Progression of suicidal ideation to suicidal behavior from a perspective of selected suicidological models

Paweł Rodziński, Krzysztof Rutkowski, Anna Ostachowska

Department of Psychotherapy, Jagiellonian University Medical College

Summary

In clinical practice suicidal ideation (SI) is one of the most commonly encountered symptoms in patients with mental disorders. Such encounter calls for diligent evaluation of suicidal risk. Although the risk factors are widely known, accurate estimation of suicidal risk remains one of the most difficult and most important tasks that clinicians face – especially considering recently collected data showing increase in suicide prevalence in Poland. More thorough estimation of suicidal risk in patients with SI requires taking under consideration not only suicidal risk factors but also factors that are more specific for progression of SI to suicidal behaviors (SB). The review presented in this paper consists of a range of suicidological theories that allow to select a number of groups of factors and mechanisms that are most specific for progression of SI to SB. These groups include: (1) transgression of fear of causing harm and pain to oneself, as well as disintegration of other protective barriers such as (2) decline of social integration with others, feeling of being alienated or abandoned, decline of sense of belongingness, lack of social support, (3) resignation from family and social obligations, (4) dismissing cultural or religious norms, (5) rejection of life goals, values and aspirations that were appreciated earlier, (6) narrowing down in perceived alternatives for suicide, i.e., "tunnel vision", feelings of helplessness and powerlessness, (7) devising in details and accepting simple suicidal plan, especially when such plan is being consolidated through rehearsals and as if "automatized", (8) impulsiveness, (9) accumulation of aggression that may be vented out as suicide, and finally (10) accessibility of means to commit suicide.

Key words: suicide, suicidal behavior, suicidal ideation

Introduction

Suicide is multidimensional and complex phenomenon that is diversely defined. Among most widely accepted there is WHO definition according to which suicide is an act of deliberately taking one's own life [1]. Analogically, suicidal behaviors (SB) are commonly defined as potentially lethal behaviors undertaken with an intention of taking one's own life. SB that were associated with clear suicidal intentions or posed

considerable risk of death are commonly regarded as suicidal attempts (SA) [1, 2]. A part of authors uses a term "suicidality" that encompasses all previously mentioned phenomena. Key element in defining all those terms (that separates them from accidents that result or may result in death) is "deliberation" or "intent". Consequently, commonly accepted definitions imply that suicidal ideation (SI – understood as the desire to take one's own life) precede suicidal behaviors as well as suicide.

Prevalence of suicidality

Nonetheless, only few of patients with SI manifest SB. In general population of France 1-year prevalence of SI was 3.9%. At the same time 0.5% of participants attempted suicide [3] (that was 13% of those with SI). An international study (that included samples of general population of 19 countries, including 7 European countries) showed life-time SI prevalence of 9.2%, whereas SA prevalence was 2.7% (that was 29.0% of those with SI) [4]. It is estimated that one suicide is being committed for every 15–25 suicidal attempts [2]. According to WHO's global assessment, approximately 1.5% of all deaths are results of suicide. In the year 2012 suicide was ranked as 15. most common cause of death. However, in the age group of 15–29 year-olds suicide was ranked as 2nd most common cause of death. 1-year prevalence of suicide for 100,000 people in Poland in 2012 was 16.6 (this included ratio of 30.5 in men and ratio of 3.5 in women according to WHO). In comparison, worldwide suicide ratio was estimated to be 11.4 [1]. According to Polish police reports (based on different methodology of collecting information about suicides) in recent years a number of suicides in Poland increased: from the range of 3839–4384 cases in the period of 2008–2012 to 6101 cases in 2013 and 6165 cases in 2014 [5]. In Polish students aged 14–21 years having SI during their life-time was reported by 37% of girls and 25% of boys, whereas having SA in a past was reported by 11% of girls and 5% of boys [6]. In turn, among Polish teenagers that committed suicide between 1999 and 2006 80–85% were boys [7]. In early 1990's suicides comprised of 10% of total injury-caused deaths in children and adolescents, whereas in 2012 this percentage increased to nearly 15% [8]. Those observations are accompanied by increase in SA prevalence in adolescent psychiatric patients in recent 10 years. Data clearly shows that, both globally and in Poland, men are more likely to commit suicide than women. In Poland for each women who died by suicide there are 4–9 suicides committed by men [1, 9].

Suicidality and psychiatric diagnosis

Psychological autopsies show that over 90–95% of suicides are committed by people suffering from mental disorders [9]. Such deaths are mostly attributed to affective disorders (ca. 80%), mainly depression. Approximately 10% of suicides are thought to be associated with schizophrenia [2].

From other point of view – that of clinical practice of treating patients with mental disorders, SI is one of the most frequently encountered symptoms. In patients with major depression SI were reported by 18% of those treated by general practitioners, 55% of those treated as outpatients by psychiatrists, and 76% of those hospitalized in psychiatric wards [10]. SI were found in 61% of patients during an episode of bipolar disorder. Combined life-time prevalence of SI and SB in patients with bipolar disorder was 80%, whereas 51% attempted suicide [11]. Completed suicide accounts for 10–15% of deaths in patients diagnosed with recurrent depressive disorder [12] and 15–19% of deaths in patients diagnosed with bipolar disorder [13]. SI are also common in patients suffering from schizophrenia spectrum disorders. Of patients who had had at least one episode of schizophrenia in their life-time 16% reported having SI within last two weeks before the examination [14]. More than 30% of patients diagnosed with schizophrenia attempt suicide during their life-time [15], and approximately 6% commit suicide [16]. Meta-analysis confirmed that in patients with schizophrenia there is strong association between presence of SI and death by suicide (95% CI: 3.82–11.02) [17].

SI and SB are also common in patients with eating disorders. 20% of patients with anorexia nervosa aged 7–18 report SI, as well as 43% of patients with bulimia nervosa [18]. In turn, history of SA is observed in 3–20% of female patients with anorexia nervosa, and 25–35% of female patients with bulimia nervosa. Moreover, in comparison with general population significantly increased suicidal risk was found in patients with anorexia nervosa – it reached 5.3% (death caused by cachexia were not included) [19].

A group of psychiatric patients that has relatively low suicidal risk but in which SI are common is that of patients with neurotic, behavioral and personality disorders. In population of those patients who are referred for psychotherapeutic treatment in a day hospital one third is reporting having SI within the last two weeks before examination [20, 21]. Among patients with mental disorders, SI and SB are most frequently observed in patients with borderline personality disorder, dissocial personality disorder, general anxiety disorder, and panic disorder. In patients with borderline personality disorder, apart from frequent self-harm (50–80% of cases), there is increased prevalence of SI, SA (present in history of 40–80% of the patients), and suicide (estimated to be 5–10%) [22].

Also in cases of substance dependence SI is found in an above average prevalence (OR: 2.0–2.5), as well as SA (OR: 2.6–3.7) [23]. In people with substance dependence, combined life-time prevalence of SI and SB is over two times higher than in general population (9.0% vs. 4.1%) [24]. Furthermore, studies show that between 19% and 63% of suicides are associated with psychoactive substance use, most frequently alcohol dependence [25]. It is estimated that ca. 10–15% of patients with alcohol dependence die by suicide [2].

Suicidal ideation in context of the suicidal risk evaluation

Above-mentioned data concerning the prevalence of suicidality manifestations point to necessity of routine suicidal risk evaluations in psychiatric patients. Despite of numerous and vast knowledge on suicide its predictions remain one of the most difficult tasks that clinicians face. Accurate estimation of suicidal risk is crucial for adequate selection of therapeutic methods, decisions about hospitalizations and preventive monitoring of patient's behavior. Selecting patients burdened with high suicidal risk is indispensable for ensuring safety for them during periods of decompensation.

It is estimated that ca. two-thirds of people who die by suicide visit health care professional within the last 6 weeks before committing it [2]. Studies show that among those who died by suicide as much as 80% of people communicated their intentions to others either verbally or through behavior [26]. However studies also show that this communicativeness decreases in period directly preceding an act of suicide and is very limited in reference to therapists. In a group of patients who committed suicide in hospital, 39% were admitted due to SI and 78% disclaimed having SI during their last evaluation by their therapist [27]. Other studies confirm that patient's family is a valuable source of information – within the last 12 months before suicide in 69% of cases a spouse was informed about suicidal intention, in 50% – a friend, and only in 18% – a therapist. Another study showed that among patients who disclaimed having SI during evaluations by therapists 25% disclosed having SI to their families. Also authors emphasize that a number of suicidal patients may disclose SI by filling self-report questionnaire with questions concerning SI. Furthermore, in cases of high suicidal risk patient's behavior is regarded more important for risk evaluation than patients' declarations that frequently are forms of dissimulation. Among factors that point to high suicidal risk, authors emphasize patient's efforts to conceal preparations for suicide [26]. In such situations ability to establish a good report with patient and being vigilant to the whole spectrum of potential suicidal communications seem invaluable.

More detailed estimation of suicidal risk involves taking under consideration a range of factors: male gender, period of adolescence or being elderly, Caucasian race, not being in a relationship, being divorced or widowed, lack of social support, instable interpersonal relationships, law violations, being unemployed, reporting SI, having suicidal plans, including having made preparations for suicide, suicidal attempts in the past, especially if those were potentially highly lethal, insomnia, having delusions or hallucinations, intense anxiety, psychomotor agitation, low self-esteem, feeling of helplessness, hypochondria, impulsiveness, being raised in a culture that approves suicide, no plans for future, recent loss experience, recent childbirth, having family members who died by suicide, parent death or isolation from parent in childhood, sexual abuse, being raised in dysfunctional family etc. It is also necessary during suicidal risk evaluation to take under consideration patient's somatic condition, especially diseases that cause chronic and intractable pain or limit patient's ability to

move, such as HIV infection, brain neoplasms, epilepsy, neurodegenerative diseases, including amyotrophic lateral sclerosis, multiple sclerosis, Parkinson's disease, Huntington's disease etc. [2, 28]

Moreover, thorough suicidal risk evaluation involves looking at patient's situation from the perspective of theoretical models that give account of mechanisms that lead to suicide. So far suicidologists proposed at least several distinct and helpful perspectives for understanding suicide. In this paper a selection of those theories has been reviewed with emphasis on the role of SI in those models and mechanisms of progression of SI to SB.

Sociological approach to suicide

Some theoretic models do not emphasize SI as an element of mechanism that leads to suicide. Such approach seems understandable in case of classical sociological model proposed in the late 19th century by the pioneer of suicidological research Emil Durkheim. Drawing conclusions from statistics, Durkheim claimed that the following two factors have the strongest impact on suicide: social cohesion and society influence on individuals in terms of their norms, aspirations, limitations, individualistic approach, excessively high expectations. Durkheim's observations led him to select four categories of suicide [29]:

1. Egoistic – that stems from too weak social cohesiveness of the individual with his/her social environment, decline in social bonds, and lack of sense of belonging (e.g., religious groups of low social cohesion such as protestants, not in a relationship, being widowed, and having no children).
2. Altruistic – that stems from too strong social cohesiveness, that leads to domination of group goals over individual goals, readiness to sacrifice one's own life for the good of social group (e.g. Kamikaze pilots, suicidal bombers, soldiers trained for that very purpose).
3. Anomic – caused by disintegration and vagueness of social norms and rules during times of social destabilization, lack of society regulatory influence on individuals morality and aspirations, lack of social legitimization of individual's value and importance (e.g., immigrants, globalized societies, individuals raised in individualistic cultures that approve consumption).
4. Fatalistic – caused by excessive restrictions, limitations, intrusive control imposed from the outside on individuals (e.g., prison suicides, suicides by people forced to slave labor, human rights violations, suicides by members of discriminated social groups).

Among researchers who further elaborated sociological approach to suicide Benjamin Wolman needs to be mentioned. Wolman emphasized prosuicidal influence of 19th century culture that caused a sense of alienation in individuals, disintegration of

familial bonds, depersonalization of human relationships and devaluation of individual's values and identities in context of mass culture [30].

Psychoanalytic concepts

Psychoanalysis offers various ways for interpreting SI and SB. Among these Sigmund Freud's theories are probably most popular. From their perspective SI and SB may be viewed as manifestations of death drive (*thanatos*), the task of which is to lead organic life back into the inanimate state. However, later this concept was criticized by numerous researchers for its "mechanistic" approach [31–35].

Freud also claimed that in melancholia and facing contradictory emotions towards the lost object, the individual reacts with splitting of the *ego* followed by identification of the split *ego's* part with the lost object. This causes an aggression towards the lost object to be redirected to individual's *ego*. In other words, inability to vent out one's own contradictory emotions towards the object leaves the individual with no other option but to manifest his/her anger towards the object in form of self-harm or suicide [32–35]. According to later Freud's hypothesis, suicide may also result from strict or sadistic *superego*, which abandons *ego*, i.e., stops to gratify it, and directs its aggression towards it [34, 36]. Those concepts were further developed by Otto Fenichel who noted that fear of being abandoned that overtakes *ego* also contributes to suicide. Fenichel also emphasized that suicide may be a manifestation of desire to be reunited with the lost object [32–34, 37].

Among causes of suicide, as Karl Menninger pointed, there is introjection of the lost object and displacement of primitive oral aggression from the object to the *ego*. Menninger also proposed a triad of unconscious wishes that together lead to suicide – those were a wish to murder, a wish to be killed, and a wish to die – those desires are associated with *id*, *ego* and *superego* respectively [34, 38].

An important contribution to psychoanalytic perspectives on suicide was made by Melanie Klein. She described a role of defense mechanisms – especially projection and identification – in suicide. According to Klein, apart from aggression towards the internalized lost object that contributes to suicide, this act stems also form a desire to save the lost object. Inability to reconcile contradictions on the images of the objects causes an individual to use splitting. In such circumstances unconscious motivation for suicide includes a desire to destroy the part of *ego* that identifies with the "bad" object or *id*, which in turn allows to save internalized "good" object as well as the part of *ego* that identifies with it [32, 34, 35].

Donald Winnicott proposed that frustration and oppression of the true *self* together with circumstances that allow only the false *self* to exist may result in suicide [34, 39, 40]. According to Heinz Kohut, lack of a nurturing maternal figure during childhood gives no opportunity for the individual to internalize soothing and comforting object. This makes the individual vulnerable and helpless in face of stressful situa-

tions, losses predispose him or her to depression, anxiety or disintegration. Among those reactions Kohut emphasized the role of extreme anxiety that may lead to suicide – an act in which the sense of being in control is being saved at the cost of destruction of one's own body and personal world [34, 40]. From the perspective of Erik Erikson's psychosocial development suicide is a result of failures in overcoming life crises at some stages of development. Erikson claims that accumulation of such failures result in unfavorable mental states that are responsible for propensity to suicide – those states include: mistrust to others, shame, hopelessness, guilt, sense of inferiority, confusion of social roles, sense of alienation, sense of uselessness, and disillusionment [41].

Above-mentioned prominent psychoanalytic models of suicidality do not describe in detail the progression of SI to SB – most probably because of axiological reasons. In their view the processes of developing SI and the progression of SI to SB do not differ qualitatively from each other. This suggests that the progression of SI to SB – which is crucial from clinical perspective – results from a "quantitative" change, i.e., a change in strength of certain psychic dynamisms – which may be difficult to evaluate. Such "quantitative" determinants may be at least partly responsible for difficulties in estimating the risk of the progression of SI to SB faced by clinicians in practice.

Presuicidal Syndrome

A groundbreaking concept of the presuicidal syndrome was proposed in 1953 by Erwin Ringel. The syndrome is defined as mental state that directly precede suicidal attempt. Ringel claimed that three major factors (precursors of suicide that coalesce together) contribute to such condition [2, 26, 34]:

1. Narrowingin the following areas of functioning:
    a) dynamic narrowing (predominance of negative emotions and thoughts, pessimism, anticipation of misfortunes, anxiety, low self-esteem, helplessness, being concentrated on personal losses);
    b) situational narrowing (inability to see solutions to one's own problems, sense of having no escape, hopelessness that prevents from seeking constructive countermeasures and goal-oriented efforts);
    c) narrowing in perceived values (devaluation of life-goals that were valued earlier, decline in interests and contact with others);
    d) interpersonal narrowing (social withdrawal, sense of alienation, sense of being rejected by others).
2. Emergence of thoughts in which suicide is being misleadingly perceived as favorable or desired solution (suicidal ideation).
3. Accumulation of aggression and emotional tension which is being endured for some time but finally is directed inwards, i.e., against oneself in form of suicide.

Despite the fact that this perspective does not locate SI precisely in a clear causal mechanism it states that SI is one of three crucial prosuicidal factors. According to Ringel, coexistence of all those factors results in escalation of suicidal risk. In other words, the risk of SI progression to SB is the highest when SI co-occur with a mental state characterized by narrowing in certain above-mentioned areas of functioning together with a tendency to accumulate aggression that may be directed towards oneself.

Suicide as a result of mental pain

One of the pioneers of suicidology, Edwin Shneidman, defined suicide as a conscious act of self-induced annihilation, best understood as a multidimensional malaise in a needful individual who defines an issue for which suicide is perceived as the best solution. In view of Shneidman's works, key place among prosuicidal factors belongs to mental pain (psychache as he called it) of intensity that is intolerable for an individual. According to Shneidman, psychache stems from frustrated and unfulfilled needs, feelings of guilt and shame, sense of abasement, loneliness and various forms of anxiety. Sources of psychache include traumatic experiences (e.g., health problems, being left by a partner etc.) as well as unconscious psychodynamic predispositions [26, 32, 34].

Shneidman also emphasized concentration on almost solely "negative" emotions and only one fatal way of escaping those emotions contribute to suicide. This suggests certain narrowing in range of emotions and perceived possibilities ("a tunnel vision") and being excessively absorbed with SI – which is congruent with Ringel's concepts. An individual who wants to take his life tries to find a way out, to escape, "to leave his stage", to distance himself or herself, to cease to exist. Moreover, some of the suicidal people also tend to self-limit, self-suppress their life, decreasing its length, narrow down its richness. This phenomena is also described as so-called indirect self-destructiveness [32, 42, 43].

According to Shneidman, thoughts about cessation of unbearable suffering (through suicide or "falling asleep forever") may seem for such individual as an option that alleviates pain, frustration and sense of being left alone. Through suicide an individual wants to stop the unbearable mental pain (or to escape from awareness of it). Such state is imbued with a sense of entrapment, being rejected, hopeless, and helpless (this show similarities to Baumeister's theory described below). Shneidman compares a mental state of the one who attempts suicide with a state of being intoxicated or being faded with some psychoactive substance – the individual is stunned by intense emotions, which distort his or her perception and criticism [26, 32, 34, 43].

Among experiences of suicidal person Shneidman also emphasized ambivalence. Such person struggles with complexity and incongruences of his or her thoughts, attitudes and impulses – both towards himself or herself as well as towards the suicidal act itself [32, 34, 43]. This ambivalence is also emphasized by Erwin Stengel and finds its expression in his proposal for defining suicidal attempt as an act of intentional self-

harm undertaken without certainty concerning surviving it. In other words, the act is implemented not with awareness of inevitable death but rather with one's approval of mereeventuality of dying in its result [44].

The role of helplessness and cognitive biases in suicide

According to Aaron T. Beck, suicide stems mainly from depression and sense of helplessness. Sense of helplessness defined as anticipation of negative experiences plays crucial role in suicide. A person who plans to take his or her own life perceives such act as the only solution to his or her excruciating problem. Usually the person sees his or her future in an extremely pessimistic way, expects to run up against more suffering, more difficulties, more frustration, more deprivation, etc. The person views oneself in an excessively negative manner, as terminally ill, helpless and hopeless. The person is excessively self-critical, tends to blame him – or herself, accuses oneself over various things, and has low self-esteem. The person who is planning to commit suicide sees him – or herself as deprived and impoverished in terms of various resources – typically to an unrealistic extent. This finds its expression in form of thoughts on being alienated, rejected by others, not being loved, and at times in form of thoughts about being destitute. Despite the fact that except for suicide there is usually a range of alternatives, the arbitrary choice of suicide is regarded as the only available. Other options are not being considered, and pro-suicidal interpretations of the person's situation are regarded as adequate and accurate. Consequently, SI that tends to self-impose on the individual may result from a number of cognitive biases, such as: over-generalization, magnification and minimization, erroneous attribution, incorrect labelling, selective abstraction, negativity bias etc. The affective state (the emotional response) of the suicidal person is congruent with the label given to a traumatic situation, regardless of his or her actual situation. Whichever is the predominant affect – e.g., sadness, anger, anxiety, euphoria – the higher its intensity is, the stronger sense of legitimacy (or adequacy) of SI is. The perception of being in a hopeless situation and wanting not to bear the mental pain evermore the person yearns for escape. In such circumstances suicide may be viewed as more desirable than continuing life [32, 34, 43].

Escape Theory of Suicide

The Escape Theory of Suicide formulated by Roy F. Baumeister (based on earlier theory created in 19070's by Jean Baechler) proposed understanding of suicide as a consequence of a sequence of six casually related phases of the so-called decision tree [34, 45]:

1. Experiences that are falling short of individual's standards which causes sense of disappointment, that far from one's expectations (this may stem from both

unrealistically high or strict expectations towards oneself, and actual problems and failures).

2. Attribution of responsibility for not meeting expectation to the *self*.
3. Comparing the *self* with expectations produces high self-awareness that may include painful sense of inadequacy, being unwanted, sense of guilt, and fear of being rejected.
4. The emotions mount and lead to negative affect and decreased mood.
5. Escape from the negative affect is obtained through so-called cognitive deconstruction (defined as transition from more integrated and complex thinking to less integrated and simple thinking that focuses at "here and now", in which the perspective is narrow in terms of time, which is characterized by lack of cognitive flexibility, and which enables a state of at least partial indifference or numbness). Such reduction in pain may prompt individual to seek more and more radical ways of escaping from unpleasant thoughts and emotions.
6. Consequences of cognitive deconstruction include: (a) progressive disinhibition of restraints that protect against SB; (b) predomination of tendencies to escape from negative affect with attenuation of other emotions; (c) passivity and resignation from seeking constructive solutions; and (d) tendencies for excessively pessimistic approach to difficult situations and preventing meaningful thoughts. Such phenomena lead to weakening of self-preservation needs, sense of not being in control of oneself, anticipation of no positive experiences in the future, weakening of attachments and obligations to others, disregard towards social norms and restrictions – this means weakening of the factors that prevent impulsive, irrational or risky actions directed against the *self*.

Consequently, Baumeister's theory offers perspective at the progression of SI to SB that is different from the above-mentioned. Baumeister emphasizes gradual disintegration of protective barriers. Lack of those render SI into impulses that are more likely to initiate actions. In other words, the escape theory of suicide allows us to single out the factor that facilitates the progression of SI to SB through cognitive deconstruction that disinhibits suicidal impulses.

Interpersonal Theory of Suicide

In recent years a lot of attention has been drawn by the Interpersonal Theory of Suicide formulated in 2005 by Thomas Joiner and further developed by Van Orden et al. The theory proposes that most of the suicidal attempts (both fatal and non-fatal despite high probability of death) are caused by coexistence of three factors. Coexistence of two of those factors – thwarted belongingness and perceived burdensomeness – leads to the desire to die, i.e., SI. Those two factors joined by the third one – capability for suicide – causes suicidal attempts [28, 46].

Thwarted belongingness is described as interpersonal construct composed of facets: sense of loneliness or disconnectedness to others and absence of reciprocal care or having no one to turn to and not being a source of support to others. Situations that may bring such state include, e.g., social withdrawal, death of spouse, divorce, conflicts or abuse within a family, or being sexually abused in childhood etc. [28, 46].

Perceived burdensomeness is also described as composed of two different facets: a sense of one's death is worth more to others than one's life and self-hate. This state may stem from situations when one may think of being burden to others, when one suffers from physical illness, being unemployed, or being homeless. The state may manifest itself by communications such as "I'm a burden", "I'm useless", "I cause only problems to others" etc. Emotional components of this state include a sense of guilt or shame, low self-esteem, and sense of being redundant. Especially strong prosuicidal impact of perceived burdensomeness was noted in cases when one had sense of being burden not only to a single person but to many people [28, 46].

Interpersonal theory of suicide claims that thwarted belongingness and perceived burdensomeness are two distinct factors. Thus even total frustration of the desire to belong does not exclude possibility of having a sense of being a burden to others. Separateness of the factors was verified empirically. Studies on this model showed that presence of only one of these two factors results in relatively low SI prevalence, whereas presence of both of the factors results in high SI prevalence [28, 46].

The third factor that is responsible for the progression of SI to SB was labeled capability for suicide. It is understood as overcoming evolutionally constituted fear of suicide. Such fear consists of fear of physical pain and its tolerance. Overcoming the fear is effectuated by habituation through experiencing pain caused by, e.g., diseases, recurrent self-harm or SB etc. Acquiring stable non-ambivalent conviction that preplanned suicidal method will not result in unbearable pain is thought to be one of key components of capability for suicide [28, 46].

The authors of the Interpersonal Theory of Suicide propose that other commonly known pro-suicidal factors, e.g., mental disorders, contribute to suicide by means of the three key factors mentioned above [28, 46]. Authors emphasize well-verified empiric basis of the interpersonal model [28, 46]. Moreover, the Joiner's theory is in many aspects congruent with other suicidological concepts including those proposed by Durkheim, Baumeister and Shneidman. As an example, in interpersonal model one may discern hints of two types of suicide described by Durkheim. When changing from sociological to individualistic perspective Durkheim's egoistic suicide type seems to correspond to the concept of thwarted belongingness whereas Durkheim's altruistic suicide type seems to correspond to the concept of perceived burdensomeness.

Integrated motivational-volitional model

Rory C. O'Connor's [32] integrated motivational-volitional (IMV) model was inspired by arrested flight model developed by Mark Williams [47]. IMV model also has well-verified empiric basis. It proposes that process of developing SB has three phases: pre-motivational, motivational and volitional phase. The first, i.e., pre-motivational phase is biosocial background for other processes and moderates its course. The first phase encompasses interactions between: (a) diathesis, (b) environment and (c) life events.

The second and the most complex phase, i.e., motivational phase describes development of SI. It sees experiences of defeat and humiliation together with vulnerability towards them as a starting point of this process. Next, inability to escape from those experiences evokes sense of entrapment. This process is influenced by a number of moderators that determine subjective level of threat to the *self* (threat to self moderators), such as coping strategies, social problems solving, biases concerning one's helplessness, and tendency to rumination. Then sense of entrapment or being unable to escape from a situation may lead to SI, which is moderated by another set of factors, i.e., motivational moderators – also emphasized by Joiner – such as sense of burdensomeness and thwarted belongingness, as well as lack of positive thoughts and plans for future, and deficit of social support [32].

Lastly, a turn from motivational to volitional phase may occur – which is synonymous with progression of SI to SB – depending on volitional moderators. This progression include devising suicidal plan: time, place and method. According to IMV model, the moderators that participate in this process are diverse and it does not provide a closed list. Among most important of those are: (a) acquired capability for suicide, understood analogically to Joiner's views as a result of habituation that allows an individual to overcome self-harm protective barriers, (b) impulsiveness, (c) implementation intentions, described by Peter Gollwitzer, which include planning when, where and how to realize the desire to take one's own life, consolidating the pattern of reactions that lead to suicide through, e.g., multiple rehearsing of a simple suicidal plan with all the details, that makes implementation of the plan in certain circumstances as if automatic with little chances for critical second thought and abandoning the plan, (d) knowing other people who presented SB (imitating other people as form social learning), and (e) an access to means of committing suicide [32, 48].

Recapitulation

In psychiatric patients SI is one of the most commonly observed symptoms. This refers both to inpatients and outpatients. Accurate evaluation of suicidal risk in both clinical settings belongs to most important as well as most difficult tasks that clinicians face. This matter is especially relevant considering alarmingly increasing prevalence of

suicide in Poland. In order to increase accuracy of suicidal risk evaluation in patients with SI, apart from considering many well-known suicidal risk factors, it is reasonable to take under careful consideration the factors that are most important for progression of SI to SB.

This broader approach to suicidal risk evaluation may be useful not only in cases of patients who report SI but also in those who seem to dissimulate SI as well as in those who manifest other forms of suicidality that suggest presence of SI.

A review of selected suicide models reveal complexity and multidimensionality of progression of SI to SB. Some of the theories – due to various reasons – do not distinct the progression of SI to SB from the whole process that leads to suicide. However, most suicide models considered separately do not provide thorough explanation of the progression of SI to SB. Nonetheless, the discussed models do not contradict each other. Moreover, they seem complementary as each subsequent model widens the range of included aspects and dimensions of pro-suicidal processes. Along with the increasing resources of clinical research we are offered more and more solid empirical basis for explaining genesis of SB. This allows us to gradually narrow down a gap in our understanding of SB – the intention–behavior gap. Complementary, in this regard subsequent suicidological theories seem to be increasingly nearer the clinical experiences, provide us with helpful perspectives for assessing patient's situation, and allow us to single out the crucial risk factors.

On the basis of the reviewed models of SB we may select groups of risk factors that are most specific for the progression of SI to SB – those are: (1) transgression of fear of causing harm and pain to oneself, as well as disintegration of other protective barriers such as (2) decline of social integration with others, feeling of being alienated or abandoned, decline of sense of belongingness, lack of social support, (3) resignation from family and social obligations, (4) dismissing cultural or religious norms, (5) rejection of life goals, values and aspirations that were appreciated earlier, (6) narrowing down in perceived alternatives for suicide, i.e., "tunnel vision", feelings of helplessness and powerlessness, (7) devising in details and accepting a simple suicidal plan, especially when such plan is being consolidated through rehearsals and as if "automatized", (8) impulsiveness, (9) accumulation of aggression that may be vented out as suicide, and finally (10) accessibility of means to commit suicide.

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Address: Paweł Rodziński
Medical Center for Mental Health Promotion
35-021 Rzeszów, Langiewicza Street 16/22