de auto-llenado (Auto Informe de jóvenes y las actitudes hacia el suicidio). Artículo II compara los datos del artículo I con los datos correspondientes de un estudio de 316 adolescentes en Cambodia con la misma metodología. El artículo III es un estudio cualitativo basado en entrevistas a 12 jóvenes que recientemente han intentado suicidarse. Artículo IV es estudio cualitativo basado en entrevista con 12 profesionales de atención primaria de salud.

Resultados

Artículo I: Entre los adolescentes, la ideación suicida durante el último año se reportó en un 22,6%, planes de suicidio 10,3% , intentos de suicidio un 6,5%. Las adolescentes fueron significativamente más propensos a reportar pensamientos suicidas. El análisis multivariado mostró que el síndrome de ansiedad/depresión (YSR), el síndrome de quejas somáticas (YSR) y la exposición a intentos de suicidio o suicidio consumado de otras personas cercanas se asociaron significativamente con sus propias expresiones suicidas.

Artículo II: No hubo diferencias significativas en las serias expresiones suicidas (planes e intentos) entre los países, leves expresiones suicidas durante el año pasado fueron más comunes entre los jóvenes nicaragüenses. En general, los problemas de salud mental fueron más frecuentes en Cambodia, donde los adolescentes puntuaron significativamente más alto en casi todos los síndromes en comparación con los adolescentes de Nicaragua, excepto para el síndrome de apatía/depresión entre los adolescentes varones. El patrón de asociación entre los problemas de salud mental y planes suicidas/intentos difirieron entre los países. En Nicaragua, los ocho YSR-síndromes se asociaron significativamente con graves expresiones suicidas de ambos sexos en comparación con sólo un síndrome entre las adolescentes mujeres y dos síndromes entre los adolescentes varones en Cambodia.

Artículo III: Un modelo de las vías que conducen a los intentos de suicidio entre los hombres jóvenes se construyó con base en las experiencias de los informantes.
Condiciones estructurales como la pobreza o las familias monoparentales, junto con las expectativas de conducta social en el marco de la masculinidad hegemónica. Todos estos factores estuvieron involucrados para finalmente crear una sensación de fracaso e incapacidad para enfrentar la situación. Posteriormente hubo un aumento del uso de alcohol y drogas, así como la exposición a los intentos de suicidio y suicidio consumado entre los familiares y amigos los que actuaron como desencadenantes para el intento de suicidio de estos jóvenes.

**Artículo IV:** Los profesionales de atención primaria de salud consideran que carecen de los conocimientos y competencias al ser abordados por los jóvenes con problemas de salud mental. Ideas erróneas acerca del suicidio fueron comunes. Sentirse frustrados es lo que les hizo hacer caso omiso a las señales de problemas de salud mental o incluso rechazar la búsqueda de ayuda de los jóvenes. En la práctica, una respuesta común de las profesiones de la salud es remitir al paciente a otro colega.

**Conclusiones**

La prevalencia de serias expresiones suicidas entre los jóvenes de Nicaragua se encuentran dentro del rango reportado en países de altos ingresos. Los profesionales de la salud deben ser conscientes de que las quejas somáticas, como tal, están relacionados con un mayor riesgo de comportamiento suicida entre los jóvenes, y que aquellos que han estado expuestos a intentos o suicidio consumado de alguien cercano se encuentran en mayor riesgo de tener serias expresiones suicidas también cuando no hay señales de alerta en cuanto a trastornos mentales.

La comparación intercultural nos permite tener mayor evidencia de que existen tanto factores específicos culturales y factores universales asociados a serias expresiones suicidas. Según lo que ha sido sugerido por varios investigadores. Mientras que la prevalencia muestra una menor variación entre las culturas, los factores asociados podrían comportarse de manera diferente, como se muestra en el presente estudio, por tanto los diferentes enfoques de prevención se pueden aplicar.

Las entrevistas con hombres jóvenes que habían intentado suicidarse nos dicen que no sólo las difíciles condiciones socioeconómicas, sino también las expectativas de conducta social en el marco de la masculinidad de los hombres jóvenes deben ser dirigidas a disminuir el riesgo de suicidio.

Los profesionales de la salud necesitan estar alertados de que graves problemas mentales a veces se esconden detrás de la búsqueda de ayuda por motivos más triviales. Hay una necesidad de un enfoque más integral a los problemas de salud mental en atención primaria de salud, incluida la formación integral del personal. La participación continua de las instituciones de la comunidad, la familia y otros que son esenciales para desarrollar mayor prevención.

**Palabras claves** expresiones suicidas, adolescentes, gente joven, Nicaragua
LIST OF PUBLICATIONS

This thesis is based on the following papers, which will be referred to in the text by their Roman numerals.


II. Obando Medina, C.M., Jegannathan, B., Dahlblom, D., Kullgren, G. Suicidal expressions among young people in Nicaragua and Cambodia: A cross-cultural study. (Submitted)


IV. Obando Medina, C.M., Dahlblom, K., Kullgren, G. “...It’s a shock when someone doesn’t want to live”. Nurses and doctors’ perceptions of young people’s help-seeking in primary health care in Nicaragua. (Manuscript)

* The article has been published in an open-access journal
**Terms used throughout this thesis are defined as follows**

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<td>Death caused by self-directed injurious behavior with any intent to die as a result of the behavior (Centre for Disease Control and Prevention)</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>A non-fatal self-directed and potentially injurious behaviour with any intent to die as a result of the behaviour that may or may not result in injury (Centre for Disease Control and Prevention)</td>
</tr>
<tr>
<td>Suicide ideation</td>
<td>Thoughts of harming or killing oneself (Centre for Disease Control and Prevention)</td>
</tr>
<tr>
<td>Suicidal expression</td>
<td>Life-weariness, death wishes, suicidal ideation, suicide plan or suicide attempts</td>
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<tr>
<td>Adolescent</td>
<td>Someone between 10 and 19 years of age (WHO)</td>
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<tr>
<td>Young people</td>
<td>People aged between 15 and 24 years of age (WHO)</td>
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INTRODUCTION

My way into the collaborative research project between Umeå, Sweden, and León, Nicaragua

As part of an extensive collaborative research project between Nicaragua and Sweden, supported by SIDA/SAREC, Department of Psychiatry, Umeå University has been involved in mental health research in León since the end of the 1980s. In 2002, a research centre in León was inaugurated – the Centre for Demographic and Health Research CIDS. Within the centre the ongoing mental health research was organised as a Mental Health Unit. By 2005 several studies on mental health were performed focusing on suicidal behaviour. Dr. Trinidad Caldera presented his thesis Studies on Mental Health in Nicaragua in 2005 and Dr. Andres Herrera presented in 2006 his thesis on suicidal behaviour among young people – both of them registered as PhD-students at Umeå University.

I was involved as research assistant in several of the ongoing mental health projects. Dr. Caldera, who was my teacher at the university, invited me to participate in a study on suicide attempts as related to violence in pregnant women by Dr. Eliette Valladares. After that I was involved as research assistant in a community-based study on suicidal expressions conducted by Dr. Herrera and also in a project on Depression in adolescents by Yale University.

After some months I had the opportunity to register for a master’s program in Epidemiology. My master’s thesis focused on the use of verbal autopsy to determine the mental health status of those who committed suicide in Leon municipality from 2004 to 2006.

During those years I participated in other studies at CIDS as a fieldwork coordinator, in data collection and analysis. For example, in one study, conducted in 2004, we measured the incidence of suicides in León. Also in this period I participated as research assistant in the “Home Alone” Project – a project focused on studying the life situations of sibling caretakers in poor areas in León. In 2007, I also participated in a project describing the “Critical Pathway of Attention in Mental Health”.

During my master’s training I was supervised by Dr. Trinidad Caldera and also Dr. Gunnar Kullgren, as part of his commitment with the mental health research project at CIDS. During this time, the opportunity to take a summer course in Field Epidemiology in Sweden arose – two intense and motivational weeks to learn more in a different academic environment.
This became the starting point for my own research project and by the end of 2007 I had the opportunity to be registered as PhD-student at the Division of Psychiatry, Department of Clinical Sciences, Umeå University.

Conditions for young people in Nicaragua

Nicaragua, known as “the land of lakes and volcanoes”, is the largest country of Central America. It is divided into 15 departments and two autonomous regions (Figure 1).

Spanish is the principal language, but the country is multi-ethnic with mestizos making up the majority of the population. The 2005 census counted 1,044,476 households with an average of 4.9 people per household. In Nicaragua young people represent a significant part of the population. Nicaragua’s population is predominantly young: 37% are under 15 years of age, 59% are of productive age (15-64 years), and 34% (1.9 million) are between 10 and 24 years old (INIDE, 2008). Poverty is a major concern in Nicaragua with 16% of the population living under absolute poverty (<1 USD per day). Unemployment rates have increased over the last decades (INEC, 2006).

The level of education remains the lowest in Central America and 72% of the population do not complete secondary education. The mean average of years
in school is around 6 years, with high dropout rates. It takes on average 10 years to complete 6 years of primary school (Del Carpio, 2007; INEC, 2006).

For young people who drop out of school it is difficult to find work, and for those working, conditions are harsh (Unesco, 2008). Although under current legislation children under 14 are not allowed to work, eight out of 10 adolescent workers began working before their 14th birthday (Instituto Casa Alianza, 2009; Unesco, 2008). Approximately one-third of working adolescents reported having suffered work-related injuries (Instituto Casa Alianza, 2009; Unesco, 2008).

Violence in different forms and shapes is part of everyday life. A 2004 study conducted in five Nicaraguan hospitals revealed that injuries accounted for 18% of all emergency room visits; of these, 17% were firearm injuries (MINSA, CDC & OPS, 2004).

The main causes of morbidity in male adolescents are injury, poisoning, other external causes, and sexually transmitted infections, while among female adolescents they are complications in pregnancy and childbirth, domestic and sexual violence, injury, and poisoning. The main causes of death among adolescent boys are homicide, transport accidents, and suicide, while among adolescent girls the leading causes are problems related to pregnancy and childbirth, homicide, and suicide. Overall, adolescents aged 15–19 accounted for an estimated 32% of self inflicted injuries (intentional self-harm) (PAHO, 2007b).

Another social problem that affects young people is alcohol and drug abuse (PAHO, 2007a). Still, alcohol consumption continues to be a low priority for the health system in Nicaragua, as in most countries in the region of the Americas. According to a survey from five cities in Nicaragua, young people have alcohol drinking patterns that should call for concern (PAHO, 2007a). Mental health services for children and adolescents are scarce and unevenly distributed within the country. Out of all patients receiving outpatient mental health care only 8% were children or adolescents (Organización Panamericana de la Salud & Organización Mundial de la Salud, 2006).

Nicaragua has traditionally strict and religious norms and values. Generally the family norms are rigid and restrict adolescents’ lives in order to protect them. Even though Nicaraguan families often consist of many members sharing the same household, this rigidity causes feelings of loneliness and captivity among the adolescents and they often feel that they are prevented from choosing the lifestyle they prefer (Herrera et al, 2006).

Nevertheless, rapid structural changes in society have contributed to changing lifestyles among young people (Serra & Castillo, 2003). The rapidly changing economy forces young people to leave their family. It is common
that one family member emigrates to Costa Rica, the US or Spain to work (INEC, 2001; Instituto Casa Alianza, 2009) sending remittances to sustain their families left behind.

In recent years there has been a tendency to view young people in Nicaragua as a social problem (Instituto Casa Alianza, 2009; Serra & Castillo, 2003). There has been a shift from a cultural model that invites young people to be a useful part of the community, towards a cultural model that favours self-realization and individual personal development (Serra & Castillo, 2003).

Suicidal behaviour among young people

Prevalence

Suicide is one of the leading causes of death among young people worldwide, and is now among the three most common causes of death among those aged 15-34 (both sexes) in many countries (Bertolote et al, 2005). In the Americas, 38.4% of suicides were committed by those aged between 25 and 44. In Central America the age range with the highest rate was 20-24. Suicide rates in this age group were highest amongst Mexican and Nicaraguan males. Trends in suicide since 1990 report that the rate had remained relatively stable for most countries, dropping only in Cuba and the United States, whilst an increase was noted in Brazil, Mexico, Nicaragua and Uruguay (PAHO, 2007b).

Regarding suicidal expressions, a systematic review of studies published from 1997 to 2007 summarises that around 9% of the general population report having thoughts of suicide at some point in their lives and 3% have made a suicide attempt (Nock et al, 2008b). A systematic review in 2005 of 128 international studies on the prevalence of suicidal phenomena in adolescents (513,188 adolescents), found a mean proportion of adolescents reporting they had attempted suicide at some point in their lives to be 9.7%, and 29.9% of adolescents said they had thought about suicide at some point (Evans et al, 2005).

A Nicaraguan community-based study shows that in the age group 20-24 years, 23.9% of males and 22.6% of females reported suicide ideation, plans or attempts during the past year (Rodriguez et al, 2006). In a hospital-based study in the same setting, the group with the highest rate of attempted suicide in Nicaragua was the age group 15 – 19 years, with 203.7 per 100,000 inhabitants and year, followed by the age group 20 – 24 with 87.6 per 100,000 inhabitants (Caldera et al, 2004).

Even though the prevalence of suicidal behaviour varies across countries (see for example: Vijayakumar et al, 2005; Bertolote et al, 2005), young people
with suicidal behaviour share common characteristics. A survey carried out in 17 countries from different continents representing developed and developing countries found overall risk factors to be shared cross-culturally (Nock et al., 2008a). Several researchers have suggested that exploring universal versus culture-specific factors within this field might give a deeper understanding of suicidal behaviour (Hjelmeland, 2010; Mishara, 2006). Or as formulated by Nock and co-author (2008a): “Suicidal behaviour is the result of an interaction between many factors, for instance mental disorders, but also cultural and environmental factors. Factors beyond the mere presence of mental disorders might help to understand the transition from ideation to plans and attempts. Because of this complexity the differences between different cultures need to be understood on the basis of a social context.”

**Factors associated with suicidal expressions**

The development of suicidal behaviour is complex and different factors have been identified as being related to suicidal behaviour. In a systematic review of publications listed in different databases from 1963 until 2000, Evans and co-authors (2005) identified a number of specific factors within four domains: problems related to mental and physical health; other personal characteristics and experiences; family characteristics and social factors.

Reported below are factors identified in Evans’ review that are deemed relevant for the present thesis. More recent publications are mentioned regarding some factors, in particular previous studies conducted in Nicaragua.

**Problems related to mental health**

Five studies in the review reported non-specific mental health problems to be factors associated with suicidal behaviour. In more recent publications, Martin and co-workers (2005) and Borjes and co-workers (2010) have confirmed this association. Five studies were on anxiety disorders with a more complex but still overall positive association. A large number of studies supporting the association between depression and suicidal expressions are listed in Evans’ review. A recent example from a low-income country is a study from Cambodia (Jegannathan & Kullgren, 2011). Regarding substance use, the review states that “most of the studies were indicative of an association with suicide attempts”. However, it was further noted that none of the substance use disorders made an additional contribution to the variance in suicidal ideation in multivariate analysis. Illicit drug abuse seemed to have a strong direct association.
Other personal characteristics and experiences

It is noteworthy that in Evans’ review there was little evidence of an association between socio-economic characteristics and suicidal thoughts and behaviour. The studies included were mainly from high-income countries. However, a later study, based on data from 27 Australian schools, seems to indicate that coming from a socially disadvantaged background is a risk factor (Martin et al, 2005). In a qualitative study from Nicaragua, poor socio-economic conditions were perceived by young female suicide attempters to have contributed to their suicide attempts (Herrera et al, 2006). Regarding reviewed studies on family structure, the results were judged as inconclusive. There were a few studies on the absence of either parent, but mixed results were reported.

Family relationships seemed to be of importance in the Evans review; good communication and feelings of being understood by family members were associated with a lower prevalence of suicidal expressions in many studies. Family conflicts in a broader perspective have shown to be associated with suicidal expressions (Lyon et al, 2000; Martin et al, 2005). The Nicaraguan interview study of young females who had attempted suicide concluded that poor communication and conflicts within the family were major triggering factors (Herrera et al, 2006). The Evans review also included numerous studies looking at the influence of suicide exposure from friends and family on the suicidal behaviour of the individual. In studies with multivariate analyses, a family history of suicide attempts made a significant independent contribution. Several more recent studies have confirmed these results (Bridge et al, 2006; Conner et al, 2007). A Nicaraguan community-based study reported similar findings (Rodriguez et al, 2006).

Educational and social factors

Problems with poor school achievement and attendance were reported to be associated with suicide attempts, as reported in Evans’ review. Martin and co-workers (2005) found lower perceived performance scores to be associated with suicidal thoughts. A Nicaraguan study found that hospital admissions for attempted suicide amongst young people peaked during exam periods (Caldera et al, 2004).

Pathways to suicidal behavior

Suicidal behaviour is sometimes described as a process with varied length, usually extending over many years, progressing from weariness with life to death wishes, suicidal thoughts, suicide ideation, concrete planning, culminating in a suicide attempt or completed suicide (Engin et al, 2009; Fullagar, 2003; Salander-Renberg, 2001). However, others have suggested
that the process should be characterized as fluctuating rather than smooth, with no clear stepwise progressions, and likely to vary from day to day and maybe from hour to hour (Wyder & De Leo, 2007).

Fortune et al (2007) suggests that there are three types of suicidal processes: the first characterised by longstanding difficulties at home, school and with peers; the second characterized by an established psychiatric disorder; and the third characterised by the emergence of the suicidal process as an acute response to life events among seemingly well functioning young people without apparent mental illness (Fortune et al, 2007). Most researchers studying suicidal processes seem to favour a stress-vulnerability model similar to Fortune’s third type, for example; Pridmore & Jamil (2009), Aglan and co-workers (2008) of Cheng & Chang (2007).

In recent years an increasing number of qualitative studies have been undertaken exploring young men’s suicidal behaviour in relation to gender and cultural issues (Alston, 2010; Mac an Ghaill & Haywood, 2010; Oliffe et al, 2010; Scourfield et al, 2010; Shiner et al, 2009). The majority of these studies have been conducted in high-income countries.

**Health care professionals and suicidal expressions among young people**

A number of studies have shown that primary health care (PHC) can play a key role in preventing suicide (Luoma et al, 2002; Mann et al, 2005; Schulberg et al, 2004). PHC in Nicaragua, like in other developing countries, struggles to provide adequate mental health services (Saraceno et al, 2007). PHC centres and general hospitals are the primary facilities taking care of suicide attempts, but staff are generally not trained to provide specific care to these patients (Penayo et al, 1990; WHO, 2011). As a consequence, young people with suicidal thoughts and behaviours might not receive the help and the care that can prevent future suicidal acts.

A key point in this context, as has been pointed out in other studies, is that patients’ visits to their primary care centres increase in the weeks before their suicidal attempts (Draper et al, 2008; Luoma et al., 2002). A Nicaraguan study showed that almost half of the females younger than 25 years of age had contact with health services within 6 months before their suicide attempt (Caldera et al., 2004).

Counselling skills can help identify those at risk; especially since patients with suicidal thoughts have ambivalent feelings about their difficulties (Luoma et al., 2002). An open attitude and careful questioning can help in obtaining a deeper understanding of the patient’s situation, and in finding an adequate treatment (Huband & Tantam, 2000).
Misconceptions among staff might be barriers for good treatment. Several studies recognise that continuous training in mental health issues improves treatment and changes negative attitudes towards young people with suicidal expressions (McCarthy & Gijbels, 2010; Samuelsson & Åsberg, 2002; Stewart et al, 2002). Primary health care plays a crucial role in detecting and preventing suicidal behaviours, and staff need to have the tools to be able to meet the demands of PHC users.

**Conceptual framework for the current thesis**

Suicidal expressions in young people are determined by different factors, as illustrated in Figure 2, including societal factors such as poverty, family factors that include negative interpersonal relationships, separated parents, parental maltreatment, violence and a difficult childhood. Taken together these adversities might have future consequences for the individual, such as reduced self-esteem, mental distress, substance use, poor academic performance and suicidal behaviour. Exposure to suicidal behaviour among close relatives and friends, a lack of friends or other trusted people within the family, might increase the burden among those already vulnerable.

Gendered expectations from the society can also contribute to suicidal expressions. In many societies, the hegemonic pattern of masculinity (Conell, 2005; Courtenay, 2000a), as represented by the “ideal” man, encourages young men to be independent, successful and womanising, among other things. It also fosters unhealthy attitudes and behaviours that encourage men to engage in situations that might compromise their lives, in order to prove their manliness to society and to themselves. In addition, the pressure to live up to this ideal and men’s failure to meet these expectations can contribute to young men’s feelings of failure, thus undermining their mental health.

In this situation, as seen in Figure 2, primary health care has a key role in promoting mental health and preventing suicidal expressions among young people.
Figure 2. Model illustrating the conceptual framework.

Model adapted from Pillai A et al. Int. J. Epidemiol. 2009;38:459-469
AIMS

The overall aims of the present thesis are to increase knowledge and gain a deeper understanding of suicidal expressions among young people in a low-income country setting. The more specific objects for each study are listed in Table 1, which gives an overview of the thesis.

Table 1. Objective, design, sample and analytical methods used for each study.

<table>
<thead>
<tr>
<th>Paper</th>
<th>Study objective</th>
<th>Design</th>
<th>Sample</th>
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</thead>
<tbody>
<tr>
<td>Cross-sectional school study on suicidal expressions</td>
<td>To assess the prevalence of suicidal expressions and their relation to mental health problems and exposure to suicide among school students</td>
<td>Self – report questionnaires: YSR, ATTS.</td>
<td>368 adolescents aged 15-18 years were randomly selected from public secondary schools in León, Nicaragua</td>
</tr>
<tr>
<td>Cross cultural comparison of suicidal expressions</td>
<td>To compare the suicidal expressions and associated factors among school students in Nicaragua and Cambodia</td>
<td>Self – report questionnaires: YSR, ATTS</td>
<td>Overall 684 students aged 15-18 years in Nicaragua and Cambodia</td>
</tr>
<tr>
<td>Pathways to suicide attempts</td>
<td>To explore and gain understanding of pathways leading to attempted suicide in young men</td>
<td>Qualitative interviews. Grounded theory</td>
<td>12 young men, aged 15-24 years, recently admitted to hospital for a suicide attempt in León, Nicaragua</td>
</tr>
<tr>
<td>Health professionals and suicidal expressions among young people</td>
<td>To explore how primary health care professionals perceive mental health problems and suicidal expressions among help-seeking young people</td>
<td>Qualitative interviews. Thematic analysis</td>
<td>12 nurses and doctors from PHC centres in León, Nicaragua</td>
</tr>
</tbody>
</table>
METHOD

Study participants and design

Cross-sectional school study on suicidal expressions: From a list of all 3162 students aged 15-18 years in all public schools in León, a random stratified sampling technique was applied proportional to the size of each school. Within each school participants were then selected by simple random sampling. 370 students were selected, out of whom 368 agreed to participate. 51% were boys.

The study was a cross-sectional study where students reported on mental health problems, suicidal expressions and exposure to suicide from significant others on two instruments described below: Youth Self Report (YSR) and Attitudes Toward Suicide (ATTS).

Cross-cultural comparison of suicidal expressions: The study participants from Nicaragua were the same as in previous study. In Cambodia, 320 students, aged 15-18 years in grades 10 and 11 from two high schools in Takhmau, a semi-urban area close to the Cambodian capital Phnom Penh, took part in the study. All the students in four randomly selected classes in each high school were invited to participate, and all 153 male and 167 females agreed. Due to missing data, 316 students from Cambodia were included in the final analyses, with 48% being male.

Similarly to the study part in Nicaragua, students reported on mental health problems, suicidal expressions and exposure to suicide from significant others on two instruments described below: Youth Self Report (YSR) and Attitudes Toward Suicide (ATTS).

Pathways to suicide attempts: Fifteen participants were invited for the study from an ongoing public hospital surveillance. Criteria for inclusion in the study were: to be male, aged between 15 and 24 years, urban-dwelling, and to have been admitted to hospital between June 2008 to December 2009 following an attempted suicide. Of those invited, one declined to participate, one migrated and one was excluded due to major mental illness. Thus 12 young men were interviewed. The study was qualitative and performed and analysed according to grounded theory.

Health professionals and suicidal expressions among young people: Through a stratified purposive sampling approach, 12 doctors and nurses from three primary health care centres in León municipality were invited to take part in the study. The study was qualitative and performed and analysed according to thematic analysis.
Data collection and analysis

**Quantitative studies**

For the cross-sectional school study and the cross-cultural comparison of suicidal expressions two instruments were used.

*Attitudes Towards Suicide (ATTS)* is a self-report questionnaire that covers three areas; (1) Exposure to suicide from significant others such as parents, siblings, friends etc., (2) attitudes towards suicide and (3) self-reports on own suicidal expressions such as positive answers on items “Feelings of life not meaningful” (only used in the Nicaraguan study), “Life weariness”, “Death thoughts”, “Death wishes”, “Suicide ideation”, “Suicide plans” and “Suicide attempts”. It should be noted that the term “Serious suicidal expression” refers to ideation/plans/attempt in the Nicaraguan study but only to plans/attempts in the cross-cultural study.
In the present studies we used only sections 1 and 3. The psychometric properties of the instrument have been reported in previous studies (Arnautovska & Grad, 2010; Mofidi et al, 2008). The semi-structured questionnaire was translated into Spanish and Khmer for use in Nicaragua and Cambodia, respectively. The translated version of ATTS was discussed among professionals and field-tested, and had been used in both the countries, previously (Jegannathan & Kullgren, 2011; Rodriguez et al, 2006).

The Youth Self-Report (YSR) is a self-report questionnaire for 11–18 year olds, developed by Achenbach and colleagues, that evaluates competencies and behavioral problems. In our study we explored the behavioral part, consisting of 112 items with statements of behaviors or symptoms, including 16 items indicating social desirability. The participants responded as following: 0 = not true; 1 = somewhat or sometimes true; and 2 = very true or often true. The items are combined into eight syndromes: withdrawn/depressed, somatic complaints, anxious/depressed (together constituting the internalizing syndrome), rule-breaking behaviour and aggressive behavior (together constituting the externalizing syndrome), social problems, thought problems and attention problems (Achenbach &
Rescorla, 2001). The total problems score is the sum of all the responses comprising of the different syndromes in YSR, whose reliability and validity has been established across diverse cultural settings (Achenbach et al, 2008; Ivanova et al, 2007).

In the present studies the internal consistency was acceptable for all YSR syndromes in both countries, except for attention problems among the boys in Cambodia (Table 2). For internalizing and externalizing syndromes the reliability was good. Very similar reliability coefficients have been reported from, for example, a Swiss study (Steinhausen & Metzke, 1998).

Table 2. Internal consistency (Chronbach’s alfa) for YSR syndromes (Paper III).

<table>
<thead>
<tr>
<th>Qualitative studies</th>
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<tr>
<td>In Pathways to suicide attempts an interview guide with open-ended questions was used to explore the issues surrounding the suicide attempt, to let the informant give their view of what happened prior to and on the day of the incident. During the interview, we used probing and follow-up questions to gain a deeper knowledge of the informant’s experience. The interviews were conducted and analyzed with a grounded theory approach.</td>
</tr>
<tr>
<td>The interpretation followed the grounded theory recommendations (Bryant &amp; Charmaz, 2007). Grounded theory involves a move from concrete findings towards a more abstract analysis. As a result we built a model with different interactions between individual and environmental stressors that contribute to an attempted suicide. The informant’s emotional state and their strategies to cope with their emotions, were presented in a lifetime perspective. Following the principles of grounded theory, the process began with coding, identifying codes that emerged from what the informants expressed in their interviews. After that they were sorted and used as a guide in the search for</td>
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categories. To have a more complete understanding of the meaning of the interviews the principal researcher coded the interviews and constructed preliminary models for each participant, and these were then negotiated amongst the research team.

In Health professionals and suicidal expressions among young people primary health care professionals were interviewed using an interview guide with open-ended questions to explore their views on suicidal expressions among young people. The guide included questions on how they managed a patient with suicidal ideation, focusing on the interviewee’s feelings and emotional reactions. Limitations related to their management of these patients and ways to improve the situation were further explored.

The interviews were conducted and analyzed with thematic analysis. Following data collection from 12 interviews, the process of analysis started by coding and identified different themes. It is a systematic process, but at the same time it is an interactive and reflexive process that identifies, analyses and reports themes within data. The process involves the identification of themes through careful reading and re-reading of the data.

Ethical considerations

The studies were approved by the regional research ethical committee in Umeå, Sweden, as well as the ethical committee of UNAN-León, Faculty of Medicine, Nicaragua. The studies’ objectives were explained to all participants. Participation was voluntary and participants were free to leave the study at any point. All informants received a leaflet providing contact information on services in the community where they could receive psychological counselling, if needed, without charge. Informed consent was obtained verbally for the quantitative studies and written for the qualitative studies.
SUMMARY OF RESULTS

Cross-sectional study on suicidal expressions

In the whole sample (n=368), the most common suicidal expressions reported were “life not meaningful” (77.7%), “death thoughts” (39.7%) and “life weariness” (34.2%). Altogether 25% reported a serious expression defined as ideation, plans or attempts. Girls reported higher prevalence of all suicidal expression than boys (Figure 4), with significant differences only on the items “life is not meaningful” and “suicide ideation”.

Figure 4. Percentage of adolescents reporting suicidal expressions during recent year stratified by gender among school adolescents in León aged 15-18 years.

Those who reported suicide ideation, plans or attempts had higher scores on all YSR-syndromes. In a ROC analysis, internalising and externalising syndromes were furthermore significantly associated with reports on ideation, plans or attempts.

Exposure to suicide among significant others was reported by one-fourth of the sample. Those exposed scored higher on all YSR syndrome, with the exception of withdrawn/depressed syndrome among girls.
A final multivariate analysis showed serious suicidal expression among Nicaraguan adolescents to be significantly associated with anxious/depressed syndrome (AOR=3.30), somatic complaints syndrome (AOR=2.97) and being exposed to suicide among significant others (AOR=2.48).

Cross-cultural comparison of suicidal expressions

Prevalence of the mildest suicidal expressions, “life weariness”, as well as the most serious expressions, “self-reported plans and attempts”, did not differ between countries. Other expressions, “death thoughts”, “death wishes” and “suicide ideation” were significantly more common in Nicaragua than in Cambodia.

In contrast, Cambodian boys and girls scored significantly higher on all YSR syndromes, except “rule breaking syndrome”, than boys and girls in Nicaragua.

Exposure to suicide among significant others was twice as often reported among Nicaraguan boys as compared to Cambodian boys, with no difference among girls.

When exploring how mental health problems and exposure to suicide related to serious suicidal expressions, a different pattern emerged between
Nicaragua and Cambodia. In a multivariate analysis, with serious suicidal expressions as dependent variable and all YSR syndromes and exposure entered as co-variates, there was no association shown among Cambodian boys, whereas among Nicaraguan boys both anxious/depressed syndrome scores and exposure were significantly associated. Among girls in both countries, exposure was associated with increased likelihood to report one of the serious suicidal expressions. Anxious/depressed syndrome and somatic complaints syndrome were significantly associated with serious suicidal expressions in Nicaragua, but only withdrawn/depressed syndrome showed association in Cambodia.

**Pathways to suicide attempts**

In the analyses of the interviews with young men who had recently attempted suicide, we identified two sorts of structural conditions of relevance to understand their pathway to suicide attempt: material circumstances and normative expectations. The first condition includes such elements as chronic poverty and dysfunctional families, whereas the second condition deals with influences of a cultural and normative nature formed by the ideals of hegemonic masculinity. These structural conditions seemed to induce a state of despair and shame that was additionally fuelled by frustration when they were unable to meet with the demands of their families and environment.

> Well, you know... in my family we (men) are expected to support our women; if she needs something, well, she just has to ask for it! We (men) are here to help the women, not the other way around... sincerely, I am not used to the fact that she supports me, I am really ashamed to say that. She is working and I am not... I just feel like a clown!" (Informant No 12)
This state of mind made them vulnerable to triggers such as alcohol or drug abuse, and, for many of them, the suicide of a close relative or friend. At this point, many warning signs for an imminent suicide attempt were present, such as mood changes, lost interest in work and increased drinking habits.

“And it was mostly because of all the problems, how they got all mixed up, and so I went with friends to booze it up and I just wanted to die. I was so sad and disappointed and I felt like I should die. Those
problems just keep piling up and when I see them I just want to drink and do stuff like that”. (Informant No 7)

After the suicide attempt support from family and friends was a key factor facilitating recovery. Talking to someone, such as the research interviewer, was perceived as important.

[After talking with you] I feel fine. I feel like a weight was been lifted off my shoulders. I feel relieved because I talked about stuff I've never talked about before. (Informant No 3)

Health professionals and suicidal expressions among young people

Several themes emerged from the data gathered throughout the interviews. The general view among health professionals was that reproductive health issues were the main reason for young people to attend primary health care. Questions related to contraceptive methods and pregnancy dominated. Mental health problems were not considered to be reasons for attending.

The interviewees had strong views on the value of life, emphasising that their role is to save life. This influenced their responses to young people who presented suicidal problems. They felt frustrated and incompetent when they were unable to meet with the demands of their patients.

“It’s hard to listen to someone saying that he or she wants to die... it’s a shock when someone doesn’t want to live, and its worse when it’s a young person”. (Female doctor Sutiava)

The treatment process of a patient with suicidal behaviour was often characterised by a tendency to refer the patient further: a nurse refers to a doctor (general physician) who then refers to the psychologist or psychiatrist, we labelled this as “hot potato syndrome”. For example, nurses felt that they had less skills and knowledge than doctors to take care of mental health problems.

“...I do not want to deal with these kinds of patients, I refer them to someone else”. (Male doctor Perla Maria)

Other perceived limitations were limited time, lack of privacy, difficulties creating a trustful relation with the patient, economic constraints and few human resources. They had a number of suggestions on how to improve the situation but felt frustrated given the fact that this was beyond their mandate. Training in mental health and specifically in the management of suicide patients was one common suggestion.
DISCUSSION

Studies on school adolescents (Paper I and II)

The prevalence of suicidal expressions seems to be fairly similar across the world. In the WHO SUPRE-MISS study on prevalence of suicidal expressions across all age groups, in ten countries, while there was variation between sites, possibly influenced by methodological differences, the overall conclusion was still that “the results were within the ranges of previously published data on community surveys in different places” (Bertolote et al., 2005).

The extent of suicidal expression reported by adolescents in our study was pretty much in accordance with what has been shown for young people in high income countries HIC (See for example: Grunbaum et al, 2002; Kessler et al, 2005; Rey et al, 1998). This is particularly noteworthy since many well known risk factors associated with suicidal phenomena, such as socio-economic adversities, disrupted families, problems with school achievement (for an overview see: Evans et al, 2005), are very common in a low income country LIC like Nicaragua (Lancaster, 1992; Pillai et al, 2009; Shooshtary et al, 2008). Whether mental disorders, representing another obvious risk factor, are more common in Nicaragua than in HICs has not been investigated but our study indicate that this might be the case; at least scores on several crucial YSR-syndromes were clearly higher among Nicaraguan adolescents as compared to a normative US sample (Achenbach & Rescorla, 2001).

One major aim of the cross-cultural study in the present thesis was to approach the issue of universal as opposed to country - or cultural - specific characteristics in suicidal expressions among young people. We choose to compare two countries, Nicaragua and Cambodia, with similarities in terms of poverty and a shared history of war and violence but differences in terms of culture. Prevalence of serious suicidal expressions turned out not to differ and overall gender patterns were fairly similar between the two countries. However, the pattern of associations between serious suicidal expressions and risk factors, such as mental distress and exposure to suicide among significant others, did differ between Nicaragua and Cambodia. Young people in Cambodia scored significantly higher on YSR-syndromes, in fact twice as high on some syndromes, but still reported a similar prevalence of serious suicidal expressions. All YSR-syndrome scores were associated with own serious suicidal expressions in Nicaragua whereas such associations were few or non-existing in Cambodia. Exposure to suicide among significant others was strongly associated with own suicidal expressions among Nicaraguan boys but no such association was seen among Cambodian
boys. As expected, from previous studies, suicide exposure was associated with own suicidal expressions among girls in both countries in the crude analyses (Brent et al, 1996; Conner et al, 2007; Fleming et al, 2007).

The multivariate analyses performed separately in each country further confirmed differences in the pattern of associations between the two countries. For example, among Cambodian boys, no significant associations remained between their own serious suicidal expressions and YSR-syndrome and exposure to suicide among significant others, whereas among Nicaraguan boys anxious/depressive syndrome was significantly associated and those exposed to attempted or completed suicide were more than four times as likely to report own serious suicidal expressions.

An overall conclusion drawn in the present thesis is that these similarities and differences between Nicaragua and Cambodia indicate that both universal and cultural specific mechanisms might play a role in suicidal expressions among young people. One limitation for the cross-cultural study is that variables reflecting “culture” such as religious thoughts, beliefs in traditional cultural specific values, were not included in the analyses (See for example, Hjelmeland, 2010). Still, our choice of comparison countries makes it seen more likely that cultural rather than socio-economic factors explain the difference even though our studies cannot identify which these factors these are. We can only speculate how cultural conditions in Nicaragua and Cambodia might act as protective or aggravating factors in suicidal behaviour among young people. It has been suggested that religion act as a protective factor, even though studies seem to show a mixed picture (Clarke et al, 2003; Sisask et al, 2010). In Nicaragua, Catholic values are still very influential and suicide is strongly condemned. From that perspective, one would expect the prevalence of suicidal expressions in Nicaragua to be lower than in Cambodia, where Buddhism, which takes a more tolerant view towards suicide, is the main religion. However, it might be that religion is less important for young people in Nicaragua today than it is for the older generation. Even though there is a high incidence of mental health problems among young people in Cambodia, this does not correspond to a similar high incidence of suicidal expressions. We have suggested that a possible reason for this is that traditional values, such as the importance of the family, are still strong in Cambodia and this might play a protective role for young people against suicidal behaviour. On the other hand, in Nicaragua, the process of globalisation is more advanced bringing with it the disintegration of traditional norms and values (Lancaster, 1992; Tully, 2007). This might help to explain why the high rates of suicide and suicidal expression in Nicaragua are similar to those of Cambodia, despite a significantly lower incidence of mental health problems in the former. A study on pathways to attempted suicide among young girls in Nicaragua lends some support to this view (Herrera et al, 2006).
Studies on suicide attempters and PHC-professionals (Paper III and IV)

The qualitative studies, based on interviews with young people who have attempted suicide, as well as interviews with health professionals who meet young people with mental and suicidal problems, aimed at further exploring factors contributing to suicide attempts, and how the health care system responds to mental health problems and suicidal expressions among young people.

For the Nicaraguan men in our study, the process leading to an eventual suicide event was influenced by a number of external and internal factors. Structural factors such as normative expectations and material conditions influenced our informant in this process by limiting their possibilities of adequately responses to stressful situations.

The informants’ inability to fulfill gendered societal expectations contributed to feelings of frustration, leading to inadequate responses, such as the use of drugs and alcohol as a means of coping with stressful challenges. Young men often engage in risky behaviors as a way of probing their masculinity to themselves and others (Courtenay, 2000a, Courtenay, 2000b; Evans et al, 2011). The Nicaraguan young men in our study seemed to perceive alcohol binges and drug use as “manly” ways to cope with stress, a behavior which in fact only tends to make the problems worse. Other studies have found that men who attempt suicide are likely to use alcohol in excessive ways (Biong & Ravndal, 2007; Möller-Leimkühler, 2003; Nock et al, 2009; Patel et al, 2007).

Overall, our findings from the interview study show that, for young men, the process of attempting suicide is rooted in feelings of inadequacy and shame, and the inability to cope with this feelings in a constructive way. One study, conducted in Nicaragua, found that girls attempting suicide also experienced it as a process fueled by negative socioeconomic conditions, family problems and the death of family members (Herrera et al, 2006). Other researchers have pointed out that the pathways to a suicide attempt cannot always be seen as a distinct process, or at least there are significant cultural variation in the way it is expressed, and sometimes a suicide attempt is an impulse act with few or no warning signs (Bertolote et al, 2005). In our study it was obvious that a number of factors gradually contributed to undermine the mental state of the respondents. As suggested by other researchers, family factors such as parental mental health problems, suicide within the family and suboptimal family environment strongly influence adolescent suicidal behavior (Brent & Mann, 2006; Patel et al, 2007). A specific stressor for the informants in our study, was the absent of a father, or a strained relationship with the father, which has been shown in other studies to be an important factor (Cash & Bridge, 2009; Herrera et al, 2006).
It is likely that at least some of the attempts could have been prevented if the informants had been capable of communicating their feelings of frustration and sadness openly, and if people in their environment had been ready to listen. In many cases there were warning signs, such as stifled messages, behavioral changes, mood changes or increased drug and alcohol use, which were not noticed or acted upon by relatives, friends or health professionals.

Around the world mental health services for young people have been shown to be insufficient and Nicaragua is no exception (Patel et al, 2007). Lack of resources is not always the main problem; structures and attitudes also play an important role, and this can be improved without increasing resources (Jacob et al, 2007). A primary health care (PHC) system that is well integrated in the community and accessible to all individuals has a key role to play in promoting mental health and the treatment of common mental disorders (Smith et al, 2006). The interview study in this thesis on primary health care doctors and nurses aimed at exploring possible barriers to manage young people with suicidal problems.

Initially, during the interviews, nurses and doctors often expressed the view that young people attending PHC do so mainly for issues regarding reproductive health, such as pregnancy, sexually transmitted diseases or contraception. During the interview we introduced a vignette describing a young person with mental health problems, and it seems that it acted as an eye-opener for many of the health care professionals, which facilitated the continued interview. Overall, they expressed very few negative or derogatory views towards young suicide attempters, in contrast to what has been reported in several other studies on attitudes (Friedman et al, 2006; Huband & Tantam, 2000; Suokas et al, 2008). However, some of them described it as a difficult challenge to meet young people who have a wish to die, when their professional role is to save the life of those struggling to survive a deadly disease.

Our study confirmed the findings of previous studies, namely that medical staff believe they lack appropriate training to handle young people with suicidal problems. Obviously, training staff in how to handle patients with suicidal behavior is a key intervention (Huband & Tantam, 2000; Mann et al, 2005; Szanto et al, 2007; Taylor et al, 2009). The perceived lack of competence led to what we describe in our paper as a “hot potato-syndrome”; nurses and doctors tended to refer or hand over young patients with suicidal or mental health problems to some other nurse or doctor at the centre.

Our informants also identified key structural barriers in providing quality care. For example, they mentioned a lack of referral specialized services and consultation support from secondary or tertiary level services. Altogether,
Overall, the interviewees expressed a strong wish to be able to improve the way PHC manage suicidal problems among young people. They had several suggestions on how to make PHC a trusted service for young people and on how to improve collaboration between PHC and community and other stakeholders.

**Methodological considerations**

The methodological strength of the thesis is in exploring the problem of suicidal expressions from different angles using different methods and different informants; qualitative and quantitative methods have been used, and a range of informants have contributed to collected data: especially school adolescents, young men who had recently attempted suicide, and health care professionals. An additional strength is the openness and willingness with which these young men were willing to talk about such sensitive issues as an attempted suicide. The informants clearly expressed that they were relieve to have an opportunity to talk about their problems.

There are however limitations worth considering. It might be that our findings cannot be generalized to other low-income settings, or even to Nicaragua as a whole. León is a university city, and whether our conclusions are valid for rural Nicaragua or other low-income countries in the region is, for obvious reasons, unclear. Furthermore, the cross-sectional study involves only young people attending school, and a substantial proportion of people in corresponding age group do not attend school. The studies also suffer from the inevitable limitation of cross-sectional studies that the design does not allow us to secure a causal relationship between the exposures measured and the outcomes explored.

For the interview studies, the informants were recruited from those admitted to the general hospital for a suicide attempt, and a few cases that attend private clinics were probably missed. Similarly, we have only interviewed health care professionals from public health care settings. However, in our understanding cases in private services are few.

The self-report instruments used for the cross-sectional study (ATTS and YSR) were developed in Western high-income settings, and they might not measure the same constructs in low-income countries such as Nicaragua and Cambodia. However, both instruments have been widely used and validated in several settings. We believe, that the high response rate on sensitive questions regarding, for example, own suicidal expressions indicates that the questionnaires were seriously and openly responded to. The instruments that were used in this thesis had different time frames (past six months for
YSR-symptoms and past12 months for suicidal expressions), but we decided to keep it as the original authors suggest and we believe that this is unlikely to have any significant influence on our results.

**Conclusions and recommendations**

The findings in this thesis provide new insights about suicidal expressions among young people in Nicaragua, a low income country where the prevalence of serious suicidal expressions among young people is within the range reported from Western high-income countries. This thesis identifies key factors associated with serious suicidal expression among young people. Clearly, our findings call for preventive activities and treatment at different levels. For example, preventive programs at the school level should aim at increasing identification of warning signs for suicidal behavior with special focus on detecting anxiety/somatic related complaints as well as adolescents exposed to suicide among others.

The qualitative study with young male suicide attempters, contributes to understanding mechanisms leading to suicidal behavior. For example, it tells us that difficult socio-economic conditions play a role in young men´s pathway to suicide but more important it also shows that the normative expectations in the society on young men need to be addressed to decrease their risk of suicide.

The cross-cultural comparison of two low-income countries with similar economic backgrounds (Nicaragua and Cambodia), lends support to the notion that factors associated with serious suicidal expressions vary between cultures. Preventive approaches must take into account the cultural background to improve its effectiveness and acceptance among the target population.

At the community level, programs must include awareness campaigns about the importance of identifying warning signs for suicide. In addition, preventive actions must include activities aiming at reducing alcohol and drug use among young people.

Finally, our results highlight the need of strengthening primary health care in providing adequate response to mental health problems, especially suicidal behavior. There is a necessity of a more integrated approach towards mental health problems. The continued involvement of the community, family and other stake holders is essential to develop successful programs for prevention and treatment. Mental health must be included in all preventive activities performed by primary health care centers at the community level.
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