INTRODUCTION
Chapter 1

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Misuse of prescription based medications and its effect in the medical and social areas are expected to be a significant public health problem. This is noteworthy in a country like India, where very little control can be achieved at the population level over the acquisition of medications without prescriptions. Analgesics are the commonest medications regularly used by the general population and are obtainable without prescription and as over-the-counter. Habitual unendorsed use of these analgesics has a probability of causing considerable medical and subsequent social harm over a period of time.

Drug misuse is defined as the use of a drug or substance including prescription medications for a purpose not consistent with legal or medical guidelines (World Health Organization, 1994). As per the definition of Drug misuse, we have defined Analgesic misuse in this study as any current (past 30 days) use of analgesics for indications other than everyday kind of pain (e.g., minor headache, sprain, toothache, pre-menstrual syndrome) without medical advice. Drug misuse has an unconstructive and harmful brunt on health and its functioning may acquire the form of drug dependence, and become a part of a wider range of challenging or harmful behaviour (The British Psychological Society & The Royal College of Psychiatrists, 2008). In the UK, the Advisory Council on the Misuse of Drugs identifies problem drug use as “a condition that may cause an individual to experience social, psychological, physical or legal problems related to intoxication and/or regular excessive consumption, and/or dependence” (Department of Social protection - Substance and Drug dependency, 1998).
Individuals misusing drugs may complain a range of health and social problems other than dependence, which may include (particularly with users of opioid analgesics):

i. physical health problems (for example, thrombosis, abscesses, overdose, hepatitis B and C, HIV, and respiratory and cardiac problems)

ii. mental health problems (for example, depression, anxiety, paranoia and suicidal thoughts)

iii. social difficulties (for example, relationship problems, financial difficulties, unemployment and homelessness)

iv. criminal justice problems.

Alcohol misuse is a common problem among all who misuse drugs. Data from the National Treatment Outcomes Research Study (NTORS) on drug misuse suggested that “22% of participants drank alcohol frequently, 17% drank extremely heavily and 8% drank an excessive amount on a daily basis”.

The strongest evidence highlights peer drug use, availability of the drugs and also fundamentals of family interaction, i.e., parental discipline as major risk factors for drug misuse (The British Psychological Society & The Royal College of Psychiatrists, 2008).

Pain in any form may affect a person's quality of life and day-to-day performances. It is the commonest cause for consultation with physicians (Turk et al., 2002, 2008 and Breivik et al., 2008). The treatment of both pain and inflammation is primarily through the use of NSAIDs. NSAIDs are the most widely used and misused of all drugs (Carson et al., 1993). Most of the NSAIDs are the non-selective inhibitors of both the cyclooxygenase-1 (COX-1) and cyclooxygenase-2 (COX-2) isoenzymes.

NSAIDs provide symptomatic relief from pain and swelling in chronic joint diseases such as in rheumatoid arthritis and in acute inflammatory conditions such as sports
injuries, fractures, sprains, acute arthritic pains and other soft tissue injuries. It also provides relief from post-operative, dental and menstrual pain, and from the pain of headaches and migraine (Pottast et al., 2005). They are also used in neonates whose ductus arteriosus does not close within 24 hours of birth.

Different NSAID formulations are available, including tablets, injections and gels, and most of them are available over the counter (there are now more than 50 different NSAIDs on the global market). Often taken without prescription, NSAIDs are the choice for relief of some types of minor aches and pains that are not necessarily indicated for NSAIDs (Stuart et al., 2010). However, it is important to note that virtually all NSAIDs, particularly the ‘classic’ NSAIDs, have noteworthy surplus effects, especially in the elderly, but the newer agents have fewer adverse effects (Langman et al., 1999). NSAIDs may cause renal impairment, especially when consumed in combination with other nephrotoxic agents.

Renal failure is a risk, if the patient is also concomitantly taking an ACE inhibitor and a diuretic - the so-called “triple whammy” effect (Thomas et al., 2000). Liver problems are also possible with the long term use of NSAIDs (Rabinowitz et al., 1992).

Although misuse of these NSAIDs affects many, certain populations such as youth, older adults, and women may be at particular risk (Hogerzeil et al., 1995, Isah et al., 1997 and World Health Organization, 1994). In total, more men than women are at present misusing prescription drugs, however, the rates of misuse and overdose among women are increasing faster than men. Individuals who misuse prescription medications are also more likely to use other drugs. Multiple studies have revealed associations between prescription drug misuse and higher rates of cigarette smoking, heavy episodic drinking, and marijuana, cocaine, and other illicit drug use among adolescents, young adults, and college students in United States (Misuse of

“More than eighty percent of older patients (aged 57 to 85 years) use at least one prescription medication on a daily basis, with more than 50 percent taking more than five medications or supplements daily” (Hogerzeil et al., 1995). This can likely lead to health issues due to unintentional use of prescription medications in a manner other than the way it was prescribed for, i.e, nonmedical use. Multiple chronic illnesses in older people, age-related metabolic changes and significant drug interactions may cause drug (and other substance) misuse more unsafe in older people than in the younger populations. Moreover, a large percentage of elderly individuals also consume over-the-counter medicines, dietary supplements, which, in addition to alcohol could lead to any unfavourable and poor health conditions (Hogerzeil et al., 1995). Finally, more males than females misuse prescription drugs almost in all age groups except adolescence (12 to 17 years), adolescent girls outnumber boys in the nonmedical use of prescription type drugs.

The objective of this study is to estimate the prevalence and predictors of analgesic misuse and the Quality of Life of a young adult population (15 - 40 years of age) of either sex in an urban area of Sikkim. Young adults are chosen as ideal participants as this population is less likely to have co-morbid medical conditions requiring chronic analgesic use and, thus, shall eliminate an analytical bias. We are mainly focusing on analgesics like Paracetamol, Ibuprofen, Aspirin, Indomethacin, Mefenamic acid, Celecoxib, Meloxicam (based on a validated case record form of analgesic misuse questionnaire).

Thus the study has the following specific objectives:

i. To estimate prevalence of analgesic misuse in an urban area of East Sikkim among young adults (15 – 40 years of age) of either sex. Analgesic misuse shall be defined as any current (past 30 days) use of analgesics for indications other than everyday kind of pain (e.g., minor
headache, sprain, toothache, pre-menstrual syndrome; etc.

ii. To find out the predictors of analgesic misuse in this population, e.g., sociodemographic factors like gender, education, easy availability; etc and clinical factors like presence of chronic pain, untreated / poorly treated pain.

iii. To estimate how analgesic misuse affects physical and emotional quality of life.